

# Association of Group, Lender, and Socio-Economic Factors with Group Loan Repayment Performance of MSE's Manufacturing Sector: A Case Study in Dedebit Credit and Saving Institution (DECSI), Ethiopia

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## Abstract

This study was conducted with the objective of analyzing the association of group, lender, and socio-economic factors with group loan repayment performance of the beneficiaries of DECSI operating in the manufacturing sector as group owned MSEs. Primary data was collected from 34 selected group leaders of the group owned MSEs borrowers by using structured questionnaire and depth-interview. Chi-square test employed to analyze the association of group related factors, lender related factors, and socio-economic related factor with group loan repayment performance. The statistical test revealed that self initiation, peer pressure, suitable loan repayment period, training, and external shocks have statistically significant association with loan repayment performance of the group borrowers; whereas homogeneity, internal and regulation, loan size, and loan supervision are found to have statistically insignificant association with group loan repayment performance, though they make difference on loan repayment performance of the group borrowers. Therefore, to improve the loan repayment performance of the group borrowers, DECSI, among others, should consider the statistically significant factors while offering group loan; and should focus on the repayment challenges which are stated by the borrowers (market linkage and loan supervision), and take corrective actions. Finally, further research on similar area is suggested by considering factors that need solution such as experience of group borrowers in the sector, group size, and lack of land; besides similar study may be conducted in other sectors of the MSEs (i.e., construction, urban agriculture, and service and trade) in order to have a holistic understanding of about the determinants of group loan repayment performance.

**Keywords:** Chi-square, DECSI, Determinant Factors, Group Loan, Logit, Manufacturing Sector, Mekelle Microfinance, MSEs.

## 1. INTRODUCTION

The purpose of this study was to analyze the association of group, lender, and socio-economic factors with the group loan repayment performance of the beneficiaries of DECSI microfinance institution. Specifically, the study was addressing groups that are engaging in manufacturing sector found in Mekelle city. It was attempting to analyze the common assumption that group lending leads to good repayment rates by examining what countervailing processes may affect group loan repayment.

Microfinance is often defined as financial services for poor and low-income clients offered by different types of service providers. In practice, the term is often used more narrowly to refer to loans and other services from providers that identify themselves as "microfinance institutions" (MFIs). It has grown in prominence since Muhammad Yunus started the Grameen Bank Project in 1976. The Grameen bank of Bangladesh, which was founded by Mohammad Yunus was one of the first microfinance institutions (MFIs). Mohammad Yunus came upon a group of villagers that were unable to pay off their debt to a money collector. These methods include group lending and liability, pre-loan savings requirements, gradually increasing loan sizes, and an implicit guarantee of ready access to future loans if present loans are repaid fully and promptly. It is an important strategy to alleviating poverty in developing countries (Cabral, Russell, & Singh, 2006, as cited by Fikirte, 2011).

Microfinance institutions are primarily expected to provide various a permanent access to appropriate financial services such as credit, savings, micro-insurance, remittances, leasing to low-income clients including consumers and the self employed, who traditionally lack access to banking and related services. It is rather an important tool

for the eradication of poverty (Jegatheesan, Ganesh, & Kumar, 2011).

In addition to financial services, some MFIs provide social intermediation services such as the formation of groups, development of self confidence and the training of members in that group on financial literacy and management. The target group of MFIs are self employed low income entrepreneurs who are; traders, seamstresses, street vendors, small farmers, hairdressers, rickshaw drivers, artisans blacksmith etc (Robinson, 2003).

One of the most characteristics of microfinance institution is extending loan to the poor and low income people through group without asking for collateral, but it serve as collateral. Therefore, in microfinance institutions (MFIs) group lending is a lending to groups of members of a community who have come together with the goal of reinforcing their creditworthiness. It allows a group of individuals - often called a solidarity group - to provide collateral or loan guarantee through a group repayment pledge (Ralph, 2011).

It is since the 1970s that, group-lending programs have been promoted in many developing countries. Most schemes make members jointly liable for the repayment of loans and give subsequent credit only if all members of the group have fully repaid. The joint liability but possibly more so, the threat of losing access to future credit incites members to perform various functions, including screening of loan applicants; monitoring the individual borrower's efforts, fortunes, and shocks; and enforcing repayment of their peers' loans (Zeller, 1998).

According to Ghatak and Guinnane (1999), joint liability leads to an enhanced repayment performance through lessening the four major problems facing formal credit institutions in lending to the poor. These problems are: (a) to ascertain what kind of a risk the potential borrower is (the problem of adverse selection), (b) to make sure they will utilize the loan once made, properly, so that they will be able to repay it (the problem of moral hazard), (c) to find out how their project really did in case they declares their inability to repay (auditing or monitoring) and (d) to find methods to force the borrower to repay the loan if she is reluctant to do so (the enforcement problem).

Even though joint-liability lending have been proposed that various aspects of microcredit's informational and enforcement in loan repayment advantages over other forms of lending, Norhaziah and Mohdnoor (2013) argued that examining repayment performance is important because, if borrowers do not repay, then there may not be sufficient funds to ensure that the liquidity position of the MFI is maintained. When there is a loss in the MFI liquidity due to high levels of non-repayment, the cyclical flow of funds between the MFI and the borrowers will be interrupted. The result of this is a reduction in the efficiency of the MFIs operation. To attain financial viability, MFI must reach operational self-sufficiency first and in order to attain operational self-sufficiency, the MFI must ensure that the operational cost can cover non-financial expenses. This can be achieved by low delinquency where the MFI must maintain a low delinquency rate to ensure operational self-sufficiency.

