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The undersigned certify that they have supervised student Mazingaizo Shannon Dissertation entitled: **The effects of interest rate on loan repayment in Microfinance Institutions in Gweru** in partial fulfillment of the Bachelor of Commerce (Honors) Degree in Banking and Finance at Midlands State University.

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DEDICATION

I dedicate this dissertation to my late grandmother Mrs Elizabeth Pindeni Mlambo and my parents Mr and Mrs Mazingaizo.

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I am grateful to Ms Manzote my lovely supervisor who walked with me at every stage with my dissertation writing. Her advice and support, her thorough comments on each chapter I presented and her insightful contributions made this dissertation a success. The values that she placed in me in doing a quality research are important. I will always be grateful for her help with building up the ideas of this topic. I would like to extend my gratitude to the Banking and Finance department for their assistance. To my friends Basil Chitura and Takudzwa Chikari I would like to say thank you for your support and making this journey enjoyable.

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ABSTRACT

The purpose of this study was to investigate the impact of interest rates on loan repayment in MFIs situated in Gweru. In this harsh economy evidenced in Zimbabwe where NPL continues to be the talk of the day as some clients fails to service their debts due to various factors . Theoretical and empirical literatures were both reviewed on loan repayment so as to make derivations and give the basis for a strong analysis. Studies carried out in other countries were integrated in the empirical literature review and various theories were used to give a theoretical assumption for this study. An explanatory research design was used to measure the strength of relationships between interest rates and loan repayment. A model was adopted from existing literature and essential adjustments were made to suit the properties of the study. A sample of 25 MFIs was drawn and a minimum of two questionnaires were administered per every institution. The conclusions of the study indicate that interest rates, sex and repayment period are significant determinants of loan repayment among other factors. Through the use of a logistic model, the author provides a model to be used in determining loan repayment. The study recommends that there is need to continuously keep interest rates on check as exorbitant interest charges are detrimental effects on loan repayment which will translates to a problem in the financial sector as whole. Also various loan facilities tailor made for female borrowers needs to be increased as they contain higher repayment capabilities as compared to their male counterparts.

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LIST OF ACRONYMS

RBZ	RESERVE BANK OF ZIMBABWE
MFI	MICROFINANCE INSTITUTION
NPL	NON PERFORMING LOANS
SSB	SALARY SERVICE BUREAU

SBL	SALARY BASED LOANS
ZAMFI	ZIMBABWE ASSOCIATION OF MICROFINANCE INSTITUTIONS
MPS	MONETARY POLICY STATEMENT

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Microfinance is the provision of financial services to the unbanked and under-banked households and small businesses (Reserve Bank of Zimbabwe, 2012). Such services range from consumer loans, money transfers, insurance products and other payment services. The purpose is to finance their microenterprises and small businesses to enable them to improve their standards of living through raising their income levels. This enables MFIs to play vital roles in economic development such as that of financial inclusion which most developing countries are in great need of, the Reserve Bank of Zimbabwe (RBZ) in its 2017 midterm (MPS) pointed out that the capability of microfinance institutions (MFIs) to deliver tailored client-specific financial services and traverse the multi-dimensional complications of the poverty phenomenon, enables MFIs to be a powerful multi-faceted approach to sustainable development. In light of these significant roles, this study seeks to explore the effect of interest rates on loan repayment in microfinance institutions in Zimbabwe so as to draw a conclusion on the true effect of lending rates on the repayment of loan advances made to various clients and as a result it hampers growth in most of these local MFIs.

This first chapter will be focusing on the background of the study which will elucidate on the relationship between interest rates and loan repayments of MFIs. The problem statement will follow which will explore the main causes of concern and a comprehensive justification of the study study is also described to clearly outline the research objectives and research hypotheses as well as the questions. The significance of the study is also considered where by various parties that will benefit from the study as well as how they will benefit will be clearly outlined. Delimitations of the study follow the significance safeguarding that resources are channelled to a specific target population so that sound and effective conclusions can be drawn. Definition of terms will be revealed followed by the organization of the study that will summarize what has been covered in this chapter and what to expect in the subsequent chapters.

1.2 Background of the Study

Microfinance originated in 1976 in Bangladesh by Dr. Mohammed Yunus when he started microfinance scheme as part of an experiment in the rural areas in Bangladesh. The scheme later became the Grameen Bank which has created the way for many microfinance banks and institution all over the world. Dr Mohammed Yunus was awarded the Nobel Peace Prize for these efforts of trying to eliminate poverty through the use of microfinance (Bateman, 2014). The nature of microfinance has changed over the years and depending on a country, the goal of players and their activities is no longer only for social economic development but most are out for profit. They are no longer 'non-profit' organizations but businesses that are aimed at making a profit at member's expenses. The microfinance industry has many players in it and the industry experiences a lot of changes in regulation and policies (Robinson, 2001).

Habibu (2010) and John (2011) noted in their respective studies that MFIs loan facilities had amplified the income in most owners and poor individuals in Zimbabwe and Bangladesh respectively. Both studies focused on business performance in areas such as acquisition of assets and increased sales. Khandker (2003) goes on to make it clear that the main objectives of MFIs as agents of development includes that of servicing the financial needs of un-served or marginalised markets as viable ways to attaining development objectives such as that of employment creation, poverty alleviation, women and poor people empowerment, and encourage new business development.

MFIs' main objective is to provide financial services for the poor people and low income earners with a range of financial services at costs that are bearable. These institutions derive most of their incomes from the interests they charge on the loan advances they provide and as a result of the massive costs they incur, they translate to also high rates being charged. Four key factors that specify these rates includes the funding costs, the MFI's operating expenses, loan losses, and profits needed to expand their capital base so as to fund probable future growth (Ghatak, 1999).

High inflationary levels also contribute to the MFIs funding costs as this eats into the organisation's equity. Thus, rising inflation rates also contributes to higher nominal rates of interest through their effect on the real value of equity. MFIs' two types of operating expenses can be

categorised as administrative and personnel. Because some of these MFIs have labour-intensive operations, it translates their personnel costs being high as well. Administrative costs contain such factors as rentals, utility bills, transportation, stationary as well as wear and tear of fixed assets. Administering and recouping small loan advances is expensive on a per unit basis. Often time's loan recovery is done by staff members whom have to pay visits to customers which increases costs as well as time taken together with transport costs. Poor repayment performance by many borrowers is a serious concern to many financial institutions (Pulley 2000).

Poor structures, insufficient road networks and technological advances in various nations where most MFIs operate especially developing countries, also contribute to the increase in their administration costs which will in turn increase also the operating cost of the microfinance. Insufficient and or poor policies also contributes to high administrative costs since most MFIs operations usually involved cash dealings and the physical movement of cash (Pitt and Khandker, 1998) though in Zimbabwe the central bank has been on a drive of making sure that these MFIs embrace the use of other forms of transacting not to be attached to hard cash due to the cash crisis bedevilling the economy (RBZ MPS January 2017).

Since 2011, two years after the Zimbabwean economy was dollarized, there has been a rise in the number of MFIs as well as an increased number of loan defaults due to the usurious interest rates which most of these players charge to their customers. This has been exacerbated by the economic deterioration which has been a daily activity. Fig 1.1 and 1.2 below shows the trends in both the interest rates and loan repayments for the whole period of 2016.

