DETERMINANTS OF LOAN DEFAULTS IN MICROFINANCE INSTITUTIONS IN TANZANIA: A CASE OF TWO SELECTED MICROFINANCE INSTITUTIONS IN DODOMA MUNICIPALITY

DETERMINANTS OF LOAN DEFAULTS IN MICROFINANCE INSTITUTIONS IN TANZANIA: A CASE OF TWO SELECTED MICROFINANCE INSTITUTIONS IN DODOMA MUNICIPALITY

By

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A Dissertation Submitted in Partial Fulfillment of the Requirement for the Degree of Masters of Science in Project Planning and Management of Mzumbe University

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CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled, "**Determinants of loan defaults in Microfinance Institutions in Tanzania: a case of two selected Microfinance Institutions in Dodoma Municipality**" in partial fulfillment of the requirements for the degree of Masters of Science in Project Planning and Management in Mzumbe University.

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DECLARATION AND COPYRIGHT

I**, Emmanuel Severine Mosha,** declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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Date: _____

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Special thanks go to the Almighty God for giving me the mental courage and wisdom to accomplish this work.

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DEDICATION

I have no words to acknowledge the sacrifices you made and the dreams you had to let go, just to give me a chance to achieve mine. I dedicate this dissertation to my loving parents Mr. Severine K. Mosha and Sarah F. Mamboya (PhD) whose love, encouragement and prayers of day and night make me able to get such a success and honour.

ABBREVIATIONS AND ACRONYMS

ACB	Akiba Commercial Bank
BRAC	Bangladesh Rural Advancement Committee
CBOs	Community Based Organisations
CGAP	Consultative Group to Assist the Poor
CRDB	Co-Operative Rural Development Bank
FINCA	Foundation for INternational Community Assistance
FSS	Financial Self - Sufficiency
GOT	Government of Tanzania
KCB	Kilimanjaro Co-operative Bank.
MEDA	Micro Enterprises Development Agency
MFIs	Micro Finance Institutions
MoFP	Ministry of Finance and Planning in Tanzania
NGO-MFIs	Non-Governmental Organisation Microfinance Institutions
NGOs	Non-Governmental Organisation
NMB	National Microfinance Bank
OSS	Operational Self-Sufficiency
PRIDE	Promotion of Rural Initiative and Development Enterprises.
RLF	Revolving Loan Funds
SEDA	Small Enterprises Development Agency
UNCDF	United Nations Capital Development Fund
VSLA	Village Savings and Loan Association

ABSTRACT

The study on determinants of loan defaults in Microfinance Institutions in Tanzania was carried in Dodoma Municipality in two selected branches namely PRIDE and FINCA. Specifically, the study intended to: assess the default rate of the selected MFIs for the period between 2004 and 2014; determine factors influencing the likelihood of loan default and identify effects of loan defaults to borrowers and MFIs. The study used cross-sectional design to gather information at the study area. Non-purposive (simple random) sampling technique was applied to select 196 respondents. Purposively, Micro-finance institutions and key informants were selected. Primary data were collected directly from the respondents using structured interview and semi - structured interview whereas secondary data were collected through a documentary review of sources including published and unpublished materials. Data obtained were analyzed by descriptive statistics and logistic regression using SPSS version 11.5. Logistic regression model estimated the factors influencing the likelihood of borrowers to default. The results of the Logistic regression model shows that age of borrowers and interest rate charged by MFIs were significant at ($P<0.05$) and business type, business management education and loan uses were found to be significant at ($P<0.01$). Majority of respondents identified loss of collaterals and denial of future loan as major effects of loan default. Loss of Interest incomes, reduction of operating profit through provision for bad debts and reduction of lending capacity are effects reported by MFIs. Further, this study recommends MFIs should involve borrowers in reviewing loan repayment terms, effective monitoring of loans, credit training programs and where necessary the use private debt collectors.

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CHAPTER ONE

INTRODUCTION

1.1 Background information

Tanzania in response to economic crisis of 1980's adopted macroeconomic stabilization policies and structural reforms which led to the transformation of the economy from socialist to the market oriented economic system. One among the strategies employed was financial liberalization initiative of 1991 which resulted into the increase of commercial banks. However, the access of credits from these commercial banks was still limited to poor citizens (World Bank, 2001). This problem was also reported by Randhawa and Gallardo (2003), that bank lending in Tanzania is extremely biased against the poor because they do not possess valuable physical collaterals to pledge as loan security. It is for this reason the Government of Tanzania (GoT) created an environment that paved a way to the growth of Microfinance Institutions (MFIs) throughout the country so as to complement the formal financial institutions (World Bank, 2011).

MFIs activities are directed towards the provision of financial services for working poor or small and micro-enterprises. These services comprise of micro loans, savings, micro leasing, micro insurance and other forms of financial services (PRIDE Tanzania, 2005). However, among these services micro loans and mandatory savings are the major services offered to the MFIs clients in Tanzania.

The long-term vision of these MFIs is to provide sustainable financial services to the economically-active poor who are unable to access these services from the mainstream of financial services (Nyamsogoro, 2010). In fulfilling this vision, Microfinance institutions have managed to play an important role in micro-enterprise development in Tanzania compared to commercial banks, particularly as instruments to reduce the financial exclusion so as to achieve equity economic growth. Remarkably, MFIs have become an economic development strategy that encourages income-generating

activities; assists entrepreneurs in stabilizing existing sources of income and enables micro-enterprises to grow into small businesses. In the development of market-based, microfinance institutions have provided SMEs with micro-loans and other financial services on a sustainable basis with more flexible terms than those offered by traditionally risk-averse banks. The linking access to finance with business development assistance is an effective way to improve entrepreneurial behaviour and builds business integrity (URT, 2000).

However, there are number of challenges facing these Microfinance Institutions which are: inadequate donor funding, insufficient support from government, improper regulations, limited management capacity and loan defaults (Dahir, 2015). Among these challenges, loan default is the major problem that threatens the financial operations of these MFIs (Cull et al, 2009, Aghion & Morduch 2005; Zeller & Johannsen, 2006).

Recent default rate statistics in developing countries show that out of the 25 MFIs, 10 which represent 40% of MFIs are experiencing a default rate of (1 -3) % which is consistent with internationally accepted rate of default. The rest of the surveyed MFIs, 8 representing 32% have default rate of (3-6) %; 4 representing 16% experience default rate of (6-10) % and 3 representing 12% have a default rate of more than 10%. In Tanzania, current default rate as reported by Foundation for International Community Assistance (FINCA) and Promotion of Rural Initiative and Development Enterprises (PRIDE) is 3.4% and 3.8% respectively. This is an alarming rate because it is more than the international acceptable default rate of 3% (Korankye, 2014). Thus, it is from this basis the study was conducted to find out the determinant of loan default in the study area.

1.2 Statement of the problem

Since loan default weakens the financial operations of MFIs, various efforts have been put in place to reduce the problem. These efforts are articulated in credit collection policies which are used to manage the accounts receivables and manage loan portfolio of MFIs (Pandey, 1995). These policies put into operation various institutional mechanisms to reduce the rate of loan default. These include lending methodologies, screening mechanisms, pledging of collateral, third party credit guarantee, credit rating and use of collection agencies (Sewagudde, 2000).

In line with this, the selected MFIs use various strategies to reduce the risks involved in unsecured lending. These include; group lending, mandatory savings deposit to the amount borrowed, rewards for on - time repayments in form of future access to higher loan amounts, penalties for late payment such as fees and denial of higher loan amounts (Mulema, 2011). In addition to this, repayment history of the continuing borrowers and third party guarantor of new loan applicants are compulsory before the loan is granted. However, traditional methods of deciding whether to grant loan to an individual are based on human judgment and experience of previous decisions. These methods are not objective but very subjective. Thus, to determinate the likelihood of a borrower to default the lender must estimate borrower's ability to pay back from his current business characteristics and favorability of MFIs credit policies to borrowers. Using a statistical approach in estimating the likelihood of default gives an objective and straight forward approach.

Despite all the mentioned strategies, loan defaults are alarming in MFIs. In Tanzania, the Foundation for International Community Assistance (FINCA) and Promotion of Rural Initiative and Development Enterprises (PRIDE) reported to experience defaults (Korankye, 2014).

General information shows that default risk is associated with economic and social factors (Berharm, 2005; Agarwal, 2009; Marjo, 2010; Vasanthi and Rajab, 2006 Marjo,

2010; and Bichanga, 2013). However, there is limited information on how current business and MFIs characteristics determine the likelihood of a borrower to default. It is on this background this study was designed to find the determinant factors for loan default in the selected Microfinance Institutions in Dodoma Municipality.

1.3 Research objectives

1.3.1 General objective

The overall objective of this research was to determine factors for loan defaults in Microfinance Institutions in Tanzania.

1.3.2 Specific objectives

Specifically this study was set to achieve the following specific objectives;

i. To assess the level of loan default amongst the selected MFIs in Dodoma for a period between 2004 - 2014.
ii. To determine factors influencing the likelihood of loan default among borrowers in the selected MFIs in Dodoma.
iii. To identify the effects of loan defaults to the selected MFIs and borrowers.

1.4 Research questions

In order to achieve the objectives of this study, the research had to answer the following questions:

i. To what extent loan default exist in the selected MFIs in Dodoma within a period of 2004 to 2014?
ii. What are the factors influencing the likelihood of loan defaults in the selected MFIs in Dodoma?
iii. What are the effects of loan defaults to the selected MFIs and borrowers in Dodoma?

1.5 Significance of the study

The major purpose of this study is to provide knowledge and help future researchers who want to research about loan default in MFIs. It helps MFIs and banks to have a model that can effectively predict the likelihood of loan default. This also serves as a tool necessary to assist the loan officers in making loan decisions, controlling and monitoring loan portfolio risk and isolating loans that need additional attention.

1.6 Scope of the study

This study focused on the determinants of loan default for borrowers of FINCA and PRIDE Tanzania Limited, looking at the level of default rate, factors influencing the likelihood of loan default and its effects to the borrowers and MFIs. The study also covered loan borrowers of these MFIs found in Dodoma Municipality within a period of 2004 to 2014. Dodoma Municipality was selected due to availability of MFIs particularly FINCA and PRIDE which experience loan defaults.

1.7 Organization of the study

This study is divided into five chapters. Chapter one presents introduction and background for the study. It contains the statement of the problem, objectives of the study, research questions, significance, scope and organization of the study. Chapter two reviews the literature related to the study by defining key terms, theoretical review, theories guiding the study, empirical literature and conceptual framework. Chapter three presents the methodology for the study which includes description of study area, research design, sampling unit and population, sampling technique, sample size, data types and sources, data collection methods and tools, data validity and reliability and Data analysis methods. Chapter four presents data analysis results and discussion of the results. Finally, chapter five presents summary, conclusions and policy recommendations drawn from the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 An overview

This chapter presents the literature related to this study. It reviews both theoretical and empirical literature. The chapter is divided into five sections. Section one presents definition of the concepts. Section two reviews theoretical literature by providing description on theories concerning loan default and conclude with theoretical justification. Section three provides a brief overview of Tanzania Microfinance policy. Section four reviews empirical literature and finally, section five presents the conceptual framework for the study.

2.1 Definition of concepts

2.1.1Loan default

Loan default has many definitions depending on the MFIs policies. Pearson and Greeff (2006) defined default as a risk threshold that describes the point in the borrower's repayment history where he or /she missed to repay at least 3 installments within a month period. This represents a point in time and an indicator of behavior, wherein there is a demonstrable increase in the risk that the borrower eventually will truly default, by ceasing all repayments

In similar vein, Ameyaw, (2011) and Murray, (2001) defines Default as inability of a borrower to pay the interest or principal on a debt when it is due. If a person or institution responsible for repaying a loan or making an interest payment fails to meet that obligation on time, that person or institution is in default. In default, an individual may lose any property kept as collateral to get the loan. Defaulting has a negative impact on credit history and credit score, which generally makes it difficult to borrow again in the future

The study's definition is consistent with Pearson and Greeff' (2006) which states that, default is a point in the borrower's repayment history where he or /she has missed to repay at least 3 installments within a month period.

2.1.2 Microfinance and microcredit

The definition of microfinance differs from one scholar to another. Their differences based on type of financial services and loan provided to clients; and kind of people received the service. For instance: Quayel and Hartarska, (2016) define Microfinance as the provision of financial services including, savings, micro-credit, micro insurance, micro leasing and transfers in relatively small transactions designed to be accessible to micro-enterprises and to low-income households. These scholars thought that Microfinance may be complemented by non-financial services such as trainings to improve the ability of clients to utilize credit facilities effectively.

TAMFI (2014) defines microfinance as, activities directed to the provision of financial services for working poor or small and micro-enterprises. The services comprise of micro loans, savings, micro leasing, micro insurance and other forms of financial services.

In similar vein, Fant (2010) define Microcredit as the provision of cash and in-kind loans in smaller amounts to micro and small entrepreneurs meant to improve their business operations.