To sum up, this study was examining the association of group, lender, and socio-economic factors with group loan repayment in DECSI microfinance institution. Specifically, the study has covered groups of borrowers who took loan from DECSI microfinance institution to work together in manufacturing activities in Mekelle city, Tigray, Ethiopia from 2009-2013 operation years. Also, the study has focused on the extent to which group related factors (i.e., demographic characteristics of members and group-specific factors), socio-economic factors, and lender related factors that may influence group loan repayment performance.

## **2. EMPIRICAL LITERATURE REVIEW**

Loan repayment performance is affected by a number of socio-demographic of group members, group specific factors and lender/institutional factors. While some of the factors positively influence the loan repayment, the other factors negatively affect the repayment rate. Regarding to the group loan repayment performance of borrowers, several studies have been conducted in many countries by different researchers and summarized below.

### **2.2.1 EMPIRICAL STUDIES IN OTHER COUNTRIES**

A study undertaken by Bassem (2008), on main factors vulnerable to affect the repayment performance of group lending in Tunisia reveal that the repayment is influenced positively by the internal rule of conduct, the same business, the knowledge of the other members of the group before his formation, the peer pressure, the self-selection, the sex, the education, and the non financial services and tie with the loan officer. However, the homogeneity, and the marital status are among the main factors acting negatively on the repayment performance of credit groups.

A study on group size and social ties in microfinance institutions conducted by Abbinki, Irlenbusch, and Renner (2006) indicated that microfinance programs provided poor people with small loans given to jointly liable self-selected groups. Follow-up loans provided incentives to repay. In this study they experimentally investigated the influence of those features on strategic defaults. Each group member invested in an individual risky project, whose outcome was known only to the individual investors. Subjects decide whether to contribute to group repayment or not. Only those with successful projects could contribute. The experiment ended if too few repay. This investigated group size and social ties effected and observed robust high repayment rates.

A study conducted by Wenner (1995) on group credit as a means to improve information transfer and loan repayment

performance in Costa Rica found that members of groups engaged in formal screening with an internal code of regulations had a low probability for delinquency, indicating that screening indeed resulted in an informational efficiency gain, a result which is supported by Zeller (1998).

A study on key factors of joint-liability loan contracts by Alexander and Denitsa (2004) reported that joint liability induces a group formation of low risk borrowers. Furthermore, the incentive system leads to peer-measures between the borrowers, helping the lender to address the moral hazard and enforcement problem. They also demonstrate that the mechanism realizes high repayment rates, if the loan officers fulfill their complementary duties in the screening and enforcement process.

Another study was conducted by Onyeagocha, Chidebelu, Okorji, Ada-Henri, Osuji and Korie (2012) on an examination of determinants of loan repayment of microfinance institutions in southeast states of Nigeria reveal that out of nine explanatory variables, five variables were found to be significant for the probability of being defaulter; that is group size, shocks, training duration, loan size and credit officers experience were significantly influencing loan repayment performance of MFIs. However, the remaining four explanatory variables namely, gender, age, interest rate and methodology had no significant effect on the loan repayment performance.

Roslan and Mohd (2009) undertook a study on the determinants of loan repayment among microcredit borrowers in Malaysia by dividing determinants into three categories- characteristics of borrowers, characteristics of the project or business and the characteristics of the loan. Their result indicated that the probability for loan repayment default was influenced by the gender of the borrower, type of business activity, amount of loan, repayment period and training.

Determinants of repayment performance of credit groups in Madagascar were analyzed by Zeller (1996). He found that groups with higher level of social cohesion have a better repayment rate. Moreover, the programs that provide saving service to their members have a significantly higher repayment rate.

Julia (1996) studied the determinants of successful group loan repayment in Burkina Faso. This study revealed that probability of loan repayment is influenced by effective use of group dynamics (*ex ante* and *ex post* peer pressure and group solidarity) as well as other factors such as appropriate training and leadership; homogeneous groups with sufficient training and reliable leaders had the highest probability of repaying their loans; negative externalities like the “domino effect” occur when one or more members of a credit group default due to the default of other members; negative influence on repayment occurs when the credit terms and conditions are no longer appropriate for each member as credit cycles continue, creating an inherent “matching problem” as group lending is repeated over time; and as loan sizes increase due to the dynamic incentives, preferred loan terms and volumes will differ with the consequence that borrowers with smaller loan volumes will reject joint-liability for borrowers with higher loan volumes in the same group if the latter run into repayment difficulties.

An investigation on the key factors that influence loan repayment performance among group clients of microcredit institutions (MFIs) in Tanzania have been carried out by Francis and Abel (2009). According to their findings, experience, training time, and sanctions have positive and significant effects on loan repayment performance among group clients of MFIs. However, transaction costs and group size have negative and significant effects on loan repayment performance.

An investigation by Alessandra, Luke, and Bruce (2005) on the effect of social capital on group loan repayment found direct relationship between default and homogeneity, which is the increment in the homogeneity of the group members, would lead to the higher repayment.

As per empirical analysis on determinants of repayment performance in credit groups by Zeller (1998) implementation of internal rules and regulations by the group members would lead to the better repayment performance that is decrement in the cost of operations of the lender and decrement in the default rate.

To sum up, as mentioned above, various studies were conducted in various countries (outside Ethiopia) on the determinants of group loan repayment performance. Most of these studies have identified major factors influencing group loan repayment performance and categorized them as group borrower specific factors (i.e., peer monitoring, peer pressure, self-selection, homogeneity, group size, internal rule of regulation), lender specific factors (i.e., loan size, training, experiences of credit officers) and socio-economic specific factor (i.e., external shocks) that affect principally the loan repayment rate of group borrowers.

