

**Factors Affecting Loan Repayment Performance of Borrowers  
of Microfinance institutions in Case of Southwest Oromia,  
Jimma Zone**

*A Thesis Submitted to the School of Graduate Studies of  
Jimma University in Partial Fulfillment of the Requirements  
for the Award of the Degree of Master Science in Accounting  
and Finance*



**Jimma University**  
**College of Business and Economic**  
**Department of Accounting and Finance**

**July 2020**  
**Jimma, Ethiopia**

# **Factors Affecting Loan Repayment Performance of Borrowers of Microfinance institutions in Case of Southwest Oromia, Jimma Zone**

**By: Mubarik Abajihad**

*Under the Supervision of*  
**Deresse Mersha (PHD)**

**And**

**Mathewos W/Mariam (MSC)**



**A Thesis Submitted to the School of Graduate Studies of Jimma University in Partial Fulfillment of the Requirements for the Award of the Degree of Master Science in Accounting and Finance.**

**Jimma University**

**College of Business & Economics**

**Department of Accounting and Finance**

**July 2020**

**Jimma, Ethiopia**

## **Declaration**

I declare that the research Report entitled “**Factors Affecting Loan Repayment Performance of Borrowers of Microfinance Institutions in Southwest Oromia, Jimma zone**” submitted to Research and Postgraduate Studies’ Office of Business and Economics College is original and it has not submitted previously in part or full to any university.

Mubarik Abajihad

\_\_\_\_\_

Date: \_\_\_\_\_

## Certificate

We certify that the research report entitled “Factors Affecting Loan Repayment Performance of Borrowers of Microfinance Institutions in Southwest Oromia” was done by Mubarik A/jihad for the partial fulfillment of Master’s Degree under our Supervision.

---

---

(Main Advisor)

---

---

(Co-Advisor)

## **Abstract**

*This study was conducted in Jimma zone southwest Oromia regional state, Ethiopia. The objective of this study was to examine the factors affecting borrowers of microfinance institutions loan repayment, examining borrower's character, the lenders institutions, evaluating loan characters and assessing the effect of the socio economics on borrowers, using primary data collected through structured questionnaire. The study employed explanatory research designed and quantitative approach. Adopted multistage sampling procedure and select Oromia credit saving and share company and Harbu microfinance institution proportionally from three microfinance institutions in Jimma zone then 196 respondents selected from both defaulters and defaulters by non-proportionate stratified sampling. The collected data were analyzed by employing descriptive statistics and binary logistic regression. The results of the model shows education level , loan type, other source of income, follow up, awareness creation, purpose of borrowing and income from activity by loan positively affect loan repayment performance of borrower. Also loan diversions; interest rate, market availability and payback period are negatively affects loan repayment performance of borrower. However, sex, age, marital status, dependent family sizes, amounts of loan extended and lender microfinance institution were found insignificant in the model. The study recommends that microfinance institutions give special consideration for educational level of borrowers, type of loan, have knowledge about borrower's other source of income, purpose of borrowing and market availability. Where determining the great covenants payback period, means that is similar with income generated from activity on purpose of borrowing. Also consider chargeable amounts of interest charge on loan and provide awareness creation or training that improve to generate more income from the purpose of borrowing rather than diverted for others purpose and follow-ups with reminders them to pay their loan on due date recommended as probably prevent default rate.*

**Keywords:** *Borrowers, Loan repayment performance, Microfinance institutions, cross-sectional data and binary logistic regression model.*

## **Acknowledgements**

These acknowledgements attempt to thank people who in some way supported, guided and encouraged me along the way to completing this thesis. I would like to express my sincere gratitude to the following people. Without their assistance, encouragement, suggestion and commitment this work would not have been a reality. Firstly, I would like to express sincere gratitude and appreciation to my main advisor: - Deresse Mersha (PhD) and co-advisor: - Mathewos W/Mariam (M.Sc.) for their great support, academic advice, discussions and suggestions. Sincere gratitude and appreciation goes to all professionals from microfinance intuitions and borrowers who have the roles in this research. At large, a very special thanks to my family, for all their sacrifice, patience, love and support throughout my studies.

## Table of Contents

Declaration.....	I
Certificate.....	II
Abstract.....	III
Acknowledgements.....	IV
Table of Contents.....	V
List of Tables .....	VII
List of Figures.....	VIII
ABBREVIATIONS .....	IX
CHAPTER ONE.....	1
1.1 Back ground of the study.....	1
1.2. Statement of the problem.....	3
1.3. Objective of the study.....	5
1.3.1. General objective of the study.....	5
1.3.2. Specific objective of the study.....	5
1.4. Hypothesis Test.....	5
1.5. Significance of the Study.....	6
1.6. Scope and limitation of the Study.....	6
1.6.1. Scope of the study.....	6
1.6.2. Limitation of the study.....	7
1.7. Organization of paper .....	7
CHAPTER TWO .....	8
LITERATURE REVIEW .....	8
2.1. Theoretical Review .....	8
2.1.1. Definition of Loan Repayment .....	8
2.1.2. Definition and role of microfinance institutions .....	8
2.2 Theoretical arguments on loan default problem .....	8
2.3. Lending methods of microfinance institutions.....	9
2.3.1. Individual Based Lending.....	9
2.3.2. Group Based Lending .....	10
2.4. Empirical Review.....	10
2.4.1 Empirical studies of other countries.....	10
2.4.2 Empirical studies in Ethiopia .....	14
2.5 Knowledge and literature gaps.....	19
2.6. Conceptual framework.....	19

CHAPTER THREE .....	21
RESEARCH METHODOLOGY .....	21
3.1. Research Design.....	21
3.2 Source of data and Methods of data collection .....	22
3.3 Target Population and Sampling Techniques .....	22
3.4 Method of Data Analysis and Presentation.....	24
CHAPTER FOUR.....	30
RESULT AND DISCUSSION .....	30
Introduction.....	30
4.1. Descriptive analysis .....	30
4.1.1. Borrowers characteristic factors of the sampled respondents .....	31
4.1.2. Lenders characteristic factors of the sampled respondents.....	36
4.1.3. Loan characteristics factors of the sampled respondents.....	39
4.2 The Econometric model tests, results and analysis.....	43
4.2.1. Assumptions of Logistic Regression.....	43
4.2.1.2. Multicollinearity Test.....	43
4.2.1.3 The Goodness-of-Fit Model.....	44
4.2.2 Model Output and Hypothesis test results .....	45
4.2.2.1 Model Output .....	45
4.2.2.2 Hypothesis test result .....	46
4.2.2.3 Binary Logistic Regression Results .....	47
4.3. Interpretation of the model results .....	50
4.3.1. The borrowers' characteristics of respondents that affecting repayment performance.....	50
4.3.2. Lender characteristics of respondents that affecting repayment performance.....	51
4.3.3. Loan characteristics of respondents that affecting repayment performance.....	52
CHAPTER FIVE .....	54
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	54
5.1. Summary .....	54
5.2. Conclusions.....	54
5.3. Recommendation .....	57
5.4 Implication for Future researches .....	58
Reference .....	59
Appendix, A.....	62
Appendix, B.....	69
Appendix: C.....	70



## **List of Tables**

Table 1 Variables and measurements.....	28
Table 2 Loan repayment performances with sex of the samples respondents. ....	31
Table 3 Loan repayment performances with age of the samples respondents. ....	32
Table 4 Loan repayment performance with marital status.....	32
Table 5 Loan repayment performances with loan diversion.....	35
Table 6 Loan repayment performance with Purpose of borrowing .....	35
Table 7 Follow up with Loan repayment Cross tabulation.....	36
Table 8 Loan repayment performance with Interest Rate Cross tabulation.....	37
Table 9 Loan repayment performance with Awareness creation.....	37
Table 10 Loan repayment performance with loan type .....	39
Table 11 Loan repayment performance within Payback period .....	39
Table 12 Loan repayment performance within amount of loan extends.....	40
Table 13 Loan repayment performance of borrower with market availability .....	41
Table 14 Loan repayment performance with other sources of income .....	42
Table 15 Loan repayment performance within income from activities by loan of the samples respondents .....	42
Table 16 Hosmer and Lemeshow Test.....	44
Table 17 Omnibus Tests of Model Coefficients .....	44
Table 18 Model Summary .....	45
Table 19 Hypothesis test result factors affecting loan repayment performances of borrowers .....	46
Table 20 Summary of variables in the equation .....	48

## **List of Figures**

Figure 1	Conceptual relationships among factors affect performances borrowers of MFIs. ....	20
Figure 2	Loan repayment performances within educational level of the samples respondents. ....	33
Figure 3	Dependents family size with loan repayment of respondents .....	34
Figure 4	Loan repayment with Lender institution of the samples respondents. ....	38

## ABBREVIATIONS

LR.....	Likelihood Ratio
LRP .....	Loan repayment performance
LPM .....	Logit probit model
MFI .....	Microfinance institutions
NBE.....	National Bank of Ethiopia
OCSSCO.....	Oromia credit and saving Share Company
SPSS .....	Statistical Package for Social Sciences

# CHAPTER ONE

## INTRODUCTION

### 1.1 Back ground of the study

Ethiopian is one of the developing countries and the socio-economic situation characterized by low income, microfinance institutions have emerged as a financial institution with the aim of formal commercial banks. The microfinance institutions provide small size of loans, saving, insurance services, money transfer to the poor society who are not get this service from other financial institution due to lack of collateral requirements (Negese, 2014).

The objective of microfinance institution as development organizations is to serve the financial needs of un-served or underserved markets as means of meeting development objectives to reducing poverty by lending money and helps to reduce unemployment other disadvantaged population groups, and encourage the development of new business (Bayeh, 2012).

Micro finances when disburse funds to the customers, they are expected to repay their loans in a specified period as agreed up on the loan agreement. The problems of loan repayments among the clients of microfinance institutions are measure of whether the loan are fully repaid amounts according to their agreement or not in each installment payment. Failure of timely collection of loan from clients is the problem area of microfinance institutions as this affects both the institutions and the clients in the sense that the institutions are unable to get back their loan and lending for new clients and that client's misuse loans and their business were no more effective (Nwachukwu,2014).

Microfinance through loan officers screen their clients in terms of their demographics, ability to pay and assets owned before disbursing the loans. The distributions loan to borrowers that combine proud microfinance principles with effective screening and monitoring strategies that are requests not based on physical collateral. Like other financial institutions the sustainability and continuity of the micro finances depends on the rates of loan repayment performance, which provides assurance on returns and income, since high repayment performance rate indicates promise microfinance's as better sustainability.

In addition, they explain to their borrowers about payment terms and conditions to controlling their loan in periods of interest rate, collateral and loan payment terms. This process is important to improve that the clients who are qualified for the loan receive it after understanding their obligations to ensure timely repayment. Whereas microfinance institutions put in place measures to ensure that loans distributed are collected in time (Makorere, 2014).

The repayment of clients, which directly depends on the effectiveness of the borrowers, mainly affects the achievement of microfinance activities in Ethiopia but clients create a big risk on repayment of both principal and interest amounts. The high loan repayment rate of borrowers is very important for microfinance institutions to make sure operated in futures sustainable basis of that microfinance institutions. When repayment performance is low rate, both borrowers and microfinance institutions would adversely affect. So, if the microfinance institutions are not available because of default problem, poor borrowers that who use these services are not served from banks will not getting the loan and suffer from poverty, which affects the development of the country as whole (Nawai, 2010).

The problem of loan defaulters reduces the lending capacity of a financial institution and denies new applicants access to credit by case of cash shortage problems augment in direct proportion to the increasing default problem. In other words, it disturbs the normal funds inflow and outflow lender institution has to keep staying in sustainable credit market. In order to maintain sustainability and objective of microfinance institutions examining factors affecting loan repayment of clients is important, because if borrowers do not repay the loan according to them agreements, then there may not be sufficient funds to ensure that the liquidity position of the microfinance institutions are maintained(Kebede.et.al,2016).

Micro financing institution in Jimma zone are one of major micro financing institutions of Ethiopia provide loan, saving, insurance services and money transfer to urban and rural poor who do not have access to services from other financial institutions likes as banks. However, to outreach large number of poorer, the defaulters have been challenging the institutions social as well as financial objectives by lack of returning larger amount of loan. Therefore, the objective of this study is to determine factors affecting loan repayment performance of borrowed from microfinance institutions.

## **1.2. Statement of the problem**

Microfinance institutions are important input for continuous development to filling the gap in the financial service sectors by providing funds. Therefore, many of microfinance institution are not sustainable and too dependent on subsidies. However, microfinance institutions should be sustainable and viable to make sure they can continually provide financing to borrowers without depending on donors and government. Accordingly, microfinance institutions supply loans mostly to urban and rural poor peoples who cannot afford collaterals to get loans from banks. Though these microfinance institutions are currently offering credit to the poor, they are facing a problem of loan repayment delay (defaulters) by clients. These problems are affecting both microfinance institution sustainable and borrowers to getting the service sustainable.

Sisay (2018) conducted a study on factors influencing loan repayment performance of micro and small enterprise financed by borrowers from Oromia credit and saving Share Company. The result shows that monitoring utilization other members in an enterprises, loan disbursement timeliness, repayment schedule suitability, repayment trend on monthly basis, repayment trend in irregular basis, supervision on monthly basis and training adequacy variables are found significantly affect loan repayment performance of borrowers.

Alemu (2018) studied on the determinants of loan repayment of micro and small enterprises in Jimma town, Ethiopia by using binary logistic regression model. From the explanatory variables result of sex and experience are positive and significantly affect loan repayment performance of micro and small enterprises. The following variable, inconvenience of loan payback period, lack of financial skill and planning are negatively and significantly affected loan repayment of enterprises. The remaining variables lack of marketing skills, follow up and supervision are positively and significantly influenced loan repayment of micro and small enterprises.

Similarly Kebede.et.al (2016) Conducted study on factors affecting loan repayment performance of small scale and his results indicate, education level and time laps between loan application and disbursement were positively and significant influencing borrowers on loan repayment performance. age, loan size, loan diversion, repayment period, number of dependents within and out of household, training, and supervision and advisory visits had influence negatively and significantly the borrowers loan repayment performance.

Secondary data gathered from lender institutions showed that there is an experience of considerable problems regarding with uncollectable loans according to shows on the data of Oromia credit and saving Share Company in the past five years loan repayment performance of borrowers.

Furthermore, the data overview from Oromia Credit and Savings Share Company in Jimma zone (2015-2019) shows the following rate by focusing on the defaulted amounts of last five years summarized as follows respectively 5.40%,4.95%,2.01%,2.38% and 6.38% or by amount 8,607,438.32, 8,607,438.32, 9,682,300.06, 11,515,407.61, and 33,250,820.48. From the five years of operations, that the default rate borrower of microfinance has been facing a severe decline in repayment recovery rates and it is increasing for the last two years. According to this report current year, report (2019) shows 6.38% loan default rate that is greater than 5% which is the national bank of Ethiopians minimum requirement for all financial institutions. These results indicated more than required percentage. However, failure of customers to repay their loans on time consist withdrawal number of active clients and affects the sustainability of the institutions.

According to the study conducted on the factors that affecting the loan repayment performance of microfinance institutions borrowers except (Sisay 2018)and (Geleta 2018) others an any authors is not analyzed successive past years loan repayment performance of borrowers in order to identify their loan repayment problem or not. To researcher knowledge, most of the researchers not considered external factors and institutional factory that affect loan repayment status of borrowers of microfinance institution during their investigations and no has conducted study on factory affecting loan repayment performance of borrowers by including all sectors except Kebede.et.al (2016). However, any one authors not included difference lender institution in order to identify the institutional character. In addition, as far as the researcher knowledge is concerned there are no similar studies conducted on factors affecting borrowers of microfinance institution on loan repayment performance in the study area. The causes of defaulter borrowers of microfinance institutions are different from region to region, zone to zone and from one microfinance to the other because of this reasons author including additional variables and conducted study on the factors affecting loan repayment performance of borrowers of microfinance institution.

### **1.3. Objective of the study**

#### **1.3.1. General objective of the study**

The main objective of this study is to determine factors affecting loan repayment performance among borrowers of microfinance institutions in Jimma zone, southwest Oromia.

#### **1.3.2. Specific objective of the study**

1. To examine borrowers characteristics that affecting them on loan repayment performance.
2. To assess factors arising from lenders characteristics affects borrowers of microfinance institution on loan repayment.
3. To investigate the loan characteristics affects loan repayment performance of borrower of microfinance institution.
4. To identify socio economic factors affects loan repayment performance of borrowers of microfinance institutions.