Literature treats microcredit and microfinance interchangeably, but there is a difference between them. Sinha (1998) describes microcredit as small loans where microfinance is appropriate where MFIs offer the loans with other financial services. Therefore, microcredit is a component of microfinance because it involves provision of credit facilities to poor, but microfinance also involves additional non-credit financial services such as savings, insurance, pensions and payments services (Okiocredit, 2005).

However, this study defines microfinance as the provision of financial services specifically loans to poor people living in both urban and rural settings who are unable to obtain such services from the formal financial sector i.e commercial banks. Nevertheless micro-credits remain the most important financial services out of the entire range of financial products in microfinance business. The average microfinance loan size varies geographically and has maturities of less than one year in general. In line to these definitions the following sub section describes the types of Microfinance Institutions in Tanzania.

2.2 Microfinance Institutions in Tanzania

Microfinance Institutions in Tanzania are subdivided into Non – Governmental Organizations (NGOs) Microfinance Institutions and Member – based Microfinance Institutions (MB- MFIs) i.e SACCOs and Banking Institutions.

NGO-MFIs operate using group lending methodology in which group acts as social collateral for loan repayment. This type of Microfinance also offers loans to few individual clients through individual lending methodology where collateral is highly needed. Some of these MFIs are: FINCA, PRIDE, VISION FUND, BRAC, and MEDA. MB-MFIs are of two types namely SACCOs and SACAs. The institutions offer loans to the registered members only. In some few circumstances, loans are provided to non-members whose financial information can be established and collateral is required. In this type of MFIs, savings are compulsory before applying for loan which acts as loan insurance fund.

However, Banking Institutions such as commercial banks are now offering microfinance services. These banks are NMB, ACB, CRDB, TPB, KCB and other Community Banks.

The study concentrated to NGO-MFIs specifically FINCA and PRIDE as one which provides a clear picture of the loan defaults than other types of MFIs and its lending methodology that is individual and group lending as explained hereunder:

2.3 Microfinance lending models

Lending models refers to the methodologies used by MFIs to grant loans to the clients. The most common lending methodologies or microfinance credit models as highlighted in the above subsection are Individual and Group lending models. Compel

2.3.1 Individual lending model

Under this lending model, loan is given directly to the borrower and therefore it is the sole duty of a borrower to make full payments of the principal amount plus interest without financial support from a group in case he/she defaults. Technical assistance, payment schedules and business management training is generally provided to the borrowers by the MFI (Hazeltine and Bull, 2003).

There is a huge risk in granting loan to individual borrowers because in case these individuals default to make repayment, institutions cannot compel other individuals to make repayments for the defaulters. Lending involves a lender providing a loan in return for a promise of interest and principal repayment in future (Kay, 2005). Due to this risk of default in loan repayment, lenders need to assemble all the relevant information of individual borrowers to make a proper screening of the credit worth borrowers.

Some of the factors that the MFIs consider before granting loans include: character of the borrower, amount being requested by the client, purpose of the loan, ability of the borrower to manage business successfully, income source of repayment and insurance.

Thus, this model is reported to be very cost-full and require large number of loan officers who closely monitor individual borrowers through deep field research to select credit worth borrowers, especially for borrowers who do not possess tangible collateral(s) or credit history.

2.3.2 Joint Liability Group model

Joint Liability Group model is also called “peer lending groups” or “Solidarity groups”. Normally it consists of four to five individuals grouped together to borrow a loan in solidarity. Members who form these groups are self-selected based on their reputation and relationship to each other. It is the responsibility of the entire group to make every payment on time according to a predefined repayment schedule. This implies that, the whole group suffers possible consequences in case of loan default.

However, the discussed models are not the only microfinance models. The other lending models are modified and adapted according to the needs of the poor clients in different developing countries and their credit policy.

2.4 Credit policy

Credit policies are set of objectives, standards and parameters to guide financial officers who offer loans and control the loan portfolio. They provide set of procedures, guidelines and rules which are designed to minimize costs associated with credit while maximizing the benefit from it (Ahimbishwe, 2002). The main objective of credit policy is to minimize the number of default loans which are bad debt, hence ensuring profitability and sustainability of microfinance institutions.

The credit policy of an organization may be stringent or lenient depending on the manager’s regulation of variables that come with credit policy, there are three main variables (elements of credit policy) namely; Credit terms , credit standards and credit procedures (Hulmes,1992). Managers use these variables to evaluate client’s credit worthiness, repayment period and interest on loan, collection methods and procedures to take in case of loan default

A stringent credit policy is a selective policy because only customers who have proven creditworthiness and strong financial base are given loans. This credit policy aims to minimize the cost of collection, bad debts and unnecessary legal costs (Pandey, 2001).

Unlikely Stringent credit policy, lenient credit policy offers loans to customers using simple loan terms and conditions. This policy targets to increase profitability of financial institution by providing more loans to the customers (Kakuru1998 and Pandey 2001). Therefore financial institutions are encouraged to formulate credit policy which balances between stringent and lenient terms and conditions in order to improve the performance of loan portfolio.

2.5 Microfinance and development

Microfinance covers the provision of financial services through a range of products and services that target low income clients. It includes loans, savings, insurance, transfer services and other financial products and services. Microfinance is one of the financial tool that facilitates the development of the low income earners by creating an access to productive resources (funds) leading to the improvement of their productive activities.

Studies have shown that micro-finance plays three roles in development through helping the poor households to meet basic needs and protects against risks, improving in household economic welfare and to empower women by supporting women's economic participation and so promotes gender equity. The literature suggests that micro- finance creates access to productive capital for the poor, which together with human capital, addressed through education and training, and social capital, achieved through local organization building, enables people to move out of poverty. By providing material capital to poor persons, their sense of dignity is strengthened and this can help to empower the person to participate in the economy and society (Otero, 1999). The aim of micro-finance according to Otero (1999) is not just about providing capital to the poor to combat poverty on an individual level, it also has a role at an institutional level. It seeks to create institutions that deliver financial services to the poor, who are continuously ignored by the formal banking sector.

Littlefield and Rosenberg (2004) argue that the poor are generally excluded from the financial services sector of the economy so MFIs have emerged to address this market failure. By addressing this gap in the market in a financially sustainable manner, an MFI can become part of the formal financial system of a country and so can access capital markets to fund their lending portfolios, allowing them to increase the number of poor people they can reach (Otero, 1999).

2.6 Theoretical framework

2.6.1 Agency theory

Agency theory studies refers to how economic actors can and do construct contractual arrangements, generally in the presence of asymmetric information. A standard practice of the agency theory is to represent the behaviour of a decision maker under different circumstances and to identify optimal decisions. The strength of this theory lies in finding theoretical ways to motivate agents to take appropriate actions, even under an insurance contract.

Such a procedure has been used in the agency theory framework to several typical situations, labeled moral hazard and adverse selection. In moral hazard models, the information asymmetry is the principal's inability to observe and/or verify the agent's action. In adverse selection models, the principal is not informed about a certain characteristic of the agent. Adverse selection refers to a market process in which undesired results occur when buyers and sellers have asymmetric information (access to different information); the "bad" customers are more likely to apply for the service.

2.6.2 Agency theory and loan defaults

This study recognizes the relationship between Agency theory and likelihood of borrowers to default their loan obligations. Information asymmetry between the Microfinance Institutions and their borrowers leads to some borrowers to acquire loan even when the probability of repayment is low. Moral hazard is the principal's inability

to observe and/or verify the agent's action. Adverse selection arises when borrowers have characteristics that are unobservable to the lender but affect the probability of being able to repay the loan.

If a borrower has taken a loan, the loan defaults partly depend on the borrower's actions. Normally, it is expect the borrower to choose actions such that the additional benefit of each action equals its additional cost. This is different when the lender has no perfect information concerning the borrower. In addition when there is no collateral, the borrower does not personally take the full cost of loan default. Moreover, the lender cannot specify perfectly how the borrower should run the business, in part, because some of the borrower's actions are cost full to obtain.

In this study Principal represents MFIs while Agent represents the borrowers who are entrusted with loans and expected to repay as per MFIs requirements. Therefore, the MFIs inability to obtain borrowers information about socioeconomic characteristics, business knowledge and experience and general business performance may lead to loan defaults. Also in the some cases the study propose that when Loan supervisors becomes an Agents of MFIs, usually fail to meet the MFI's interests acting as Principal to ensure the borrowers are well supervised and report any detail that signals defaults for immediate and appropriate measures.

This study uses the Agency theory which supports MFIs to enter into loan contract with the borrowers without having perfect information of the borrowers. This theory shows the occurrence of loan default as a result of either moral hazard or adverse selection.

2.7 Empirical literature review

2.7.1 Factors for occurrence of loan default

Makorere (2014), studied factors affecting loan repayment behavior which leads to default in Dar -es- Salaam and Morogoro, Tanzania because experience show that many financial institutions are still facing poor loan recovery. The study used cross section design and applied convenience sampling technique to obtain sample size of 100 respondents. The study used questionnaire tool to capture primary data, while descriptive statistics was used to analyse data in frequencies and percentages. The descriptive results showed that the uttermost factors like moral hazard, electricity rationing, and economic stability have strong effects in stimulating loan repayment behaviour in Tanzania. The study concluded that government intervention is important and financial institutions should assess credit risk management adequately using collateral, condition, characters, capacity and capital measurement to control delinquency rate.

Additionally, Kinyondo (2009) investigated the key factors that influence loan repayment among group borrowers of microcredit institutions in Dar es salaam, Tanzania. The study based on 150 respondents from PRIDE and FINCA in Kariakoo Division, Dar es salaam, Tanzania. The Logit model regression results suggest that experience, training time, and sanctions have positive and significant effects on loan repayment among group borrowers of MFIs. However, transaction costs and group size have negative and significant effects on loan repayment performance. Finally, Kinyondo concluded by suggesting policy options to improve loan repayment performance among borrowers of MFIs in Tanzania. These are, encouraging long term relationship with groups, adequate training of groups, establishing lasting social sanctions with the groups and by the microfinance institutions, cutting down cost incurred by groups and encouraging more coordination amongst MFIs through the creation credit reference bureau.

Furthermore, Bichanga (2013), studied causes of loan default within micro finance institutions in Trans Nzoia County, Kenya. The general objective was to find out the causes of loan default within microfinance institutions in Trans-Nzoia County. Specifically on how non- supervision of borrowers influences the loan repayment financed by MFIs in Trans-Nzoia county and effects of shrinking economic growth experienced by borrowers on loan repayment and to establish how diversion of loan funds by borrowers leads to default in loan repayment. Target population was 400 borrowers and 200 MFIs out of which using simple random sampling on each stratum a sample of 150 was selected. Data were collected using structured and semi-structured questionnaires and analysed using both quantitative and qualitative techniques. The study found out that loan default was as result of non-supervision of borrowers by the MFIs, and also as a result of inadequate training of borrowers on utilisation of loan funds before they received loans.

Also, Marjo (2010) reported that socio-demographical and behavioural variables have effects on loan default. Among other socio-demographical variables age, income, education and nationality were found significant. Also there are behavioural variables that have significant influence on loan default. These are loan size and the information if customer has been granted a loan earlier from the same company. The results had variation to some extent when excluding few of the variables outside the model.

Moreover, Vasanthi and Raja (2006) estimated the likelihood of default risk associated with income and other factors with Australian data (Australian Bureau of Statistics, ABS 2001) in a sample of 3431 households. The study aimed at seeking the relationship between the default risk and socio-economic and housing characteristics. Results showed that the age of the head of the household is significant in determining the probability of loan default. That is, the younger households tend to be adversely affected by the increasing burden of repayments. Income as socio-demographic variable show to have a significant effect, and that low income contributes to default. Another important factor was the loan to value ratio,

educational level of the head of household and marital status had significance impact on default. Vasanthi and Raja drew a conclusion that the probability of default is higher with an uneducated, younger and divorced as head of the family compared to others.

In similar vein, Agarwal et al (2009) assessed the role of individual social capital information characteristics on household default and bankruptcy outcomes. They used monthly panel data set of more than 170 000 credit cardholders for a period of over 24 months. With the observations of each borrower's default and bankruptcy filing status they were able to find distress factors such as riskiness, spending, debt, income, wealth, economic conditions, legal environment and socio-demographical characteristics to significantly affect default. Their results showed that borrowers who migrate from their state of birth default more. Another finding was that a borrower who is married and owns a house of his own has a lower risk of default.

Particularly, Berhanu (2005) studied socio-economic, institutional and natural factors that affect loan repayment capacity of smallholder farmers in North Gondar, Ethiopia. Data used for this study were collected from a sample of 157 borrowers through structured questionnaire. Two-limit Tobit model was employed to analyse factors influencing loan repayment and intensity of loan recovery among smallholder farmers. A total of 17 explanatory variables were considered in the econometric model. Out of these seven variables were found to significantly influence the loan repayment. These were land holding size of the family, agro-ecology of the area, total livestock holding, number of years of experience, number of contacts, sources of credit and income from off -farm activities. The remaining variables (family size, purpose of borrowing and loan amount) were found to have insignificant effect on loan defaults of smallholder farmers.