### **2.2.2.EMPIRICAL STUDIES IN ETHIOPIA**

An empirical analysis on factors that influence the loan repayment performance of the beneficiaries of Addis Credit and Saving Institution (ACSI) was made by Fikirte (2011). Accordingly, the study revealed that out of twelve explanatory variables, eight variables were found to be significant for the probability of being defaulter, that is age and five business types (baltina & petty market, kiosk & shop, services providing, weaving & tailoring, and urban agriculture) were important in influencing loan repayment performance of the borrower. In addition, sex and business experience of the respondents were found to be significant determinants of loan repayment rate. However, the remaining four explanatory variables namely, education level, family size, business experience and dependency ratio had no significant effect on the probability of being defaulter.

An empirical study was conducted by Amare (2005) on the determinants of loan repayment performance of

smallholder farmers in North Gondar, Ethiopia. A total of 15 explanatory variables were considered in the econometric model. Out of these, seven variables were found to significantly influence the repayment performance. These were land holding size of the family, agro-ecology of the area, total livestock holding, number of years of experience, number of contacts, sources of credit and income from off-farm activities. The remaining eight variables (family size, distance between main road and household residence, purpose of borrowing, loan amount, age of borrower, education level, gender of the household head, and expenditure for social festivals) were found to have insignificant effect on loan repayment performance of smallholder.

Another study was conducted by Abraham (2002) on an examination of determinants of repayment status of borrowers and criteria of credit rationing with reference to private borrowers around Zeway area who are financed by the DBE. The result revealed that having other source of income, education, work experience in related economic activity before the loan and engaging on economic activities other than agriculture are enhancing loan recovery performance while loan diversion, being male borrower and giving extended loan repayment period are undermining factors of loan recovery performance.

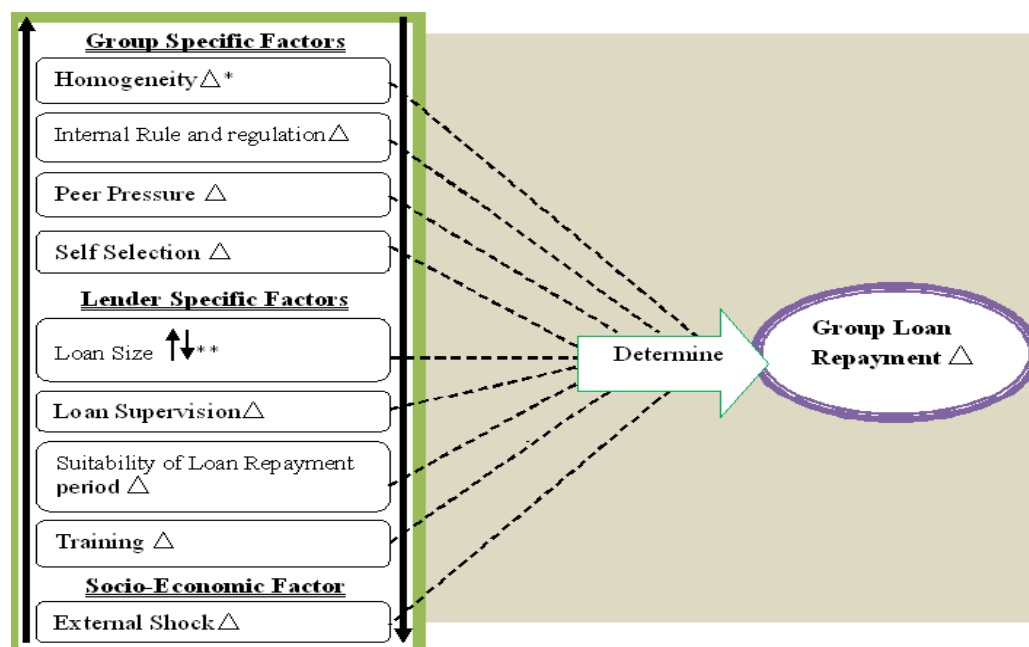
An investigation on the microfinance repayment performance of Oromia Credit and Saving Institution (OCSI) in Kuyu has been carried out by Abafita (2003). According to his finding; sex, loan size and number of dependants are negatively related to loan repayment and age was found to be positive. Income from activities financed by loan, repayment period suitability and loan supervision are positively and significantly related to loan repayment performance. Moreover, loan diversion is significant and negatively related to loan repayment rate.

Generally, numbers of studies were conducted in Ethiopia on determinants of loan repayment performance of group based and individual based credit. The results of different studies reviewed above revealed the significant factors that probably affect loan repayment as age, sex, business types, business experience, land holding size, total livestock holding, loan size, repayment period suitability, loan supervision and loan diversion.

### 2.3 CONCEPTUAL FRAMEWORK

As it has been reviewed from previous empirical studies in the above sections, factors that affecting group loan repayment performance are divided into group-specific factors (i.e. homogeneity, internal rule of regulation, self-selection and peer pressure), lender/institution related factors (i.e. loan size, suitability of repayment period, loan supervision and training), and factors related to overall socio-economic which include external shocks that involve different types of family emergencies, sickness, output market loss, major social events, etc. Thus, this study has constructed the following conceptual framework (**Figure 2.1**) based on the empirical findings. Nine socio-economic factors, group specific factors and lender specific factors were identified from the empirical studies.

**Figure 2.1: Conceptual Framework of Group Loan Repayment**



**Source:** Adapted from Abafita (2003), Bassem (2008), Francis and Abel (2009), and Onyegocho et al. (2012).

**Note:**  $\uparrow\downarrow^{**}$  Denote increase and decrease in quantitative variable  
 $\Delta^*$  Denotes changes in qualitative variables

As it has been shown in the above **Figure 2.1**, group loan repayment is affected by different factors which may

lead group borrowers to default loan or repay it fully. These are socio-demography, group-specific and lender or institution factors. The socio-demographic factor is the nature of homogeneity among group members in gender, age, education and marital status, which is expected to affect loan repayment positively as it is changed from heterogeneity to homogeneity in socio-demography among members. The group related factors are also those factors that enforce the repayment of group loan to change as they change; and the lender/institution factors are those factors that are related with lender/microfinance institution which are expected to affect group repayment status.