### **1.4. Hypothesis Test**

**H1:** Sex of the borrower significantly affecting loan repayment performance

**H2:** Age of borrower significantly affect loan repayment performance

**H3:** Marital Status significantly affecting loan repayment performance

**H4:** Educational level significantly affects loan repayment performance

**H5:** Dependent family sizes significantly affect loan repayment performance

**H6:** Purposes of borrowing significantly affect loan repayment performance

**H7:** Loan diversion rate significantly affect loan repayment performance

**H8:** Follow up significantly affect loan repayment Performance

**H9:** Interest rate significantly affects loan repayment performance

**H10:** Awareness creation significantly affects loan repayment performance

**H11:** Dummy institutions significantly affect loan repayment performance

**H12:** Loan types significantly affect loan repayment performance



**H13:** Payback period significantly affect loan repayment Performance

**H14:** Amount of loan extends significantly affect loan repayment Performance

**H15:** Other sources of income significantly affect loan repayment performance

**H16:** Market availability significantly affects loan repayment performance

**H17:** Income from activities financed by loan significantly affects loan repayment performance

## **1.5. Significance of the Study**

The significance of this study is provide information that enable effective measure the customers beneficiary of microfinance institutions as their objective or not. The micro finance institutions which are operating specifically in Oromia region have engage to providing lending services and other financial schemes to the ultimate low income society. The receiving of lending amount full on time is the key success for the micro financial institutions to provide the service sustainable and affecting borrowers to getting loan for future periods. This requires the lending institutes to work on enhancing an efficient on loan repayment performance of the borrowers. In addition, make payment fully in time is one of the key successes that increase the beneficiary of borrowers and improves the loan repayment performance. The stakeholders benefiting from this study output is Oromia credit saving and share company, their borrowers and policy makers, to appreciate and understand where and how to channel efforts to minimize loan delay or defaulting.

## **1.6. Scope and limitation of the Study**

### **1.6.1. Scope of the study**

This study is conducted on south west Ethiopia in Jimma zone. The major aim of this study is to examine socio economic factors, borrower factors, loan factors and institutional factors that affecting loan repayment beneficiary that who served from formal credit sources. The target population samples of this study are customers of microfinance institutions selected branch of 2019. Used descriptive statistics techniques and economic model to analyzing the primary data collected and gives the appropriated results.

### **1.6.2. Limitation of the study**

Though studying at full-fledged level of the defaulter's borrowers would have better result, due to finance constraints the researcher is limited to undertake the study in only four branches of microfinance institutions. To reduce the limitation the process of distributing and collecting questionnaire did with the help of additional human resource. The sample size is limited but taking more may give deep understanding on the effect of loan repayment on the performance of borrowers of microfinance institutions.

### **1.7. Organization of paper**

This paper structured in five main chapters. The second chapter presented the related literatures review. The third chapter deals with research method, population of the study, instrument of data collection and analysis. The fourth chapter deals with the result and discussion the paper. The fifth chapter forwarded conclusion and recommendation of the research.

# CHAPTER TWO

## LITERATURE REVIEW

### 2.1. Theoretical Review

#### 2.1.1. Definition of Loan Repayment

Loan defined as a type of debt instruments, which entails the redistribution of financial assets over time between the lender and the borrower according their agreement. It is also typically, the money which is expected to paid back in regular installments or partial repayments periodically that each installment being of the same amount (Savio, 2017). Additionally, success of loan repayment defined as the ability to repay the loan full as per the loan agreement and loan defaulting as the inability to repay the loan by either failing to complete the loan as per the loan agreement or neglect the loan.

#### 2.1.2. Definition and role of microfinance institutions

Different authors and organizations have defined Microfinance institutions in different ways. However, the meaning of the definitions is usually the same. Which means microfinance refers to the provision of financial services; primarily savings and credit to the poor and low-income households that do not have access to commercial banks service.

### 2.2 Theoretical arguments on loan default problem

A loan default occurs when a borrower fails to make a payment on time after an agreement reached between the lender and the borrower. It also occurs when the borrower does not comply with any other agreement made on the promissory note. Loan default is essential of two basic types. The first and the most common type occur when the debtor defaults on a payment of interest or principle. This might be because the debtor is either unable or unwilling to repay the debt. The second type of default occurs when the debtor violates any of the agreements made on the promissory note either purposely or unintentionally.

The loan may be either formal or informal one. When we think of small businesses in LDCs, the major source of finance so far is an informal sector. The probability of default of small-scale enterprises loan from informal sources is low because informal financial markets are much closer to their clients and potential clients, and through gossip and daily contact, they are much

more aware of their activities than a formal banker is, thus they know the risks they exposed. On the other hand, small-scale credit scheme from formal financial markets has experienced a high rate of default in many developing countries. Non-defaulters are those who repaid the loan in due date and the defaulters are those who did not repay the loan within the due date. The proper recovery of loan is not only a prerequisite for rapid expansion of microfinance service but also a question of life or death for any credit agency (Abebe, 2012).

Loan default is a tragedy because failing to implement appropriate lending strategies and credible policies often result in the demise of credit institutions. Default problems destroy lending capacity as the flow of repayment declines, transforming lenders into welfare, in the head of viable institutions. Loan defaults deny new applicants access to credit. In the context of third world lending programs, the cost of defaulting include not only the loss of future credit but also public embarrassment and the loss of social standing. It is advice that one should pay back a borrowed loan in the shortest time possible, as this will avoid him or her paying a lot of unnecessary money in the form of interest. One would borrow money in order to make money. There could be thousands of reasons people borrow money. For consumption, farming activities, cushioning the jolt of temporary shocks, asset buildings like buying a car, a home, to take a vacation.

### **2.3. Lending methods of microfinance institutions**

Lending methodologies may differ with respect to clients whether loans made to groups and individuals lending mode. The selection of lending methodology greatly influences product design, client selection, the way of application or approval process, and loan repayment monitoring and portfolio management activities of microfinance institutions. Lending methodology also effects the institutional structure and staff requirements, including training and compensation (Wood, 2013).

#### **2.3.1. Individual Based Lending**

Individual based lending requires greater honest on analysis of clients and their cash flows it times physical collateral and frequent close contact with clients during the term of the loan approvals and amounts. Based on an applicant's eligibility and debt capacity, which is in turn are dependents number of factors, including personal and business characteristics, age, gender, sources, amount of income, age of business, cash flow, and available collateral (Wood, 2013).

### **2.3.2. Group Based Lending**

Group based lending is one of the approaches of lending small amounts of money to a large number of clients that organized by group who cannot offer collateral. The size of the group can vary, but most of the time groups have between 4 to 8 members. The group selection is one of the factors that influence the member's loan repayment activities.

According to Nawai (2010) group-based borrowers has to form a group before applying loans because they are responsible to all of their members. If one member fails to pay the loan, the others will be responsible to pay the loan otherwise; they would deny access for the next loans.

Group lending is an approach of lending small amount of money to a large number of borrowers who cannot offer collateral. Group members are jointly accountable for the repayment of each other loans through peer pressure. The entire group members would disqualify and will not be eligible for further loans, even if one member of the group becomes a defaulter. The size of the group can vary, but most groups have between three to eight members, the group self-selects its members before acquiring a loan.

## **2.4. Empirical Review**

The empirical related literatures tried to review several studies that conducted in Ethiopia and others country by different researchers on loan repayment performance of clients of microfinance institutions and summarized as follows.

### **2.4.1 Empirical studies of other countries**

Several studies has conducted in different countries regarding determinants that affect loan repayment performance and some of them can be reviewed and summarized as follows:

Determinants of loan repayment performance of fishermen on Ghana employed multiple regression analysis in their study. Their results revealed that low level of education, lack of alternative income generating activity, cumbersome loan processing procedures, they are likely to have high loan default. The study identified fishing income, amount borrowed and size of loan invested into fishing as significant predictors of loan repayment (Acquah and Addo, 2011).

Mamun (2011) conduct the study on examining the critical factors affecting the repayment of microcredit provided by Amanah Ikhtiar Malaysia. The researcher employs a cross sectional design with stratified random sampling method to examine how common household factors affect repayment performance. According to the finding household income, number of gainfully employed members, and number of sources of income significant model fit and negative linear relationship between repayments.

Munene (2013) in his study of factors influencing loan repayment default in microfinance Institutions: The experience of Imenti North district, revealed that there was significant relationship between the type of business, age of the business, number of employees, business profits and loan repayment default. There is strong link between technical training for loan beneficiaries and the performance of entrepreneurial businesses among the remote communities. The study conducted on Microfinance institutions in Kenya to establish the causes of repayment defaults in Imenti North district, Kenya using a descriptive survey design by incorporating 400 respondents of individual microfinance loan beneficiaries and microfinance institution officials using census and cluster sampling procedures for micro finance institutions officers and loan beneficiaries respectively. The data collected use both structured and unstructured questionnaires and analyzed using descriptive and inferential statistics.

Nancy and Mohamed (2014) conducted their study on determinants of loan repayment in small-scale enterprises in developing countries, Kariobangi division in Nairobi. Based on their finding result showed that the personal characteristics variables higher education level and large family size, loan characteristics variables large amount of loan applied and longer duration of business result in increased loan repayment and vice versa. Whereas an increase in age, interest rate and change in gender leads to more loan default and vice versa.

Mukono (2015) conducted study on the determinants of loan repayment by small and medium enterprises in Nairobi country, Kenya. He employed logit regression model, descriptive statistical tools and inferential statistics to analyze the data. The analyzed data reveals that firm characteristics (ownership structure type of firm, firm location, firm size, age of the business, registration status, profitability, asset ownership, type of business and type of business activity). Borrower characteristics (age of borrower, gender of the borrower, level of education, business experience, household size, credit use experience, household income, non- business income, type of business activity, amount of business investment, borrower's attitude and family background) are positively influence loan repayment by small and medium enterprises. Whereas

loan characteristics (loan size or amount, loan repayment period, collateral value, number of installments, loan application costs, loan type, purpose of loan, previous loan repayment mode and length of time before repayment). In addition, lender or firm characteristics (interest rate, penalty for lateness, credit analysis procedure, lending policies, time lag between loan application and disbursement, and stringent loan procedures) are negatively influence loan repayment performance of small micro enterprises.

Samwel and Kevin (2016) had conducted study on the factors affecting clients on loan repayment for microfinance institutions: a case study of pride Arusha Tanzania, based on analysis the factors that affect clients on loan repayment for microfinance institutions by applying both quantitative and qualitative techniques to investigate factors affecting loan repayment performances. They used primary and secondary data and used randomly sampling techniques to select from a total population of clients and staffs. According to their findings, results from clients' characteristics age, household size, gender and level of education variables, from nature of business characteristics business type, business stability and income level variables and loan characteristics repayment period, repayment mode, and repayment amount variables were among the factors that influenced borrowers in repaying their loans. In additionally Lack of business, knowledge and borrowers age of 40 years and above are another factor mentioned by clients. In addition, the institution used reasonable and acceptable lending policies and procedures. It also good loan application procedures, loan approval system, loan disbursement, and collection techniques.

Wafula (2016) conducted study on determinants of loan repayment by borrowers from micro-financial institutions in Nakuru Country Kenya. The researcher employed a descriptive analysis and linear multiple regression model to analyze the data. His results revealed that low education levels and yet they are associated with loan repayment better than those educated counterparts and as income level increases loan repayment decreases (Lower income borrowers repaid loans than higher income borrowers). It also younger is associated with loan repayment than their old counterparts. This study identified the education level, income level and age have negative coefficient but significant determinants of loan repayment.

Yogendrarajah and Semasinghe (2016) had studied on the empirical analysis of micro credit repayment in Northern Sri Lanka. According to the researchers the all variables such as Amount of Loan, Loan interest, Decision making, control over assets and Loan management were positively influence on repayment of micro credit. The researchers had employed Linear

multiple regression model to estimate the equation of loan repayment and they analyzed and presented the results of the study by using the SSPS software 16 versions. In addition, they were used multi-stage stratified random sampling technique to select the sample from population of self-employable women who have experience more than two years and collected the data through structured questionnaire.

Benjamin (2017) examined the Microcredit Loan Repayment Default among Small Scale Enterprises in the Upper West Region of Ghana by Applying the Tobit and the double hurdle models. The results showed that enterprise size, interest rate, loan duration, level of profit and loan amount are the simultaneous determinants of probability and rate of default. However, the age and educational attainment of the enterprise owner, number of dependents and loan repayment schedule influence the probability of default but not the rate of default. The result shows more educated clients are 26.6 percent less likely to default entrepreneurs with more dependents are 59.6 percent more likely to default, Enterprises that have operated for relatively longer years record smaller default rates as compared to young enterprises. Enterprises that secured loans with higher interest rates are more probable of defaulting, enterprises that make large profits are 7.1 percent less likely to default in loan repayment and amount of loan is a positive determinant of probability of loan repayment default. This means that enterprises that secured larger loan amounts are 6.1 percent more likely to default.

Ssekiziyivu (2017) conducted study on analysis the borrowers' characteristics, credit terms and loan repayment performance among clients of microfinance institutions in rural areas of Uganda. The researcher employs a cross sectional and co relational design with applying the ordinary least squares (OLS) and multiple regression models. Accordingly the finding results credit terms (interest rates, loan period, collateral requirements) significantly contributes to loan repayment performance of MFIs in Uganda and borrowers characteristics (demographic, ability to pay and assets owned) no significant relationship between borrower's characteristics and loan repayment.



#### **2.4.2 Empirical studies in Ethiopia**

Different researchers carried out some empirical studies at different time on the factors that influence the loan repayment performance of MFIs borrowers throughout the country reviewed as flows.

Fikirte (2011) examined the determinants of loan repayment performance of Addis credit and saving institution borrowers in the Addis Ababa, Ethiopia. Accordingly, the study revealed that out of eleven explanatory variables, eight variables were found to be significant factor for the probability of being defaulter, that is age and all five business types ( baltina and petty market, kiosk and shop, services providing, weaving and tailoring, and urban agriculture) were important in influencing loan repayment performance of the borrower. In addition, sex and business experience of the borrowers were founds to be significant determinants of loan repayment rate. However, the remaining explanatory variables namely, education level, family size, and dependency ratio had no significant effect on the probability of being defaulter. She used a binary logit model and descriptive statistics to estimate the equations and analysis the result.

Meshesha(2014) has examined microfinance credit rationing and loan repayment performance and concluded that education, income, loan supervision, suitability of repayment period, availability of other credit sources and livestock are important and significant factors that enhance the loan repayment performance, while loan diversion and loan size are founds to significantly increase loan default. In addition, female borrowers were founds better in terms of loan repayment.

Ababiya (2015) studied the performance of micro and small enterprises and its determinants in Hadiya zone, Ethiopia. The result revealed that age of enterprises, age of operators, education level, number of employees, amount of initial capital, entrepreneurial skill, experience of manager, access to training and access to market were statistically significant at less than one percent significance level and had positive relationship with the performance of enterprises. They employed descriptive analyses and multiple linear regression models to estimate the equation and analysis the result. According to his study, result shows indicate that three major selected MFIs are progressing in terms of its breadth and depth of outreach. From the financial sustainability point of view, those microfinance institutions have been gone up the ladder of sustainability measures over those five consecutive years. The institution also manages its loan

portfolio as shown by the ratio of portfolio at risk, which is greater than 30 days that declined throughout the years.

Haile (2015) conducted study on investigated the determinants of loan repayment performance in Harari microfinance institutions. he revealed that saving habit of borrowers ,loan size ,perception of borrowers on repayment period ,source of income ,availability of training ,business experience ,business type ,family size ,and the purpose of saving have been found as significant factors of loan repayment performance of borrowers at one ,five and ten percent significance level. He identified that the probability of default increase as the family size increases, when the borrowers has negative perception on repayment period, less training, low business experience ,poor saving habit and only single source of income. He has employed descriptive statistics and logistic regression (binary logit) model to estimate the equations and analysis the result of finding.

Tesfatsion.et.al (2015) conducted study on the factors influencing MFIs group loan repayment performance a case of MSE's service delivering sector that are financed by Dedebit credit and saving institution by applying explanatory (descriptive) research approach and employing chi-square test to examine the association of the independent variables with the loan repayment performance of clients. In this study eleven explanatory variables were included which results in group formation (screening), peer monitoring, loan size, loan term and supervision have significant association with loan repayment performance of borrowers while the rest six variables Business experience, social ties, internal rules and regulations, saving size, group size and training have insignificant association with loan repayment performance of group borrowers.

Yilkal (2015) studied on the factors affecting women's effectiveness in use of microfinance and microcredit's services; Jimma zone, southwest Ethiopia. The researcher found that family size of the household, health status of the respondent, loan diversion, time of loan application and distance from credit source variables are statistically significant and negatively affect the loan repayment performance of borrowers. While, the age of the borrower, education level of the respondent, experience of the borrower, celebrating of social ceremony, monthly expenditure, application of machinery, installment period and loan size variables are statistically insignificant in affecting the loan repayment performance of borrowers however, their sign was positive. He recommended that microfinance institutions should give due attention on the family size of the respondents, distance from the credit source and health status of the respondents before applying

the disbursement of the loan. The examiner has been used Logit model to estimate the equations.

Haile (2016) analyzed the credit rationing and repayment performance in the Ambo woreda Eshet microfinance institution by using binary logit model. The findings revealed that major factors considered by Eshet microfinance institutions were credit rationing, loan sizes, loan diversion, family size, business experience and education. The study also found out that among the factors that used for credit rationing in microfinance age influenced loan repayment performance. Credit rationing system needs to take into account the factors that influence loan repayment performance when rationing loan applicants. The study revealed that the overall repayment performance of the borrowers and the screening technique, which the institution follows to ration loan to its clients, found to be sound. Similarly, it found that the credit scheme has contributed positively in terms of improving the incomes, access to education, access to health facilities and nutritional status of the borrowers. Specifically, loan diversion was found to be one of the important and significant factors influencing loan repayment performance negatively, i.e., it increases default risk significantly. On the other hand, evidences in this study show that female borrowers have performed better in terms of loan repayment than their male counterparts.