Fig1.1 Interest rate trends

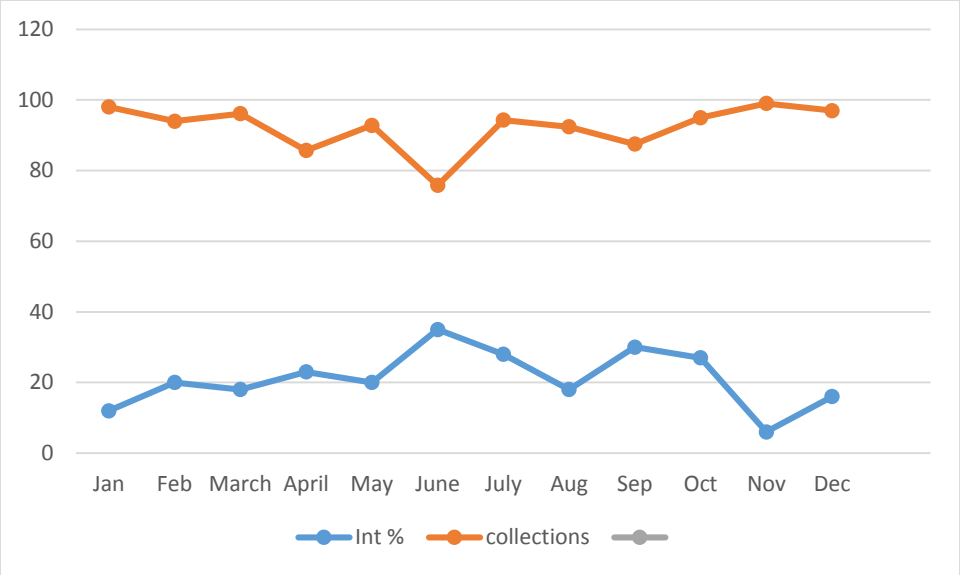

Fig 1.1 above shows the trend in the collection rate of MFIs during the period of 2016 and it can be noted from the graph that the repayment is above 75% for all institutions. However the validity of the collection trends is made visible by the interest rate trends for the same time period which show the negative relationship which exists between the interest rates and loan repayment over the stipulated time frame. Though one can notice fluctuations on various intervals, it can be strongly argued that there is a negative relationship between the two variables under study since the repayments have been noticed to be increasing each time the interest rates tend to be declining which is the case when the interest rate was very low and the collection of close to 100%. It can be noted that the same case holds for periods when the lending rate of was very high and the least collection rate of 75% was recorded.

Also on the same fig 1 above, one can notice the reverse trend on the some instances like in July were interest rates were high but still the repayment rate was way 80%. This trend diverges from what literature assumes due to supposedly the differences in the economic conditions to which most of these studies where carried out. Also this trend can be attributed to other factors which affect the repayment of loans in microfinance as postulated by Onyeagocha *et al* (2012)

From the above trends, it can be clearly seen both the divergence and agreement of literature concerning interest rates and loan repayments in MFIs and as such the researcher would want to expound more taking a closer look on the relationship between the major two variables under study.

1.3 Problem Statement

Prior to January this year, quite a huge chunk of MFIs has been offering various loan facilities at usurious interest rates in the mighty name of maximizing profits and also to cover on the operational costs involved as most of these institutions are labor intensive. These practices have worked to some extent as the sector continues to enjoy some profits though reduced as compared to the two previous trading years which were at 19.31 million as compared to 2015 of $12.88 million and $24.84 million of 2014 (RBZ 2016 MFI quarterly report). In spite of the success which some of these MFIs enjoy in extending credit supply throughout the last two decades to a growing number of marginalized poor households and low-income earners, most borrowers default in paying back those MFI loans due to the usurious rates they usher to their customers. This has been evidenced by the growing number of the NPL these MFIs have and as such, various reasons to which NPLs are attributed to have been advocated for in different developing countries across Africa and the World at large. Some authors such as Onyeagocha (2012) and Kashuliza (1993) among others claim that interest rates play an important role in impacting loan repayment both in banks and MFIs. Some authors also nullifies the impact of interest rate on loan repayment as they point out at other different factors. As clearly shown in the Fig1.1 above, loan repayment appears to be hinged on the interest rate that an MFI is charging. It is as a result of the discord in literature that has prompted the researcher in wishing to expound on case at hand in the local Zimbabwean context as also very few studies have paid attention to this growing avenue of micro financing business especially in Zimbabwe.

1.4 Objectives of the Study

- To determine the effect of interest rate on loan repayment in MFIs.
- To establish some policy recommendations basing on the findings of the study.

1.5 Statement of the Hypothesis

- H_0: Interest rates have a significant impact on loan repayments.
- H_1: Interest rates have no significant impact on loan repayments.

1.6 Research Questions

- What is the effect of interest rate on the repayment of MFIs loans?
- What are the factors that determine interest rates of MFIs?
- What can be done to immune consumers from being exploited by punitive interest rates?

1.7 Significance of the Study

This research is conducted to identify the impact of interest rates on loan repayment of MFIs. As such policy makers will benefit from this study through having a clear conclusion basing on the findings of the study as to the true effect of interest rates on the loan repayment of MFIs which will help in formulating such policies like interest rate ceilings among others. Academians may also derive benefits from this research's findings since these may formulate part of their future reference material and may be used to reinforce their studies. The research tries to fill the gap which literature has omitted as previously many studies have been conducted on the impact of interest rate on loan commercial banks yet very few attention has been ushered to the growing micro financing business in Zimbabwe. Also the research findings may benefit MFI players in setting their mind clear when formulating their respective institutions' interest rates as the decision may haunt them through poor repayment rates. The researcher also being an under graduate student, will derive benefits from the research as he gains valuable research know-how that will assist him as a stepping –stone in the future advancement in his studies as he ventures in other researches. Despite the context which has been looked into by other researchers on the subject matter, there is a definite knowledge gap within the area of MFIs loan repayment. Thus the study ought to bridge the knowledge gap that exists as to the determinants of loan repayment in MFIs in Gweru.

1.8 Delimitations (Scope) of the Study

- The researcher is mainly going to focus on the impact of interest rates on loan repayment on MFIs
- This research will be conducted basing on the 2016 information
- The researcher is mainly concentrating on the Zimbabwean MFIs specifically in Gweru though over the boarders references will be made.

1.9 Limitations of the Study

In conducting this study, the researcher encountered the subsequent glitches to the attainment of the set objectives:

- The researcher stumbled upon glitches in procuring the needed information to fulfil the study and it was due to the fact that most MFIs are privately owned and hence they do not just disclose their information to any third parties for no serious cause. For the sake of

fulfilment of the research the researcher may base some of the arguments by making use of the readily available secondary data that is annual reports.

- The researcher faced time constraints along the course of doing the research as he tried to balance up both the research and other modules.

1.9 .1 Definition of Terms

- **Interest rate:** This is the money that is charged on borrowed money as the cost of capital.
- **Repayment:** This is the act of returning back the monies one has obtained through an advancement from a financial institution.
- **Loan:** This is the amount of money someone borrows from a financial institution
- **Clients:** Customers who come to buy goods or services of an entity.

1.10 Organisation of the study

Chapter one entails the introduction which outlines the background of the study which contains information pertaining interest rates and its effect on on loan repayment in MFIs. Loan repayment seems to be affected by various factors such as gender, economic conditions, size of loan, and experience of credit officers among other factors. Chapter two reviews literature that is interrelated and pertinent to the study. Thus this chapter will survey through both the empirical and theoretical literature in-line with the study at hand. The third chapter will provide a brief narration of the methodology the researcher has utilised in tackling the objectives of the research, also the presentation of the research design overview will be made together with the procedures used in collecting and analysing data. Chapter four will deliver a presentation of the research findings and also gives an exploration of the gathered data. The fifth and final chapter will contain the summary of the study, conclusions and recommendations and also highlights the proposed antidotes in resolving the statement of the problem.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter is to unveil the literature related to the study thus the effect of interest rates on loan repayment in MFIs. It contains both theoretical and empirical literature and it seeks to display knowledge and understanding the major scholarly work published by former writers on the s matter. Different literatures relating to the study from different walks of life in various countries on nature and behaviour of MFIs and loan repayment were utilised so as to usher a deeper understanding on the lessons to the study at hand. Theoretical literature review will expound on the main theories of the study.

2.2 Theoretical Literature Review

While providing small loans to the poor, MFIs risk none repayment of their monies and viability of their day to day operations. In trying to circumvent these challenges that are inherent in their business practices, various lending models of loan disbursing are being adopted so as to boast the repayment motive within the sector. These include, among others solidarity group, village banking and individual lending models and all these fall under two broad approaches which are the welfarist approach and the institutionalist approach also refered to as the financial market approach (Morduch, 1999).

2.2.1 Welfarist Approach

The welfarist approach attentions on the demand side thus it is concerned with the customers. This approach support the idea of subsidizing MFIs programmes in order to lower their costs so as to foster the offering of low interest rates on their loans. The performance of the MFIs is measured through household studies with focus on the living standard of the individuals, number of loans, productivity improvement, incomes, capital accumulation, social services such as education and health together with food expenditures (Congo, 2002). Thus the welfarist approach stresses out that interest rates should be very low so as to better the living standards of the poor and increased repayment is a by-product advantage which follows the approach.