### 3. STATEMENT OF THE PROBLEM

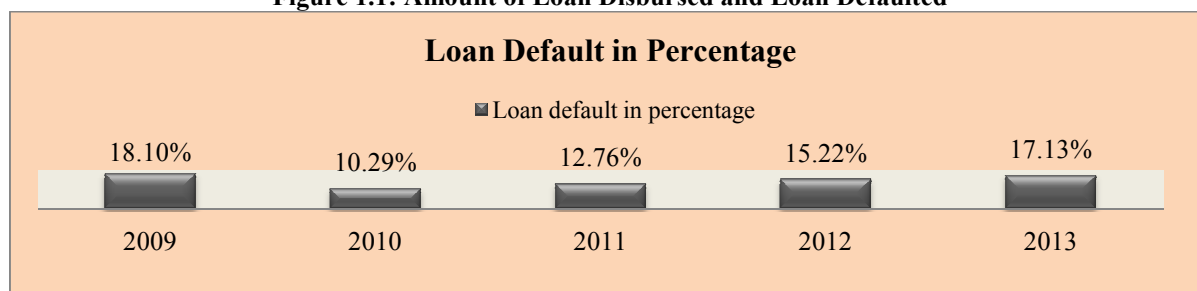
Based on a preliminary data collected, default rate of last five years on average reach around 14.7% on the selected groups in the manufacturing sector. In view of that the past five years (2009-2013) summary of group loan repayment performance (default rate) at semen branch DECSI microfinance institution is presented in Table 1.1 and Figure 1.1 below.

**Table 1.1: Summary of loan repayment performance in DECSI for the successive past 5years**

Year	2009	2010	2011	2012	2013
<b>Disbursed</b>	750,000Birr	753,500Birr	408,950Birr	7,188,473Birr	408,972Birr
<b>Loan Collected</b>	736438.55Birr	675,917.42Birr	356,767.98Birr	6,094,387.50Birr	338,915.20Birr
<b>Loan Defaulted</b>	13,561.45Birr	77,582.58Birr	52,182.02Birr	1,094,085.50Birr	70,056.80Birr
<b>Default rate</b>	18.10%	10.29%	12.76%	15.22%	17.13%

Source: DECSI (2013)

**Figure 1.1: Amount of Loan Disbursed and Loan Defaulted**



Source: DECSI (2013)

As the above Table 1.1 and Figure 1.1 indicates even if it seems like decreasing in year 2010 operation from that of year 2009 ( i.e., 18.10% to 10.29%), the default rate of group borrowers of semen branch DECSI microfinance institution is increasing consequently for the subsequent three years (2011-2013). It reveals that group borrowers are not paying well their loan successfully from time to time that can badly affect financial sustainability of DECSI microfinance institution.

This is the reason why identifying and analyzing factors that determine group loan repayment performance in DECSI microfinance institution was attempted; specifically those borrowers who operate together in manufacturing sector in Mekelle city. Besides, according to the manager of Semein branch of DECSI microfinance institution, the default rate that the institution is incurring now in group lending has its own significant contribution to the cumulative default rate of DECSI. This leads to increase in the overall annual default rate that is higher than the rate that the National Bank of Ethiopia (NBE) set for all financial institutions, i.e., <5 percent (or >95 percent expected to be collected).

Therefore, whether repayment of group loan is influenced by certain factors in a specific situation or influenced by group member themselves needs an empirical investigation so that the findings can be used by microfinance institution to manipulate its credit programs for the better.

### 4. OBJECTIVES OF THE STUDY

The objective of the study was to analyze the association of group, lender, and socio-economic factors with group loan repayment performance of Dedit Credit and Saving Institution (DECSI) microfinance in Mekelle city.

### 5. RESEARCH METHODOLOGY

#### 5.1 RESEARCH APPROACH

This section presents the research approach, description of the data type, data sources, methods of data collection, sampling design, sample size and methods of data analysis.

Given the objectives and nature of this study, the study has applied an explanatory type of research that determines the association between the dependent and independent variables by using cross sectional data

collected from the sample respondents from April 23 to May 14, 2014.

#### **5.1.1 TARGET POPULATION**

The target populations of this study were group borrowers in the manufacturing sectors and loan officer(s) of Semen branch DECSI microfinance institution residing in Mekelle city.

#### **5.1.2 DATA TYPE AND SOURCES**

This study has used primary data (both qualitative and quantitative types) collected from MSEs group leaders and DECSI's loan officer.

#### **5.1.3 DATA COLLECTION INSTRUMENTS**

This study has used structured questionnaire and depth interview, respectively, in order to collect primary data from group leaders and loan officer of DECSI.

#### **5.1.4 SAMPLING DESIGN**

This study has applied purposive sampling design to select the group leader respondents. It is because group leader is the one who looks after members of the group and he/she is assumed to know the required information. Besides, the study was census based by taking all groups currently on operation, because the number of groups are not large (i.e., they are 34 group leaders) and possibly manageable to take all groups in the selected sector (i.e., the manufacturing sector).

#### **5.1.5 SAMPLE SIZE**

This study has been conducted in DECSI microfinance branch in Mekelle city. Hence, according to the report of branch and sub-branch DECSI (2013), the total numbers of group borrowers organized as a cooperative in the manufacturing sector and currently on operation were 34. Hence, the study has covered only those 34 groups that were functioning in the manufacturing activities and financed by DECSI from 2009 to 2013.