Kebede.et.al (2016) hence, education level and time laps between loan application and disbursements were positively and significantly influenced borrower's loan repayment performance at one and five percent significance level. Whereas age of respondents, loan size, loan diversion, repayment period, number of dependents within and out household, training, and supervision and advisory visits had influence negatively and significantly the borrowers' loan repayment performance at one percent significance level. The researcher employed binary logistic regression model to estimate and analyze the result.

Abraham (2017) in the study to assess factors affecting loan repayment performance of borrowers also found sex, income from other sources, monitoring utilization of other members in a group, credit timeliness, repayment time suitability, repayment trend on a monthly basis and training adequacy are significant and positively influence loan repayment performance of the borrower. While loan utilization for the intended purpose, repayment trend on an irregular basis and visit and follow-up on irregular basis found negatively, influence the repayment performance of borrowers. The extensive involvement and interference of third parties on the

decisions of loan approval processing to the lending institute found as a contribution for high defaulting.

Balamurugan (2017) assessed the credit default risk in Oromia credit and saving Share Company. His finding outcomes revealed that the Oromia credit saving and share company default rate increased over the review period. The major causes of default found to be poor business performance, in terms of low profitability or business losses. Besides, credit diversion to unprofitable uses, poor timing, inadequate supervision to borrowers, inadequate loan size, unfair screening mechanism, non-flexibility of the nature of repayment period, not quick process were other factors that caused credit default and in addition natural disaster, poor infrastructure, poor management and presence of negligent staffs were identified and taken as causes for credit default risk. Further, the inference results of the descriptive statistics show that awareness creation is important and significant factors that enhance the credit repayment performance. He used stratified sampling method and collected the primary data by using structured and unstructured questionnaires. The researcher employed descriptive statistics and SPSS version 20 software to analysis the collected data.

Garomsa (2017) conducted a study on the assessment of factors affecting loan repayment performance of borrowers on selected microfinance institutions in Oromia region. He employed the descriptive statistics analysis and probit regression model to analyze the results of findings. It also used multistage sampling methods and he has collected the primary data by using the structured questionnaires, semi-structured interviews and focus group discussions. According to the study that income from other sources, monitoring utilizations of other members in a group, credit timeliness, repayment time suitability, repayment trend on monthly basis and training adequacy are found significant and positively influence loan repayment performance of borrower. While loan utilization for the intended purpose, repayment trend on irregular basis and visit and follow-up on irregular basis found negatively, influence the repayment performance of borrowers. In addition, he revealed that male borrowers in a given enterprise found to be more defaulters than females although they have relatively higher utilization rate of the loan for the intended purpose as compared to that of females.

Savio.et. al (2017) carried a study on the loan repayment performance of micro small enterprises in Wolaita Sodo and concluded that variables relating to smell micro enterprises loan repayment form the most dominant group of determinants of bad loans, accounting about 82.7 percent of the variability. The variables are beneficiary size of the enterprises, business related experience,

loan size, loan supervision, loan initiation and suitability of repayment situation. Also that the evidence of both descriptive analysis and multiple regression show that business related experience is found to be one of the major determinants adversely affecting the loan repayment performance having the value of 64.2 percent by taking the variable while others are constant. This indicates that in the study area, micro small enterprises did not have enough business related experience to manage their own activities properly and as the results, they fail to repay the loan they received. Another important point to rise is loan size and that decreasing the loan size increases the loan default rate. Stratified Random sampling method was used and data collected by structured questionnaire. Regression model (multiple regression models) and descriptive statistical tools was employed to estimate the equations and analysis the results.

Alemu (2018) conducted study on the determinants of loan repayment of micro and small enterprises in Jimma town, Ethiopia by using binary logistic regression model. He result of explanatory variables sex and experience positive and significantly affect loan repayment. The inconvenience of loan payback period, lack of financial skill and planning negatively and significantly affected loan repayment of enterprises. Lack of marketing skills, follow up and supervision positively and significantly influenced loan repayment of micro and small enterprises.

Geleta (2018) conducted study on the determinants of loan repayment performance of micro and small enterprises the case of Oromia credit and saving Share Company branches under Oromia special zone around Addis Aababa by using binary logistic regression model. The results of explanatory's variable group leader, education level, training, and loan follow up or loan supervision, market accessibility and technology loan positive and significantly affect loan repayment. Also the results of interest rate, internal rules and regulations, loan accessibility, lack of group leaders experiencing in business, enterprise size and enterprise group formation were negatively influenced the loan repayment performance of micro and small enterprises sectors in the study area

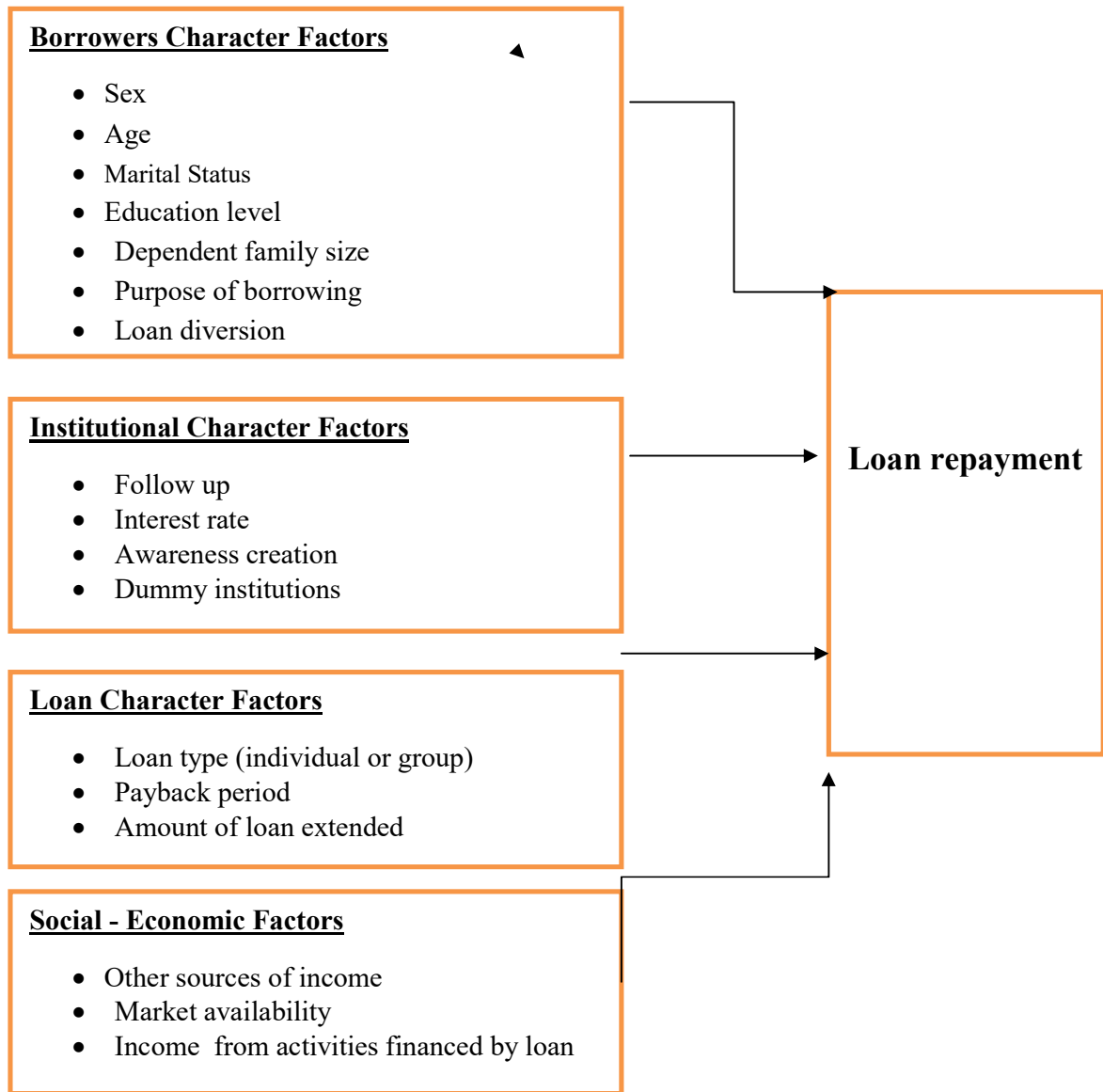
## **2.5 Knowledge and literature gaps**

As mentioned above in the various empirical related literatures review different authors conducted study in Ethiopia and others country on the factors of loan repayment performance of MFIs borrowers by used that different factors in characteristics and they revealed those positively or negatively affecting loan repayment performance of microfinance institution borrowers. Majority of the study conducted focused on loan repayment related with rural borrowers, but few study indicate loan repayment performance of urban borrowers. However, the present research focuses on the determinants of loan repayment performance of both rural and urban microfinance beneficiaries. They also conducted only on separate one microfinance institution there are not examining institutional factors by comparing difference microfinance institution no anyone of researcher conducted a study on factory affecting loan repayment performance among borrowers compares the delay rate of load from rural and urban customers of microfinance institutions. So researcher motivate to conducting further empirical study by include all borrowers sectors of both rural and urban by including different microfinance institution and additional variables to examine the factors affecting loan repayment performance borrowers of microfinance institutions on study area. The researcher divided as socio-economic factory, borrower's character factors, loan character and institutional character factors that significantly affect the loan repayment performance among clients are the concern of study area.

## **2.6. Conceptual framework**

The conceptual frameworks of this study derived from the above literature review on the hypothesis and the theories adopted. The conceptual framework of this study proposed that affects borrower of microfinance institution in Jimma zone on loan repayment performance.

**Figure 1 Conceptual relationships among factors affect performances borrowers of MFIs.**



Source: Adopted from previous Researches, modified by researcher

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1. Research Design

Zikmund (2010) defines research design as an arrangement of conditions for collection and analysis of data in a manner that it aims to combine relevance to research purpose with economy in procedure. Research design is the program that guides the researchers in the process of collecting, analyzing and interpreting the data. The aim of this research is to examine the factors affecting borrowers on loan repayment performance borrowed from microfinance institution in southwest Oromia. The researcher employs that explanatory research design with a cross sectional data to give in depth information on the factors affecting loan repayment of borrowers.

Kothari (2008) defines research design as the plan and structure through which the answers to research questions obtained. A research plan is the general scheme of the research. In other word research design described as the general plan employed in data collection necessary for the fulfillment of research objectives.

Research design categorized based on the input or the outcomes of the study. Based on input the research design categorized as qualitative or quantitative. The researcher is used quantitative type of research design or approach to conduct the study because the actual collected data can be quantified interims of number and consequently quantitative data analysis technique employed.

In other way research design also categorized as descriptive, explanatory, analytical, analogical and experimental research design. Based on the objective of the study, this study is followed explanatory type of research design because the way it analysis and the expected result behavior.



### **3.2 Source of data and Methods of data collection**

This study used both primary and secondary data collected and reached findings. To achieve the objectives of the study all the necessary required data were collected from the sample loan borrowers of both defaulters and non-defaulters from each selected branch of the institution. The primary data were collected through structured questionnaire. The questionnaires are prepared in both English and Afan Oromo that helps to reduce language barriers.

The secondary data used to support primary sources were obtained from both published and unpublished documents on microfinance institutions concerning factor affecting of the loan repayment performance of clients including number of borrowers in each microfinance institutions with sub branch. The sources of data have their own contributions, it helpful to define the research problem, methods that be used in data collection and analyses. While collecting and using both data, considerations were give to their period, reliability, and relevance to the purpose of the study.

### **3.3 Target Population and Sampling Techniques**

The target populations of this study are total numbers of borrowers of microfinance institution from Shabe woreda and Jimma town. The numbers of borrower's data collected from lender profile of the institution of last year. The study populations categories defaulter and non-defaulter during the data collection period, which is 7,094 customers of microfinance on the study areas. The study adopts multi-stage sampling techniques to arrive at target sample borrowers. The scope of this study is limited to only borrowers of microfinance institution. There are three Microfinance institutions in Jimma zone, namely Oromia credit and saving Share Company, Harbu Microfinance and Eshet Microfinance.

The researcher selected sample from two difference microfinance institutions in order to examine the institution factors. In the case of Oromia Credit and Saving Share Company, it has twenty braches in Jimma zone from these institutions two branches (Shabe woreda and Jimma town or head office) are selected purposively. These branches have a higher number of defaulters as compared to other branches in the zone. Harbu microfinance institutions have four branches in Jimma zone from these institutions. Also two branches (Shabe woreda and Jimma town or head office) are selected and in the case of Eshet microfinance institution was not included in the sample because it haven't a sub branch in Jimma zone and not possible to use

proportional sample technique to examine institutional characters factory by comparing institutional behaviors. The numbers of clients of microfinance institutions are 6,952 and 142 respectively. Out of total populations, 708 defaulter and 6,386 non-defaulter borrowers are targeted in this study. To develop the sampling size, a list of borrowers acquired from each microfinance institutions borrowers profile list. The sample size is obtained by used the following formula from the total target populations.

According to Cochran (1977) developed a formula to calculate a representative sample if the population is infinite calculated as below

$$n_0 = \frac{z^2 pq}{e^2}$$

Where,  $n_0$  is the sample size,  $z$  is the selected critical value of desired confidence level,  $p$  is the estimated proportion of an attribute that is present in the populations,  $q = 1 - p$  and  $e$  is the desired level of precision. For this study a sample size of a large population whose degree of variability is not known, the maximum variability, which is equal to 50 percent ( $p=0.5$ ) were taken and 95 percent confidence level with  $\pm 7\%$  precision, the calculation for required sample size as follows.

$$p = 0.5 \text{ and hence } q = 1 - 0.5 = 0.5, e = 0.1; z = 1.96$$

$$\text{So, } n_0 = \frac{1.96^2}{0.07^2} (0.5)(0.5) = 196$$

When we see the calculated simple size for finite population is 196 this size is significant because it is less than 5% of the total populations which does not need correction formula for finite population. Therefore, the representative sample size of this study is 196. The sampling may have its own draw back while inferring the findings based on the sample data to the whole population. To minimize the errors appropriate sampling technique were taken greater energy and attention was given to make the samples as representative as possible. To determine the sample size to estimating the mean or the proportion of the finite population, multistage samplings were used. This technique helps to give equal chance for each target population under the study. First stratified base on geography (urban business area and rural farm area). Secondly stratified as defaulters and non-defaulters based on state weather the full paid on due date or not. Finally, respondents under each stratum are selected purposely-used sample frame taken from microfinance institutions.

### 3.4 Method of Data Analysis and Presentation

The researcher used both descriptive statistics and econometric model of data analysis. The descriptive part helps for responses of the respondents using statistical tools like SPSS software. Tables, figures and charts used to classify and present the major findings of the study.

Descriptive statistics is one of the techniques used to summarize the data collected from the respondents. By applying descriptive statistics such as, frequencies, percentages, and chi-square by compare and contrast different categories of sample borrowers with respect to the desired characters to draw some important conclusions. The econometric part of analysis uses a proxy variable showing whether a loan repayment is delay or not (fully repaid within due date or not). This means defaults (borrowers not paid full a loan on time) or, non-defaults (borrowers paid full a loan on time). The proxy variable (taking binary form) assigned a value of 1 or 0 using the loan repayment as a cutoff point i.e.

$$y = \begin{cases} 0 & \text{if } Y < Z \\ 1 & \text{if } Y > Z \end{cases}$$

Where  $y$  is a categorical dependent variable, which stands for loan status of the borrowers with respect to  $Z$ ,  $Z$  is maturity date and  $Y$  is real loan equivalent performance. Having the above information the choice is the qualitative response models, i.e. linear probability model, logit model and probit model. The logit model is more preferable for this study due to the drawbacks of LPM and the normality assumption of probit model, which makes it difficult to test. So the selected model to use for this study highlighted shown below.