2.2.2 Institutionalist Approach

The institutionalist's perception of MFIs argues that they ought to be in a position to cover-up their overheads with from the revenues they make. Institutionalist's feel self-sufficiency leads to long-term sustainability for MFIs, which will facilitate greater poverty alleviation in the long-term. This

approach criticizes subsidization because it leads to high, unpaid rates and transaction costs, which have led to the failure of many microcredit programmes. They mean that it is not sustainable for the MFIs to be subsidized and that the subsidies lead to an inefficient allocation of the financial resources thus they believe in the notion that interest rates should be high regardless of the repayment rates as the MFIs have to cover all of their cost from the revenues they obtain on their loans

The welfarists make the wrong assumptions when they say that the repayment interest rate must be low, because the clients are not creditworthy and unable to save and that commercial banks could not survive in rural areas because of the high costs of offering financial services to poor households. Most MFIs which have proven self-sufficient have tended to loan borrowers who were either slightly above or below the poverty line in their respective countries (Morduch, 1999). These MFIs are able to capture economies of scale by extending larger loans to the marginally poor.

2.2.3 Individual Model

This is a self-explanatory credit lending model whereby micro-loans are ushered directly to the borrower and it falls under the welfarist approach. This model does not support the notion of formulating peer groups to foster loan repayment as loans are advanced on individual capacities. The move towards individual loans has been remarkable in recent years. As Karlan and Zinman (2010) said "recent estimates suggest that about one-half of MFIs are individual liability lenders" and this is true also to the Zimbabwean case where most MFIs are making use of the model as there is a notion that repayment is not obliged to other parties making it easy for MFIs to recoup their monies, ZAMFI (2014). This implies that loans are advanced to an individual based on his/her own personal credit profile and as such there is a notion that this model tends to improve on loan repayment at various levels of interest rates especially if the MFIs is administering a salary based facility. This type of lending is more common with customers who require a bigger sized loan facility at the same time having the potential to pay back. at times it is used where the economy is miss firing and hence the MFI will be requiring a solid line of defence like in the current Zimbabwean case where there is growth in individual salary based loans are being advances to different groups in order to foster high repayment rates as through salary based facility repayment is guaranteed.

This model stresses out that MFIs would anchor their credit analysis on the personal knowledge they have for their clients including society reputation among peers, sources of income and also the position of the business. Though it is a bit different from what the local MFIs do as most of the analysis is based on the employee's records as well as the income sources among others. Also individual guarantors are usually requested for by these MFIs. These may include family members, relatives, friends that are very close to the borrower and also who are ready to shoulder the burden of repaying the loan in case the borrower falls into default. In some cases were the amount required is large, the MFIs takes some goods as collateral security so as to keep the repayment rate close to hundred percent. The model entails that the financial institution must administer regular and close contacts with individual customers so as to provide them with credit products tailor made to suit the specified individual requirements. It has been most successful in urban-based, larger, production-oriented businesses and the loan repayment though high, it is relatively less as compared to other models such as the group model Bangoura (2012).

2.2.4 Solidarity Group Model

Solidarity group model was originated in the Grameen Bank in Bangladesh and was pioneered by Dr Yunus in 1970's. In this model, advances are made to a solidarity group of five people whereby every member of the group acts as a guarantor of the repayment of the other members, and thus access to subsequent loans is dependent on the successful repayment by all group members. In default instances by any member, the other group affiliates are indebted to pay back the loan advance on behalf of the defaulter, or else the groups' ability of access to future advances is forfeited. Ghatak and Guinname (1999) postulated that this model tends to yield high repayments at different interest rates as chances of loan defaults are very slim as each group member is a guarantor of another member and as such the MFIs can recover their monies unlike in the individual model. The model is evidently being used by Thrive MFI and it shows from the above trend that their repayment is not very far from those other payers that are making use of the guaranteed SBL. It tends to be similar to the village banking model but they are different as the latter involves a formulation of a community based and managed credit and savings associations were by a loan is extended to a larger group of clients in the range of 15-30 persons or more. Usually, the MFIs advance a loan to the village associations, which will then advance to individual members. In individual lending model, the loan is given to individuals instead of groups as explained above.

2.2.5 Women borrowers and loan repayment

In addition to using group model as an approach to ensuring their sustainability, most MFIs around the world and Zimbabwe is no exception, have shifted some attention towards advancing to women as compared to men, women are considered good payers of their advances (Pitt & Khandker, 1998). It is also believed that involvement of women in MFI programmes has a wide welfare and socio-economic development impacts (Pitt & Khandker, 1998). Literature evidence also supports the notion that most female borrowers repay their loans as compared to their counterparts. For instance, a research conducted by Hulme (1991) in Malawi, concluded that about 92 per cent of women repay their loans on time, in contrast with the male counterparts which have 83 per cent. Khandker *et al*. (1995) also echoed the same sentiments amongst Grameen Bank customers in Bangladesh whose repayment rate was at 98.7 per cent for women and 85.7 per cent for men. Another study carried out in Pakistan has indicated that female borrowers have a higher likelihood of paying back on their loan facility (Chaudhary & Ishaf, 2003). Thus in Gweru various MFIs like Thrive, KCI, JHM,, Solten Financial services and so forth, have turned attention to woman in a bid to keep their repayment rates as high as possible. These MFIs have different loan packages specifically crafted for women.

Women are deemed to be good credit risk takers which contributes to them being better payers because they are said to be more cautious on their investment undertakings Todd (1996). It is also believed that coercive sanctioning by some MFI policies simply affects woman and as such makes them better payers (Mersland, 2009). Disputably, women are said to that they easily feel mortified by the uttered antagonism of others which may push them to make quick repayments so as to counter any embarrassment. Besides the above mentioned, it is also debated that due to their constrained mobility, most woman tends to stay closer to their work places and homes, therefore making it easy for MFIs to monitor them and make some necessary follow ups (Armendariz & Morduch,2005). Rosenberg (2010) also concurred with the same notions as he postulated that the higher repayment rates showed by women basically highlights their burning aspirations to maintain access to microloans with view to coping with any possible household emergencies in the future. He goes on to suggest that borrowers may even be willing to pay high interest rates on the loan even if they receive very small or no return on their loans just to retain their access to credit. This implies that women's continued membership to microfinance programmes cannot

simply be interpreted to mean that the services provided by these institutions benefit them and meet their needs. Verhelle & Berlage (2003) contend that repayment rates shown by microcredit borrowers also suggest that there may be more to microfinance than it is assumed or known.

2.3 Empirical Literature Review

The empirical literature shows the evidence of the applicability of the research topic at hand and below are various case studies from both developing and developed countries in support of the literature reviewed above.

The Central Bank of Zimbabwe (2014) in the industry's first quarter report alludes to the fact that one of the problems that have been contributing to high levels of NPLs has been attributed by the usurious interest rates which are being charged by MFIs. The Smart Campaign (2011) in its quest to protect the interest of borrowers or microfinance clients has called for transparency in the way interest rate charges are calculated adding that it is in the interest of the borrowers to know how the rates are calculated before even signing the loan agreement. This echoes with the requirements of the new Microfinance Act Number 3 of 2013 (Chapter 24:29) particularly Section 15 (subsection 2 b and c) that requires MFIs to display information pertaining to the annual interest rates and other charges on their loans and advances.

A study by Kashuliza (1993) was conducted using a linear regression model to analyse contributing factors of loan repayment in smallholder agriculture in the southern highlands of Tanzania. The findings indicated that the perception towards repayment, education levels, farm incomes and off-farm income positively impact loan repayment and farm income was very substantial, whilst household expenditure, interest rates, age and household size have negative influence on loan repayment performance. Zellar (1996) went on to analyse the contributing factors of loan repayment in credit groups operating in Madagascar. The author's main idea was to try and quantifying the effects of inside-group pooling of highly volatile risky assets by controlling for community level and program design factors that influence the repayment rate of group loans. The Tobit model was used with data sets on various groups from diverse MFIs. His findings indicated that socially cohesive groups pool risks by diversifying the members' asset portfolios so that their repayment performance is improved even in communities with high risk exposure.

Another similar research was done by Nkusu (2011) in Nigeria where he was exploring on the macroeconomic elements of NPL using panel vector autoregressive model together with panel regressions model. He pointed out in his research article that an increase in interest rates will result in the corrosion of the borrower's ability to repay their dues and hence, causes an increase in NPL. This draws down to the fact that interest rates policies have a significant contribution in the growth of NPL in developing economies.