#### **5.1.6 METHOD OF DATA ANALYSIS AND PRESENTATION**

This study has applied the Chi-square test to test the statistical association of group, lender, and socio-economic factors with group loan repayment performance.

#### **DEFINITION OF VARIABLES**

Once the analytical procedure and its requirements are known, it is necessary to identify the potential explanatory and dependent variables, and describe their measurements. Different variables are expected to affect group loan repayment (the dependent variable). The major variables influencing the group's loan repayment and the direction of their effect are presented and explained below.

#### **DEPENDENT VARIABLE: GROUP LOAN REPAYMENT ( $Y_i$ )**

$Y_i(s)$  is the binary variable that represents group loan repayment performance. Group loan repayment is defined as the act of paying back money previously borrowed from microfinance institution by all group members. It has a value of 1 if group is non-defaulter otherwise 0, if default.

#### **INDEPENDENT VARIABLES**

Independent variables are variables that are expected and have more explanatory power on the dependent variable, i.e., groups' loan repayment. The independent variables that have been empirically identified and used in this study are: internal rule of conduct, peer pressure, homogeneities among member, self selection, external shock, loan size, suitability of repayment period, training, and loan supervision.

**Table 3.2: Authors, code, measurement, expected sign and operational definitions of independent variables**

Authors	Independent Variables	Codes	Operational definitions	Measurement	Expected Sign
Bassem (2008); Manfred (1996); Zeller (1998)	Internal rule	IRC	It indicates that whether the group has internal rule of conduct to monitor members. It is expected that groups that have clear internal rules of conduct have a significantly higher loan repayment.	Dummy variable (1= if it has rule, 0= if it hasn't).	Positive
Bassem (2008); Ahlin and Townsend (2005); Wydick (1999)	Peer pressure	PP	It refers to the will to exercise pressure on defaulters' group members.	Dummy variable (1= if make pressure to incite repayment, 0= if not).	Positive
Bassem (2008); Julia (1996); Umara and Iqbal (2013)	Homogeneities among group member	HOM	It implies the homogeneity among group member and it is measured by average age range, sex, marital status, education level. The higher the homogeneity among members the higher loan repayment	Dummy variable (1= if members are homogenous in composition, 0= if not)	Positive
Bassem (2008); Charlotte and Lodewijk (2003); Manfred (1996); Sharma and Zeller (1997); Umara and Iqbal (2013); Zeller (1998)	Self selection	SS	It indicates whether members are organized by their own interest through selecting members or by another body.	Dummy variable (1= if organized by their own, 0= if not by their own).	Positive
Abafita (2003); Onyeagocha et al. (2012); Umara and Iqbal (2013)	Loan size	LS	If the loan size was higher and enough for the intended project, the chance of repayment is increased.	Dummy variable (1= if loan granted is enough for the intended investment, 0= if not enough for intended purpose)	Positive
Abafita (2003)	Suitability of repayment period	SRP	It is expected that member borrowers who find the repayment period suitable, perform better. Hence we expect a positive sign for this variable.	Dummy variable (1= if repayment time is suitable and otherwise 0).	Positive
Francis and Abel (2009); Julia (1996)	Training	PLT	It indicate that pre and after loan training for group members by DECSI microfinance institution.	Dummy variable (1= if there is adequate training for members, 0 otherwise).	Positive
Abafita (2003)	Loan supervision	LSP	It refers to continuous follow up and supervision visit by loan officer to evaluate the loan utilization and repayment. It is expected to have positive relationship with loan repayment.	Dummy variable (1= if there is timely supervision, 0= if not).	Positive
Manfred (1996); Onyeagocha et al. (2012); Sharma and Zeller (1997)	External shock	EXS	It refers to the sickness, market loss, family problem, etc of group members.	Dummy variable (1=if the default reason is because of external shock, 0= if it is not because of external shock).	Negative

Source: Own Empirical Review (2014)

Note: The above table is depicted on variable based order.

## 5.2 LITERATURE DRIVEN HYPOTHESIS

The hypotheses are driven after an extensive empirical literature review and the factors that are considered in this study are those factors which were considered in the previous studies. These factors are categorized in to group-

specific factors, lender related factors, and socio-economic factor by following the classification in the empirical studies (Norhaziah & Mohdnoor, 2010; Olomola, 1998; Roslan & Mohd, 2009; Zeller, 1996; 1998). The expected association of these factors on the group loan repayment performance is hypothesized in the following section.

### **5.2.1 GROUP-SPECIFIC FACTORS**

When loan is not repaid, it may be due to the character of the borrowers, borrowers' unwillingness and/or inability to repay. Homogeneity among group members, self-selection, internal rule of conduct, and peer pressure are considered in this study as group-specific factors that affect group loan repayment. The effects of these factors are hypothesized as follows:

**Hypothesis 1:** *Groups that are homogeneous are predicted to have a higher probability of loan repayment as compared to groups that are heterogeneous.*

**Hypothesis 2:** *Groups that implement internal rule and regulation are predicted to have a higher probability of loan repayment as compared to groups that didn't implement internal rule and regulation.*

**Hypothesis 3:** *Groups formed with self selection are predicted to perform better in terms of loan repayment as compared to the groups formed by other than member's self-selection (by an outside agent).*

**Hypothesis 4:** *The higher peer pressure exercised by group members on the defaulting member, the higher the group performs good loan repayment.*

### **5.2.2 LENDER/ INSTITUTION RELATED FACTORS**

Loan defaults arise not only from problems with the borrower but also because of the problems with the lender (microfinance institution). Thus, in this study, the following four lender related variables are hypothesized as below:

**Hypothesis 5:** *The larger the loan size, the higher the probability of loan repayment by the group borrowers.*

**Hypothesis 6:** *As suitable loan repayment period is set for borrowers, the probability of loan repayment increases.*

**Hypothesis 7:** *As loan supervision is made regarding loan utilization, the probability of loan repayment by the groups is higher.*

**Hypothesis 8:** *As training is available by DECSI MFI, the higher the probability of loan repayment by the groups.*

### **5.2.3 FACTOR RELATING TO SOCIO-ECONOMIC CHARACTERISTICS**

Although there are different socio-economic factors that can affect group loan repayment, this study took the critical socio-economic factor that affects group loan repayment, i.e., external shock. This involves different types of family emergencies, sickness, output market loss, major social events, etc. It is expected to affect performance of group loan repayment. Thus, the following hypothesis is considered:

**Hypothesis 9:** *External shock is predicted to have a significant and negative impact on group loan repayment rate.*

## **6. RESULTS AND DISCUSSIONS**

For the purpose of examining the determinants of group loan repayment performance, group owned MSEs operating in the manufacturing sector which has been financed by Dedebit Credit and Saving Institution (DECSI) from 2009- 2013 were taken as a target population for this study. Their total number was 34. Hence, this study has used census method to study the factors affecting loan repayment of this sector. Questionnaire was distributed for all group leaders of those currently functioning group owned MSE's. All the distributed questionnaires were completed and returned (100 percent response rate). In addition, depth interview was carried out with randomly selected five group leaders and DECSI's loan officer.

### **6.1 DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS**

In this section, the group leaders' demographic characteristics are presented with particular reference to age, gender, education level and marital status in Table 4.1 below.



**Table 4.1: Demographic Characterises of Respondents**

Category	Number	Percent
<b>Gender</b>		
Male	29	85.29
Female	5	14.71
Total	34	100
<b>Education level</b>		
Primary	2	5.88
Secondary	3	8.82
TVET/Diploma	17	50.00
Degree	12	35.29
Total	34	100
<b>Age</b>		
18-25	2	5.90
26-35	21	61.75
36-45	11	32.35
Total	34	100
<b>Marital status</b>		
Single	15	44.12
Married	18	52.94
Divorced	1	2.94
Total	34	100

Source: Own Survey (2014)

As indicated in Table 4.1 above, among the 34 respondents;

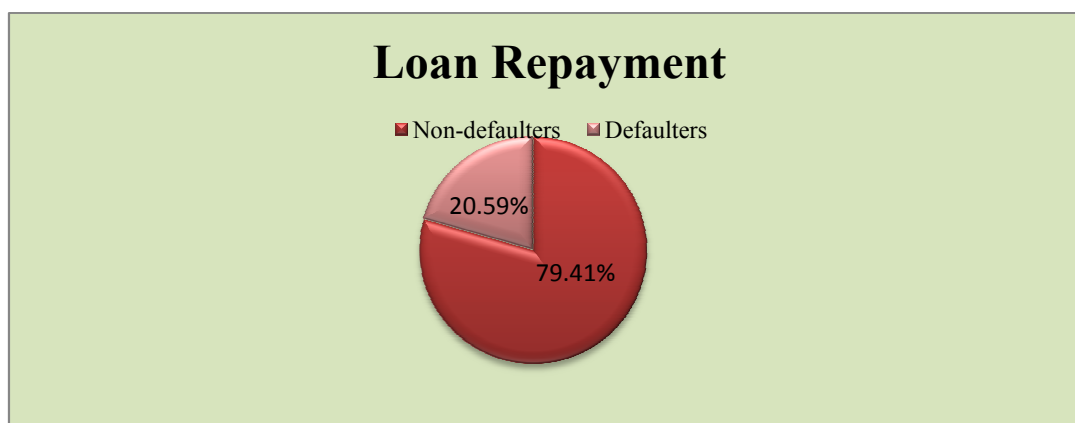
- 5(14.71 percent) of group borrowers were led by females and 29(85.29 percent) of group borrowers were led by males.
- Majority (50 percent) of the group leaders have attended diploma (TVET) followed by first degree holder group leaders (35.29 percent). The remaining group leaders, 8.82 percent had secondary, and 5.88 percent had primary education.
- Group leaders in the age category of 18-25; 26-35 and 36-45 accounts 5.90 percent, 61.75 percent and 32.35 percent, respectively.
- 44.12 percent, 52.94 percent and 2.94 percent were single, married and divorced, respectively.

## 6.2 RESULTS, ANALYSIS AND DISCUSSION

### 6.2.1 STATUS OF GROUP LOAN REPAYMENT

To know the loan repayment status, group borrowers were asked whether they have paid back fully or not paid successfully in the form of “Yes” or “No” response question. Such an objective response and direct measurement of the binary dependent variable (i.e., group loan repayment equal to “1” if groups were non-defaulters and “0” otherwise) was used to determine the factors that affect group loan repayment performance in similar studies of Bassem (2008), Julia (1996), Manfred (1996), and Zhang and Yoichi (2008). Therefore, both group borrowers paid successfully and those did not paid fully were taken into analysis for the identified common explanatory variables.

Out of the total respondents 79.41 percent (27 groups) were able to repay the loan within the given maturity period, and hence they are creditworthy. Whereas the remaining 20.59 percent (7) respondents have defaulted on their loan and this implies that the borrowers are not creditworthy. In addition, loan officer was asked/ interviewed if the institution has any feedback from group borrowers as “What do you think is the reason borrowers fail to pay their loans?” Then the officer replied that borrowers often reason out market problem, mainly output market, and some borrowers also claim repayment schedule relating to amount and grace period. The following Figure 4.1 shows the status of loan repayment by the group borrowers.