## Logit Model

According (Gujarati, 2004) and Madalla the dependent variable of this logit model takes binary response, i.e.  $y = 0$  if a given loan repayment is delay (not fully repay on due date) and  $y=1$  if not delay (fully repay on due date). In terms of probability it can written as

$$P(y_i = 1) = P_0 \quad P(y_i = 0) = 1 - P_0 \dots\dots\dots 2$$

This simply shows that the probability that a given loan repayment delay is  $P_0$  and the probability that it is non-delay is  $1-P_0$ . This can be written in equation form of logistic distribution as:

$$P_0 = E(y_i = 1/x_i) = \frac{1}{1 + e^{-(B_0 + \sum \beta_i x_i)}} \dots\dots\dots 3$$

$$P_0 = \frac{e^{B_0 + B_1 X_1 + B_2 X_2 + \dots + B_i X_i}}{1 + e^{B_0 + B_1 X_1 + B_2 X_2 + \dots + B_i X_i}} \dots\dots\dots 4$$

Where:  $P_0$  is the probability,  $e$  is an irrational number (2.718),  $B_0$  the intercept term and  $B_i$ 's are the coefficients of the predictors  $X_i$ . In reality  $P_0$  is unobserved (latent) variable, but instead we see the proxy variable  $y_i$  is taking the values  $y_i = 0$  if the loan is defaults and  $y_i = 1$  if the loan is not defaults. So equation 4 can be written as:

$$P(y_i = 1/X_i) = \frac{e^{B_0 + \sum B_i X_i}}{1 + e^{B_0 + \sum B_i X_i}} \dots\dots\dots 5$$

Equation, 5 is expressed in terms of event probability, i.e. the probability that  $y_i = 1$  occurs. The nonevent probability can easily derive from the above equation. Since,  $y_i$  takes only 0 and 1, the probabilities of  $y_i = 1$  and  $y_i = 0$  should sum up to 1. So the nonevent probability will be:

$$P(y_i = 0/X_i) = 1 - P(y_i = 1/X_i)$$

$$P(y_i = 0/X_i) = 1 + \frac{1}{e^{B_0 + \sum \beta_i X_i}} \dots\dots\dots 6$$

By taking from equations 5 and 6, we can write in terms of odds (probability ratio) as:

$$\frac{P(y_i = \frac{1}{X_i})}{P(y_i = \frac{0}{X_i})} = \frac{P(y_i = \frac{1}{X_i})}{[1 - P(y_i = \frac{1}{X_i})]} = \frac{[1 + e^{B_0 + \sum B_i X_i}][e^{B_0 + \sum B_i X_i}]}{[1 + e^{B_0 + \sum B_i X_i}]} = e^{B_0 + \sum B_i X_i} \dots\dots\dots 7$$

The equation is simply the odds in favor of being poor, i.e. the ratio of the probability that a given loan repayment is defaults to the probability that it is non-defaults. Equation 7 can be linearized by taking the natural logarithms as:

$$Y_i = \ln\left[\frac{P(y_i = 1/X_i)}{1 - P(y_i = 1/X_i)}\right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i$$

$$Y_i = \beta_0 + \sum_{i=1}^t B_i X_i \dots\dots\dots 8$$

$Y_i$  is simply the log odds ratio, which is linear in  $X$ 's. If we are interested in probabilities rather than the odds, we estimate the coefficients  $B_i$ . Generally, for estimation purpose, the logit model can write as:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i + E_i \dots\dots\dots 9$$

Where,  $E_i$  is a stochastic term, which indicates the random effect of other variables that are not included in the model. The most important properties of the logit model are the dependent variables assumed to have a linear relationship not with the predictor as it is, but with its logit form. Moreover, it does not assume any relationship between the predictors; they may take any form. There is no assumption of normality regarding to the distribution of the error term, rather it assumed to follow a logistic distribution. Having the mentioned discussion, our econometric model becomes:

$$Y_i = \beta_0 + \sum \beta_i X_i + E_i$$

Where,  $Y_i$  stands for the loan repayment performance of borrowers with reference to the default rate.  $\beta_i$ s are coefficients of the predictors  $X_i$ ,  $i$  stands for borrowers run from  $i$  to  $n$ .  $X_i$ s are predictors.  $E_i$ , statistical errors terms and unobserved character.

## Estimation and Hypothesis Test

- A. The coefficients give the signs of the partial effects of each  $x_j$  on the response probability, and the statistical significance of  $x_j$  is determined at whether we can reject.

$H_0: \beta_s = 0$  or alternatively;

$H_1: \beta_s \neq 0$  at a sufficiently significant level

Where  $s = 1, 2, 3 \dots n$  and  $n$  is number of variables

- B. Goodness-of-fit measure that usually reported is the so-called percent correctly predicted which computed as follows. For each  $i$ , we compute the estimated probability that  $y_i$  takes on the value one,  $G(\hat{\theta}_i)$ , If  $G(\hat{\theta}_i) \geq 0.5$ , the prediction of  $y_i$  is unity, and if  $G(\hat{\theta}_i) < 0.5$ ,  $y_i$  is predicted to be zero.

The second specification problem also defined in terms of the latent variable model is heteroskedasticity in  $e$ . If  $\text{Var}(e|x)$  depends on  $x$ , the response probability no longer has the form  $G(\theta|x)$ ; instead, it depends on the form of the variance and requires more general estimation. Such models are not often used in practice, since logit and probit with flexible functional forms in the independent variables tend to work well.

Binary response models apply with little modification to independently pooled cross sections or to other data sets where the observations are independent but not necessarily identically distributed. Often year or other time period dummy variables are included to account for aggregate time effects. Just as with linear models, logit and probit can be used to evaluate the impact of certain policies in the context of a natural experiment.

**Dependent Variable:** The dependent variable of this study for the logit model is loan repayment.

Dependent variable is a dummy variable (given a value of 1 if the loan repayment fully paid within due date and 0 otherwise). Factors that would be affecting this choice considered as independent variable.

**Independent Variables:** The explanatory variables of importance in this study are those variables, which are considerations to have an affecting loan repayment. This included socio-economic variables, borrower characteristic variables, institution characteristic and loan characteristic variables. These explanatory variables listed as follows table:

**Table 1 Variables and measurements**

Variable	Indicators	Symbol	Data status	Measurement
<b>Dependent variable</b>				
Loan repayment	progressive make payment on due date or no	LRP	Dummy	1, Fully repaid on due date and otherwise ,0
<b>Independent variables</b>				
Sex	Gender	SX	Dummy	1,for male and 0, for female
Age	Year	AG	Continuous	Positive integers
Marital Status		MS	Nominal	
Loan Type	Responsibility (Individual or group )	LTP	Nominal	1, for Group and otherwise 0
Education level	Status of schooling level	EL	Ordinal	Year of schooling
Dependent Family Size	Household impact	DFSZ	Continuous	Negative
Loan Diversion	Impact on change plan	LD	Nominal	1, if diverted, otherwise, 0.
Other sources of income	Effect of related income	OSOI	Nominal	1 if have another source of income, otherwise 0
Amount of loan extend	Effect on plan implementation	AOLE	Nominal	1, if similar your request, otherwise,0
Interest Rate	Fairness Cost of borrowing	IR	Nominal	1, if not fair , otherwise,0
Market Availability	Availability of demands	MA	Categorical	0 High,1Medium,2,low
Follow up	Institutional monitoring impact	FU	Nominal	1,yes , 0, otherwise
Payback period	Time	PBP	Nominal	1, if not convenient 0, otherwise
Awareness creation	Training	AC	Nominal	1, if provided 0, otherwise
Purpose of borrowing	Reliability	POB	Nominal	1, Social purpose, 2.Business 3, Domestic and agricultural
Income from activities by loan	Income earned from activities financed by loan	IFA	Continuous	1,if sufficient , 0, otherwise
Dummy institutions	Name of lender microfinance institution	DI	Nominal	1.Oromia Credit and Saving Share Company and 0. Harbu microfinance

The researcher employed a general model form based on empirical evidence as follow:

$$Y_i = \beta_0 + \sum \beta_i X_i + E_i$$

Where:  $Y_i$  . represents the dependent variables (LRP) of borrowers,

$i$  stands for borrowers ,  $n$  is number of variables

$\beta_0$  - is the intercept,  $\beta_i$  - represents the coefficients of the  $X_i$  variables

$X_i$  - represents the explanatory variables of borrowers for  $i$  to  $n$ .

$\varepsilon_i$  - is the error term

The above empirical model developed to examine factors affecting loan repayment performance borrows of microfinance institution in Ethiopia by using explanatory that listed above table as follows:

$$\text{LRP} = \beta_0 + \beta_1 \text{SX} + \beta_2 \text{AG} + \beta_3 \text{MS} + \beta_4 \text{EL} + \beta_5 \text{DFSZ} + \beta_6 \text{POB} + \beta_7 \text{LD} + \beta_8 \text{FU} + \beta_9 \text{IR} + \beta_{10} \text{AC} + \beta_{11} \text{DI} + \beta_{12} \text{LTP} + \beta_{13} \text{PBP} + \beta_{14} \text{AOLE} + \beta_{15} \text{OSOI} + \beta_{16} \text{MA} + \beta_{17} \text{IFA} + E_i$$

Where:

LRP = Loan repayment

IR = Interest Rate

SX = Sex

AC = Awareness creation

AG = Age of borrower

DI = Dummy Institution

MS = Marital Status

LYP = Loan Type

EL = Education level

PBP = Payback period

DFSZ = Dependent Family Size

AOLE = Amount of loan extend

POB = Purpose of Borrowing

OSOI = other sources of income

LD = Loan Diversion

MA = Market Availability

FU = Follow up

IFA = Income from activities by loan

$\beta_{1,2,\dots,20}$  = coefficient

$\varepsilon_i$  = Satirical errors & unobserved characters



## CHAPTER FOUR

### RESULT AND DISCUSSION

#### Introduction

The result of analysis has conducted to address the main and specific objectives of the study. This part divided in to two major sections. The first section presents descriptive statistics and their corresponding interpretation. The second section the econometric analysis was employed logit model in order to identify the most important factors that are affected the loan repayment. To measure the relative importance of significant explanatory variables on loan repayment by divided as borrower's characteristics such as, sex, age, marital status, educational level, dependent family sizes, loan diversion and purpose of borrowing. Lenders characteristics like as interest rate, follow up, awareness creativity and dummy institution. Loan characteristics of respondents such as loan type, payback period , amounts of loan extend and social economic characteristics such as market availability, others source of income and income from activities by loan, are treated as explanatory variables where the selection of these variables basis both theoretical and empirical justification.

#### 4.1. Descriptive analysis

This section firstly, presents borrowers characteristics of sampled respondent's statistical descriptions of the factors that affect loan repayment performance of borrowers based on the descriptive analysis as follows. From 196 questionnaires distributed to respondents, 189 (one hundred eight nine) have been appropriately filled and returned. This implies that the response rate for this study was ninety six point forty three percent (96.43%), which implies that highest proportion of respondents have participated in the process of data collection. This study employed binary logistic regression for data analysis. As shown in table 20 ,the following independent variables educational level, loan diversion, purpose of borrowing, loan type, interest rate, market availability, follow up, payback period, awareness creation, others source of income and income from activities made a statistically significant category since p value (Sig.) is less than 0.05, for each of the coefficients in the logistic regression model.

#### 4.1.1. Borrowers characteristic factors of the sampled respondents.

In this section, based on summary of descriptive statistics of respondents the borrower's characteristics (sex, age, marital status, education level dependent family size, loan diversion and purpose of borrowing) discussed in the crosstab and bar charts as follows by comparing chi-square with significance level.

**Table 2 Loan repayment performances with sex of the samples respondents.**

Sex with Loan repayment		Loan repayment		Total	Chi-Square
		Defaulters	Non –Defaulters		
Sex	Count	21	30	51	$X^2 = 4.675$ Asymp. Sig. (2 sided) = 0.031
	Female %	41.2%	58.8%	100.0%	
	% of Total	11.1%	15.9%	27.0%	
	Count	83	55	138	
	Male %	61.1%	39.9%	73.0%	
	% of Total	43.9%	29.1%	73.0%	
Total	Count	104	85	189	
	%	100.0%	100.0%	100.0%	
	% of Total	55.0%	45.0%	100.0%	

**Source: own compilation from survey data (2020)**

From the total sample, respondents based on sex distribution 27 percent female and 73 percent males. The P Value of the result is 0.031 that is less than the minimum standard for P value (0.05) significant level. This means there is statistical significance different between the sex of defaulters and non-defaulters at five percent significance level. Further, the percentage of the loan repayment status of the borrowers fully completed their payment with due date (non-defaulters) 58.8 percent female and 39.9 percent male. From these result female borrowers have better repayment performance than male. This result indicated male borrower's low performance on loan repayment.

**Table 3 Loan repayment performances with age of the samples respondents.**

	Loan repayment		Total	Chi-Square
	Defaulters	Non –Defaulters		
21-30	39	29	68	<b>chi2 (1) = 7.645</b> Asymp. Sig. (2-sided) = <b>0.006</b>
31-40	33	13	46	
Age 41-50	20	17	37	
51-60	8	14	22	
Above 61	4	12	16	
Total	104	85	189	

**Source: own compilation from survey data (2020)**

According to above Table 3, the age of respondents are categorize in to five parts. The respondents between age of 21-30 are 68 in number from this category 39 defaulters and 29 non defaulters ,within 31-40 are 33 defaulters and 13 non defaulters ,within 41-50 are 20 defaulters and 17 non defaulters ,within 51-60 are 8 defaulters and 14 non defaulters and above 60 are 4 defaulters and 12 non defaulters. This shows that the large number of defaulters borrowers are within age of 31-40 years, the second largest group of age are between 21-30 years, the third are within 41-50,and the small percentage of age group are above 51years. The P value results show 0.006 that is less than 0.05, which is significant at one percent.

**Marital Status of Respondents**

The following table 4 helps to identify married respondents from unmarried respondents. As indicated in the following table out of 189 (100 percent) respondents 45 (24 percent) are single and 144 (76 percent) are married.

**Table 4 Loan repayment performance with marital status**

Marital status with Loan repayment		Loan repayment		Total	Chi-Square
		Defaulters	Non –Defaulters		
Marital Status	Count	21	24	45	$X^2 = 1.254$ Asymp. Sig. (2-sided)=0.263
	Single %	46.7%	53.3%	100.0%	
	% of Total	11.1%	12.7%	23.8%	
	Count	83	61	144	
	Married %	57.6%	42.4%	100.0%	
	% of Total	43.9%	32.3%	76.2%	
Total	Count	104	85	189	
	%	100.0%	100.0%	100.0%	
	% of Total	55.0%	45.0%	100.0%	

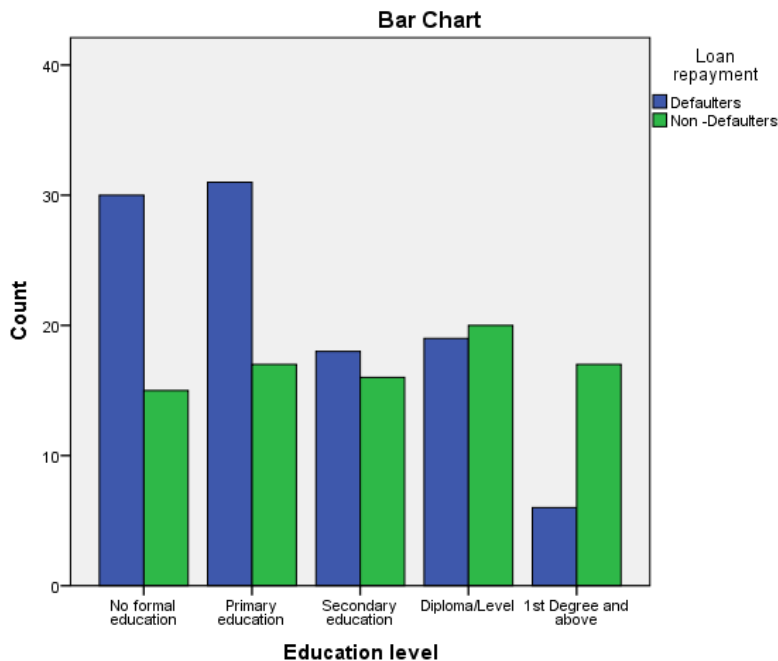
**Source: own compilation from survey data (2020)**

The P Value of the result is 0.263, which is greater than the minimum standard for P value 0.05 or insignificant. This means there is not statistical significance different between the marital status of defaulters and non-defaulters.

### Educational Level of Respondents

The loan repayment performance of the borrowers relative to their educational level shows on following chart.

**Figure 2 Loan repayment performances within educational level of the samples respondents.**



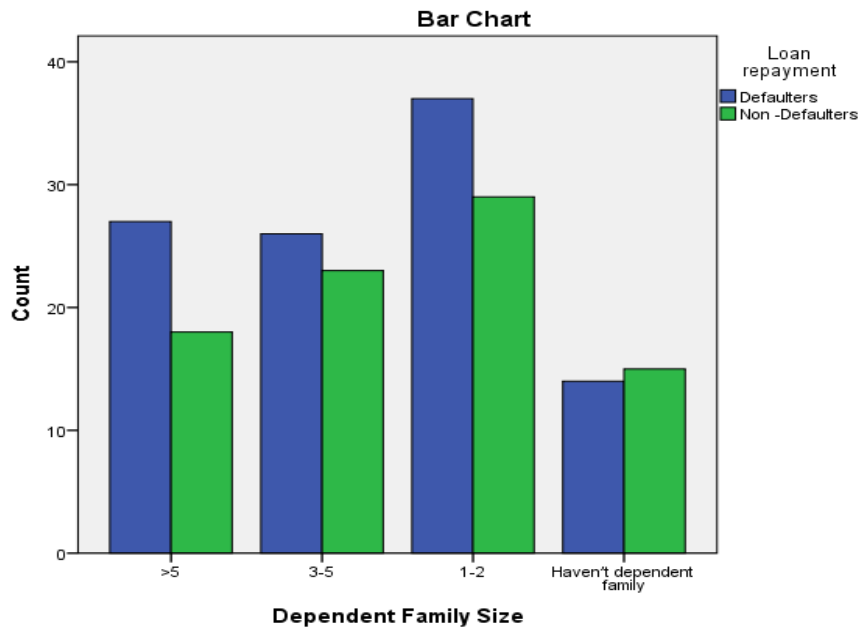
**Pearson chi2 (1) = 11.106 P = 0.001**

**Source: own compilation from survey data (2020)**

According to above chart the education level of respondent are divided in to five parts.