Above all, Berhanu (2005) added that availability of alternative sources of income, family size and purpose of borrowing. Through empirical review, it is noted that

business characteristics (profitability of business, acquisition of business management education, experience on business etc,) and MFIs characteristics (interest rate charged, screening mechanism, credit rationing etc.) were not included into variables that influence loan default. Therefore, this study intends fill this gap by finding out how business and MFIs characteristics determines the likelihood of a borrower to default.

2.7.2 Statistical methods for estimating the likelihood of loan default

According to Weizhuo (2010), there are several statistical methods used to estimate credit scoring models in assessing borrowers' credits, such as discriminate analysis (Dunn and Frey, 1976), linear probability models (Turvey, 1991), probit models (Lufbuttow et al.,1984) and logit models (Mortensen et al., 1988). The last three methods estimate the default rate based on the historical data on loan performances and the borrowers' characteristics. The idea of linear probability is to look up for a linear combination of explanatory variables. It assumes there is a linear relationship between the default rate and the factors. The probit model assumes the probability of default follows the standard cumulative normal distribution function. The probability of default is logistically distributed in the logit model and discriminant analysis divides borrowers into high and low default-risk classes (Mester, 1997). In addition, Weizhuo (2010) explained that, discriminant analysis presents the critical assessment of the use of discriminant analysis in business.

Further studies conducted by Collins and Green (1982) suggested linear probability model could show a reasonable prediction outcomes compared to discriminant analysis and logit models. However, Pyndick and Rubinfeld (1998), Greene (1997), and Judge et al. (1985) explained that the linear probability model can predict the default rate, but the predictive value might not necessary lie between zero and one. Moreover, because the variances of the models are generally heteroscedasticity, it leads to inconsistent estimation problem and invalid conventional measure of fit such as the R^2.

Nevertheless, Hand and Henley (1997), reports that logistic approach is a more

appropriate statistical tool than linear regression, when there are two discrete classes (good and bad risks) defined in the model. This gives the logistic approach superior classification rate. The probit model is very similar to the logit model. The logit model is generally preferred to the probit model because of its simplicity (Barney et al., 1999; Novak and LaDue, 1999; Lee and Jung, 1999)

On the other hand, Clarke, (2005) agrees with other scholars that, logistic modelling approach is commonly used to model the bank's lending decision and that logit model can increase the overall classification rate, and substantially reduce the error rate. The logistic approach also gives superior classification compare to discriminant analysis (Wiginto, 1980).

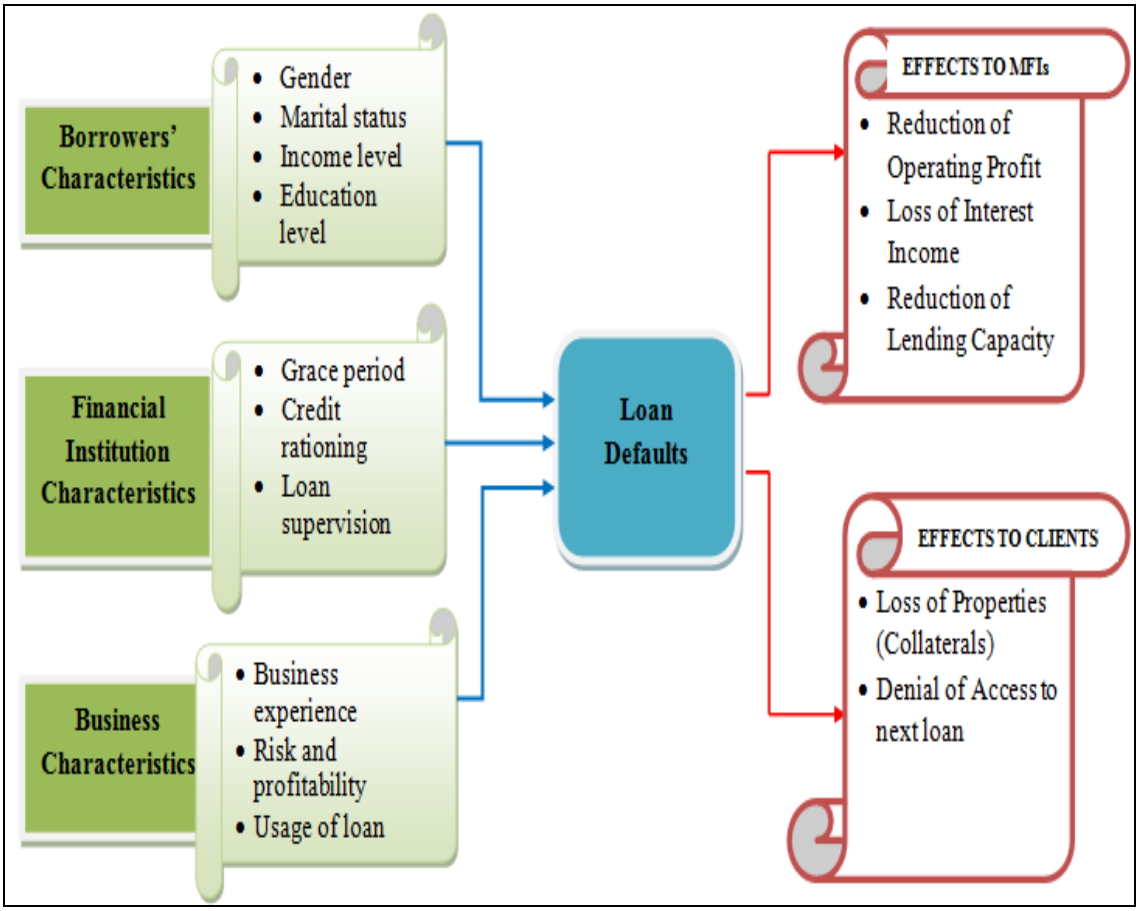
From the afore-discussion, it appears that loan issues and borrowers' behavior are major determinants of loan defaults. As stated by Makorere (2014) repayment of loan depends on borrower's behaviors and economic stability; whereas Kinyondo (2009) argued that lack of training and lack of sanctions for defaulted borrowers are major causes of loan default. On the other hand, Bichanga (2013) reported non supervision of borrowers while Onyeagocha *et al* (2012) revealed that shocks, loan size, experience of credit officers influences the borrowers to default. However, there is limited information regarding to financial Institutions and business characteristics as determinant for loan defaults. In addition, descriptive analysis was not considered as the important technique for analysis. However, the logistic approaches that is logit models have been applied frequently in previous research and gives superior classification.

2.8 Conceptual framework

According to Dinh and Kleimeier, (2007), there are two important standards for variable selection; first, the variables should have significant coefficients and contribute to explanation of the dependent variable's variance. Second, the variables should have close correlation with included variables.

The major factors commonly used in credit scoring models include the borrowers' income, age, gender, education, occupation, employer type, region, time at present address, residential status, marital status, home phone, collateral value, loan duration, time with bank, number of loans, and current account (Dinh and Kleimeier, 2007; Roszbach, 2004; Jacobson and Roszbach, 2003; Martinelli, 1997; Crook, Hamilton, and Thomas, 1992; Boyes, Hoffman, and Low, 1989; Capon, 1982;). This study groups these variables into Borrowers' characteristics, Financial Institution characteristics and Business characteristics.

Figure 2.1: Determinants of Loan defaults and its effects



Source: Author, 2015

The dependent variable is the loan default which is a binary dependent variable.

$$Y = \begin{cases} 1 \text{ Defaulted; if loan installment is delayed} > 30 \text{ days} \\ 0 \text{ Not defaulted; if loan installment is delayed} < 30 \text{ days} \end{cases}$$

This criterion is consistent with study definition of loan default.

First independent variable is borrowers' characteristics that results to failure to repay the loan. This study assumed that the characteristics of borrower which include Gender type, marital status, Level of education and Level of Income help to identify the reasons for loan defaults from client's side. This relationship is also supported by Makorere (2014), study on factors affecting loan repayment behavior.

The second independent variable is the nature and characteristics of undertaking to be funded by loan. The study assumed that defaults arise due to inability of the undertaking to regenerate returns. Therefore, the study assessed if loan is spent on business or personal expenditure and if on business then what is the characteristics of business. The age of business, profitability and risk level of the business was taken into account.

The third independent variable is the financial institutions' characteristics. This variable is measured by the rate of interest charged on loan by different institutions; grace period offered by the institutions; credit rationing and loan supervision. The assumption is the period offered to the clients before the first installment of loan repayment and the amount to pay as a cost for taking a loan as well as others mentioned have a significant influence on the defaults of loans.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 An overview

This chapter presents methodological process which provides vital information needed to achieve the study objectives. The chapter is divided into main sections including an overview. The second section provides description of the study area. This is followed by research design, study population and sampling unit, sample size, sampling techniques, types and sources of data, data collection methods, validity and reliability issues and wind up with data analysis methods.

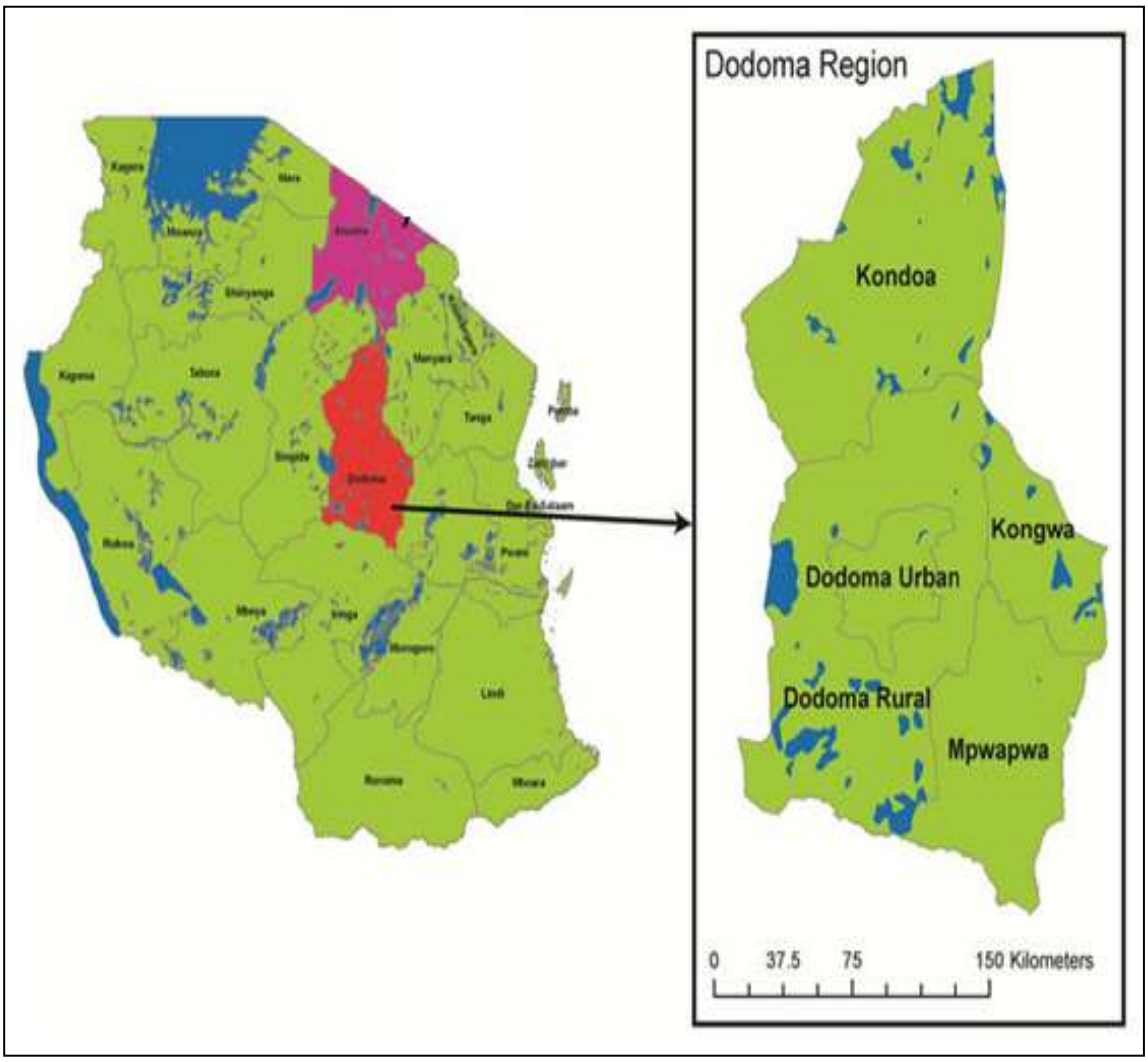
3.1 Description of the study area

This study was conducted in Dodoma Municipality in Dodoma region. It is found in Longitude 35^{o} 44' East and Latitude 6^{o} 10' South in the center of the country, the town is 486 kilometres West of the former capital at Dar es Salaam and 441 kilometres South of Arusha, the headquarters of the East African Community. Dodoma Municipality covers an area of 2,669 square kilometre of which 625 square kilometers is urbanised.