**Figure 4.1: Status of Loan Repayment by the Group Borrowers**

Source: Own Survey (2014)

It was well discussed in literature that less loan default rate is critical for financial sustainability of MFIs (Norhaziah & Mohdnoor, 2013). Concerning this matter, annual reports of DECSI indicates that the loan default rate for DECSI is increasing from time to time, especially in the group lending (DECSI, 2013). This result also found 20.59 percent default. Therefore, this high loan default rate might endanger the financial sustainability of DECSI.

**Reason for Engaging in Group Loan:** one of the major reasons, as stated by respondents, to engage in group credit was they had no collateral security that DECSI requires as guarantee for the money loaned. Table 4.2 below reveals that out of the total group borrowers (34), about 47.06 percent responded lack of collateral security; required by DECSI (35.29 percent), and easy to get loan in group was their main reason for engaging in group loan.

**Table 4.2: Summary of Reasons for Engaging in Group Loan**

Group Borrowers	Reason of Engaging in Group Loan		
	Easy to get loan in group	It is required by DECSI MFI	Lack of collateral security
Response (n=34)	6	12	16
Percent of response	17.65	35.29	47.06

Source: Own Survey (2014)

## 6.2.2 HYPOTHESES TESTING

### 6.2.2.1 LOAN REPAYMENT AND GROUP SPECIFIC FACTORS

Group characteristics include composition (homogeneity) of group, initiation of group members, peer pressure and internal rule and regulation of group borrowers. The description of these variables is provided below to indicate the mean difference between credit worthy and non credit worthy group borrowers in terms of loan repayment performance.

#### a) LOAN REPAYMENT BY GROUP COMPOSITION AND INITIATION, AND COMPARISON OF NON DEFAULTERS AND DEFAULTERS

The following Table 4.3 shows the comparison of non-defaulter and defaulter groups by using group compositions and initiation.

**Table 4.3: Distribution of Sample Group Borrowers by Composition and Initiation**

Group-specific Factors	Categories	Group Loan Repayment				Total		Chi <sup>2</sup>	P-value		
		Non defaulters		Defaulters		Freq.	Percent				
		Freq.	Percent	Freq.	Percent						
Composition of Group	Homogeneous	24	88.89	5	71.43	29	85.29	1.35	0.245		
	Heterogeneous	3	11.11	2	28.57						
	Total	27	100	7	100					34	100
Initiation of Group	Self selection	25	92.59	2	28.57	27	79.41	13.9*	0.000		
	Non-self selection	2	7.41	5	71.43					7	20.59
	Total	27	100	7	100						

Source: Own Survey (2014)

\*Significant at 1 percent level

The homogeneity among group members is expressed in terms of group members has similar demographic

characteristics. As described in Table 4.3 above, majority of group borrowers (85.29 percent) included in this study have homogeneous members in their demographic characteristics. Group borrowers that were heterogeneous in nature are found to make up 14.71 percent. With respect to perception of group borrowers about homogeneity in composition of group, 88.89 percent of the non defaulter group borrowers reflect that they are homogeneous, while 71.43 percent of the defaulter group borrowers replied that they are homogeneous group members. So, the relationship between group composition and group loan repayment performance seems to have positive relationship as expected. Additionally, this study shows that repayment status of heterogeneous groups which accounts 11.11 percent are non defaulters and 28.57 percent are defaulters.

Group borrowers that were homogeneous in their composition are more likely to repay loan on time than heterogeneous group borrowers. This may be as a result of homogeneous group has members who understand each other's feeling, discuss freely to give solution for any problem found among their members and committed to repay their loan within a given time or scheduled repayment period. However, the association between homogeneity among group members and between group loan repayment is not statistically significant according to the Pearson chi-square test statistics ( $\text{Chi}^2=1.35$ ,  $P=0.245$ ).

From this result it is possible to conclude that there is a difference in terms of loan repayment among these two groups (defaulters and non-defaulters) in terms of group composition (homogeneity), although the difference is insignificant according to Chi-square test statistics.

The motive of the above Table 4.3 is to examine whether the way in which the group initiated has a difference on loan repayment performance on both credit worthy and non-credit worthy group borrowers. Out of the total 34 group borrowers incorporated in this study, 27(79.41 percent) of the respondents respond that their group was initiated based on members self selection while 7(20.59 percent) of the respondents replied that their group was formed by a promoter. There is significant difference between the two groups in terms of group formation (group initiation whether group is formed based on member self-selection or by an outside agent or promoter). 92.59 percent of non defaulter group borrowers has been formed by themselves based on self selection whereas only 28.57 percent of defaulter are formed by member self selection. This shows the existence of a positive relation between member self-selection and group loan repayment performance. Furthermore, the Chi-square analysis ( $\text{Chi}^2=13.9$ ,  $P=0.000$ ) shows that there is a significant association between group loan repayment performance and group initiation at 1 percent significance level.

From this result, it can be concluded that screening and selecting of creditworthy group member is more effective with groups that are formed by the members themselves because it is indicating a lower rate of loan default for these groups.

Moreover, the loan officer of DECSI microfinance institution was interviewed with the questions "Who qualifies to borrow a loan from DECSI microfinance institution?" and "How group borrowers initiated/formed?" Then he said that first, the Bureau of Trade and Industry (BTI) screen the applicants and provides training to the selected applicants and finally the bureau transfers the selected applicants to DECSI and up on giving orientation to the applicants, DECSI provide (disburse) the loan to the applicants. According to the officer, the criteria for loan eligibility are clients should be dedicated to use the loan properly and repay it on time; clients with clean track record; above the age of 18 years and productive; have good credit discipline and no mental problems; be permanent residents of their respective areas; projects financed should be feasible and marketable; poor urban and rural people who are able to work and generate income; and no access to other formal financial institutions.