The P Value of the result is 0.001 which is less than the minimum standard for P value 0.05 or which is significant at one percent (Chi2=11.106). Further, the percentages the loan repayment status when the level of education is increasing the defaulter's rate are decrease. These results indicated at level of education increase performance of paid their loan within periods are increased. This indicates as level of education increases, probably borrowers enhance their ability to accessing, evaluate their revenue and expenses, improving customer handling to get high market demand or generating more income.

**Figure 3 Dependents family size with loan repayment of respondents**



**Pearson chi2 (1) = 0.620 P = 0.431**

**Source: own compilation from survey data (2020)**

According to the above chart, the dependents family size of respondents are divided into four parts, the respondents have more than five dependents family size, between three to five, between one to two and haven't dependents family size.

The P Value is 0.431, which is greater than the minimum standard for P value 0.05 or insignificant. This means the proportion of have dependent family size defaulter is not significantly different from the proportion have dependent family size of defaulter borrowers.

**Loan diversion**

This result indicated that from the observed population 61.4 percent of the respondents are not diversifying their loan for the intended purpose whereas 38.6 percent of the respondents are diverting their loan to the intended purpose are summarized as follows.

**Table 5 Loan repayment performances with loan diversion**

			Loan repayment		Total	Chi-Square
			Defaulters	Non –Defaulters		
Loan Diversion	No	Count	57	59	116	X <sup>2</sup> = 4.208 Asymp. Sig. (2sided)=0.04
		%	49.1%	50.9%	100.0%	
		% of Total	30.2%	31.2%	61.4%	
	Yes	Count	47	26	73	
		%	64.4%	35.6%	100.0%	
		% of Total	24.9%	13.8%	38.6%	
Total	Count	104	85	189		
	%	100.0%	100.0%	100.0%		
	% of Total	55.0%	45.0%	100.0%		

**Source: own compilation from survey data (2020)**

The P Value is 0.04 which is less than the minimum standard for P value 0.05 which is significant at five percent (Chi2=4.208). From respondents how are diversify their loan to intended purposes 64.4 percent and 35.6 percent defaulters and non-defaulters respectively. This result indicated loan diversions have negative effect loan repayment performances or increase defaulter borrowers of microfinance institutions.

**Purpose of borrowing respondents**

The following table 6 shows the repayment performance of borrowers based on Purpose of borrowing respondents because the forecasted and earned from activities on purpose of borrowing. As indicated in the following table from total 189 (100 percent) respondents about 74 (39 percent) for social purpose, 75 (40 percent) for business and 40 (21 percent) are for domestic and agricultural.

**Table 6 Loan repayment performance with Purpose of borrowing**

			Loan repayment		Total	Chi-Square
			Defaulters	Non –Defaulters		
Purpose of borrowing	Social purpose	Count	46	28	74	X <sup>2</sup> = 2.608 Asymp. Sig. = 0.271
		%	62.2%	37.8%	100.0%	
		% of Total	24.3%	14.8%	39.2%	
	Business	Count	37	38	75	
		%	49.3%	50.7%	100.0%	
		% of Total	19.6%	20.1%	39.7%	
	Domestic and agricultural	Count	21	19	40	
		%	52.5%	47.5%	100.0%	
		% of Total	11.1%	10.1%	21.2%	
Total	Count	104	85	189		

**Source: own compilation from survey data (2020)**

The result of analysis from table 6 regarding with loan repayment shows from respondents borrowed for social purpose are about (62 percentage) defaulters and (38 percentage) non-defaulters. From of respondents borrowed for business are about (49 percent) defaulters and (51 percent) non-defaulters. From respondents borrowed for domestic and agricultural purpose about (53 percent) defaulters and (47 percent) are non-defaulters. The result indicates that the probability of repaying loans successfully is higher for borrowed for business purpose rather than the borrowers who use the loan for social purpose and agricultural and domestic use.

**4.1.2. Lenders characteristic factors of the sampled respondents.**

In this section, based on summary of descriptive statistics of respondents the lenders institution characteristic (follow up, interest rate, awareness creativity and dummy institution) discussed in the tables consecutively as follows.

**Follow up** - The follow table 7 describes the repayment performance of borrower’s respondents how get follow up by lender institution. As indicated in the following table from total 189 (100 percent) respondents about (71 percent) are gate full up and around (29 percent) are not get that provided by lender institution.

**Table 7 Follow up with Loan repayment Cross tabulation**

		Loan repayment		Total	Chi-Square
		Defaulters	Non –Defaulters		
Follow up	Count	40	15	55	X <sup>2</sup> = 8.839 Asymp. Sig. = 0.003
	No %	72.7%	27.3%	100.0%	
	% of Total	21.2%	7.9%	29.1%	
	Count	64	70	134	
	Yes %	47.8%	52.2%	100.0%	
	% of Total	33.9%	37.0%	70.9%	
Total	Count	104	85	189	
	%	100.0%	100.0%	100.0%	
	% of Total	55.0%	45.0%	100.0%	

**Source: own compilation from survey data (2020)**

The result of analysis from table 7 shows that out of respondents got full up by lender institution (71 percent) and (29 percent) defaulters and non-defaulter respectively. The P value results show 0.003 that is less than 0.05, which is significant at one percent. The percent with loan repayment performance from respondents that not get follow up 72.7 percent defaulters and 27.3 percent non-defaulter borrowers. Whereas borrowers conducted follow up 48 percent are defaulters and 52 percent are successful or non-defaults borrowers. This result indicates that the

provided follow-up by lenders increases probability of loan repayment performance of borrowers.

**Table 8 Loan repayment performance with Interest Rate Cross tabulation**

		Loan repayment		Total	Chi-Square	
		Defaulters	Non -Defaulters			
Interest Rate	Fair	Count	13	27	40	$\chi^2 = 9.281$ Asymp. Sig. = 0.002
		%	32.5%	67.5%	100.0%	
	% of Total	6.9%	14.3%	21.2%		
	No fair	Count	91	58	149	
%		61.1%	38.9%	100.0%		
% of Total	48.1%	30.7%	78.8%			
Total	Count	104	85	189		
	%	100.0%	100.0%	100.0%		
	% of Total	55.0%	45.0%	100.0%		

**Source: own compilation from survey data (2020)**

This table shows the relationship between the status of the loan repayment and interest rate charged by the institutions. The result shows that from the observed population 21 percent of the population believes the interest charged is fair whereas about 79 percent of the population responded the chargeable amounts to interest by microfinance institution charged is not fair interest chargeable. Regarding the loan repayment status respondents the interest charged is not fair whereas about 61 percent defaulters and 39 percent non-defaulter which is significant at one percent ( $\chi^2=9.281$ ). These results indicated unfairness of interest charged increase defaulter rate.

**Table 9 Loan repayment performance with Awareness creation**

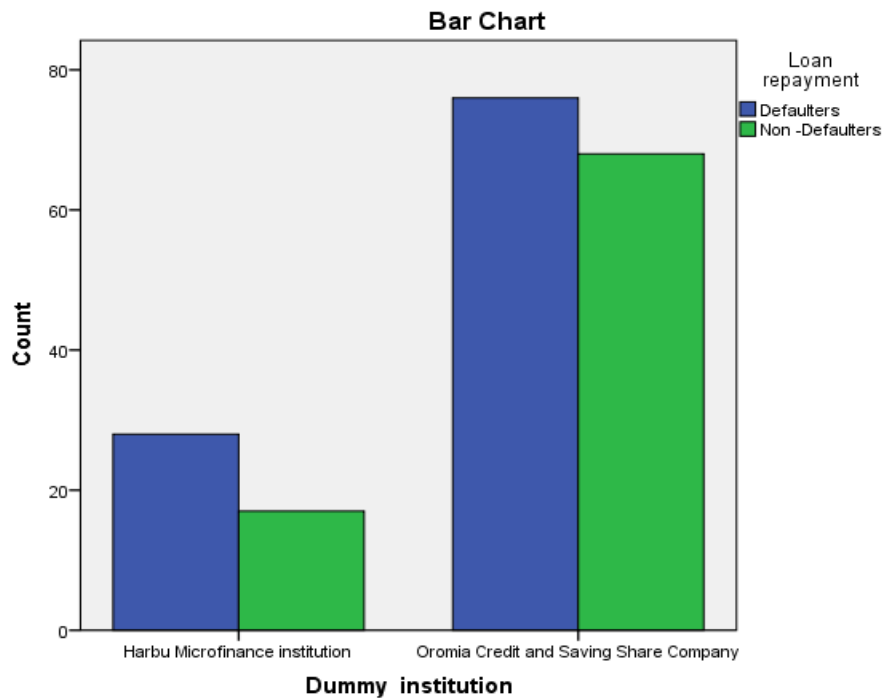
		Loan repayment		Total	Chi-Square	
		Defaulters	Non -Defaulters			
Awareness creation	No	Count	59	17	76	$\chi^2 = 24.742$ Asymp. Sig. = 0.000
		%	61.1%	38.9%	100.0%	
		% of Total	31.2%	9.0%	40.2%	
	Yes	Count	45	68	113	
		%	39.8%	60.2%	100.0%	
		% of Total	23.8%	36.0%	59.8%	
Total	Count	104	85	189		
	%	100.0%	100.0%	100.0%		
	% of Total	55.0%	45.0%	100.0%		

**Source: own compilation from survey data (2020)**



The above table compares average clients who attend or get awareness creativity that provided by microfinance to clients and who did not. In this regard, the relative probability of being at defaulters rather than non-defaulters for clients who did not attend training was higher than the corresponding relative probability for clients who attended training. On the other hand, the relative probability of being non-default rather than default clients who not attended training was than the corresponding relative probability of clients who attended. Which is significant at one percent ( $\text{Chi}^2=24.742$ ) However, this finding indicates that delivery of organized and providing sufficient training by lenders or microfinance institutions probably increasing the loan repayment performance of borrowers.

**Figure 4 Loan repayment with dummy institution of the samples respondents.**



Chi-Square 0.884  $p = 0.347$

**Source: own compilation from survey data (2020)**

The two-selected lender firms categorical taken as the variable. Accordingly as indicated in below chart, from the sample respondents of firms 76 percent Oromia Credit and Saving Share Company and 24 percent are borrowers of Harbu microfinance institution.

The P Value is 0.347, which is greater than the minimum standard for P value 0.05 or insignificant. This means there is not statistical significance different between the lender institution of defaulters and non-defaulters.

#### 4.1.3. Loan characteristics factors of the sampled respondents.

In this section, based on summary of descriptive statistics of respondents the loan characteristic (types of loan, payback period, amount of loan extended) discussed in the tables consecutively as follow.

**Table 10 Loan repayment performance with loan type**

		Loan repayment		Total	Chi-Square	
		Defaulters	Non –Defaulters			
Loan Type	Individual	Count	46	14	$\chi^2 = 15.378$ Asymp. Sig. = 0.000	
		%	76.7%	23.3%		
		% of Total	24.3%	7.4%		
	Group	Count	58	71		
			%	45.0%		55.0%
		% of Total	30.7%	37.6%		
Total	Count	104	85	189		
		%	100.0%	100.0%		
	% of Total	55.0%	45.0%	100.0%		

**Source: own compilation from survey data (2020)**

From 189 the total sampled respondent individual borrowers are 60 (31.7 percent) from this category regarding with loan repayment were 46 (76.7 percent) defaulters and 14 (23.3 percent) are non- defaulters. Were 129 (68.3 percent) are group borrowers, from this category 58(45 percent) defaulters and 71(55 percent) non-defaulters respondents. Loan type has been included in the estimation and group borrowers was found to be positively and significantly affected loan repayment performance of borrowers which is significant at one percent ( $\chi^2=15.378$ ).

**Table 11 Loan repayment performance within Payback period**

		Loan repayment		Total	Chi-Square	
		Defaulters	Non -Defaulters			
Payback period	Convenient	Count	32	49	$\chi^2 = 12.722$ Asymp. Sig. = 0.000	
		%	39.5%	60.5%		
		% of Total	16.9%	25.9%		
	Not convenient	Count	72	36		108
			%	66.7%		33.3%
		% of Total	38.1%	19.0%		
Total	Count	104	85	189		
		%	100.0%	100.0%		
	% of Total	55.0%	45.0%	100.0%		

**Source: own compilation from survey data (2020)**

As shown in above table, 11 regarding perception of convenient of installment period 67 percent of the defaulters respondents installment period not convenient, which is greater than the corresponding figure for the defaulters borrower 33 percent, which is a significant at one percent level. This indicates that the variable under consideration negatively related with repayment performance, which is highly significant at one percent. The percentage defaulter borrowers say the payback period is not convenient. This implies that indicate modify payback period that similar with borrowers convenient the probability of loan repayment performance are increase.

**Table 12 Loan repayment performance within amount of loan extends.**

		Crosstab				
		Loan repayment		Total	Chi-Square	
		Defaulters	Non -Defaulters			
Amount of loan extend	No	Count	51	28	79	X <sup>2</sup> = 4.342 Asymp. Sig. = 0.037
		%	64.6%	35.4%	100.0%	
		% of Total	27.0%	14.8%	41.8%	
		Count	53	57	110	
Yes		%	48.2%	51.8%	100.0%	
		% of Total	28.0%	30.2%	58.2%	
		Count	104	85	189	
Total		%	100.0%	100.0%	100.0%	
		% of Total	55.0%	45.0%	100.0%	

**Source: own compilation from survey data (2020)**

The above table shows the relationship between the amounts of the loan extends and loan repayments. Accordingly the loan repayment status respondents they not get similar amount with your requesting are 65 percent defaulters and 35 no defaulters. Where from borrowers got similar amount with requesting 48 percent are defaulter and 52 percent are non-defaulters which is statically significant at five percent (Chi2=4.342). These results indicated the probability of extend the same amount of their asking are increase the loan repayment performances of borrowers.

**4.1.4. Socio economic character factors of the sampled respondents.**

In this section, based on summary of descriptive statistics of respondents the Socio economic characteristic (market availability, others source of income, income from activity by loan) discussed in the tables consecutively as follows.

**Table 13 Loan repayment performance of borrower with market availability**

**Crosstab**

			Loan repayment		Total	Chi-Square
			Defaulters	Non –Defaulters		
Market Availability	High	Count	0	8	8	X <sup>2</sup> = 14.245 Asymp. Sig. = 0.001
		%	0.0%	100.0%	100.0%	
		% of Total	0.0%	4.2%	4.2%	
	Medium	Count	45	45	90	
		%	50.0%	50.0%	100.0%	
		% of Total	23.8%	23.8%	47.6%	
	Low	Count	59	32	91	
		%	64.8%	35.2%	100.0%	
		% of Total	31.2%	16.9%	48.1%	
Total	Count	104	85	189		
	%	100.0%	100.0%	100.0%		
	% of Total	55.0%	45.0%	100.0%		

**Source: own compilation from survey data (2020)**

Availability of market demand for products to consumers is considered as a major factor for borrowers to sale their products to paid their loan within the time or due date. Accordingly, the assessment showed above stated that from the total respondents. From those responding as that having high market demand, all of them (100 percent) of the sample respondents were a non-defaulters, while those responding having medium and low market demand, the majority were (50 and 64.8 percent respectively) founds to be defaulters. Which is significant at one percent (Chi<sup>2</sup>=14.245). This result indicates having high and low; market demand for the products or service is significantly affect the repayment performance of borrowers.

**Other sources of income**

The below table show summarizes other source of income from activities by loan. The result indicated that from the observed respondents 49.5 percent of the respondents have other sources of income, whereas about 50.5 percent of the populations have no other source of income.

**Table 14 Loan repayment performance with other sources of income**

**Crosstab**

		Loan repayment		Total	Chi-Square
		Defaulters	Non –Defaulters		
Other sources of income	Count	55	21	76	$\chi^2 = 14.298$ Asymp. Sig. . = 0.000
	No %	72.4%	27.6%	100.0%	
	% of Total	29.1%	11.1%	40.2%	
	Count	49	64	113	
	Yes %	43.41%	56.6%	100.0%	
	% of Total	25.9%	33.9%	59.8%	
Total	Count	104	85	189	
	%	100.0%	100.0%	100.0%	
	% of Total	55.0%	45.0%	100.0%	

**Source: own compilation from survey data (2020)**

The percentages respondents those who have no other source of income defaulter and non-defaulter borrowers are 72.4 percent and 27.6 percent respectively. On the other hand, respondents have other source of income of 43.41 percent defaulters and 56.6 percent non-defaulters (successful pay their loan within due date) which is statically highly significant at one percent ( $\chi^2=14.298$ ). These results indicate the borrowers how have others source of income pay their loan within due date.

**Table 15 Loan repayment performance within income from activities by loan of the samples respondents**

**Crosstab**

		Loan repayment		Total	Chi-Square
		Defaulters	Non –Defaulters		
Income from activities by loan	Count	53	37	90	$\chi^2 = 0.795$ Asymp. Sig. = 0.384
	No %	58.9%	41.1%	100.0%	
	% of Total	28.0%	19.6%	47.6%	
	Count	51	48	99	
	Yes %	51.5%	48.5%	100.0%	
	% of Total	27.0%	25.4%	52.4%	
Total	Count	104	85	189	
	%	100.0%	100.0%	100.0%	
	% of Total	55.0%	45.0%	100.0%	

**Source: own compilation from survey data (2020)**

According to results, showed in above table the percentages respondents those who have earned sufficient income from activity by loan 51.5 percent defaulter and 48.5non-defaulter borrowers

and from not 59 percent and 41 percent respectively. This result indicated income from activities financed by the loan is significant determinant of the probability of loan repayment. According this study finding sufficient income from activities financed by loan positively and significantly related with loan repayment performance and thereby reduces loan default.