According to the Population Census of 2012 the district had total population size of 410,956; out of the total population 199,487 people (48.5 percent) are male while 211,469 people (51.5 percent) are female and the average household size is 4.4 people.

Dodoma Municipality has a total of 6 MFIs including PRIDE, FINCA, VISION FUND, WORLD VISION, BRAC; 8 Commercial Banks including Co-operative Rural Development Bank (CRDB), National Microfinance Bank (NMB), National Bank of Commerce (NBC), Diamond Trust Bank (DTB), Akiba Commercial Bank (ACB), Tanzania Postal Bank (TPB), Exim and Baclays and 22 Savings and Credit Cooperative Societies (CDA Report, 2013).

Figure 3.1: Map Tanzania showing Dodoma region



3.2 Research design

A cross-sectional design was used to gather information from a representative population sample to obtain an overal picture as it stands in the study area. In respect to this, data from sample respondents were collected at a single point in time. The design was chosen because of being economical to conduct in terms of time.

3.3 Sampling techniques

The study employed both purposive and non-purposive sampling techniques. Purposively, out of 7 districts Dodoma Urban municipality was selected. The criteria for selecting this study area based on the availability of MFIs and their beneficiaries. The second stage also involved purposive sampling technique to select PRIDE and FINCA out of 6 MFIs in Dodoma municipality. The criteria for selecting PRIDE and FINCA is because they are the biggest MFIs in the study area which use both individual and group-based lending models. Similar technique was used to select 2 key informants from each selected MFI. These were Branch Managers, credit officers and loan officers who make 6 key informants. The selection criteria was based on their knowledge and information concerning about the factors influencing borrowers to default their loans in the study area.

Lastly, non-purposive sampling technique that is simple random was used for selecting loan borrowers from PRIDE and FINCA. This method was used to select 98 respondents from each MFI and make a total of 196 respondents. Equal sample size was taken from each location because the population did not differ much.

3.4 Population and sampling unit

The target population of the study was loan borrowers from MFIs. The sampling frame of the study was a list of loan borrowers from FINCA and PRIDE in Dodoma municipality which was obtained from respective offices. The sampling unit in this study was a loan borrower who has obtained loan from selected MFIs.

Due to unavailaility of the loan borrowers using individual lending model, this study use borrowers of group lending model to gather the required information. Thus, the population used to calculate sample size was 328,765 borrowers obtained from FINCA and PRIDE as shown in Table 3.1.

Table 3.1 Number of registered borrowers in selcted MFIs in 2014

MFI	Number of Borrowers	
	Group lending Model	**Individual lending Model**
FINCA	173,530	3873
PRIDE	155,235	4603
TOTAL	**328,765**	**8476**

Source: Field data, 2015

3.5. Sample size

From each selected MFIs, register was used and names of 98 borrowers were selected using simple random sampling technique to make a grand total of 196 out of 328,765 borrowers. The sample size was obtained using formula as shown by Kothari, (2004) as presented hereunder:

$$n = \frac{z^2 * p * q * N}{e^2(N-1) + z^2 * p * q}$$

Where

N= size of population – 328,765

n= size of sample - ?

e= acceptable error - (since the estimate should be within 2% of true value),

p= standard deviation of population - 0.02

z= 2.005 (area of normal curve for the given confidence level of 95.5%)

q= 1-0.02

$$n = \frac{(2.005)^2(0.02)(1-0.02)(328765)}{(0.02)^2(328765-1)+(2.005)^2(0.02)(1-0.02)}$$

$$\frac{25904.21}{131.58}$$

Thus, the appropriate sample size is 196 borrowers.

3.6 Data types and sources

Two types of data were collected for this study. These were both primary and secondary data.

3.6.1 Primary data

Primary data were collected directly from the borrowers and key informants during a field survey using structured and semi-structured interview respectively. In primary data, the researcher obtained information on borrower's characteristics, business characteristics and MFIs characteristics. This information provided a basis for analysis of factors influencing the likelihood of borrowers to default.

The collected information included borrower's characteristics (age, gender, level of education, level of income, asset ownership and marital status); business characteristics (type of business, past experience on business, profit generated from business, and acquisition of business management education) and MFIs characteristics (interest rate, legal procedures to deal with defaulters, loan supervision). This detailed information aimed at determining the likelihood of loan default.

Further data were collected regarding the effects of loan defaults on borrowers and MFIs. The collected information showed of how loan default problem have an impact to MFIs and borrowers. This included information on the effects in operations of MFIs and social or economic effects to borrowers who defaulted and the rest of group members.

3.6.2 Secondary data

Secondary data were collected through documentary sources including: MFIs annual reports related to loan default problem, journals (published and unpublished) and websites. Unpublished documents were management and supervisors' reports concerning loan defaults. Published documents were Annual Financial reports, journals and other related documents. Secondary data provided a list of loan defaulters only from individual lending model from 2004 to 2014. In group lending model, defaulters are not known to the MFI since the group is required to make a full loan repayment regardless of any default in the group.

3.7 Data collection methods and tools

Primary data were collected directly from the respondents using structured interview and semi-structured interview. These methods are elaborated in the below subsections.

3.7.1 Structured interview

Structured interview method used questionnaire in data collection (Olsen and George, 2004). The questionnaire was chosen as important tool of collecting data from respondents, due to its cost-effectiveness and strength of capturing empirical data in both informal and formal setting (Kothari, 1990). The questionnaire consisted of both open and closed ended questions (Appendix 1). To ensure accuracy of the information gathered from respondents, the questionnaire was translated into Kiswahili, the national language that was well understood by interviewees.

3.7.2 Semi-structured interviews

An in-depth interview conducted to key informants by using checklist (Appendix II). An in-depth interview was chosen as important method of data collection partly due to its flexibility in obtaining information from various actors and its ability of capturing additional information that was useful in interpreting the results of the sampled respondents (Kothari, 1990).

3.7.3 Documentary review

This method was used to collect secondary data whereby relevant documents and information were reviewed such as annual management reports, journals and other related documents. The obtained information helped the researcher to modify the objectives of the study as well as the preparation of the questionnaire to be used.

3.8 Validity and reliability of data

According to Phelan and Wren (2006), data reliability is the degree to which an assessment tool produces stable and consistent results while validity refers to how well a test measures what is purported to measure.

The external validity was determined and studied from the respondents using pilot testing of the results and choosing the method that is most precise such as interviews, observation and questionnaires. Internal validity was guaranteed by carefully structuring interviews and questionnaires so as to have a comprehensive consistent and precise study. A questionnaire pre-testing was done to determine the internal validity for surveying instruments.

Reliability was guaranteed by making sure that the questionnaires are adequate, precise, and exhaustive and in simple language. Adequacy of reliability for the surveys was done by designing a sample which was large enough to be representative of a population. All data collected by the researcher through different techniques were

cross-checked in order to ensure that the instruments used are able to measure what they were expected to measure, and obtain reliable data. In order to determine the reliability of data, research instruments were pre-tested for at least one respondent from each group, and they were modified in the light of pilot study.

3.9 Data analysis methods

3.9.1 Descriptive analysis

For the objective of identifying the extent of loan defaults and its effects, was analysed using descriptive statistics where means, frequencies, percentage composition and cross tabulation were employed. Frequency distribution was used as a tool for organising data and grouping them into categories to show the number of observations in each category and percentage composition used to find out the proportion of respondents in each category. Cross tabulation was used as a joint frequency distribution of cases based on two or more categorical variables (Baker, 2004).

3.9.2 Analysis model

There are several statistical models which can be used to assess the factors for loan default. Discriminant analysis, linear probability models, probit models and Logit models. The last three methods estimate the default rate based on the historical data on loan performances and the borrowers' characteristics. Thus, in the second objective Logistic regression model was employed to determine the factors leading to the likelihood of borrowers to loan default.

3.9.2.1 Logistic regression model

The study makes use of the logistic regression model which is based on binomial probability theory. It is a mathematical modeling approach used in describing the relationship of several independent variables to a dichotomous dependent variable or a limited dependent variable. The logit function was employed because the dependent

variable “default” is dichotomous, whereas the proposed covariates were mixture of continuous and categorical random variables.

3.9.2.2 Estimation of the model

Due to the nature of the study, the dependent variable is binary taking only two values of zero and one. In this case, ordinary least square cannot be appropriate for this nature of data. Therefore, the study adopts logistic regression model designed specifically for limited dependent variables. This method uses maximum likelihood estimation method to estimate the value of parameters of the model.

The dependent variable takes the value of 1 if the borrower defaults loan repayment for more than 30 days) and takes the value of 0 if the borrower did not default (did not delay loan repayment for more than 30 days). In binary logistic model, this variable is the one that determines the likelihood of a borrower to repay the loan. This makes possible to estimate the Likelihood of default as explained by business and MFIs characteristics, which include variables such as the place of residence, age of a borrower, gender of a borrower, distance from MFIs to business area, business type, business management knowledge, interest rate charged by MFIs, marital status of the borrower, level of education of a borrower, asset ownership, past business experience and weak legal actions to defaulters.

The borrower’s likelihood to default is determined by the utility derived from prompt loan repayment. The difference in utility levels between defaulting and not to defaulting is what determines the borrower’s repayment decision. Let utility derived be denoted by u. This utility depends on borrower’s characteristics including education level, age, marital status and gender of the borrower. Other factors that may affect the utility function include distance from MFIs to business area, business type, business management knowledge, interest rate charged by MFIs and other characteristics.

For each borrower we can derive the utility difference denoted by y^* as a function of borrowers' characteristics and other factors denoted by X and the error term μ, which captures the influence of other factors not observed. The following equation can be estimated, assuming a linear relationship

$$y* = X\beta + \mu \qquad (1)$$

y^* is unobserved variable called the latent variable. The assumption is that the borrower may default when the utility difference exceeds a certain threshold level that can be set to 0 without loss of generality.

If y is the variable that represents the borrower's likelihood to default it takes the value of 1 if the borrower defaults and it takes the value of 0 if the borrower do not. Estimation of equation 1 is not possible because y* is unobserved, hence it is of little significance.

Consider the following situation:

$$y = \begin{cases} 1 \; if \; y* > 0 \\ 0 \; if \; y* < 0 \end{cases}$$

Therefore, instead of estimating equation (1) equation (2) is estimated.

$$P_i = E(Y = 1|X_i) = \beta_1 + \beta_2 X_i \qquad (2)$$

Where:

$$Y = \begin{cases} 1 \text{ If the borrower defaults (delay loan repayment for more that 30 days)} \\ 0 \quad \text{If the borrower do not default (not delay loan repayment for more that 30 days)} \end{cases}$$

Equation (2) can be estimated by Ordinary Least Squares method (OLS), hence called a Linear Probability Model (LPM). Since the dependent variable is binary, estimation by OLS will be inappropriate. Gujarati (2004) points out the weaknesses of estimating equation (2) by OLS method. First, it can lead to probabilities that are out of range, that is, either negative values or values greater than 1. Second, the error term will be heteroscedasticity therefore statistical inferences will lead to wrong conclusions. Third non-normality of the disturbance term and finally the measures of goodness of fit of the model will be questionable.

To resolve the problems of LPM, it is necessary to make some assumptions on the distribution of the disturbance term μ. The logistic regression model assumes the disturbance term follows a standard logistic distribution with mean 0 and standard deviation of $\frac{\pi^2}{3}$ while the probit model assumes μ follows a standard normal distribution with mean 0 and standard deviation of 1. Both logit and probit models use Maximum Likelihood (ML) technique to estimate equation (1).

This study uses the logit model to estimate the borrower's likelihood to default. This is because it is easier to interpret the logit model than the probit model.

X is a set of explanatory variables explaining the dependent variable. Since logit model assumes that the error term follows a standard logistic distribution with mean 0 and standard deviation of $\frac{\pi^2}{3}$. Thus the probability that Y=1 is given as:

$$P_i = E(Y = 1|X_i) = \frac{1}{1 - e^{-(\beta_1 + \beta_0)}} \quad (2)$$

For ease of exposition, we write equation (2) as

$$P_i = \frac{1}{1+e^{-Z_i}} = \frac{e^Z}{1+e^Z} \quad (3)$$

Where $Z_i = \beta_1 + \beta_2 X_i$

The equation (3) represents what is known as the (cumulative) logistic distribution function of characteristics of the borrower, business and MFIs.