Another study conducted by Hoque and Hossain (2008) which was carried out in Egypt investigated on the relationship between higher interest rates and loan defaults and they applied three different regression models. They advocated for a reduction of interest rates so as to foster the repayment capacities of borrowers thus reducing the loan default rates. Their findings entailed that loan defaulting and higher interest rates had a high positive correlation and this adds up to the borrower's debt obligations which will translate into loan defaults resulting in banks' capital reduction. A similar research carried out by Asari, *et al*. (2011) in Ethiopia also pointed out that NPL and interest rates have a positive relationship. His research concluded that increases in NPL translates to a reduction of the bank's assets and in turn eats on the capital. Interest rates and their volatility are amongst the most precarious and closely monitored variables in the economy. Dash and Kabra (2010) in India postulated that commercial banks which extend loan facilities at aggressively higher rates also incur greater NPL which was the case of some MFIs in developing countries Zimbabwe being no exception.

A study conducted by Monyo (2004) in Bangladesh elucidated on various factors that drive poor loan repayment and they include lack of sound credit collection techniques in most MFIs, poor customer analysis before granting loans, inadequate borrower supervision and site follow ups, lack of proper business know-how, misappropriation of funds to other uses other than the sole purpose of borrowing. When firms gets to decide on the types of investments to undertake, apart from the expected rates of return they also consider the cost of capital which in most cases includes the interest charges on the money borrowed. Thus interest charges affects many business decisions as they hinder the development and growth of many SMEs, which in turn weakens debtor's capability to repay both the total principal and interest.

A complementary study carried out by Abreham (2002) which was focusing on the determinants of loan repayment of borrowers and the criteria of credit rationing was done in relation to the private borrowers in Ghana. The estimation results using the Tobit model showed that having other income sources, higher education, vast working experience in interrelated economic activities prior to the loan application and also venturing in various economic activities apart from agriculture are well enhancing factors while loan diversion, being a male borrower and also offering extended loan repayment periods are negatively affecting the loan repayment performance.

In another study conducted by Rose, (2007), she define successful loan repayment as the capability to payback the extended loan facility in line with stipulated terms enshrined in the loan agreement. She also defined loan defaulting as the failure by the borrower to meet his or her obligations of repaying the loan facility or servicing his or her debt. Her study on the factors that cause defaults in government micro credit programs in Kenya, she concluded that there is a strong relationship between domestic problems, income sources and loan defaults

Taylor (2011) also argues that high interest rates by MFIs promotes debt trap for the borrowers which may hinder the loan repayment process. Exorbitant lending rates have also been observed to hinder the uptake of micro loans, thereby hindering the original intention of MFIs Dehejia *et.al* (2012). With the global campaign for financial inclusion among the unbanked, there is a general concern that high interest rates reduce demand and uptake of microfinance services.

However Capozza *et.al (*1998) during conducting their study in mortgage defaults, found out that increased volatility in interest rates contribute less in loan defaults. Basing on the statistical and theoretical analysis, they highlighted that various empirical studies may encounter challenges in drawing up a conclusion on the major impact of interest rate volatility on loan defaults. Their study was in disagreement with literature as they advocated for other factors to be behind bad loans apart from interest rates even though the study was based on commercial banks not MFIs.
The studies conducted so far in this area have gave more attention mainly to the relationship between interest rates and nonperforming loans in the commercial banking sector. Other studies in line with loan repayment in MFIs have focused on other developing countries around the world

excluding Zimbabwe. Hence a need to determine whether there exists a relationship between borrowing interest rate charges and loan repayments in MFIs in Zimbabwe.

Bekele *et.al*. (2003) in analysing the various elements influencing the loan repayment performance in Ethiopia used the logistic regression model. They made use of data from 309 borrowers of input loans in the Oromia and Amhara National Regional states and their findings concluded that individuals who access huge loan amounts had higher repayments as compared to those who obtain small loan amounts. In addition the results showed that late disbursement of inputs purchased by the loan funds was an important bottleneck in loan repayment while livestock were found to be vital in bettering the farmers' repayment capability.

A research paper authored by Adela and Iulia (2010) revealed the link that exists between interest rates and NPLs. Another study carried out by Kaplin *et.al*. (2009), empirically supports the notion that interest rates and loan defaults are negatively correlated and they were using information from large non-financial US firms for the period 1982-2008. They concluded that no positive correlation exists between interest rates and loan defaults after they conditioned the expected default frequency credit measure**.**

Roslan and Zaini (2009) investigates the impact of some borrower related characteristics, project related features together with loan related characteristics on loan repayment of agro bank micro credit scheme. The characteristics of the borrowers are (i) marital status (ii) occupation (iii) level of education (iv) race (v) gender (vi)age (vii) number of dependents, experience. The project related characteristics includes the project ownership structure, project type, project proximity to closest agro bank office, and revenue accumulated from the project. The loan characteristics include the loan amount and also the repayment period lengths. The data used in the study is a primary data, which is gathered through a survey carried out among agro-bank micro credit scheme borrowers in 86 branches of agro bank throughout Malaysia.

2.4 Summary

The objective of this chapter was to obtain more insights on the interest rates and repayment in MFIs. The chapter partly looked into the background of MFIs and some of the lending models being employed with various perspectives on loan repayment across different organisations. The

chapter also looked at the close relationship between loan repayment and woman borrowers and also various studies in relation to the effect of interest rates on loan repayment. The next chapter encompasses the discussion of the research methodology which will include the methods and procedures used in conducting the study such as the research design, the target population, sample size together with data collection and analysis methodology

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This chapter focuses on the presentation of the various tools and methods the researcher applied in gathering and analysing the data relating to the effect of interest rates on loan repayment. The chapter will give an account on the way to which the research was undertaken so as to guarantee the reliability and validity of the collected data as well as the results. It entails the research design and the model specification to be used. Also the justification of the variables that the researcher used will be clearly alluded to. It then goes on to present on the data sources, types as well as the various diagnostic tests to be conducted. The summary containing the main points will then be presented at the end of the chapter.

3.1 Research Design

The research design the researcher made use of in this study was both descriptive method and also explanatory method for gathering analysing data aimed at establishing the relationship between loan repayments and borrowing interest rates of microfinance institutions. Explanatory researches mainly focuses on conducting hypotheses tests with the aim of explaining the nature of other specific relationships, or to establish the difference between groups, or the independence of various elements in a given situation. The explanatory method also ushers the chance to examine data making use of different statistical packages such as SPSS, STATA, EVIEWS and these are fast as they remove personal judgments and human related errors. Explanatory method further permits the usage of both quantitative and qualitative data thus the researcher used questionnaires as the data collection tools. This method was preferred because it allows for prudent comparison of the research findings. They assist the researcher in being knowledgeable on the characteristics of the population and to clearly understand the aspects in the area of study and draw substantive conclusions and make appropriate recommendations Chandaran (2004).

3.2 Model Specification

The research adapted the logistic regression model to analyse the relationship between interest rates and loan repayment. This model was adapted from Onyeagocha *et al* (2012) who carried out his study in Nigeria where he was testing for the determinates of loan repayment in MFIs through the use of the Logistic regression econometric model. For the purpose of this study, the model was adjusted to suit the local environment and it is presented as follows:

$$Yi = \beta_0 + \beta_1 Ls + \beta_2 Age + \beta_3 Rp + \beta_4 Sex + \beta_5 Int + \mu$$

Where:

Yi is the dependent variable representing loan repayment rate(LRp (a dummy variable assigned 1 when high and 0 otherwise) as also used by Gembremedhin (2010)

$\beta 0$ is the constant intercept

$\beta 1, \beta 2, \beta 3, \beta 4$ and $\beta 5$ are the coefficients of the estimated relationship between loan repayment and the independent N variables.

Ls = Loan Size

Age = Age

Rp= Repayment Period

Sex = Gender dominance factor

Int= Interest Rate

μ = error term

3.2.1 Justification of Variables

The variables applied in this research were at some point used in various studies by other researchers in different countries and as such it made the researcher to drop some variables and picked some in order to match his study to the local Zimbabwean context. The researcher selected variables that appeared to have highly influenced repayment of loan with interest being the major variable.

3.2.1.1 Loan Size (Ls)

Loan size is hypothesized to have a negative relationship with loan repayment. In essence, the bigger the size of the loan ushered by the institution, the smaller the client's repayment rate Onyeagocha *et al* (2012). Hashad (2014) however believes that loan amount and repaying ability have a positive correlation thus MFIs gets to monitor the micro-projects more carefully for huge amounts and hence the repayment capability will be higher. For MFIs loan size is places in different categories taking values from $50 to $300 for the least category up to above $800 the highest category Onyeagocha *et al* (2012).