## **4.2 The Econometric model tests, results and analysis**

### **4.2.1. Assumptions of Logistic Regression**

Before a model relied up on to draw conclusions or predict future outcomes, we should check, as far as possible, that the models we have assumed are correctly specifies. That is, the data do not conflict with assumptions made by the model. For binary outcomes, logistic regression Hosmer and Lemeshow (1980) goodness of fit test is the most popular modeling approach.

The Hosmer and Lemeshow (1998) goodness of fit test are based on dividing the sample up according to their predicted probabilities. Logistic regression assumes meaningful coding of the variables. Logistic coefficients were difficult to interpret if not coded meaningfully. The convention for binomial logistic regression is to code the dependent class of interest as 1 and the other class as 0. The groups must be mutually exclusive and exhaustive; a case can only be in one group and every case must be a member of one of the groups. Larger samples needed than for linear regression because maximum likelihood coefficients are large sample estimates.

The logit regression equation should have a linear relationship with the logit form of the dependent variable. The dependent variable must be categorical. Logistic regression does not assume a linear relationship between the dependent and independent variables.

#### **4.2.1.2. Multicollinearity Test**

Before running a model, the logit, explanatory variables can checked for multicollinearity (Verbeek, 2008). When the independent variables are correlated, it regarded as a problem in the model and this problem are called multicollinearity. Since, multicollinearity is a problem when the explanatory variables logit model highly correlated and provides redundancy information about the response. Therefore, in order to check the existence of multicollinearity among the 17 independent variable, correlation coefficients among the variable were calculated and presented in a matrix as shown in following table (See Appendix).

### 4.2.1.3 The Goodness-of-Fit Model

Binary logistic regression model results revealed that borrower’s loan repayment performance affected by the interaction of different borrower’s factors, lenders related factors, loan factors and socio-economic related factors.

Hosmer and Lemeshow (1980) showed by simulation that (provided  $p+1 < g$ ) their test statistic approximately followed a chi-squared distribution on  $g-2$  ( $g$ =number of groups) degrees of freedom, when the model is correctly specified. This means that given our fitted model, the p value calculated as the right hand tail probability of the corresponding chi-squared distribution using the calculated test statistic. If the p-value is small, this is indicative of poor fit. The null hypothesis for the test is that “there is evidence of miss specification”. The inferential goodness-of-fit test is the H–L statistic that yielded a  $\chi^2$  showed on the following table.

**Table 16 Hosmer and Lemeshow Test**

Step	Chi-square	Df	Sig.
1	7.859	8	.477

**Source: Binary regression output**

As presented on above table the chi-square value for the Hosmer-Lemeshaw (1980) test is 7.859 with a significant level of 0.477. This value is larger than 0.05, therefore indicating support for the model. Hence, we reject the null and conclude that the model fit. Here poor fit indicated by a significant value less than 0.05. Therefore, to support a model the value must be greater than 0.05 (Julie, P, 2007).

**Omnibus test of model coefficient:** gives an overall indication of how well the model performs, over and above the result obtained for block 0, with none of the predictor enters in to the model. This referred as a ‘goodness of fit’ test. For this set of result, a highly significant value is necessary significant value less than 0.05 (Julie, 2007). It presented in the following table.

**Table 17 Omnibus Tests of Model Coefficients**

		Chi-square	Df	Sig.
Step 1	Step	114.911	17	.000
	Block	114.911	17	.000
	Model	114.911	17	.000

**Source: Binary logistic regression output**

From above table 17 to test the measure of goodness of fit in logistic regression analysis, the chi-square was computed and showed that the model significant at one percent significance level. Consequently, the null hypothesis stating the coefficients of independent variables to be equal to zero rejected and the alternative hypothesis of non-zero slope was accepted. The value given in the sig. column is the probability of obtaining the chi-square statistic given that the null hypothesis is true. In other words, this is the probability of obtaining this chi-square statistic (114.911) if there is in fact no effect of the independent variables, taken together, on the dependent variable. This is, of course, the p-value, which compared to a critical value, perhaps .05 or 01 to determine if the overall model is statistically significant. In this case, the model is statistically significant because the p-value is less than five percent.

**Model summary:** gives us another piece of information about the usefulness of the model. The Cox and Snell R square and the Nagelkerke R square values provide an indication of the amount of variation in the dependent variable explained by the model (from a minimum value of zero to a maximum of approximately 1) (Julie, 2007).

**Table 18 Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	145.186 <sup>a</sup>	.456	.609

**Source: Binary logistic regression output**

**Regression analysis** in the model (20) variables' having (+) value indicates its significant increase chances of loan repayment or non-defaulters. Whereas variables having (-) value indicates their significant decrease chances of loan repayment or increase to default.

Nagelkerke R Square and Cox & Snell R Square at 95 percent confidence level approximates at 45.6 percent and 60.9 percent respectively showing the model's goodness of fit was good.

## 4.2.2 Model Output and Hypothesis test results

### 4.2.2.1 Model Output

In the preceding section, variables characterizing the loan repayment performance and their differences among the defaulters and non-defaulter identified. However, binary logistic model analysis emphasize on considering the combined effect of variables between defaulter and non-defaulters borrowers in the study area and their p-value of less than five percent was declared as



sig statistical relationship between dependent (loan repayment) and independent variables associated with loan repayment in binary logistic regression with value of ( $P < 0.05$ ), and  $P < 0.01$ .

The binary logit model result, the maximum likelihood estimates revealed that microfinance borrowers loan repayment affected by the interaction of different potential institutional related and non- institutional related factors. To test the measure of goodness of fit in logistic regression analysis, the likelihood ratio test that says chi-square distribution with degree of freedom (df) equal to numbers of independent variables included in the model (Gujarat, 2003). Consequently, the chi-square computed indicated, the model was significant at one percent significance level.

#### 4.2.2.2 Hypothesis test result

Loan repayment is dependent variable, which is, begins by adding independent variables in to categorical variable list in SPSS version 24 and coded on the date set for 0 and 1 for dummy variables. The study insure that independent variable is categorical variables is declared in this analysis.

**Table 19 Hypothesis test result factors affecting loan repayment performances of borrowers**

Factory affecting loan repayment performances borrowers of microfinance institutions in Jimma zone, southwest, Ethiopia summarized in the following table.

Independent Variables	Symbol	Expected sign/ Hypotheses	Result from binomial logistic regression model
Education level	EL	+ (high education level, high loan repayment performance)	$\beta$ of .405; positive association between education level and loan repayment of MFIs' borrowers
Loan Diversion	LD	- (loan diversion , loan repayment performance)	-.981, negative association between loan diversion and loan repayment of borrowers of MFIs
Purpose of borrowing	POB	+ (Purpose of borrowing, loan repayment performance)	.647 positive association between training and loan repayment of MFIs' borrowers
Follow up	FU	+(more follow up, better loan payment performance )	1.142, positive associations between follow up provided and loan repayment of MFIs' borrowers
Interest Rate	IR	- (unfairness calculation of interest rate , loan repayment performance)	-1.699 negative association between interest rate and loan repayment of borrowers in MFIs
Awareness Creation	AC	+( Awareness creation, loan repayment performance)	B of 1.335; positive association between training and loan repayment of borrowers
Loan Type	LTP	+ (More individual lending scheme, better loan payment performance )	$\beta$ of 1.378; positive association between individual oriented method of lending and loan repayment of borrowers.

Payback period	PBP	+(Convenient payback period, loan repayment performance)	-1.350 negative association between Payback period and loan repayment of borrowers in MFIs
Market Availability	MA	+ (high market availability, high loan repayment performance)	-1.521 negatively associated between market availability and loan repayment of borrowers of MFIs.
Other sours of income	OSOI	(have other source of income , better loan payment performance )	$\beta$ of .983; positive association between having other source of income and loan repayment of borrowers of MFIs
Income from activities by loan	IFA	+(More income from activities by loan, high loan repayment performance)	$\beta$ of .964 ; positive association between income from activities financed by the loan and loan repayment performance of borrowers of MFIs'

The above table shows that out of all the independent variables those was stated under the null hypothesis eleven independent variables was found that statistically significantly affecting the loan repayment performance at one percent and five percent significance level. That means, payback period, interest rate, market availability and awareness creativity were founds that statistically highly significant affects loan repayment performance borrower of microfinance institution at one percent significance level. Educational level, loan type, loan diversion, other source of income, follow up, purpose of borrowing and income from activity by loan were founds that statistically and significantly affect the loan repayment performance at five percent significance level. This indicates that the null hypotheses (H9, H10, H13 and H16) rejected at one percent significances level. In addition, (H4, H6, H7, H8, H12, H15, and H17) rejected at five levels of significances. However, the three six hypotheses (H1, H2, H3, H5, H11 and H14) not rejected at one percent or five percent level of significance. Therefore, sex, age, marital status, dependent family size, dummy institution and amount of loan extend are statistically insignificant at one percent and five percent level of significances. That means there is not affecting loan repayment performance of borrowers of microfinance institutions of the study area.

#### 4.2.2.3 Binary Logistic Regression Results

The logistic regression model output of the variables included in this study presented as follows. The variable in the equation table gives information about the contribution or importance of each of a models predictor variable. The test that used here known as the Wald test and the value of the statistics for each predictor in the column labeled Wald. Value less than 0.05 in the sig. column are the variables that contribute significantly to the predictive ability of the model (Julie, 2007).

**Table 20 Summary of variables in the equation**

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 <sup>a</sup>								
SX	-.677	.478	2.008	1	.156	.508	.199	1.296
AG	.185	.199	.859	1	.354	1.203	.814	1.778
MS	-.786	.582	1.822	1	.177	.456	.146	1.426
EL	.405	.189	4.563	1	.033**	1.499	1.034	2.173
DFSZ	.297	.241	1.523	1	.217	1.346	.840	2.158
LD	-.981	.486	4.067	1	.044**	.375	.145	.973
POB	.647	.299	4.693	1	.030**	1.909	1.064	3.428
FU	1.142	.532	4.615	1	.032**	3.134	1.105	8.885
IR	-1.699	.586	8.400	1	.004*	.183	.058	.577
AC	1.335	.473	7.980	1	.005*	3.801	1.505	9.600
DI	.811	.565	2.060	1	.151	2.250	.743	6.807
LTP	1.378	.547	6.353	1	.012**	3.966	1.358	11.576
PBP	-1.350	.460	8.625	1	.003*	.259	.105	.638
AOLE	.560	.437	1.643	1	.200	1.751	.743	4.126
MA	-1.521	.422	12.965	1	.000*	.219	.095	.500
OSOI	.983	.446	4.859	1	.028**	2.671	1.115	6.401
IFA	1.019	.493	4.277	1	.039**	2.770	1.055	7.273
Constant	-1.148	1.583	.526	1	.468	.317		

a. Variable(s) entered on step 1: SX, AG, MS, EL, DFSZ, LD, POB, FU, IR, AC, DI, LTP, PBP, AOLE, MA, OSOI and IFA.

**Source: Binary logistic regression output**

Number of observation: 189 B=regression coefficient Exp (B) = odds ratio

Sig. = significance S.E. = Standard error,

\*and\*\*indicate that the coefficients are statistically significant at one and five percent level respectively

**Wald statistic:** Alternatively, when assessing the contribution of individual predictors or independent variables in a binomial logistic regression model, one may examine the significance of the Wald statistic. The Wald statistic, analogous or comparable to the t-test in linear regression, is used to assess the significance of coefficients i.e., tests the effect of individual predictor while controlling other predictors. If the wald statistic is located outside, the lower and upper limit of a given confidence interval (99, 95, or 90 percent), null hypothesis rejected and the independent variable is significant. The reverse is true when Wald statistic is located within the interval. In this model, Wald statistic test used to assess the significance of an individual predictor.

The Wald statistic is the ratio of the square of the regression coefficient to the square of the standard error of the coefficient and asymptotically distributed as a chi-square distribution. Although several statistical packages report the Wald statistic to assess the contribution of individual predictors, the Wald statistic has limitations. When the regression coefficient is large, the standard error of the regression coefficient also tends to be large increasing the probability of type-II error. The Wald statistic also tends to be biased when data are sparse.

**B:** This is the coefficient for the constant (also called the “intercept”) and the independent variables of the model. In binomial logistic regression, the regression coefficients represent the change in the logit for each unit change in the predictor. Given that the logit is not intuitive, focus is given for a predictor's effect on the exponential function of the regression coefficient – the odds ratio.

**S.E.:** This is the standard error around the coefficient for the constant.

**Sig.:** This is the chi-square test that determine whether the association between independent variable and dependent variable is statistically significant by comparing the p-value (sometimes called prob-value) of independent variable with the chosen significance level. The association is statistically significant and null hypothesis rejected when the p-value (value listed in the column called “Sig.”) is smaller than or equals to the specified significant level or .05. Whereas, when p-value listed in the sig. column is greater than the specified significance level, the association between the independent variable and dependent variable is statistically insignificant.

**Exp (B):** This is the exponentiation of the B coefficient, which is an odds ratio. This odds ratio is easier to interpret than the coefficient. It is used to interpret the relation between the independent variables and the probability that the dependent variable. The odds in favor of an event occurring is defined as the probability the event will occur divided by the probability the event will not occur. The odds ratio measures the impact on the odds of a one-unit increase in only one of the independent variables.

As presented in the table 17 above, at the top of the output we see that 189 observations in this data set used for analysis. The likelihood ratio Chi-square (17) of 114.911 with p- value of 0.0000 tells us that this model composed of more suitable significant variables comparative insignificant predictors and this indicates that whether the combined effect of all the variables in the model is different from zero or not. Also, tell us how the model as a whole is significantly fit. The log likelihood 145.186 indicated how quickly the model converged.

### 4.3. Interpretation of the model results

The estimated of binary logit model are shown below in table 20 the 17 explanatory variables were considered in the economic model. Out of these 11 of the variables were found to be significant at one percent significant level and five percent significant level significant while the remaining six variables were not significant in explaining the variations in the dependent variable. Educational level, purpose of borrowing, loan diversion, loan type, interest rate, market availability, other sources of income, follow up, payback period, awareness creation, and income from activities by loan included in the model were found to be statistically significant. However, the remaining explanatory variables namely, sex, age, marital status, dependent family size, and dummy institution had no significant effect on the probability of being defaulter.

#### 4.3.1. The borrowers' characteristics of respondents that affecting repayment performance

In this case, the effects of the variables listed under the borrower's characteristics of respondents' factors interpreted based on the sign of each independent variable.

**Purpose of borrowing:** is hypothesizes that there is significant association between Purpose of borrowing and loan repayment performance of borrowers. The result from binomial logistic regression model indicates positively sign. However use for social purpose is statistically significant but has a negative coefficient use for business purpose and use for domestic and agricultural has a positive sign and statistically significant. The result indicates that the probability of repaying loans successfully is higher for borrowers, who used the loan for business, domestic and agricultural investment rather than the borrowers who use the loan for social purpose use. The result shows that if a borrower uses the loan for social purpose his/her probability of repaying the loan other things remaining constant will increase by 35.6 percent. As a result, this affects the borrowers' loan repayment performance negatively. The significance value is .030, which is less than .05. Therefore based on this researcher can say that there is a significant difference between defaulters at five percent significance level. This result is similar with the result of (Mukono, 2015).

**Educational level:** The result from binomial logistic regression model indicate positive sign for education level variable ( $\beta$  of 1.499) which implies positive association between education level and loan repayment performance of borrowers. This result shows that as level of education increases, borrower's ability to access, evaluate, and understand customer handling and get high market demand. Since the Sig., statistic or p-value in some other statistical application (.033) is smaller than the chosen significance level (0.05 or 5 percent). This finding is similar with result of (Fikirte, 2011), (Mukono, 2015) and (Mesele, 2016).

**Loan Diversion:** The loan diversion statuses of borrowers are significant and negatively related to loan repayment rate. The P Value of the result is .044 which is less than the minimum standard for P value = 0.05. The relationship between the status of the loan repayment and loan diversion from the intended purpose of the borrowers has negatively relationship. This finding is similar with result of (Yilkal, 2015).

#### **4.3.2. Lender characteristics of respondents that affecting repayment performance**

**Follow-up:** this hypothesized was founds that positively and statistically significantly affecting loan repayment performance at five percent significance level. By holding other variables constant an increase frequency follow up activities by the lender microfinance institutions increase the probability of borrowers repaying the loan by 0.32 percent in the study area. In other case when follow up or supervision activity increases by the institutions probability of default decreases. This result is line with the prior expectation of (Haile, 2015), (Meshesha, 2014) and (Tefatsion.et.al, 2015). Nevertheless, this result is not agree with the result of (Negese, 2014), (Kebede, 2016), (Garomsa, 2017), (Balamurugan, 2017) and (Geleta, 2018).