It is easy to verify that as Z_i ranges from $-\infty$ to $+\infty$, P_i ranges between 0 and 1 and P_i is nonlinearly related to $Z_i (\text{i.e.}, X_i)$, thus satisfying two requirements considered earlier. In order to satisfy these requirements, we have created estimation problems because P_i is non-linear not only in X but also in $\beta's$ as can be seen clearly from equation (2). This means that cannot use the familiar OLS procedure to estimate parameters Gujarati (2004). Therefore, the equation (2) can be liberalized as follows:

If P_i, is the probability of a borrower to default is given by equation (3), then$(1 - P_i)$, is the probability of a borrower not to default given the equation (4)

$$1 - P_i = \frac{1}{1-e^{Z_i}} \quad (4)$$

Therefore, the above equation will be as follows

$$\frac{P_i}{1-P_i} = \frac{1+e^{Z_i}}{1+e^{-Z_i}} = e^{Z_i} \quad (5)$$

Now $P_i/(1 - P_i)$ is simply the odd ratio[1] in favour of a borrower to default, the ratio of the probability that loan default occurs. In order to obtain a good result the equation (5) must be in natural log as follow in equation (6)

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = Z_i$$
$$= \beta_1 + \beta_2 X_i \quad (6)$$

That is, *L*, the log of the odds ratio, is not only linear to X, but also linear in the parameters. *L* is called the logit, and hence the name logit model for model equation (6).

3.9.4 The estimation techniques

In order to estimate the logit model the equation (6) can be as follows

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = \beta_1 + \beta_2 X_i + \varepsilon_i$$

To estimate the specified logit model the forced entry method was used in favour of the stepwise approach. This is because of the advantage that the forced entry method has over the stepwise method. The stepwise method removes the variables that do not meet the significance level condition specified, thus losing some important information regarding the effect of variables removed have on the dependent variable. By forced entry method, all the variables are entered together and none is removed from the specified model.

[1] Odds ratio refers to the ratio of the probability that something happens to the probability of it not happening. If p is the probability of occurrence 1-p is the probability of non-occurrence. Thus the odds ratio is given as $\frac{p}{1-p}$

3.9.5 Empirical model

The following logistic model was estimated

$$P_i = E(Y = 1|X) = F(X\beta), \quad (7)$$

Where; P_i is the probability that the dependent variable takes the value of 1, given the value of regressors

X is a vector of explanatory variables explaining the dependent variable

β is the coefficient

In terms of logarithm of the odds is the equation (7) is written as:

$$ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 AG + \beta_2 GND + \beta_3 MART + \beta_4 EDU + \beta_5 BUSTYP + \beta_6 BUSEDU + \beta_7 MFILOCAT + \beta_8 FAMPROB + \beta_9 LOANUSE + \beta_{10} WEAKLEG + \beta_{11} ASTOWN + \beta_{12} PASTEXP + \beta_{13} INTEREST + \varepsilon_i \quad (8)$$

Where,

$Y_i =$ Dependent variable that takes the value of "1" if the borrower defaults and it takes the value of 0 if the borrower does not default

p Is the estimated probability that *Y* takes the value = 1.

AG	=	Age of the borrower
GND	=	Gender of the borrower takes "1" if respondent is male and "0" for female
MART	=	Martial status of respondent takes "1" for married "0" and otherwise
EDU	=	Education level of respondent take "1" if attended formal education and "0"otherwise
BUSTYP	=	Business type takes "1" if business generate frequent revenue weekly and "0" otherwise
BUSEDUC	=	Business Education takes "1" if respondents acquired business education and "0" otherwise
MFILOCAT	=	MFI Location takes "1" if distance to MFI is within 1-3 km otherwise "0"

FAMPROB	=	Family problem take "1" if respondent had death in family, etc and "0" and otherwise
LOANUSE	=	Uses of loan take "1" if loan was used for business purpose and "0" and otherwise
WEAKLEG	=	Weak legal actions takes "1" if MFI has weak legal action toward defaulters and otherwise "0"
ASTOWN	=	Borrowers Asset Ownership takes "1" if respondent own assets accepted as collateral and otherwise "0"
PASTEXP	=	Past experience takes "1" if respondent has past experience of the business he/she owns and "0" otherwise
INTEREST	=	Interest rate charged by MFIs

By rearranging (7), the estimated probability of default P(Y=1) is given by

$$P(Y=1) = \frac{1}{1+e^{-(\beta_0+\beta_1 X+\beta_2 X+\beta_3 X+\cdots+\beta_n\ xn+e}} \qquad (8)$$

Where; β_0, β_1, β_2, β_3 ,…… β_n are the coefficients to be estimated and *e* is the error term.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 An overview

This chapter presents and discusses the results of determinants of loan defaults in the selected MFIs. Section one presents an analysis for characteristics of respondents, section two presents the assessment of the level of loan default in selected MFIs for a period of 2004 to 2014. Section three provides the logistic regression results of factors influencing loan defaults in the selected MFIs. The forth section winds up with identifying effects of loan defaults to the borrowers and MFIs.

4.1 Demographic characteristics of respondents (n=196)

According to Marjo (2010) socio-demographical variables have a notable outcomes leading to loan default. The significant variables are income, age, education and marital status. Thus, in this section, age, gender, education, marital status and asset ownership are presented and discussed. Such variables are fundamentally linked to borrower's eligibility to acquire loan from MFIs and the ability to repay the loan.

4.1.1 Gender of respondents

Gender is socially-constructed roles and relationships between men and women. Since many MFIs target female clients, the gender results in Table 4.1 proves the success of this target as most of the borrowers are women by (70.4%) compared to men (29.6%). This indicates that a great number of women are involved in small income generating activities and normally they acquire capital from MFIs.

The results are supported by Armendariz and Morduch, (2005) who reported that women participates more in MFIs than men and therefore women are helped by raising their awareness as well as to enable them to have a greater control over resources. In addition, women are likely to form informal social association such as ROSCA or "Mchezo"

which can be formalized by the financial institution and become a security for loan acquisition. The reason for MFIs to focus on female clients is substantial, as women clients have higher repayment rates and contribute larger portions of their income to household consumption than their male counterparts. Thus, there is a strong business and public policy case for targeting female borrowers.

4.1.2 Age of respondents

Age measures the borrower's age in years. Age of respondent is an important aspect in MFIs because it determines the ability to take risk, mobility, mental maturity and life experience particularly in financial management.

In the same table, the age of respondents were grouped into three categories. The categories are youths (18-34 years), adults (35-54 years) and the elders (55 years and above). In general the results show that majority of the borrowers are youth and adults forming 71.4% of respondents while the rest of the age groups forms 28.6%. These results indicate that most of the borrowers are still at economically productive age (18 - 34 years). Therefore, the findings suggest that youth are engaged more in acquisition of loans from MFIs so as create self employment through business.

This finding is supported by Autio et al. (2009) who conducted a comprehensive study of the use of small loans in Finland. The results showed that young adults use small loans more than other age groups.

4.1.3 Level of education

The study also investigated the level of education among borrowers, since it is often believed that higher education gives borrower the ability to understand, interpret and respond to new opportunities including access to loans from MFIs faster than their counterparts with lower education (Feder *et al*., 1985).

The results in Table 4.1 indicate that, high percentage composition of respondents (40.8%) have attained secondary school education, followed by 35.2% who have primary school education and 12.3% university degree. Only 11.7% of respondents have no formal education. This implies that, majority of respondents with low education are self employed and had opportunity to acquire loan from IMFs. However, presence of respondents with university education demonstrates efforts towards self employments due to the problem of unemployment in the country.

Table 4.1: Socioeconomic characteristics of respondents

Variable	Category	Frequency	Percentage
Gender	Male	58	29.6
	Female	138	70.4
Age (years)	(18-34) years	88	44.9
	(35-54) years	52	26.5
	(55-64) years	45	22.9
	(> 65) years	11	05.7
Education level	Not Educated	23	11.7
	Primary school	69	35.2
	Ordinary secondary	38	19.4
	Advanced secondary	42	21.4
	University education	24	12.3
Marital status	Single	33	16.8
	Married	83	42.2
	Widow/widower	34	17.3
	Divorced	46	23.5
Asset ownership which are collaterals	Not owned	141	71.9
	Owned	55	28.1

Source: Field data, 2015

4.1.4 Marital status

The marital status of households is usually used to determine the stability of a household in African families. It is normally believed that married household heads tend to be more responsible in business activities than single head of households. It is through this assumption that, the marital status of borrowers in MFIs will have an effect on loan repayment.

As shown in Table 4.1, majority 42.2% of the respondents were married whereas 16.8% were single, 23.5% were divorced and about 17.3% were widow/widowers in both MFIs. This implies that married respondents have more family responsibilities which force them to join MFIs to obtain capital to establish other income generating activities. The findings also were supported by Yarumba (2010), that married have additional responsibilities for their families which force them to utilize the available resource so as to earn income for improving households' livelihood.

4.1.5 Ownership of collaterals / assets

Assets are pledged as security for a loan to be forfeited in the event of any loan repayment defaulting. It is apparent that ownership of collateral is an important criterion or factor for one to qualify for loan from any MFI (Duy, 2012). In this study it was discovered that 71.9% of respondents owned assets which are not accepted by MFIs as collateral while 28.1% of the respondents owned such type of assets. This implies that majority of the borrowers had no collaterals and ultimately the situation forces them to Joint Liability Groups [2] in MFIs.

[2] Is an informal group preferably of 4 to 10 individuals coming together for the purpose of acquiring loan through group mechanism against mutual guarantee

4.2 Assessment of the extent of loan default in selected MFIs for a period of 2004 to 2014

The extent of loan defaults for a period of 2004 to 2014 was ascertained using records of borrowers who were in individual lending model. This extent was determined by calculating the ratio of the total borrowers served to the number of borrowers who have defaulted. This ratio is expressed in terms of percentage as shown in Table 4.2 and presented in Figure 4.1.

Table 4.2: Extent of loan defaults in selected MFIs for a period of 2004 to 2014

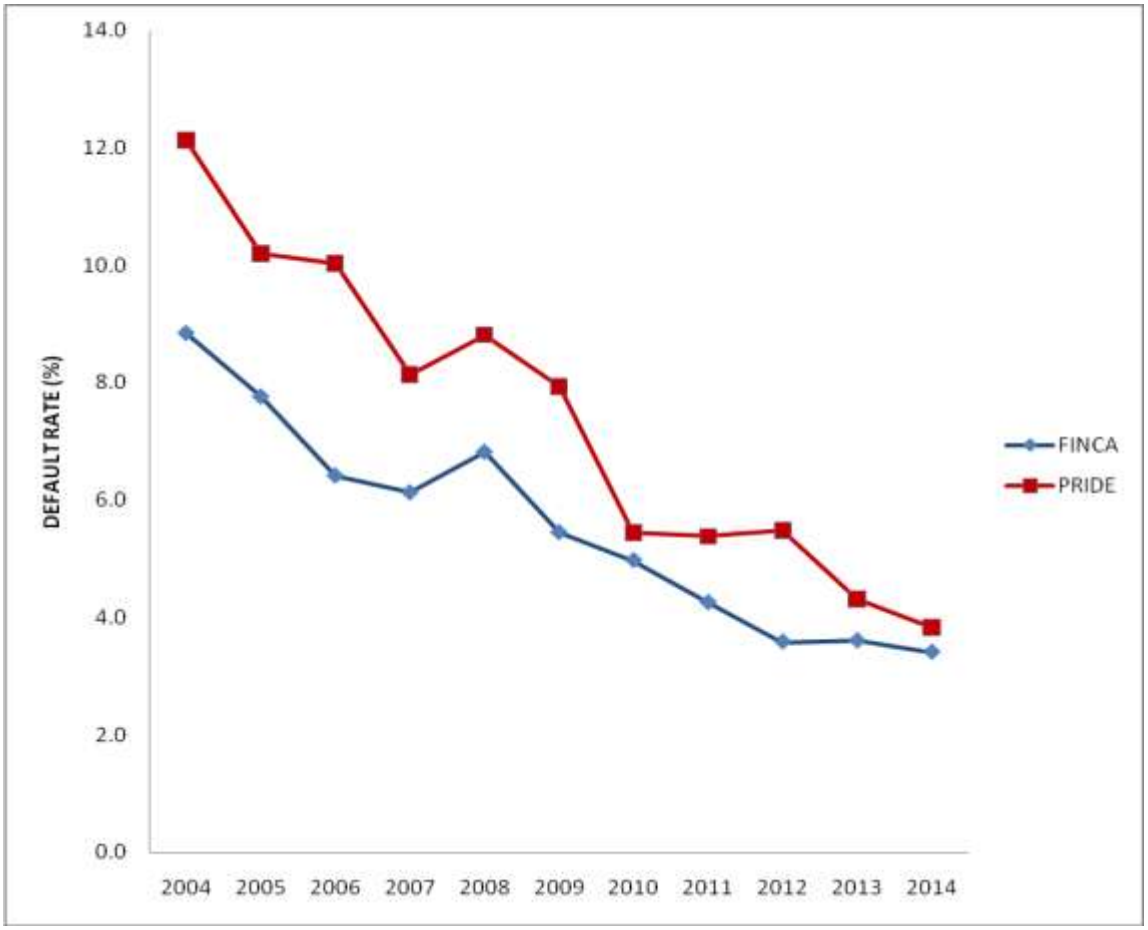
Years	FINCA			PRIDE		
	Total Borrowers	Borrowers Defaulted	% Default	Total Borrowers	Borrowers Defaulted	% Default
2004	2,737	242	8.8	1,978	240	12.1
2005	2,809	218	7.8	2,148	219	10.2
2006	2,885	185	6.4	2,274	228	10.0
2007	2,971	182	6.1	2,582	210	8.1
2008	3,066	209	6.8	2,859	252	8.8
2009	3,176	173	5.4	3,291	261	7.9
2010	3,299	164	5.0	3,694	201	5.4
2011	3,433	146	4.3	4,015	216	5.4
2012	3,573	128	3.6	4,213	231	5.5
2013	3,719	134	3.6	4,385	189	4.3
2014	3,873	132	3.4	4,603	176	3.8

Source: Field data, 2015

In both MFIs the rate of loan defaulter has been decreasing from year 2004 to 2007. However, in 2008 to 2009 there was a sharp increase of default rate in PRIDE microfinance institution. Information from the institution shows inadequate close monitoring and less supervision of new borrowers' businesses due to few loan supervisors. Thereafter, there was a massive decline of default rates due to increase

loan supervisors, close monitoring of borrowers' business, high screening and credit rationing for new borrowers.