3.2.1.2 Age

Age of borrowers is expressed in years. It is a continuous variable in which the younger the age the higher may be his/her productivity, knowledge which may translate to higher repayment capabilities. Also the higher or the older the age the lower may be his/her productivity and this leads to loan defaults.

On the other way round, the older person may have a lot of experience on business, which may lead to successful loan repayment, and the younger one may have limited experience attributed to his age and this many lead to unsuccessful lon repayment Gembremedhin (2010). Hence, age contribution to successful loan repayment performance of the private borrowers cannot be predetermined.

3.2.1.3 Repayment Period (Rp)

This is the duration to which the total loan amount is expected to be repaid. Shorter repayment periods might result in the borrower not to gather enough monies to repay his or her loan. The repayment periods extends from below one month up to above 9 months for longer periods. Arguably longer repayment periods may be said to be detrimental to the borrower if they cannot obtain future loan facilities until the existing one is fully paid back. Hence both short and long term repayment periods can have negative effects on effective repayment of loan facilities. However if the repayment period is medium it is anticipated that the borrower will have an opportunity to repay his/her loan successfully Bekele *et.al* (2003)

3.2.1.4 Gender (Sex)

Sex of the borrower is a dummy variable 0 being for male and 1 for female. Various studies in MFIs have brought to light that most women are easily tempted to use their loan proceeds to better up their family welfares which in most cases will compromise their capability to repay back their loan facilities (Mayoux, 2011). Some authors also argue that advancing loans to women is an important step in empowering them and this instil in them a mantra of working hard and financial discipline, which is capable of leading to higher loan repayment rates Khandker *et.al* (1995). They went on to explain that women had higher loan repayment rates than that of men in the case of Grameen Bank where the MFI business originated from. Thus, women borrowers may have higher loan repayment rates. With this back ground of gender as a contributing factor on loan repayment and some authors discarding its significance, the researcher expects a positive sign.

3.2.1.5 Interest rate (Int)

Julien (2014) pointed out that interest rates on MFIs products differ across regions and also depends on the institutional framework of its service offering. Interest rate thus is postulated to have a significant dominance on the clients' ability to repay their loans and it is regarded as a continuous variable. As such it is a continuous variable with interest rates ranging from zero up to infinity and a negative sign is being expected from this research which means that loan repayment decreases as interest rates increase. Weinberg (2006) postulated that the obligations of repaying are affected by two main factors which include, the charged interest rates and the size of debt being owed. Some financial institutions even make use of the interest rates that a client is willing to pay as a screening technique in identifying those borrowers with a high repayment probability.

3.2.1.6 Error Term (μ)

It is the random error term which captures omitted but relevant variables in the model and it is important as it facilitates the obtaining of sound results through accounting for the omitted variables.

3.3 Data Types and Sources

The research data was obtained from both primary. 2016 data was used because that was the year before the interest rates ceilings were affected by the Central Bank.

3.4 Diagnostic Tests

For the purpose of testing the reliability and validity of the data used as well as the variables applied in this study, various diagnostic tests were carried out including multicolinearity and heteroskedasticity tests.

3.4.1 Multicolinearity test

Multicolinearity occurs when two or more independent variables have a relationship that is perfectly strong. Gujarati (2008) claims that multicolinearity causes estimation of coefficients to be no longer done with great accuracy which then affects the econometric model results. In order to ascertain if the explanatory variables have any correlation, a correlation matrix was used in this study so as to assess any needs of effecting changes to the used model.

H_0: the exogenous variables are related

H_1: there is no relationship

The rule of thumb states that the null hypothesis cross correlation matrix (R^2) must be less than 0.8, otherwise the researcher should remove some variables that have a linear relationship that is perfect, because there exist multicolinearity across exogenous variables.

3.4.2 Heteroskedasticity

When testing for Heteroskedasticity, the researcher used the Breusch-Pagan tests. And it was conducted under the null hypothesis of homoskedasticity in the residuals. The null hypothesis assumes that the errors are homoskedastic and independent of the regresses. The test shows whether the explanatory variables are able to explain the variations in the dependent variable.

H_0: There is Homoskedasticity

H_1: There is no homoscedasticity

If the p value of the chi2> 0.05 do not reject Ho and conclude that there is homoscedasticity.

3.4.3 Model specification test

There will be need to check if the model estimated is correctly specified and that is there are no omitted variables. The researcher will use the link test and a value greater than 0.05 is considered correctly specified. A model with a value less that 0.05 is considered insignificant since it shows the presence of omitted variables. The main hypothesis for the study is as follows:

H_0: Interest rates have a significant impact on loan repayments

H_1: Interest rates have no significant impact on loan repayments

3.5 Research Population

The purpose of this research is to gather information on the effect of interest rate on loan repayment in MFIs and therefore the targeted respondents are the MFIs personnel both top management and credit officers (loans officers) situated in Gweru. These are targeted since they are involved in the day today determination of the loan repayment activities within various MFIs.

3.5.1 Research Sample

For a sample to be a true representation of the entire population should constitute a proportional percentage of the whole population. The researcher tried to balance the size of the sample with the resources.The researcher applied Krejcie and Morgan (1970) table to determine the sample size and from the 27 active MFIs in Gweru (RBZ, 2016), a sample of 25 institutions were selected. A

minimum of two questionnaires were administered on every institution which totaled to 75 and of these 75 questionnaires 10 did not return and 7 were spoiled leaving only 58 questionnaires available for use. Schutt (1999) indicated that response rate below 60 % is unacceptable in a study and the research obtained a response rate of 77.3 which is acceptable.

3.6 Data Collection Methods and Instruments.

The researcher utilised primary sources to gather data. This was attained through utilization of questionnaires.

3.6.1 Primary Data

The researcher used primary data to obtain the answers required to satiate the study. Data from primary sources is raw data and it has not been processed as such it matches the objectives of the research enabling easier data analysis. Primary data also allows the researcher to gather the much needed information to satisfy the objectives of the study on the effect of interest rates on loan repayment in MFIs. It also allows the researcher to fulfil on the challenges that MFIs are facing. Primary data used in the study was obtained through the administering of questionnaires to different respondents.

3.6.1.1 Questionnaires

The questions assembled were inclusive of open ended and closed questions. Open-ended questions creates space for the respondents to prompt their opinions on the interest rates MFIs charge. Closed questions were also adopted providing limits as to what the researcher is anticipating from the respondents particularly on level of interests in relation to repayments. Questionnaires can be deemed as a viable manner to which information can be received as in most cases the respondents will be engaged thus they can get to attend them when no longer busy. Further-more, the use of questionnaires is also a cheap means of gathering data and also covers a wider range of respondents.

3.7 Data Validity and Reliability Tests

Data validity and reliability facilitates that the forwarded questions to the respondents are properly attended to as anticipated by the researcher. Some of the questions that resulted in an unfavourable alpha will be removed from the questionnaire sample for the betterment of the research questions and the attainment of the study's objectives.

3.8 Summary

The research stressed more on the research methodology that was used in the study. The explanatory and the descriptive research methodology were taken into consideration so as to measure and explain the variables that loan repayment in MFIs. The researcher went on to discuss the model specification that was adopted in order to suit the study. The various sources of data were incorporated and utilized in this study such as the primary data through the use of structured questionnaires. The various diagnostic tests which needed to be taken into consideration were discussed and the plan for data analysis and presentation were also given. This leading to the next chapter were results of the study will be presented and analyzed by the researcher.

CHAPTER 4: DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter presents, interprets and discusses the results of the data for the study. Results that answer the research questions and the hypothesis were presented according to the methodology stated in chapter three. Primary data collected using questionnaires was analysed using a Stata 13 and Microsoft excel. Validation of results was done through diagnostic tests such as multicollinearity, cronbatch alpha, model specification and heteroscedasticity. A logistic regression analysis was run. Findings of the study will be related to the results in previous literature. A summary of the entire points will conclude the chapter.