**Interest rate:** researcher hypothesized interest rate calculation was found to affect loan repayment performance of borrowers negatively and highly statistically significantly at one percent significance level. This means that the higher loan interest rates probably by the case of unfair chargeable amount by microfinance institution, the borrowers are fails to repay their loan within repayment schedule. As the interest rate charged by lenders, institution increased the probability of default to be increase. This result supported by the result of (Nancy and Mohamed, 2014) and (Mukono, 2015). Nevertheless, this result is inconsistent with the result of (Yogendrarajah and Semasinghe, 2016) and (Benjamin, 2017).

**Awareness Creation:** is significant and positively affects loan repayment performance of borrowers. This result indicates defaulters clients who attend training are lower than the defaulters borrowers who are did not attend or get awareness creativity training. In this regard, the relative probability of being at delinquency rather than paying loan on time for clients who attended training was more than double the corresponding relative probability for clients who did not attended the provided awareness creation trainings was at one percent level of significance. However, this finding contradicted with the previous findings that delivery of well-organized and sufficient training by microfinance institutions would improve loan repayment performance. This result agreed with the results of the study conducted by (Garomsa, 2017) and (Mukono,2015).

#### **4.3.3. Loan characteristics of respondents that affecting repayment performance**

**Loan type:** - hypothesized that there is significant association between loan type and loan repayment performance of borrowers. The result from binomial logistic regression model in the above table 20 and descriptive statistics table 10 indicate positively sign. This shows that as borrowers obtain loan by groups, the probability to repay their loan increase. If borrower obtained loan as group lending scheme, his or her obtain supports and guidance from the others and incentive to operate effectively when loan was taken as the group. This positively affects the probability borrower's loan repayment performance. As the Sig. statistic or p-value (.012) is smaller than the chosen significance level (0.05 or 5 percent), the positively association between lending type and loan repayment is statistically significant. This result is contradicts with the result of (Mukono,2015).

**Payback period:** The payback period is significantly and negatively affects loan repayment performance of borrowers. The result shows statistic and highly significance one percent level. This result indicates loan payback period was unsuitable. This means the installments payment period scheme are not suitable with the period of revenue generation from activities. This implies that suitable installment period have negative related with loan repayment performance. Therefore, the result is consistent with prior expectation hypothesized. This is similar results with (Tenishu, 2014) and (Alemu,2018).

#### **4.3.4 Socio economic characteristics that affecting repayment performance**

**Market Availability:** this hypothesized there is negatively and highly statistically significantly between market availability and loan repayment performance of borrowers. Market demand for products or services to consumers is considered as a factor for borrowers to sale their products or provided service to pay their loan within the time or due date. This result indicate having high market demand or customers respondents are paid their loan within due date. However, the majority percent respondents that have not high market demand are defaulters. This result is similar result with (Haile, 2015).

**Others source of income:** - According to the survey result was founds that positively and statistically significantly affecting loan repayment performance at five percent significance level. This result shows that the having of additional source of income is important. Means have additional income probably increase the borrower's on loan repayments performance by 0.28 percent in the study area. This result is similar result with (Fikirte, 2011)

**Income from activities financed by the loan:** - hypothesized that income from activities financed by the loan is associated with loan repayment performances borrowers of microfinance institutions. The coefficient from binomial logistic regression model in the above table 15 and table 20 indicate positively significant for this variable ( $\beta$  of 2.770), which implies positively association between income from activities financed by the loan and loan repayment. This shows as the income from activities financed by the loan increase borrower's ability to repay their loan within period of time or due date. Since the significance, statistic or p-value in some other statistical application (.048) is smaller than the chosen significance level, the positive association between income from activities financed by the loan and loan repayment is statistically significant. On the other hand, as Wald statistic regarding income from activities financed by the loan 4.227 is outside of 95 percent confidence interval (1.055-2.770), the developed research hypothesis that there is significant association between income from activities financed by the loan and loan repayment is accepted. The result from binomial logistic model interpreted as other factors being constant, increase in income from activities financed by the loan could lead loan repayment rate improved by 1.019. In other way, the probity of increases income from activities financed by the loan increases the odds ratio in favor of non-defaulting by a factor of .964. This result agrees with findings of (Meshesha, 2011) and (Garomsa,2017).



## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1. Summary

The analysis of the study shows that out of the seventeen independent/explanatory variables, which were hypothesized to investigate the factors affecting loan repayment performance of borrowers of microfinance institutions, eleven variables were statistically significant. These variables include educational level, purpose of borrowing, loan diversion, loan type, interest rate, market availability, follow up, payback period, awareness creation, other sources of income and income from activities by loan; In contrast, the remaining six variables were less powerful. While comparing the effects of the significant explanatory variables incorporated in the study, Educational level of borrowers was the significant variable, which affects loan repayment performance of borrowers. As estimated, the variable was positively related to repayment performance and statistically significant at five percent probability level. This result shows that borrowers who have better educational level are more likely to be successful paid loan within due date.

#### 5.2. Conclusions

This study employed both the descriptive and logit model in order to identify the factors affecting loan repayment performance of borrowers of microfinance institutions. Based on the finding it can be concluded that educational level, loan diversion, loan type, interest rate, market availability, other source of income, follow-up, payback period, awareness creation, purpose of borrowing and income from activities by loan have significant effect on loan repayment performance of borrowers positively or negatively. The education level, loan type, follow-ups/ supervisions by the lender institution, awareness creation, other source of income, purpose of borrowing and income from activities by loan are significant variables, which have positive relationship with loan repayment performance of the borrowers. While loan diversion, interest rate, market availability and payback period has negative relationship with loan repayment performance of the borrowers.

**The education level:** - attained by the borrowers was statistically significant and had positive relationship with loan repayment. In this study, the borrower with more education was more likely to be successful on loan repayment. That is the borrowers with higher education level have greater chances of succeeding than those with less education. Borrowers that are more educated and know how to use their loan effectively by managing expenses, and earning more revenue, save, assessing market of investment activity. Therefore, borrowers who attained higher education are repaying their loan better and easy to provide training than those attained lower education.

**Loan diversion:** the loan diversion statuses of borrowers are significant and negatively related to loan repayment rate. The negative sign implies that the use of diverted funds for less or non-income generating purposes.

**Purpose of borrowing:** researcher hypothesized purposes of borrowing is significant and negatively affect loan repayment performance of borrowers. Use for social purpose and for domestic and agricultural are statistically significant has a negative coefficient but use for business purpose has a positive sign and statistically significant.

**Loan type:** was statistically significant and had positive relationship with loan repayment. In this study, the borrower borrowed by group loan type have more likely to be successful on loan repayment. That is the borrowers borrowed in-group have greater chances of succeeding than those borrowed by individual. This shows that as borrowers obtain loan by groups, the probability to repay their loan increase. If borrower obtained loan as group lending scheme, their supports and guidance from the others and incentive to operate effectively as loan taken as the group. This positively influences the probability borrower's loan repayment performance.

**Interest rate:** researcher hypothesized interest rate calculation was found negatively and statistically significantly affects loan repayment. This means that with the unfair loan interest rate charged by microfinance institution, the borrowers to repay their loan within repayment schedule.

**Follow-up or supervision:** Supervision affects the loan repayment performance positively and statistically significant. Borrowers those who get supervised showed good performance to settle their loan because supervision may solve the problem of diverting the loan for other purpose and

encourages the members to make the full effort required their investment projects to be successful.

**Awareness creation:** Training accessibility was affecting loan repayment positively and statistically significant. Providing training to borrowers refers to the facilitation of different trainings, which assists the operators of the borrowers to perform in a suitable way. Capacity building trainings, confidentiality to pay within period would better prepare borrowers to perform in the invested activity they engaged. Therefore, borrowers that have sufficient awareness creation to repaid their loan than the borrowers that attended less or not trained. In other way delivering well-organized and sufficient training properly for borrowers, decrease the probability of being defaulter.

**Payback period:** The payback period a loan is significant and negatively affects loan repayment performance of borrowers. This result indicates loan payback period was unsuitable. It expected that borrowers, who find the repayment period suitable, perform better. From this study monthly installment period are not the same with revenue generation from activities. This implies that suitable installment period have negative related with loan repayment performance.

**Market availability:** Market available was negatively and statistically significantly affects loan repayment. This means market demand for products/service to consumers is considered as a major factor for borrowers to sale their products to pay their loan within the time or due date. This study result shows low market demands are significantly affecting the repayment performance of borrowers.

**Income from activities by loan:** income generated from activity invested by loan was significant and had positive affect loan repayment. This means the income from activities financed by the loan increase borrower's ability to repay their loan within period of time or due date.

### **5.3. Recommendation**

Depending up on the above analyzed data and conclusion drawn the following recommendations were forwarded based on the logit model result and descriptive statistics that are important to the microfinance institutions and its borrowers to take corrective measures on the most important factors affecting loan repayment performance of borrowers of microfinance institutions. It classified as lenders related, borrower related, loan related and socioeconomic related factors in order to reduce significantly loan default borrower and make beneficiary and sustainable of both borrowers and microfinance institutions. Based on the research findings the following recommendations were forwarded.

The borrowers who attained more education level able to pay better performance than the borrowers who were in lower level schooling .Therefore, microfinance institutions should motivate specially on primary level or un educated clients and also easy to provide training that supported borrowers.

Awareness creation trainings would better prepare borrowers to perform in the activity they engaged. Therefore, borrowers, which have sufficient access of training, repaid their loan than those less trained. In other way delivering of well-organized and sufficient training properly for borrowers, reduces the probability of defaulter. Therefore, lender microfinance institution should provide training or creation awareness for their financial management activities like saving habit, the financial recording experience that enables them to manage the expense and revenue related activities of their investing activity in the study area.

The interest rate of MFIs higher specially and unfair on interest charged that leads to create disagreement among borrowers then adjusting chargeable amount in turn affects their loan repayment activities. The conflict of borrowers on interest were calculated from gross borrowed amount but lender institution is deducting five percent as saving, two percent for insurance on the borrowing date and also payment made round by round this deducted are not fair to include in the interest chargeable amounts and deductions of round by round. Microfinance institutions aware the borrowers determining interest from fair amounts considering this problem to support or perform borrowers on loan repayments.

Conducting borrower's follow-up/supervision visits has also a direct bearing on loan repayment performance. In other words, implementing effective and timely follow-up or supervision system and practices considered as a major part of credit activity because a borrower who gets robust and continuous information and technical advices from the lenders institutions is more likely to be successful.

Payback period has a significant effect on loan repayment performance of borrowers. Unsuitability of loan repayment period for borrowers was found to significantly increase the probability of default rate. Therefore, the institution considering problems and has to be arranging special payback schedules depending on the time suitable for them to generate income from activity operating by loan. It will reduce default rate.

Borrowers should use a mechanism of saving money and actively done on investing activity to generate more income from activity financed by loan and repay their loan within specified period to sustainability of both borrowers and lenders.

Loan diversion was also found as essential and has significant effect on loan repayment rate negatively. This means, diverting loan into non-income generating activities increases default rate. Therefore, it is recommended that the institution should give attention to continuous follow-up on proper loan utilization.

In order to solve the problem of borrowing purpose by borrowers, they access the income generating from activity that investing by loan and preparing their plan study to borrow from microfinance and the lenders identify their plan before lending the money, then controlling them by following according to their proposal. In addition, Policy makers are understanding the problems and revising their policy how to minimize loan delay or defaulting.

#### **5.4 Implication for Future researches**

The study emphasized on the factors affecting loan repayment performance of borrowers of microfinance institutions, specifically, Jimma zone; it has taken only two microfinance institutions for this study. Therefore, future researcher can examine about loan repayment performance of borrowers by taking other variables. Future researcher can also enlarge a sample size in different industries such as banking industries for a broader view.

## Reference

- Ababiya, A. G. (2015). Performance of Micro and Small Enterprises and its Determinants: The Case of Hadiya Zone. *Bulletin of Business and Economics* , 214-222.
- Abdullal, M. (2011). Examining critical factors affecting the repayment of microcredit schemes in Amanah. *international economics and business research* , 93-182.
- Abebe, D. (2012). Socioeconomic factors influencing loan repayment performance of microfinance clients: the Case of Busa Gonofa microfinance institution. *National Open University* .
- Acquah, H. A. (2011). Determinants of Loan Repayment Performance of Fishermen:. *Moldova* , 4.
- Alemu, O. (2018). Determinants of Loan Repayment of Micro and Small Enterprises in Jimma Town. *Global Journal of Management and Business Research: B Economics and Commerce* , 18 (4).
- Balamurugan, V. (2017). Assessment of credit default risk in oromia credit and saving share. *International Journal of Business and Administration Research* , 2 (18).
- Bayeh. (2012). Financial sustainability of Microfinance Institutions in Ethiopia. 4.
- Benjamin, M. A. (2017). Microcredit Loan Repayment Default among Small Scale Enterprises:. *A Double Hurdle Approach* , 14 (1).
- Fikirte K. (2011). Determinants of loan repayment performance', a case study on Addis Credit.
- Garomsa, A. (2017). Assessment of factors affecting loan repayment performance of borrowers: An empirical study on selected microfinance institutions in oromia region.
- Geleta, G. Determinants of Loan Repayment Performance of Micro and Small Enterprises the case of Oromia credit and saving Share Company branches under oromia special zone around Addis Aababa .
- Gujarati, D. (2004). *Basic Econometric* (4th Ed.). New York: McGraw-Hill companies.
- Haile, F. (2016). Credit Rationing and Repayment Performance in the Case of Ambo Woreda Eshete Microfinance Institution. *An International Peer reviewed Journal* , 23.

- Haile, F. (2015). Determinants of loan repayment performance: A case study of Harari. *Journal of agricultural extension and rural development* , 7.
- Hosmer, D.W. & Lemeshow, S. (1980). A goodness of fit test for the multiple logistic regressions model (Vol. 1). *Communications in Statistics Journal*.
- Hosmer, D.W. and Lemeshow, S. (1998). *Applied Logistic Regression*. New York: A Wiley-Inter science Publication.
- (2012). Importance of the size of sample and its determination in the context of data related. *Bulletin of the Gauhati University Mathematics Association*.
- Julie, P. (2007). *SPSS Survival Manual: Step by Step Guide to Data Analysis Using SPSS*. New York, USA: Open University Press.
- Kebede. M, T. a. (2016). Factors Affecting Loan Repayment Performance of Small Scale Enterprises Financed by Micro Finance Institutions: Study on Private Borrowers around Wolaita and Dawuro Zone. 16.
- Kothari, C. (2008). *Research Methodology: Methods & Techniques*. New Delhi, India: New age International Publishers.
- Makorere, R. F. (2016). Factors affecting loan repayment. *International Journal of Development and Sustainability*. 3.
- Meshesha, T. (2014). Microfinance Credit Rationing and Loan Repayment Performance: A Case of Omo Microfinance Konso Sub Branch.
- Mukono, A. (2015). Determinants of loan repayment by small and medium enterprises in Nairobi country.
- Nancy, G.K. and Mohamed, S. B. (2014). Determinants of Loan Repayment in Small. *Management Studies and Economic Systems* , 4, 67-79.
- National Bank of Ethiopia. (2016, Jine). <http://www.nbe.gov.et/publications/annualreport.html>.
- Nawai, N. (2010). Determinants of Repayment Performance in Microcredit Programs : A. *International Journal of Business and Social Science* , 1 (2).

- Negese, T. (2014). Performance of Loan Repayment Determinants in Ethiopia Microfinance. 13, 29-49.
- Nwachukwu, I. N. (2014). Determinants of institutional credit repayment performance among farmers in Afikpo North LGA of Ebonyi state.
- (2015-2019). Report of Oromia Credit and Savings Share Company Jimma zone.
- Samwel, W. a. (2016). Factors affecting clients on loan repayment from microfinance institutions: a case study of PRIDE Arusha, Tanzania. International journal of scientific and technical research in engineering. 1 (8).
- Savio, R. B. (2017). Loan Repayment Performance of Micro Small Enterprises. International Journal of Computational Research and Development. , 2 (2), 154-159.
- Sisay, T. (2018). Factors influencing loan repayment performance of micro and small enterprise borrowers financed by microfinance institution the case of oromia credit and savings share company. Addis ababa: addis ababa university.
- Ssekiziyivu, B. T. (2017). Borrowers' characteristics, credit terms and loan repayment performance among clients of microfinance institutions (MFIs): Evidence from rural Uganda. Makerere University Business School, Uganda .
- Tesfatsion Sahlu, G. A. (2015). Factors Influencing MFIs Group Loan Repayment Performance of MSEs. Research Journal of Finance and Accounting , 6 (5).
- Verbeek, M. (2008). A Guide to modern Econometrics", 3rd edition, John Wiley and Sons. Erasmus University, Rotterdam.
- Wafula, N. (2016). Determinants of Loan Repayment by Borrowers from Micro-Financial Institutions in Nakuru County Kenya. Journal of Investment and Management , 5 (5).
- Wood, J. (2013). A Financial Market System Perspective : The New Microfinance Handbook Washington. In W. Bank. DC.
- Yilkal. (2015). Factors Affecting Women's Effectiveness in use of Microfinance and Microcredit Services; Jimma Zone, Southwest Ethiopia.
- Zikmund, William G., B. J. (2010). Business Research Methods. South Western. Cengage Learning.