Figure 4.1: Trends of loan default in selected MFIs for a period of 2004 to 2014



Source: Field data, 2015

Table 4.3 below shows the total default rate of the selected MFIs in year 2014 among several demographic characteristics. These characteristics include variables such as Gender, Age, Education level, Marital status and Occupation of clients. First and second column shows demographic characteristics and its variables respectively. Third, fourth, fifth and sixth columns shows Number of clients defaulted, Number of clients that did not default, Total number of clients and Percentage number of clients defaulted respectively.

Table 4.3: Loan default rate according to demographic characteristics

Demographic Characteristic	Variables	No. of Clients Defaulted	No. of Clients Not Defaulted	Total No. of Clients	% Defaulted
Gender	Male	121	1913	2034	5.9%
	Female	187	6255	6442	2.9%
Age Groups (Years)	(18-34)	114	2090	2204	5.2%
	(35-54)	129	3939	4068	3.3%
	(55-64)	49	1477	1526	3.1%
	(> 65)	16	662	678	2.4%
Education Level	Not Educated	107	1927	2034	5.3%
	Primary school	53	965	1018	5.2%
	Ordinary secondary	81	2631	2712	3.0%
	Advanced secondary	49	1816	1865	2.6%
	University education	18	829	847	2.1%
Marital Status	Single	114	3107	3221	3.5%
	Married	31	2258	2289	1.4%
	Widow/widower	89	1860	1949	4.8%
	Divorced	74	943	1017	7.3%
Occupation	Formal Employee	35	1228	1263	2.8%
	Self employed	72	1538	1610	4.5%
	Businessmen	201	5402	5603	3.6%

Source: Field data, 2015

From Table 4.3 the results show that male clients default more than the female clients. This is explained by 5.9% default rate on male clients compare to 2.9% on female clients. The reason for male to default more than women as reported by Arminger et al., (1997) and Coval et al., (2000) is that women are more risk averse than male.

Youth age ranging from 18 to 34 defaults more than other age groups as it can be seen on Table 4.3. Also results suggest that default rate decreases with an increase of clients' age. Thus youth of age between (18 – 34) default at a rate of 5.2% while age ranging (35 – 44), (45 – 55) and (more than 55 years) defaults at a rate of 3.3%, 3.1% and 2.4% respectively. These findings are supported by Thomas (2000) and Boyle et. al., (1992) who confirmed that older borrowers default less compared to younger borrowers. Thus financial institutions hesitate to lend to younger clients who are more risk averse.

Uneducated clients and those who only attended primary level education default more than other clients who have acquire secondary and higher education. Table 4.3 shows uneducated clients default at a rate of 5.3% while clients acquired higher education level from university default at a rate of 2.1 %. Uneducated have low business and financial skills to measure risks involved on their business and how to manage business. This leads to make business loses which will affect the ability to repay loans.

On marital status, divorced and widows/widowers clients default more followed by single clients while married clients default less compared to all other status. From the Table 4.3, divorces clients default at rate of 7.3%, Widow/widowers at a rate of 4.8%, Single at a rate of 3.5% while only 1.4 % of total number of married clients defaulted their loans.

Finally Table 4.3 shows that clients who are employee of the formal sectors are less in the total number but also default at a lower rate of 2.8%. Businessmen default at a rate of 3.6% while clients with self employment are reported to default more compared to other occupations by 4.5%.

4.3 Factors influencing the likelihood of loan default in the selected MFIs

Logistic regression model was employed to estimate the likelihood of borrowers who obtained loan from selected MFIs to default. SPSS version 11.5 was used for analysis and the results of final Logistic regression estimates are presented in Table 4.4.

In table 4.4 below, Column two with the heading "B" gives the coefficient of variables in the model. Column three with the heading "S.E" gives the standard error for the coefficient values. The column four with heading "wald" gives the Wald test values of the coefficient values. Df is the degree of freedom for the wald test values. The column "sig", show how significant the variables are to the model. A value less than 0.05 shows the variable is highly significant. Column "Exp (B)" gives the odds of each variable.

Table 4.4: Logistic Estimated Parameters

PREDICTOR	B	S.E	Wald	Df	Sig	Exp(B)	
Constant	4.117	1.609	6.544	1	0.011	61.36	**
AGLOG	-0.761	0.361	4.432	1	0.035	0.467	*
GNDLOG	0.391	0.496	0.621	1	0.431	1.479	Ns
MARTLOG	0.156	0.477	0.108	1	0.743	1.169	Ns
EDULOG	0.514	0.378	1.847	1	0.174	1.672	Ns
BUSNTYP	-1.596	0.48	11.069	1	0.001	0.203	**
BUSEDUC	-1.409	0.507	7.734	1	0.005	0.244	**
MFILOCAT	0.633	0.868	0.532	1	0.466	1.883	Ns
FARMPROB	0.072	0.413	0.031	1	0.861	1.075	Ns
LOANUSE	-1.588	0.507	9.814	1	0.002	0.204	**
WEAKLEG	-0.344	0.652	0.279	1	0.597	0.709	Ns
ASTOWN	-0.423	0.668	0.401	1	0.527	0.655	Ns
PASTEXP	-0.631	0.856	0.543	1	0.461	0.532	Ns
INTEREST	-1.38	0.637	4.7	1	0.03	0.252	*

**** and * indicate significance at 1% and 5% respectively while (ns) shows not significant**

Source: Field data, 2015

4.3.1 General analysis of the estimated coefficients and odds ratio

General analysis of the odds ratio values shown in Table 4.4 indicate that GNDLOG, MARTLOG, EDULOG, MFILOCATION and FAMPROB have odd ratios greater than one (OR>1) with positive coefficients. This shows a positive relationship with likelihood to default. The odds ratios of AGELOG, BUSNTYPE, BUSEDUC, WEAKLEGAL, ASTOWN, PASTEXP and INTEREST are less than one (OR<1) with negative coefficients. This shows a negative relationship of these factors with the likelihood to default.

Further, Table 4.4 shows some factors were found to be significant at (P<0.05) including age (AGLOG) and interest rate charged by MFIs (INTEREST). Factors such as Business type (BUSNTYPE), business management education (BUSEDUC) and use of the loan (LOANUSE) were found to be significant at (P<0.01).

The remaining factors were found to have insignificant effect in the likelihood of loan default. These factors are: Marital status (MARTLOG), level of education (EDULOG), gender of borrower (GNDLOG), distance/location of MFIs (MFILOCATION), family problems such as diseases (FAMPROBR), weak legal action to defaulters (WEAKLEGAL), asset ownership (ASTOWN) and past experience on business (PASTEXP).

4.3.2 Analysis of the significant factors

4.3.2.1 Age of the borrower

Age measures the borrower's age in years. As the age of the borrower increases it reduces the likelihood of a borrower to default. The results show odds ratio of 0.467. This means that a unit increase in borrower's age lowers the likelihood of default by 53.3%. This suggests that borrowers in group between 18 to 34 years old are more likely to default than older age groups in the selected MFIs.

This finding is supported by Mokhtar (2012) where it was observed that the older borrowers would be more responsible and disciplined in repaying their loan than younger borrowers. Thomas (2000) and Boyle *et al* (1992) confirm that older borrowers are more risk adverse, and therefore the less likely to default. Thus banks are more hesitant to lend to younger borrowers who are more risk averse.

4.3.2.2 Business management education

Business management education among the borrowers was significant at 1% with odds ratio of (0.244) and a coefficient of (-1.409). This implies that borrowers who have management skills acquired through trainings or seminars manage their businesses more prudently and are less likely to default compared to borrowers managing their business without business education. Therefore an acquisition of business management education was associated with a reduction of the likelihood of a borrower to default by 75.6%.

This result is supported by Awan (2015) who ranked lack of business education as the 4^{th} important cause of loan default in the study conducted in Pakistan. Also Oladeebo (2008) found out that, borrowers that do not have formal education are likely to have inadequate knowledge of loan acquisition and management, thereby making them unable to repay the loans given to them. On the other hand, the borrowers' education level distinguished from post-graduate to non-high school graduate. Borrowers with

high level of education are more likely to repay their loan since they occupy higher positions and with high income levels.

4.3.2.3 Type of business

Business type was also significantly associated with the likelihood of loan default at 1%. The analysis showed a coefficient of (-1.596) with the odds ratio of (0.203), indicating that, businesses with frequent business transactions (*Revenue can be obtained in daily basis*) are likely to have reduction of odds in favour of default by 79.7% compared to businesses with less transactions. This means businesses which are able to generate enough revenue to meet the weekly repayment schedules reduce the likelihood of loan defaulting. This implies that borrowers involved in food vending, retail shops, and motorcycle operators (bodaboda) reduces the likelihood of loan defaulting compared to borrowers involved in businesses such as saloon and cloths selling. This finding is supported by Suraya et. al., (2012) where it was observed that the lower revenue cycle in businesses creates loan repayment problems to borrowers.

4.3.2.4 Loan uses

Loan use was significantly associated with the loan defaulting likelihood at 1%. The odds ratio of (0.204) suggests that the use of loan for non business purposes is likely to increase loan default compared to business uses. Borrowers, who use loan for business purpose, reduce loan default likelihood by 79.6% compared to those who use loan for other non business purposes. The study revealed that most borrowers use loan to finance food, shelter, clothes and to meet their basic needs rather than for business activities.

This result is supported by Bayang (2009) who reported that, at the time of loan disbursement, the poor borrowers are pre-occupied with addressing their social problems ranging from shortage of food, lack of seeds for planting and paying medical bills among others, a practice which makes loan repayment difficulty. Also Onchangwa

et al (2013) asserted that misallocation of loans in unproductive activities by borrowers reduced their investments and this posed a high loan defaults in Kenya.

4.3.2.5 Interest rate

Interest charged by MFIs was also associated with influencing the likelihood of a loan borrower to default. This variable was statistically significant at 5% with an odds ratio of (0.252) which shows that the interest charged by MFIs, as compared to those charged by Commercial banks, leads to about 74.8% reduction in the loan default likelihood. This means that high interest rates impose high cost to the borrowers, making loan repayment difficulty.

These findings concur with Vandel (1993) and Okpugie (2009) in their studies who found out that high interest rate charged by microfinance institutions is a major cause of default among the microfinance borrowers.

4.3.3 Assessment of the model fit

In assessing the overall fitness of the model two approaches were used; statistical measures and pseudo R2 measures.

The Hosmer and Lemeshow test measures the overall fit. The Hosmer and Lemeshow test shows insignificance for the fitted model is 0.614 as shown in Table 4.5, indicating that insignificant differences remain between actual and expected values. This is a strong indication of a good model fit.

Table 4.5: Results of Hosmer and Lemeshow test

Step	Chi-square	Df	Significance
1	8.288	8	0.614

4.3.3.1 Pseudo R^2 measures

It can be observed from Table 4.6 that the model has a relatively larger pseudo R^2 of 0.521 for the Nagelkerke R Square and 0.452 for the Cox and Snell R Square. That is the fitted model is able to explain or account for 52.1% of the variation in the dependent variable. This is an indication of a good model.

Table 4.6 Model Summary

Steps	-2log likelihood	Cox & Smell R Square	Nagelkerke R Square
1	200.812[a]	0.452	0.521

However, there were some other factors which were not statistically significant in the estimated model but had influence in the likelihood of loan default. These are Marital status (MARTLOG), level of education (EDULOG), gender of borrower (GNDLOG), distance/location of MFIs (MFILOCATION), family problems such as diseases (FAMPROBR), weak legal action to defaulters (WEAKLEGAL), asset ownership (ASTOWN) and past experience on business (PASTEXP). Their influence is supported by different scholars who researched on similar studies.