4.2 Descriptive Statistics

```
. sum LRp IntRate Rperiod Lnsize Sex Age
```

Variable	Obs	Mean	Std. Dev.	Min	Max
LRp	58	.5344828	.503166	0	1
IntRate	58	2.568966	.9753464	1	4
Rperiod	58	3.103448	1.50659	1	5
Lnsize	58	2.482759	1.158362	1	4
Sex	58	.5862069	.4968138	0	1
Age	58	3.068966	1.461339	1	5

4.3 Diagnostics Test Results

The following results were obtained after running a logistic regression model. The model was further tested for multicollinearity and heteroscedasticity.

4.3.1 Multicollinearity

Multicollinearity test was carried out to find out if there was existence of variables that have perfect collinear relationship of above or below 0.8 and -0.8 respectively. Such variables basing on the rule of thumb are rejected. Results from multicolinearity tests are as follows;

Table 4.1 Multicolinearity Test Results

Variable	LRp	Int	Rp	Ls	Sex	Age
LRp	1.0000					
Int	-0.2373	1.0000				
Rp	-0.5834	-0.0408	1.0000			
Ls	-0.7214	0.1098	0.6143	1.0000		
Sex	0.7599	-0.1211	-0.5043	-0.7138	1.0000	
Age	0.0683	-0.0157	-0.1467	0.0111	0.0642	1.0000

Source: Raw data

The above outcomes demonstrate that multicolinearity did not exist following all the relationship coefficients are ranging from -0.0408 which is the minimum to 0.7599 which is the highest. This shows that the effect of one independent variable on loan repayment is not traded off by whatever other variables, thus every one of the variables were held and utilized as a part of evaluating loan repayment.

4.3.2 Test for Heteroscedasticity

The test for heteroscedasticity is conducted to see whether there is constant variance between the regressors. The test is conducted under the null hypothesis (H_0) that there is a constant variance between the regressors against the alternative that constant variance across the regressors does not exist. Breusch-Pagan/Cook-Weisberg test for heteroscedasticity was used in this study to test for econometric problem. The results from the test are shown in table 4.2 below

Table 4.2: Breush-Pagan/Cook-Weisberg test for Heteroscedasticity

Chi2 (1)	0.16
Prob> chi2	0.6854

Source: Raw data

The results from the test above show that there is no constant variance between the independent variables since the probability of 0.6854 is greater than 0.05 showing the significance of the model.

4.3.3 Model Specification Test Results

There was need to check if the estimated model was correctly specified and if there were no omitted variables. The test results shows that the model was correctly specified basing on the rule of thumb since the F value was 0.1823 which is way above 0.05.

Table 4.3 Ramsey RESET Test Results

F(3,50)	1.68
Prob>F	0.1823

Source: Raw data

4.4 Results Presentation and Analysis

A logistic regression analysis was carried out to test the significance of the relationship between Loan repayment and five independent variables. The following results were obtained.

4.4.1 Logit Regression Results

Number of obs = 58 Pseudo R2 = 0.6553

Wald chi2 (5) = 40.21 Prob > chi2 = 0.0000

Log pseudo likelihood = -13.809709

Table 4.4 Summarized Regression results

LRp	Coef	Std. Err	Z value	P>|Z|
Int	-1.344601	.6723791	-2.20	0.046
Rp	-.7743946	.4617616	-2.08	0.094
Ls	-.9322103	.6152792	-1.52	0.130
Sex	3.180037	1.220334	2.61	0.009
Age	.0813666	.3942174	0.21	0.836
cons	6.133777	3.223718	1.90	0.057

Source: Raw data

The regression results yields to the equation that follows:

$$LRp = 6.133777 - 1.344601Int - 0.7743946Rp - 0.9322103LS + 3.180037Sex + 0.0813666Age$$

4.5 Interpretation of Regression Results

The logistic regression results showed a Pseudo R^2 of 0.6553. This means that the variables, (Int, Rp, Ls, Sex and Age) explain about 65.53% of the variations in relation to loan repayment and the other omitted factors account for the remaining 34.47%.

4.5.1 Interest rate (Int)

Interest rates has a coefficient of -1.344601 showing it is significant though has an inverse relationship with the endogenous variable, from the expectations stated in chapter three, it was anticipated to have a negative sign. Weinberg (2006) performed a cross sectional analysis on measuring the impact of interest rates on loan repayment obtained a negative relationship. Moreso, Kashuliza (1993) carried out a regression model to analyze the factors affecting loan repayment and the findings showed that there is a negative relationship between high interest rates and loan repayment. This result implied that an increase in interest rate would reduce the probability of loan repayment by 1.3446. The possible justification for this variable sign is that, when interest rates increases the cost of borrowing also increases hence, in order to reduce income burden customers may opt to default.

4.5.2 Repayment period (Rp)

Loan repayment period yielded a coefficient of -0.7743946. It is significant at 5% confidence interval. The prior anticipation of the variable sign was positive although it turned out to be a negative sign which could be as a result of the differences in the economic conditions where the study was conducted. This however confirmed with the result obtained by Onyeagocha *et al* (2012), who found out that the higher the repayment period on a facility issued, the lesser the chances for a higher loan repayment. The results obtained show that an increase in repayment period could cause reduced repayment by the probability of 0.774. The reason for this result might be due to diversion of core purpose by borrowers and also that of borrowers becoming reluctant as the period increases.

4.5.3 Sex (Sex)

Gender factor was also found to be significant at 5 % confidence interval with a coefficient of 3.1800. In the previous chapter, the researcher expected the sex variable to be positively correlated to loan repayment. Being male or female has an effect on the repayment of a loan facility by an elasticity of 0.65758 units resulting in increased repayment level. This shows that woman have a high repayment as compared to their male counter parts.

4.5.4 Loan size and Age (Ls and Age)

Both variables loan size and age were found to be statistically insignificant. Prior to expectation from the previous chapter, the researcher expected loan size to have a positive relationship with with loan repayment however, it came out with a negative sign. Conversely, Roslan and Zaini, (2009) in their study pointed out that the variable loan size has a significant and established a positive correlation between loan repayment and the stipulated repayment period. Also age was expected to have a positive sign, nevertheless the outcome was found to be a negative.

4.6 Odds Ratio

This is a measure of the constant effect of a unit change in a predictor X on the likelihood that one outcome will occur. In this case they measure the constant effect of a unit change in the independent variables on the outcome of loan repayment. Table 4.6 below shows the obtained results

Table 4.6 Odds Ratios

Variables	Odds Ratio	Std. Err	Z Value	P > |z|
Int	.6606436	.1752513	-2.20	0.046
Rp	.5609828	.2128642	-2.08	0.094
Ls	.3936826	.2422247	-1.52	0.130
Sex	24.04765	29.34616	2.61	0.009
Age	1.084769	.4276346	0.21	0.836
Cons	461.1748	1486.698	1.90	0.057

Psuedo R2=0.6553

Source: Raw data

Interpretation of Odds Ratios

4.6.1 Interest rates (Int)

Interest rate was found to be significant and obtained odds ratio of 0.661 meaning that as interest rates increase, it is more likely to reduce chances for loan repayment by 0.661. This echoes the study conducted by Gembremedhin (2010) which concluded the two variables had a perfect negative relationship.

4.6.2 Repayment period (Rp)

Loan repayment period had an odds ratio figure of 0.561, meaning period size is more likely to reduce repayment by the of 0.561.

4.6.3 Sex

The results showed an odds ratio of 24.04765 which implies that sex is more likely to increase repayment by almost 24 times. Women are more likely to have higher repayment capabilities as compared to their male counterparts. This concurs with the study findings of Mayoux (2011)

4.6.4 Loan size and Age

Loan size and age were both insignificant even though age had an odds ratio of 1.085 which basing on the ratio alone without considering the z value it will be significant. Loan size had the least ratio of 0.39368 which translates to minimal effect on loan repayment .

4.7 Marginal effects

Marginal effects reflect the change in the probability of loan repayment given a unit change in an independent variable say interest rate. The following table illustrates the marginal effects on loan repayment.

Table 4.8: Marginal effects after Logit

Variable	dy/dx	Std. Err	z	P>|z|
Int	-.3356697	.16838	-1.99	0.046
Rp	-.1933218	.11512	-1.68	0.093
Ls	-.2327193	.15403	-1.51	0.131
Sex	.6575811	.16739	3.93	0.000
Age	.0203126	.09845	0.21	0.837

Source: Raw data

(*) dy/dx is for discrete change of dummy variable from 0 to 1

y = Pr (LRp) (predict)

= .51890773

4.7.1 Marginal effects of Interest rates

Marginal effect results for interest rates was -0.33567 which implies that a unit change in interest rate will cause a decrease in probability of loan repayment by 0.33567. Interest rates have a negative impact in the repayment of loans thus as interest, which is the cost of borrowing increases, the repayment rate falls as alluded to by Gembremedhin (2010) and Julien (2014)

4.7.2 Marginal effects of Repayment period

The results on repayment period are -0.19332 which indicated that a unit increase of 0.1933 in the period size will imply a reduction in probability of loan repayment. Bekele *et.al* (2003) affirmed the same in their study as the more the loan advance is stretched over long periods, the lesser the chances of getting it repaid on time.