## **Appendix, A**

**JIMMA UNIVERSITY**  
**COLLEGE OF BUSINESS AND ECONOMICS**  
**DEPARTMENT OF ACCOUNTING AND FINANCE**  
**MSC PROGRAM**

**Dear respondent,**

I am a graduate student in the department of Accounting and Finance, Jimma University. Currently, I am undertaking a research entitled '*Factors affecting repayment Performance of borrowers of Microfinance institutions in Case of Jimma zone*'. The aim of this study will be to identify causes that affect the loan repayment among borrowers of Microfinance institutions.

*I will like to promise you that the information you provide used purely for academic purpose; no individual's responses would identified as such and the identity of persons responding were release to anyone. So its confidentiality is highly guaranteed.* You honest and thoughtful response is helpful as a great input to the quality of the research results, and I believe that you will broaden your assistance by participating in the study. This questionnaire contains only two sections and expected to take approximately 15 to 25 minutes to complete. You are kindles requested to provide accurate answer by assuring questions.

**Thank you in advance for your kind cooperation and wasted your time.**

**Sincerely,**

**Mubarik Abajihad**

**Instructions:**

- I. No need of writing your name
- II. For Open-ended questions indicate your answers by *write the appropriate answer* on the blank space provided in front of the question.
- III. For Close-ended questions, indicate your answers by mark (√) in the appropriate choice box.
- IV. If you have comments or if you want to provide further explanations, please use the space provided at the end of the questionnaire.

1. Name of your lender institution \_\_\_\_\_

**I. Borrowers Character Factors**

1.1 Sex. 0. Female  1. Male

1.2 Age \_\_\_\_\_

1.3. Marital Status 0. Single  1. Married

1.4. Education level by year of schooling \_\_\_\_\_/program \_\_\_\_\_

1.5. Your dependents family size within the household in number \_\_\_\_\_

1.6. Do you prepare business plans with purposes of borrowing? 1. Yes  0. No

1.7. If your answer is yes would you diversions for other purpose? 1. Yes  0. No

1.8. If yes what is the reasons entire to non-intended purposes? 0. Business plan problem

1. Unexpected business situations  2. Others

1.9 In which sector you are purpose of borrows from microfinance institution?

1. Social purpose  2. Business  3. Domestic and agricultural .

1.10. Do you have experience with sector your purpose of borrowing before engaging in this credit scheme? 1. Yes  0. No

## II. Institutional Character Factors

- 2.1 Did you get any training before receiving a loan? 1. Yes  0.No
- 2.2 If yes, it is relating with purpose of borrowing. 1. Yes  0.No
- 2.3 Does institution frequently follow up on loan after its disbursement? 1. Yes  0. No
- 2.4 Do you think that your production or market place is accessible for consumers? 1.Yes

## III. Loan Character Factors

- 3.1 Did you receive loan by group or individual? 1. Group  0. individual
- 3.2 If groups how you are formed your group? 0. Based on friendship  1. Family based relationship 2. Activity based  3. Randomly created by institution  4.Others
- 3.3 If you received loan in-group what is your status in your Credit groups? 1. Paid fully in due date  0. Not completed payment with due date
- 3.4 If you received loan by individual what is your status? 1. Paid fully in due date  0. Not completed payment with due date
- 3.5 The amount you received is similar to your intended requested. 1. Yes  0.No
- 3.6 If no, it has effects on your loan repayments. 1. Yes  0.No
- 3.7 . Payback period is not convenient. 1 yes  2.No
- 3.8 How you are paying the loan amounts? 1. By settlement methods  0.at onetime
- 3.9 If it is settlement method how determined interest rate? 1. Fixed  0. Floating
- 3.10 On a day of received loan either any percentage deducting by lenders for saving  
1. Yes  0. No
- 3.11 If yes do you get interest that saving amounts. 1. Yes  0. No
- 3.12 If question numbers 3.11 yes the interest, would be calculating from which one?  
1. from total amounts  0. After deducting amount of saving
- 3.14 The interest rate charged /calculation is 1.fair  0.not fair
- 3.15 The amounts of money you have borrowed \_\_\_\_\_ maturity period by year \_\_\_\_\_ or by month \_\_\_\_\_ amount percentage you are saving \_\_\_\_\_
- 3.16 The payment terms per year \_\_\_\_\_, the amount you are pay to the first term \_\_\_\_\_, amount paid to next period \_\_\_\_\_ and total amount you are paid (up to the end terms) \_\_\_\_\_

#### **IV. Social - Economic Factors**

4.1 Do you use other sources to pay the loan repayment other than the return of your loan investment? 1. Yes  0. No

4.2 Do you have any other sources of income other than the activity you have borrowed for it? 1. Yes  0. No

4.3 If your answer is yes at what about market demand status of your product/service?  
0. High  1. Average  2. Low

4.4 If it is low, have you ever been assessed the feasibility of your business before starting operations? 1. Yes  0. No

**YUUNIVARSIITII JIMMAA**  
**KOLLEJJII BIIZINESII FI IKOONOOMIKSII**  
**MUUMMEE AKKAAHUNTINGII FI FAAHIINANSII**  
**SAGANTAA DIGIRII LAMMAFFAA**

**Gaaffilee**

**Kaabajamtoota warra deebistan**

Ani barataa eebbifamuu kan yuunivarsiitii Jimmaa muummee akkahuntingii fi faahinaansii irraa. Yeroo ammaa ani qorannoo matadureen isaa ‘**Taateewwan liqeeffattoota dhaabbata aksiyoona liqiif qusannoof raawwii liqii deebisanii kaffaluu irratti dhiibbaa godhan: bakki isaa godina Jimmaa.**

Kaayyoon qorannoo kan rakkoo raawwii liqii deebisanii kafaluu liqeeffataa waldaa aksiyonaa liqiif qusannaa irraatti dhiibbaa godhuu addatti baasuu ta’a Ani odeeffannoon isin kennitanuu qorannoo qofakan itti fayyadamuu ta’u isaa waada isinif gala:

**Deebin enyummaa namoota addatti bahee fi deebii dhuunfaadhaan lakkise eenyuyyuu akka deebiise addatti qoodaamamiti.kanaaf iccitooma isa sirriitti wabii qabeessa.**

Deebiin isin amanamummaafii yaada guutuun kennitan qulqullina firii qorannoo kanaatiif qooda guggaa qaba. Akkasumas qorannoo kana keessatti balinaan gargaarsa akka gootan nan amana. Gaaffileen kunniin kutaalee lamaa qabufii tilmaamaan daqiiqaa 15- 25 keessatti akka xumuramu eegama. Kanaafuu isin gaaffilee fudhattan mirkaneefachuu haala gaariidhaan deebii sirrii kenniitu.

**Hirmaattotni nuwallin tattani hojjetaan galataguddaa qabdu.**

**Erga,**

**Mubaarik Abbajihaad**

## Qajeelfama:

- I. Maqaa barreessuu hinbarbachisu.
  - II. Gaaffiillen banaan kan agarsiisuu deebii keessan barreessudha kanaaf deebii qajeelaa bakkaa duwwaa kannaame irratti barreessaa.
  - III. Gaaffiillen cufaan kan agarsiisuu deebii keessan saanduqa keessatti mallattoo itti gochuu (✓)
  - IV. Yoo yaada/ibsa dabalata qaabataan maaloo iddoo dhuma gaaffii argamuu irratti ibsa.
- Maqaa dhaabbata irraa liqeffattan \_\_\_\_\_

### 1: Taateewwan haala liqeffattoota

- 1.2. Saala 0. Dhalaa  1. Dhiiraa
- 1.1 Umrii \_\_\_\_\_
- 1.3. Haala fuudha fi heeruma 0. Kan hin fuune/heerumne  1. Kan fuudhe/heerumte
- 1.4. Sadarka barumsaa turmaata wagaattin \_\_\_\_\_ / Sadarka \_\_\_\_\_
- 1.5 Baayyina maatii keessan keessa hirkataa ta, aan \_\_\_\_\_
- 1.6 Yeroo liqeffattanu karoora liqeffattanuf ni qopheessitu? 1. Eeyee  0. Lakki
- 1.7 Yoo deebiin kee eeyee ta, ee gara biraatti ni jijjirtaa? 1. Eeyee  0. Lakki
- 1.8 Yoo deebiin kee eeyee ta, ee guutuumaatti maaliif karoora liqeffatteen alaa ta'e?  
0. Rakko buuzinesi planittin qarshiin eeyyamame gahaa waan hin taneef  1. Irra caalaatti bu'aa argachuuf  2. Kan biroo

### 2: Taateewwan haala inistiitiyuutii

- 2.1 Liqaa fudhachuun dura leenjii fudhattee/nii jirtaa/tu? 1. Eeyee  0. Lakki
- 2.2 Yoo fudhattee/ni jiratte/ttan sababa liqaa keetii/ssani wajjin wal arga? 1. Eeyee   
0. Lakki
- 2.3 Hangii fudhattan/te kan barbadden/nin walqixa? 1. Eeyee  0. Lakki
- 2.4 Yoo hin taane liqaa kaffaltii irratti miidhaa isin irratti fide qaba? 1. Eeyee  0. Lakki
- 2.5 Inistiitiyuutiin isinif liqeessuu hordoffii isinif ni godhaa? 1. Eeyee  0. Lakki
- 2.6 Yoo ni godhaa ta'e yeroo akkami gidduutti waggaa hangaam? \_\_\_\_\_

### III. Taateewwan haala liqaa

- 3.1 Liqii kan fudhattan gurmuun moo dhuunfaadhaan? 1. Gurmuun  0. Dhuunfaadhaan
- 3.2 Yoo gurmuun ta, ee akkamin gurmuu keessan akkamin uumtan? 0. Walbeekumsan   
1. Walittidhufeenyaa maatiittin 2. Haala qabeenyattin 3. Faduulii dhaabbaattichaan 4. Kan biraa

- 3.3 Yoo gurmuun fudhattaan sadarka kaffaltii keessani gurmuu keessan keessa haala kam irratti argamtu? 1. Kan yeroon kaffallu xumuraan  0. Kan yeroon kaffalle hin xumuree
- 3.4 Yoo dhuunfaadhaan fudhattaan sadarka kaffaltii keessani haala kam irratti argamtu?  
1. Kan yeroon kaffalun xumuree  0. Kan yeroon hin kaffalle hin xumuree
- 3.5 Deebiin  keessan gad-aanaa yoo ta'e osoo hojii hin jalqabiin qorannoo gaggeessitanii jirtu/ta  
1. Eeyyee  0. Lakki
- 3.6 Maallaqa liqeeffattan seekteraa maalii irratti ittin hojjetan? 1. Daldaalaa  2. Qonna fi Oomisha  3. Tajaajila
- 3.7 Seekteraa irraati hojjechuuf liqeeffattan irratti kanaandura muuxxannoo ni qabduu?  
1. Eeyyee  0. Hin qabnu
- 3.8 Yoommu liqaa kaffaltii galii irratti hojjechuuf liqeeffateen irraa kan argamu alaatti galii bira irra ni kaffaltaa? 1. Eeyyee  0. Lakki
- 3.9 Yeroon kaffaltii isaa mijaa'aa wan dha?  1 Eeyyee  2. Lakki
- 3.10 Haalli hangaa kaffaltii keessanii akkami? 1. Qoqqoddaan 0. Yeroo tokkotti
- 3.11 Yoo qoqqoddaan kaffalama ta'e hangi dhalli irraa herregamu haala kamiin?  
1. Dhabbataadha  0. Ni jijjirama
- 3.12 Guyyaa qarshii fudhattanu/ttu dhibbeentaan qusattan jiraa? 1. Eeyyee  0. Lakki
- 3.13 Yoo jira ta'e hanga qusattanurratti dhala ni argattuu? 1. Eeyyee  0. Lakki
- 3.14 Yoo deebiin gaaffii 2.27 eeyyee ta'e yeroo kaffaltii rawwattanu dhalli isa kam irraa herregama? 1. Hangi qusannaa osoo hin hirrifamin 0. hangi qusannaa hirrifamee
- 3.15 Mallaqa hammamii liqeeffatte/tan \_\_\_\_\_ yeroo turtii \_\_\_\_\_ hanga qusanoof keewwattan \_\_\_\_\_
- 3.16 Yoo yeroon kaffaltii isaa qoqqoddaan yoo ta'e hanga marsaa jalqabaa irratti kaffalttan \_\_\_\_\_ hanga marsaa itti aanutti irratti kaffaltan \_\_\_\_\_ kaffaltii walii gala hanga xumuraatti kaffaltan/te \_\_\_\_\_

#### IV Taateewwan haala hawaasummaa fi dinagdee

- 4.1 Hamma galii kan biroo ni qabda? 1. Eeyyee  0. Lakki
- 4.2 Yoo deebiin keessan eeyyee ta'e hanga isaa tilmaaman mallaqaan ji'an \_\_\_\_\_ waggaan \_\_\_\_\_
- 4.3 Afooshaalee Hawaasummaa irratti ni hirmaattaa? 1. Eeyyee  0. Lakki
- 4.4 Yoo deebiin kee eeyyee ta'e liqa kaffaltu irratti miidhaa ni fidaa? 1. Eeyyee  0. Lakki
- 4.5 Siyaasni yeroo hamma keessatti kaffaltii raawwachuu irratti rakkoo isin irraan gahe qaba?  
1. Eeyyee  0. Lakki

**Appendix, B Correlation matrix between independent variables**

	LRP	SX	AG	MS	EL	DFS	LD	LTP	OS	AE	IR	MA	FU	PBP	AC	POB	IFA	LI
LRP	1																	
SX	-.169	1																
AG	.005	.757	1.00															
MS	-.094	.024	.312	1														
EL	.243	-.091	.415	.169	1													
DFSZ	.057	.074	.333	.218	.337	1												
LD	-.149	-.007	.020	.010	.084	.123	1											
LTP	.297	-.030	-.041	-.248	.086	-.055	-.159	1										
OSOI	.286	.036	.138	.023	.141	-.013	-.036	.136	1									
AOLE	.162	-.032	.112	.005	.054	.032	.077	.021	.114	1								
IR	-.222	-.104	-.156	.053	-.058	-.022	-.025	-.123	-.125	.019	1							
MA	-.246	.091	.115	.016	.029	.057	.056	-.151	.026	.069	-.065	1						
FU	.228	.004	.124	-.003	.117	-.069	-.018	.014	.116	.071	-.154	-.139	1					
PBP	-.270	.172	.117	-.032	.066	.104	.050	-.108	-.056	-.084	.087	.122	-.013	1				
AC	.373	-.110	.204	-.002	.077	.040	-.081	.183	.208	.114	-.018	-.124	.092	-.187	1			
POB	.089	-.082	-.038	-.150	-.122	-.068	.002	.003	.076	.125	.069	.182	-.029	-.008	.062	1		
IFA	.074	-.007	.180	-.011	.108	.059	.234	-.263	.039	.030	.037	.028	-.028	.052	.017	.067	1	
LI	.081	-.060	-.053	-.079	.040	-.039	-.092	-.168	.048	-.020	-.009	.168	-.057	-.057	-.002	.048	.114	1



**Appendix: C Sample frame from OCSSCO borrowers performance states based on number of clients report of 2019**

S.N	Name of Branch	No. of Borrowers members			Percentage of Borrowers served
		Defaulter	Non- Defaulter	Total	
1	Goma	470	3,417	3,887	5.6
1.	Agaro	39	1,382	1,421	2.1
2.	Mana	527	5,660	6,187	8.9
3.	Jimma	363	2,035	2,398	3.5
4.	S/achekorsa	511	3,723	4,234	6.1
5.	Dedo	569	1,471	2,040	2.9
6.	Sokoru	344	1,283	1,627	2.4
7.	O/Nada	781	1,795	2,576	3.7
8.	L/Kossa	422	2,652	3,074	4.4
9.	Gera	968	4,149	5,117	7.4
10	L/Seka	1,401	1,987	3,388	4.9
11	T/Afeta	1,163	2,161	3,324	4.8
12	Shabe	593	4,360	4,953	7.2
13	Gumay	178	1,073	1,251	1.8
14	N/Benja	86	5,772	5,858	8.5
15	C/Boter	454	2,849	3,303	4.8
16	Sigimo	1,026	1,960	2,986	4.3
17	Setema	426	1,451	1,877	2.7
18	Bilida	132	2,702	2,834	4.1
19	Akko	645	1,130	1,775	2.6
20	Botor	124	2,945	3,069	4.4
21	JMFS	109	1,890	1,999	2.9

**Source: OCSSCO report for the year ended 2019.**

**Appendix Loan repayment performance borrowers of Oromia credit and saving Share Company in Jimma zone in past five years based in amounts from 2015-2019**

Years	2007/2015	2008/2016	2009/2017	2010/2018	2011/2019
Amount of total loan	159,278,790.93	173,850,285.51	379,055,813.41	483,426,535.27	521,573,460.24
Amount of collected	150,671,352.61	165,242,847.19	369,373,513.35	486,529,499.62	511,293,887.87
Amount of defaulted	8,607,438.32	8,607,438.32	9,682,300.06	11,515,407.61	33,250,820.48
Default rate	5.40%	4.95%	2.01%	2.38%	6.38%