4.4 The effects of loan defaults to borrowers and Microfinance Institution

4.4.1 Loan default in group lending model

In this part the researcher was interested to know if there was a defaulter within the group borrowers that is one who missed to repay at least 1 installment within a month period. Therefore, respondents were requested to display information whether one of

them has missed to repay at least 1 installment within a month period or not. The results are shown in Table 4.7 below.

Table 4.7 Presences of defaulters in lending groups

Response	Frequency	Percentage
YES	125	63.8
NO	71	36.2
Total	**196**	**100**

Source: Field data, 2015

As shown in Table 4.7, 63.8% of respondents have experienced defaulting problem within their groups. The researcher was interested to know what measures has been taken by a group to pay the installment to IMFs. 95% of respondents reported that the defaulters lends money from the group members and repay the installments while 5% reported that a group holds some properties to force the defaulters to if members have doubt. This reveals that there was existence of defaulters in groups despite repayment made to MFIs.

4.4.2 The effects of loan defaults within the group lending model

4.4.2.1Loss of properties

The study identified loan defaults effects to loan borrowers. Collateral are valuable items that are to be acquired in case a borrower defaults to compensate for the loss. Table 4.8 shows that majority of respondents (76%) accepted that loan defaulters lose their properties in case the borrower fails to repay the remaining loan balance. 24% reported that defaulters do not lose their property instead are denied to acquire next loan and be rejected by group members.

Table 4.8: Response of borrowers on Loss of Properties set as collateral

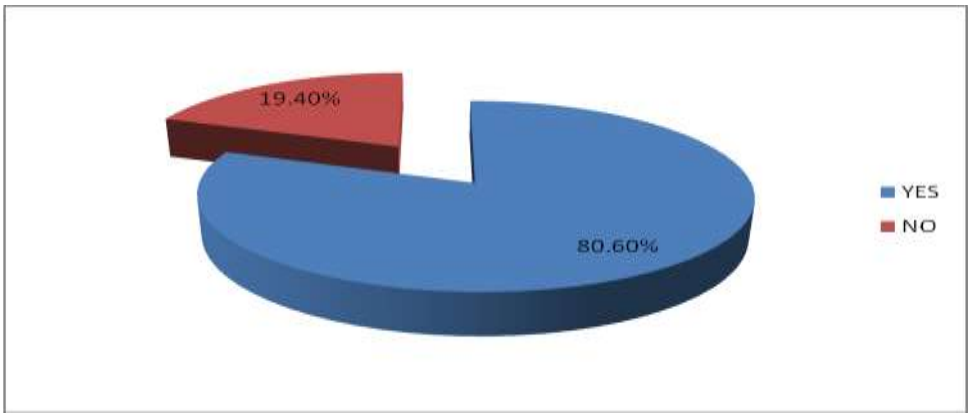
Loss of property	Frequency	Percent
YES	149	76.0
NO	47	24.0
Total	196	100.0

Source: Field data, 2015

4.4.2.1 Rejection of borrowers to the next loan opportunity

The respondents were required to comment whether the individual borrowers rejected for the next loan opportunity or not. The responses are shown on Figure 4.2.

Figure 4.2: Response of borrowers on Denial for next Loan opportunity



Source: Field data, 2015

The information provided in Figure 4.2 shows that 80.6% of respondents accepted that loan defaulters are denied for next loan opportunity. These findings revealed that IMFs had strong measures to control defaults.

4.4.3 Effects of loan defaults to MFIs

The information provided by key informants revealed that there was long term effect of loan default to MFIs, despite group lending methodology. The effects mentioned were: reduction of operating profit, interest income and lending capital capacity as explained hereunder.

4.4.3.1 Effect of loan defaults on operating profits

Operating profit is a profit earned from MFIs operations (gross profit minus operating expenses) before deduction of interest and taxes. This section analyses the effects of loan defaults on an operating profits of the selected MFIs for a period 2010 to 2014.

Table 4.9: Provision of Bad Debt through Operating Profit

MFI	YEAR	2010	2011	2012	2013	2014
PRIDE	Operating Profit	1,819,052	2,428,708	3,494,778	5,403,096	6,571,002
	Bad debts	471,817	307,511	314,615	236,879	244,436
	% provided to recover bad debt	25.9%%	12.7%	9%	4.4%	3.7%
FINCA	Operating Profit	2,093,117	3,197,850	4,010,542	6,604,260	7,328,658
	Bad debts	418,623	272,685	282,982	248,177	240,547
	% provided to recover bad debt	19.9%	8.5%	7.1%	3.8%	3.3%

Source: Field data, 2015

From Table 4.9, it is seen that highest impact of loan default on operating profit was recorded in 2010 for both selected MFIs. At this year operating profit of Tshs. 1,819,052 was reduced by Tshs. 471,817 representing 21% of the total operating profit for PRIDE while Tshs. 418,623 was reduced from the collected operating profit of Tshs. 2,093, 117 which represent 19.9% for FINCA.

The lowest impact of loan default on operating profit was registered in year 2014, where PRIDE had 3.6% of the operating profit used for provision of bad debts while FINCA registered a loss of 3.3% of the collected annual operating profit for provision of bad debt.

Generally, PRIDE spent a total of Tshs. 1,575,258 to recover bad debts which is equivalent to 7.9% of Tshs. 19,716,636 which is the total operating profit for 5 years. While FINCA records showed a total of Tshs. 1,463,014 was lost from a total of Tshs.

23,234,427 which is 6.2% of collected operating profit to recover the total defaulted loan amount for 5 years.

On the other hand, Interest income obtained from loans increases the profit of the microfinance institutions. However, defaulted loans have negative effects on operations of the MFIs. Whenever loan default occurs, lending institution has to make provision for bad debt which reduces the amount of profit generated from interest income. The findings showed an average of 4.1% and 3.2% of interest incomes were used to provide for bad debts for PRIDE and FINCA respectively in a period of five years starting from 2010 to 2014.

This obviously has a negative impact on the financial performance of the institution. This situation also sends a wrong signal to any potential investors and also upset the existing ones who wish to see their wealth growing. In addition, it undermines the ability of the selected MFIs to raise additional capital from investors who are mostly concerned about the health of the loan portfolio of the financial institution they are investing their funds.

Further, key informants reported different measures to solve loan defaults problem. The measures which have accounted to the remarkable loan performance include loan renegotiation, loan refinancing and effective monitoring and recovery programs instituted by the selected institution to address the problem.

4.4.3.2 Impact on lending capacity

The lending capacity of MFI is influenced by loan recovery. Therefore large amount of unrecovered loans undermines the MFI's ability to grant more loans to the potential clients and to create new loans as indicated in Table 4.9 a total of Tshs. 1,463,014 was used to recover the bad debt which could be used to create new loans. This has a negative impact on the liquidity of the organization which could result in temporary freeze on or suspend entire lending activities or borrowing from other financial institutions at high cost.

Therefore loan default reduces the interest income that could be obtained from the interest charged on each defaulted loan. Second, it reduces the operating profit of the MFIs through provision of bad debt as a result of loan default. Third, it leads to limited access to financial services for new loan applicants. Loan default reduces lending capacity of MFIs hence offering of loans to other new applicant becomes difficult. This also affects the continuing borrowers in need of more credit due to shortage of funds.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS

5.0 An overview

This chapter summarizes the study and provides the conclusions, policy implications and limitations of the study. It is divided into four sections. Section one covers the summary of the study, section two concludes the study, section three presents policy implications as related to the results of the study and section four presents limitation of the study.

5.1 Summary

The study generally examined the determinants of loan default in MFIs in Tanzania. Specifically it included the assessment of the level of default rate amongst selected MFIs, determining the factors that influence the likelihood of loan default among borrowers in the selected MFIs, and finally it identified the effects of loan defaults to the borrowers and MFIs.

Basing on the results and discussion above, section 4.1 discussed demographic characteristics which included variables such as gender, age, education, marital status and asset ownership. These variables are fundamentally linked to borrower's ability to repay the loan. The results showed that great number of respondents were female which suggested that women participated more in MFIs more than men. Results also shows that majority of the borrowers are youth and adults indicating youth are engaged more in acquisition of loans from MFIs so as create self employment through business. Also data show that most of respondents have attained a secondary and primary education that makes 40.8% of the total respondents. In addition, 42.2% of the respondents were married whereas the remaining percentage was formed by other marital status. Finally, findings showed that 71.9% of respondents owned assets which are not accepted by MFIs as collateral while 28.1% of the respondents owned such type of assets. This

implies that majority of the borrowers had no collaterals and ultimately the situation forces them to Joint Liability Groups in MFIs.

Starting with first objective, it assessed the level of loan defaults in the selected MFIs. This extent of loan default was ascertained using records of borrowers who were in individual lending model. Generally, the rate of loan default has been decreasing from year 2004 to 2007 due to proper screening of borrowers as well as credit rationing. However, in 2008 to 2009 there was a sharp increase of default rate in the selected microfinance institutions due to inadequate close monitoring and less supervision of new borrowers and inadequate loan supervisors businesses due to few loan supervisors.

Further, the results in this section show that male clients default more than the female clients. The reason for male to default more than women as reported that women are more risk averse than male. Youth age ranging from 18 to 34 defaults more than other age groups which means that, default rate decreases with an increase of clients' age. Thus financial institutions hesitate to lend to younger clients who are more risk averse. Also findings shows uneducated clients default more than other educated clients at a rate of 5.3%. Uneducated clients have low business and financial skills to measure risks involved on their business and how to manage business. This leads to make business loses which will affect the ability to repay loans. On marital status, divorced and widows/widowers clients default more followed by single clients while married clients default less compared to all other status. Finally statistics shows that clients with self employment are reported to default more compared to other occupations.

In the second objective, results depicted that some variables examined had a significant influence on the likelihood of loan defaults. Factors which were found to be significant at ($P<0.05$) including age and interest rate charged by MFIs. Factors such as Business type, business management education and use of the loan were found to be significant at ($P<0.01$). The model predicts that as the age of the borrower increases it reduces the likelihood of a borrower to default. Secondly, borrowers who have management skills

acquired through trainings and seminars manage their businesses cautiously and are less likely to default their loans. Third, businesses which are able to generate enough revenue to meet the weekly repayment schedules reduce the likelihood of loan defaulting. This means lower revenue cycle in businesses creates loan repayment problems to borrowers. Fourth, the use of loan for non business purposes is likely to increase loan default compared to business uses. Borrowers, who use loan for business purpose, reduce the likelihood of loan default compared to other uses of loan. Finally, Interest charged by MFIs was also associated with influencing the likelihood of a loan borrower to default. High interest rates impose high cost to the borrowers, making loan repayment difficulty.

Finally, the last objective identified the effects of loan defaults face defaulting borrowers and MFIs. Borrowers with default history are affected negatively in the following ways namely, denial of subsequent loan opportunities, bad image to the society and loss of properties pledged as collateral and bad relationship with MFIs officers. Also, the study revealed adverse effects to the respective MFIs. These were named to be the loss of the expected interest income that could be obtained from the interest charged on each defaulted loan, it reduction of MFIs operating profit through provision of bad debt as a result of loan default and limited capacity to expand the access to financial services for potential and current loan applications.

5.2 Conclusion

The intension of this study was to determine the factors influencing loan default in many MFIs in Tanzania. The study revealed that MFIs are tools for achieving equity economic growth and poverty reduction in Tanzania. Despite the MFIs importance to the community, the study also revealed some challenges facing them and highlighted the policy strategies to be implemented to resolve these challenges particularly the loan default problem.

Literature review in loan default in MFIs and specifically in the Tanzanian context was inconclusive in some vital issues areas like the level of default rate of MFIs in Tanzania; detailed analysis on determinants factors for loan default in individual MFIs and the effects of loan defaults to the borrowers and MFIs.

Furthermore, the study concludes that age of borrower, interest rate charged by MFIs, business type, loan purpose and business management education are main factors that determine the likelihood of a borrowers to default. However other factors such as family social problems such as diseases, weak legal action to defaulters, and past experience in business are vital in repayment of loan installments.

The effects associated with loan defaulting are inevitable to the borrowers and to some extent, also to the MFIs. The study findings identified the effects which a defaulting borrower directly faces which include denial of next loan opportunities and loss of the collateral properties. However, MFIs only face the effects of loan defaulting from the individual borrowers and are also affected by losing interest incomes and reduction of operating profit through the provision of bad debts as a result of loan defaulting.

From the study it is concluded that, there still exists a significant level of loan default rate among the Tanzanian MFIs. This level of loan defaults is enhanced by the higher interest rates charged by MFIs, the nature of the businesses of the borrowers and their loan repayment installments, The use of loan for non business purposes and lack of business management knowledge and skills. Due to these factors defaulted borrowers are denied the next loan opportunities and also lose their valuable collateral properties; while the MFIs are also affected in their operations due to the loss of interest incomes, high provision for bad debt and reduction of lending capacity.