4.7.3 Marginal effects of Sex

A marginal effect of 0.657811 is shown on the results of sex which implies that gender positively impacts the loan repayment by 65.78%. Abafita (2003) and Mayoux (2011) in their respective studies concluded on findings that sex is a very significant variable which affects loan repayment.

4.7.4 Marginal effects of loan size

The results showed that the marginal effect of loan size is -0.232719 which shows that an increase in the loan size will result in a decrease of the loan repayment which aligns with the study findings of Onyeagocha *et al* (2012) which concluded that indeed huge loan amounts reduce the repayment capacity of borrowers.

4.7.5 Marginal effects of Age

From the results of the marginal effects, age has a marginal effect of 0.0203126 which shows a minimal positive effect on loan repayment. The results showed that the older the customer is, the more the chances of getting their loan facility paid up even though the impact is very minimal. Abafita (2003) and Gembremedhin (2010) in their respective studies also concluded that age has a significant positive relationship with loan repayment which was however different from this case as the relationship is indeed positive but not significant. This could be as a result of the differences in the countries where the studies were conducted.

4.8 Conclusion

The chapter looked at the data presentation and analysis of the factors that influence the repayment of loans in MFIs. It was observed that various factors affects loan repayments in various MFIs. The results from the regression analysis highlighted that interest rates, loan size and gender are significant to the repayment of loans in MFIs. From the regression model, it was noted that age has a positive relationship to loan repayment though it is statistically insignificant. Sex was statistically significant at 5% and it also has a positive relationship with the loan repayment. The next chapter will look at the summary, recommendations and conclusions.

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents discussion of the findings, conclusions and recommendations and further research on the problem. The chapter begins with a summary of the study, followed by discussions on major findings and draws conclusions based on the same results presented on previous chapter. It also provides some recommendations and suggestions for further studies.

5.2 Summary

The principal aim for this study was to analyze the effects of interest rate on loan repayments in Gweru operating MFIs. The first section of the study presented trends of interest rates as well as that of repayment in the previous year. The research further used prior literature work to understand numerous factors that are likely to impact on on repayment and this formed the basis for formulating an econometric model, which was later used for statistical analysis. A statistical package STATA 13 was used to analyze data and the following results were obtained; interest rates are strongly related to repayment of loans in MFIs as well as gender and loan size. The study revealed that customers are more likely to go into default if the borrowing costs increase which includes the interest rates. Also the the research brought it out that age has no impact on loan repayment which was the opposite to the findings of Zekasta, (2003).

5.3 Conclusions

The main aim of this study was to analyze the impact of interest rates on loan repayment in MFIs. Although some explanatory variables were included so as to reach to a sound conclusion on the the true determining factors of loan repayment in Zimbabwean MFIs. It was useful to engage empirical examination to obtain the nature of the relationship between loan repayment and various variables interest rates being the main of the all. The establishment of these important variables will foster and better the repayment of loans in local MFIs. Benefits such as improved loan book performance as well as poverty eradication through charging minimal lending rates can be derived which is a plus both to the community and the financial institution. The findings of this study conform to that Onyeagocha *et al*. (2012) who established determinants of loan repayment in MFIs. Other authors such as Julien (2014) admitted that interest rates are of paramount importance in fostering higher loan repayments in MFIs. The study then concluded that apart from interest

rates, loan size as well as the gender factor is important in facilitating higher repayment rates in MFIs. Even though age of the borrower as well as the repayment period were found to be insignificant in determining loan repayments in Zimbabwean MFIs, this does not mean that it holds everywhere else as Gembremedhin (2010) in his research which was conducted in MFIs in Ethiopia reviled findings that contained both variables as important factors in determining loan repayment. The regression regression model was from Onyeagocha *et al* in (2012), with some modifications and adjustments effected to best suit the Zimbabwean context. Apparently high interest rates affects loan performance in local MFIs though various factors also adds to the same and these include the nature of products as quit a number of players are embracing the salary based loans which tends to yield higher repayment rates. Interest caps which were effected early this year by the central bank appeared as a good move as far as boasting repayments and minimizing bad loans within the financial institutions. Also it comes with a significant chunk of benefits to the customers, the financial institution and the whole financial system at large.

5.4 Policy Recommendations

After the reviewing of literature and the findings from the data collected the researcher came up with the following recommendations as a way to aid on what can be done by microfinance institutions concerning the area of study.

5.4.1 Interest rate

From the regression results presented in the previous chapter, interest rate is statistically significant and it bears the negative expected sign. An increase in interest rate will result in a decrease in the loan repayment. With this background, MFIs ought to charge a reasonable premium which borrowers pay and as a result loan repayment is enhanced. Also basing on the findings, the regulator needs to continuously monitor the interest rate capped in the market as some players may continue to exploit customers at the expense of NPL. MFIs have been very instrumental in the financial inclusion drive as well as poverty alleviation within the Zimbabwean community at large and as such ushering minimal interest rates will go a long way in attaining these important objectives. So in a nutshell, the regulators need to keep interest rates on check at all times in order to foster a sound financial system.

5.4.2 Repayment period

Loan repayment period is also statistically significant and again has an anticipated negative sign which entails that as the period to payback increases, the lesser the chances of repayment. As such MFI's need to appreciate the danger in lending monies for longer time frames and engineer loan products that do not extend much into the future as this can compromise their operations. In as much as the regulator (RBZ) encourages financial institutions to administer productive lending against consumption lending which most MFIs are practicing. This comes with various limitations as the longer the repayment period in such deteriorating economic conditions, the lesser the certainty and chances of getting the loan repaid. In a nutshell, both the regulators and the financial institutions need to strike a balance between lending long and maintaining a high performing loan book.

5.4.3 Gender

The regression results showed that sex is significant and it also bears the expected positive sign meaning women contain high repaying ability. As such local MFIs need to engineer as many women targeted products as possible since this does not compromise the loan recovery for these MFIs and at the same time it is a sure tool of women empowerment. Policy makers as well as financial institutions should strive to engineer various product offerings directed to woman as this has very limited effects on loan repayment.

5.5 Suggestions for Further Studies

The study focused on the effect of interest rates in microfinance institutions in Zimbabwe and was limited to those in Gweru. For further study one may consider focusing on MFIs outside Gweru and also even to focus on commercial banks. The study also recommends further studies on other factors that affect MFIs' products apart from interest rates.

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APPENDICES

APPENDIX A: QUESTIONNAIRE

KINDLY COMPLETE IN THE SPACES PROVIDED OR TICK IN THE BOXES THAT CORRESPOND TO YOUR ANSWER OPTION.

1. Which age category shows high repayment capabilities?

☐ Below 24 years ☐ 25-30years ☐ 31-40years ☐ 36-46years ☐ above 50years

2. Of your clientele base what sex faces challenges in repayment?

☐ Male ☐ Female

3. Marital Status

☐ Single ☐ Married ☐ Divorced ☐ Widowed

4. What are the loan sizes do you offer your clients who repay their dues on time?

☐ $100-$300 ☐ $301-$500 ☐ $501-$800 ☐ above $800

5. What is the scheduled repayment period for your loan facilities which has high repayment rates?

Please tick where appropriate

	1	**2**	**3**	**4**	**5**
Below 1 month					
Above 1 month below 3months					
Above 3 months below 6months					

Above 6 months below 9months

Above 9 months

6. What interest rates has been your organisation charging in the previous year?

1 2 3 4

Below 12%

13% - 20%

21% - 25%

Above 26%

7. How long have you been working in the MFI?

☐ Less than a year ☐ above 1year below 3 years ☐ above 3 years

8. What is your highest level of education?

☐ O Level ☐ A Level ☐ 1st Degree ☐ 2nd Degree

9. How would you rate the previous year repayment of your institution?

☐ **High** ☐ **Low**

Thank you!!!

Raw Data

n	LRp	Int	Rp	Ls	Sex	Age
1	1	3	2	2	1	5
2	1	2	1	1	1	1
3	0	1	5	3	0	2
4	1	4	3	2	1	1
5	0	3	5	2	1	2
6	0	2	1	4	0	5
7	1	1	5	4	1	5
8	0	3	2	4	0	1
9	1	2	4	2	1	3
10	0	4	2	1	1	5
11	1	2	1	2	1	2
12	0	3	4	4	0	1
13	1	4	2	2	1	4
14	1	3	1	2	1	1
15	0	2	5	4	1	3
16	1	2	4	1	1	1
17	0	3	2	2	1	4
18	0	1	5	4	0	5
19	1	2	2	2	1	2
20	0	2	3	1	0	1
21	0	3	4	3	0	4
22	1	4	1	1	1	3
23	1	2	3	2	1	3
24	0	3	5	4	0	4
25	1	2	3	2	1	5

26	1	2	4	3	0	4
27	0	3	3	4	0	4
28	1	3	2	1	1	1
29	1	2	4	2	1	5
30	0	1	5	4	0	2
31	1	2	1	1	1	3
32	0	3	5	3	0	4
33	1	2	5	1	1	1
34	1	3	2	2	0	4
35	0	4	4	4	0	4
36	0	3	5	4	0	1
37	1	2	2	1	1	5
38	0	4	5	4	0	2
39	0	3	4	3	0	3
40	1	2	1	2	1	4
41	1	4	1	1	1	5
42	0	2	5	4	0	4
43	1	1	2	1	1	5
44	0	4	5	4	0	1
45	1	3	1	2	1	4
46	1	1	2	2	1	1
47	0	1	4	4	0	2
48	1	2	4	2	1	3
49	0	4	5	4	1	3
50	1	2	2	1	1	3
51	0	3	3	3	0	5
52	0	4	4	4	0	4
53	1	4	1	2	1	4

54	0	3	5	3	0	1
55	1	2	2	1	1	2
56	0	4	4	3	0	3
57	1	1	2	1	1	5
58	1	2	1	2	1	3

APPENDIX B: REGRESSION RESULTS

LOGISTIC RESULTS

```
. logit LRp IntRate Rperiod Lnsize Sex Age

Iteration 0:   log likelihood = -40.064496
Iteration 1:   log likelihood = -14.727227
Iteration 2:   log likelihood = -13.851199
Iteration 3:   log likelihood = -13.809794
Iteration 4:   log likelihood = -13.809709
Iteration 5:   log likelihood = -13.809709

Logistic regression                                     Number of obs   =         58
                                                        LR chi2(5)      =      52.51
                                                        Prob > chi2     =     0.0000
Log likelihood = -13.809709                             Pseudo R2       =     0.6553

------------------------------------------------------------------------------
         LRp |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     IntRate |  -1.344601   .6723791    -2.20   0.046     -2.66244   -.0267626
     Rperiod |  -.7743946   .4617616    -2.08   0.094    -2.279431    .1306416
      Lnsize |  -.9322103   .6152792    -1.52   0.130    -2.138135    .2737148
         Sex |   3.180037   1.220334     2.61   0.009      .788227    5.571848
         Age |   .0813666   .3942174     0.21   0.836    -.6912853    .8540186
       _cons |   6.133777   3.223718     1.90   0.057    -.1845935    12.45215
------------------------------------------------------------------------------
```

APPENDIX C: TEST

Multicollinearity Tests

```
. corr
(obs=58)
```

	n	LRp	IntRate	Rperiod	Lnsize	Sex	Age
n	1.0000						
LRp	0.0114	1.0000					
IntRate	0.0612	-0.2373	1.0000				
Rperiod	0.0062	-0.5834	-0.0408	1.0000			
Lnsize	-0.0081	-0.7214	0.1098	0.6143	1.0000		
Sex	-0.0983	0.7599	-0.1211	-0.5043	-0.7138	1.0000	

Heteroskedasticity Test

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of LRp

         chi2(1)      =     0.16
         Prob > chi2  =   0.6854
```

Model specification

```
. ovtest

Ramsey RESET test using powers of the fitted values of LRp
       Ho:  model has no omitted variables
                  F(3, 50) =      1.68
                  Prob > F =      0.1823
```

Cronbatch Alpha Test

```
. alpha LRp IntRate Rperiod Lnsize Sex Age

Test scale = mean(unstandardized items)
Reversed items:  IntRate Rperiod Lnsize

Average interitem covariance:     .2383747
Number of items in the scale:            6
Scale reliability coefficient:      0.6012
```

APPENDIX D

ODDS RATIO

```
. logit LRp IntRate Rperiod Lnsize Sex Age, or

Iteration 0:   log likelihood = -40.064496
Iteration 1:   log likelihood = -14.727227
Iteration 2:   log likelihood = -13.851199
Iteration 3:   log likelihood = -13.809794
Iteration 4:   log likelihood = -13.809709
Iteration 5:   log likelihood = -13.809709

Logistic regression                                     Number of obs   =         58
                                                        LR chi2(5)      =      52.51
                                                        Prob > chi2     =     0.0000
Log likelihood = -13.809709                             Pseudo R2       =     0.6553

------------------------------------------------------------------------------
         LRp | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     IntRate |   .6606436   .1752513    -2.20   0.046     .0697777    .9735924
     Rperiod |   .5609828   .2128642    -2.08   0.094     .1864801    1.139559
      Lnsize |   .3936826   .2422247    -1.52   0.130     .1178744     1.31484
         Sex |   24.04765   29.34616     2.61   0.009     2.199493    262.9194
         Age |   1.084769   .4276346     0.21   0.836     .5009318    2.349068
       _cons |   461.1748   1486.698     1.90   0.057     .8314422    255799.2
------------------------------------------------------------------------------
```

Marginal Effects

```
. mfx

Marginal effects after logit
      y  = Pr(LRp) (predict)
         =  .51890773
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
 IntRate |  -.3356697      .16838   -1.99   0.046  -.665685 -.005654   2.56897
 Rperiod |  -.1933218      .11512   -1.68   0.093  -.418961  .032317   3.10345
  Lnsize |  -.2327193      .15403   -1.51   0.131  -.534605  .069166   2.48276
     Sex*|   .6575811      .16739    3.93   0.000   .329502  .985661   .586207
     Age |   .0203126      .09845    0.21   0.837  -.172642  .213267   3.06897
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

APPENDIX E: DESCRIPTIVE STATISTICS

```
. sum LRp IntRate Rperiod Lnsize Sex Age

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         LRp |        58    .5344828     .503166          0          1
     IntRate |        58    2.568966    .9753464          1          4
     Rperiod |        58    3.103448     1.50659          1          5
      Lnsize |        58    2.482759    1.158362          1          4
         Sex |        58    .5862069    .4968138          0          1
-------------+--------------------------------------------------------
         Age |        58    3.068966    1.461339          1          5


. tab LRp IntRate

           |                Int Rate
       LRp |         1          2          3          4 |     Total
-----------+--------------------------------------------+----------
         0 |         4          4         12          7 |        27
         1 |         4         17          5          5 |        31
-----------+--------------------------------------------+----------
     Total |         8         21         17         12 |        58


. tab LRp Rperiod

           |                    Rperiod
       LRp |         1          2          3          4          5 |     Total
-----------+---------------------------------------------------------+----------
         0 |         1          3          3          7         13 |        27
         1 |        10         11          3          5          2 |        31
-----------+---------------------------------------------------------+----------
     Total |        11         14          6         12         15 |        58


. tab LRp Lnsize

           |                Ln size
       LRp |         1          2          3          4 |     Total
-----------+--------------------------------------------+----------
         0 |         2          2          7         16 |        27
         1 |        12         17          1          1 |        31
-----------+--------------------------------------------+----------
     Total |        14         19          8         17 |        58
```

```
. tab LRp Sex

           |          Sex
       LRp |         0          1 |     Total
-----------+----------------------+----------
         0 |        22          5 |        27
         1 |         2         29 |        31
-----------+----------------------+----------
     Total |        24         34 |        58
```

```
. tab LRp Age

           |                    Age
       LRp |         1          2          3          4          5 |     Total
-----------+-------------------------------------------------------+----------
         0 |         6          5          4          8          4 |        27
         1 |         7          3          7          6          8 |        31
-----------+-------------------------------------------------------+----------
     Total |        13          8         11         14         12 |        58
```