5.3 Policy implications

The study also came up with recommendations that will address the adverse effects of loan defaulting to both the borrowers and the MFIs.

The MFIs should review their policies so as to establish stringent lending and debts collection regulations by considering the factors that affect the ability of borrowers to repay loan installments. Issues concerning the business supervision and loan repayment schedules should be taken into account. MFIs should also build capacity of the borrowers in managing their businesses prudently so as to get adequate revenues for proper and prompt loan repayments.

MFIs in Tanzania should involve to a great extent competent loan officers and customers in formulating professional lending and other loan processing terms, because they are the people in the field with good understanding of better terms which should apply.

MFIs should consider credit insurance, that will ensure loans issued to borrowers are free from the risk of loan defaulting. This is because insurance has a great impact on loan repayment security. The use of credit insurance minimizes the effects of loss of collateral properties of defaulting borrowers and loss of income to MFIs.

MFIs should consider and review their interest rates they charge on loans. This is because high interest rates have a negative effect on loan repayment to a great extent. The Tanzanian government should also consider offering subsidies to MFIs. Subsidy policies to these MFIs could be appropriate in promoting a fair competition with other commercial banks.

5.4 Limitation of the study

There are limitations encountered during the course of this study. Firstly, Time factor was a constraint because the time available to accomplish this study was limited; hence the coverage of the study could not be increased further.

Secondly, the availability of secondary data was difficult for some vital information that could support the findings of this study. This is due to the poor record keeping and confidentiality policies of the MFIs. However, there were long procedures to obtain the required data from the MFIs relating to the borrowers and MFIs information.

5.5 Areas for Further Research

This study can be broadened to all Tanzanian MFIs given the availability of resources. The researcher proposes an investigation of the borrowers' perceptions on MFIs' policy and procedures that influence the borrowers to default. This will help MFIs to restructure their policies and procedures to improve loan repayment and reduce loan defaults.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

TITLE: DETERMINANTS OF LOAN DEFAULTS IN MICROFINANCE INSTITUTIONS IN TANZANIA

Please circle the correct answer

PART I: PERSONAL INFORMATION

1. Gender 01. Male 02. Female

2. Age……

3. Level of Education

   01. Primary School completed 02.Ordinary Secondary completed
   03. Advanced Secondary school completed 04. Degree and above
   05. Tertiary education 06. Not educated

4. Marital status

   01. Single 02. Married 03. Divorced 04. Widowed

5. Source of Income in Household? (*Tick)*

No	Source of Income	Tick
1	Business	
2	Wages of day works	
3	Salary from Employment	
4	Agriculture	
5	Others	

6. Do you have savings?

   01. Yes 02.No

7. How savings is used in Household?

No	Expenditures of Savings	Tick
1	Business Growth	
2	Personal Consumption	
3	Household Consumptions	
4	Emergencies	
5	Repayments of Loan installments	
6	Payments of school fees	
7	House construction	
8.	Purchases of valuable items (assets)	

8. Types of Assets owned by respondents

No	Type of Assets	Ticks
1	House(s)	
2	Car (s)	
3	Plot(s)	
4	Furniture(s)	
5	TV/ Radio	
6	Motorcycle(s)	
7	Bicycle(s)	
8.	Immovable Business	
9.	Other assets	

PART II: INSTITUTIONAL RELATED QUESTIONS

1. How long have you being doing your financial services with FINCA/PRIDE? .....
2. Apart from FINCA/ PRIDE, what are other microfinance institutions you have been involved with?

   01. Microfinance Bank 03. SACCOS 05. Not involved

   02. NGOs - MFIs 04. ROSCA and other Informal institution

3. Is the repayment scheme set by FINCA/PRIDE microfinance suitable for timely repayment of loans?

   01. Yes 02. No

4. If NO, Why?

No	Reasons for delay/default in repayment of Loan installments	Agree	Disagree	I don't know
1	Starting time to repay is too early			
2	Loan repayment period is short			
3	Amount of repayment in each month			
4	Other reasons			

5. What do you suggest to make the repayment scheme suitable?

No	Suggest to make the repayment scheme suitable	Agree	Disagree	I don't know
1	Give enough time before starting to repay			
2	Make the repayment period longer			
3	Reduce amount of loan installment			
4	Ability to pay more than one installments at once (kukupua)			
5	Others			

6. How far is your business location to FINCA/PRIDE microfinance institutions ……km?

7. Do you incur any transport costs to arrive at FINCA/PRIDE office?

   Yes 02. No If yes how much ……

8. What is the interest rate charged in FINCA/PRIDE ……..

9. How is the Interest rate charged on loan set by FINCA/PRIDE microfinance compared to others?

   01. High 03. Low

   02. Medium 04. Normal Market rates

10. Are the loans offered by FINCA/ PRIDE biased in any form?

    01. Yes 02. No

11. Do you think this biasness contributes to increase in number of loan defaulters?

01. Yes 02. No

PART III: BUSINESS RELATED QUESTIONS

1. What type of business do you own?

No	Type of Business	Tick
1	Restaurant	
2	Food vending	
3	Retail shop	
4	Saloon	
5	Grocery	
6	Fruits and Vegetables	
7	Matching Guys	
8	Transport by Motorcycle (bodaboda)	
9	Genge la mahitaji ya nyumbani (nyanya, vitungu, mkaa)	
10	Clothes (Tailor, special etc)	
11	Animal products (eggs, milk nk)	
12	Others	

2. Did you inject any FINCA / PRIDE loan amount into this/these businesses?

01. Yes 02. No

3. If YES, WHY?

No	Reasons for injecting Loan Amount in business	Tick
1	Capital growth	
2	Repayment of business debts	
3	Establishment of other new business	
4	To meet the business running cost	
5	OTHERS	

4. Did have any past experience concerning this type of business?

01. Yes 02. No

5. How long is your business in operation? ……

6. Have you attended any business education?

01. Yes 02. No

7. If YES what type of business education did you acquire?

01. Certificate level 03. Degree level 05. Training and seminars

02. Diploma level 04. Masters Level 06. Tertiary Level

8. Did your business generate profit?

   01. Yes 02. No

9. Average profit generated per week?……

PART IV: LOAN & REPAYMENT RELATED QUESTIONS

1. Why did you Borrow from FINCA/PRIDE?

No	Purpose of Loan	Tick
1	Business	
2	Meet Emergencies	
3	Personal Consumption	
4	Repayment of Loan Installments	
5	Repay Loans from Family and Friends	
6	Purchase of Assets	
7	House constructions	
8	Payments of school fees	
9	Others	

2. How many times have you borrow from FINCA/PRIDE microfinance institution? ……..
3. How much money did you borrow from FINCA/PRIDE MFIs? …….TSH
4. Did you take the preferred amount of loan from FINCA/PRIDE as you requested?

   01. Yes 02. No

5. Was the amount of loan provided by FINCA/PRIDE enough to meet your plans in business?

   01. Yes 02. No

6. Did you spend the entire loan in reason you specified above?

   01. Yes 02. No

7. If No, What amount……..

8. If, NO, What amount did spend on other expenditures?

No	Loan Expenditures	Tick	Tsh
1	Personal Expenditures		
2	Luxury		
3	Social contributions		
4	Repayment of family Debt		
5	Meet Emergencies		
6	Payments of School fees		
7	House constructions		
8	Purchases of Assets		
9	Others		

9. What are the income sources for Loan repayments?

No	Sources of Incomes for Loan Repayments	Tick
1	Sales	
2	Profits	
3	Profits from other business	
4	Loan from other MFIs	
5	Loan from family and Friends	
6	Others	

10. How do you benefit from full repayment your loan?

01. Strongly Disagree 02. Disagree 03. Neutral 04. Disagree 05. Strongly Disagree

No	Benefit from full repayment your loan in Time	
1	Access to the next higher loan	
2	Build good relationship with the loan provider	
3	Build good relationship with loan provider	
4	To make the family stable	
5	OTHERS	

11. Have you ever failed (defaulted) to repay the loan in other Microfinance?

01. Yes 02. No

12. Are you aware of defaulting members?

01. Yes 02. No

12. What are the characteristics of a person who you are aware of his/her loan default?

01. Male 02. Female 03 Others …….

01. Youngsters 02. Adults

01. Business borrower 02. Consumption borrower

13. Why did you fail to repay loan installments?

01. Strongly Disagree 02. Disagree 03. I don't Know 04. Agree 05. Strongly Agree

No	**Reasons for failing to repay loan installments**	
1	Poor loan supervisions	
2	Weak legal enforcements to defaulters	
3	High interest rates	
4	Grace period	
5	Short repayments period (per week)	
6	Death of borrowers	
7	Offer of relend loan	
8	Family Problems (Diseases, funerals)	
9	Multiple borrowing	
10	Acquire more than	
11	Misuse of Loan	
12	Application of loan without clear objectives	
12	Lack of savings	
13	Few/ lack of Income sources	
14	Borrowers' characters	
15	Age	
16	Gender	
17	Lack of awareness of Loan to the (spouse) family	
18	Establishment of new business	
19	Collapse of business	
20	Lack of Business education	
21	Economic changes	
22	Business types	

14. Measures taken to loan defaulters?

01. ……..

02. …….

03. ……..

04. ……

05. ……

15. Effects to loan defaulters?

01. Strongly Disagree 02. Disagree 03. I don't Know 04. Agree

05. Strongly Agree

No	Effects to loan defaulters	
1	Access to the next higher loan	
2	Bad relationship with loan officers	
3	Bad relationship with MFIs	
4	Lack of trustfulness to the group members	
5	Selling of assets set as collaterals	
6	Shame and disgrace in community	
7	Fear to apply for new loan	
8	Shifting in hiding from community	
9	Others	

GROUP LENDING RELATED QUESTIONS

1. Why did you engaged in group lending?

No	Reasons for applying loan in Group	Tick
1	Easy to get loan in a group	
2	It is MUST according institution's regulations	
3	Easy to repay when you are in group	
4	Others	
5		
6		

2. How was the group formed??

01. Based on the group member interest

02. Based on the loan provider (FINCA/PRIDE microfinance) interest

03. Others ……

3. How many of the group member that you knew before? …….

PART VI: GENERAL QUESTIONS

Please fill in space

1. Do you face any difficulties during the repayment process, please mention the major challenges
    1. ……
    2. ……
    3. ……
2. From your awareness and knowledge, mentions possible causes of loan defaults
    1. ……
    2. ……
    3. ……..…...
3. What do you think should be done by PRIDE/FINCA to improve the loan repayment process?
    a. ……
    b. ……
    c. ……

APPENDIX II: INTERVIEW QUESTIONS FOR KEY INFRORMANTS

1. Number of borrowers in Past 10 years

Year	Individual Borrowers			Group Borrowers		
	Total	Male	Female	Total	Male	Female
2004						
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014						

2. Loan repayment history in Past 10 Years

Year	Individual Borrowers	Group Borrowers
	Defaulters	Defaulters
2004		
2005		
2006		
2007		
2008		
2009		
2010		
2011		
2012		
2013		
2014		

3. Effects of Loan default on Interest Income

MFI	YEAR	2010	2011	2012	2013	2014
PRIDE	Interest Income					
	Bad debts					
	% provision for bad debt					
FINCA	Interest Income					
	Bad debts					
	% provision for bad debt					

4.Effects of loan default on Operating Profit

MFI	YEAR	2010	2011	2012	2013	2014
PRIDE	Operating Profit					
	Bad debts					
	% provision for bad debt					
FINCA	Operating Profit					
	Bad debts					
	% provision for bad debt					

5. Apart from loans what other services do you offer?
6. Apart from Loan installments are there other contribution made by client to MFI?
7. What is the repayment schedule
    a. Interest rate……..

b. Time of repayments …….

c. Maximum and minimum period of loan recovery…….

d. How do you determine loan recovery period?

8. Do you assess the business of the borrowers?
9. What are the purposes of your loans to the borrowers?
10. Do you offer any seminars or trainings to the borrowers to ensure good management of their business but as well as loan repayments?
11. How do you assess credit worthiness of the client especially individual client?
12. What are the start loan amount and the maximum amount of loan you offer?
13. What are the criteria for client to be in group lending or individual lending model?
14. How do the loan groups formed?
15. What makes the client to be able to obtain higher loan next time?
16. Which number of unpaid loan installments do you regard as
    a. Delay
    b. Default
17. What are the major reasons stated by the defaulters?
18. What are the major reasons stated by delayers?
19. What are the steps taken to the borrowers who delay their installments?
20. What are steps taken to the borrowers who defaults their installments?
21. What are effects caused by loan defaults to the MFI?
22. What measures to you take to ensure loan defaults rate decreases?
23. What are your suggestions to the borrowers to ensure their timely repayments of their loan installments