The loan officer also added, groups can be formed on their own interest or can be initiated by an outside agent like by the city's bureau of trade and industry. After that these groups must provide letter of application to the Bureau of Trade and Industry. The application letter should include name of the group (business), address of the group (business), description of the business and a memorandum of association signed by all members of the group. The Bureau of Trade and Industry then screens applicants as per the above mentioned criterion and send list of groups who passed the screening process to DECSI to get loan.

#### **b) LOAN REPAYMENT BY PEER PRESSURE AND INTERNAL RULE AND REGULATION, AND COMPARISON OF NON DEFAULTERS AND DEFAULTERS**

The next Table 4.4 presents the comparison of credit worthy and non-credit worthy group borrowers by using peer pressure and internal rule and regulation.

**Table 4.4: Distribution of Group Borrowers by Peer Pressure and Internal Rule and Regulation**

Group-specific Factors	Categories	Group Loan Repayment				Total		Chi <sup>2</sup>	P-value
		Non defaulters		Defaulters		Freq	Percent		
		Freq	Percent	Freq.	Percent				
Peer Pressure	Have peer pressure among members	23	85.19	2	28.57	25	73.53	9.15*	0.002
	Have no peer pressure among members	4	14.81	5	71.43	9	26.47		
	Total	27	100	7	100	34	100		
Internal Rule and Regulation	Have internal rule and regulation	16	59.26	2	28.57	18	52.94	2.10	0.147
	Have no internal rule and regulation	11	40.74	5	71.4	16	47.06		
	Total	27	100	7	100	34	100		

Source: Own Survey (2014)

\*Significant at 1 percent level

As Table 4.4 above shows 73.53 percent of borrowers have responded that they have made enforcement on loan defaulter members in the form of peer pressure to incite repayment rate whereas group borrowers that do not make peer pressure on default members represent 26.47 percent of the total observation. According to Table 4.4 above, regarding to the peer pressure, 85.19 percent of non-defaulter group borrowers have responded that they have used different enforcement techniques on loan defaulter members that is called in group borrowers peer pressure (i.e., paying for him/her and then exclude from the group, reporting to the authority or loan officer, etc.) to incite repayment rate whereas defaulter group borrowers that made peer pressure on default members represent 28.57 percent. This shows that peer pressure among group members on defaulting members is positively related to group loan repayment performance. Moreover, statistically there is significant difference between the two groups (non defaulters and defaulters) of borrowers in the loan repayment in terms of group initiation at 1percent significance level (Chi<sup>2</sup>=9.15, P=0.002).

Therefore, it is possible to say that existence of peer pressure among group members proves to be positive and meaningfully contribute to improve the group loan repayment performance.

Table 4.4 above revealed that relatively higher (59.26percent) of the non defaulter have internal rule and regulation in their group to manage conducts of their members while only 28.57percent of noncredit worthy groups have internal rule and regulation. However, as the test statistics (Chi<sup>2</sup>=2.10, P=0.147) shows there is no statistically significant mean difference between non-defaulters and defaulters in loan repayment in terms of the internal rule and regulation.

Even though, it is statistically insignificant, from the result it is possible to conclude that group borrower that have internal rule and regulation are most probably repaying loan successfully as compared to defaulter groups and positively related to group loan repayment performance.

#### 6.2.2.2 LOAN REPAYMENT AND LENDER SPECIFIC FACTORS

Lender specific characteristics are factors that affect the group loan repayment. These are suitable loan repayment period, loan size, loan supervision and training. Those factors that are expected to have a significant effect in this study are discussed below.

##### a) LOAN REPAYMENT BY SUITABLE LOAN REPAYMENT PERIOD AND LOAN SIZE, AND COMPARISON OF NON DEFAULTERS AND DEFAULTERS

The following Table 4.5 presents the comparison of credit worthy and non-credit worthy group borrowers by using suitable repayment period and loan size.

**Table 4.5: Distribution of Sample Group Borrowers by Suitable Loan Repayment Period and Loan Size**

Lender Specific Factors	Categories	Group Loan Repayment				Total		Chi <sup>2</sup>	P-value
		Non defaulters		Defaulters		Freq.	Percent		
		Freq.	Percent	Freq.	Percent				
Suitable Loan Repayment Period	Suitable repayment period	24	88.89	2	28.57	26	76.47	15.90*	0.000
	Not suitable repayment period	3	11.11	5	71.43	8	23.53		
	Total	27	100	7	100	34	100		
Loan Size	Sufficient	18	66.67	4	57.14	22	64.70	0.221	0.638
	Not sufficient	9	33.33	3	42.86	12	35.30		
	Total	27	100	7	100	34	100		

Source: Own Survey (2014)

\*Significant at 1 percent level

Loan terms such as the repayment period might affect the loan repayment by the borrower. In this study it is hypothesized that as suitable loan repayment period is set for borrowers, the probability of loan repayment increases which mean that group borrowers that found suitable loan repayment period make good repayment performance as compared to borrowers that not found suitable repayment period. As indicated in the Table 4.5 above, the survey result shows 26(76.47 percent) of the respondents believe that the repayment period DECSI scheduled is suitable. Moreover, regarding perception of suitable loan repayment period 88.89 percent of the respondents who consider it as suitable are non-defaulters, which is greater than the corresponding figures for the defaulter group borrowers (28.57percent). This reveals that suitable loan repayment period is positively related with repayment performance. The remaining 8(23.53 percent) respondents believe that the repayment period set by DECSI is not suitable in which 5(71.43 percent) respondents are unable to settle the loan as per the established repayment schedule. Furthermore, when it is tested whether suitability of loan repayment has a significant association with loan repayment of group borrowers, Pearson chi-square value (Chi<sup>2</sup>=15.90 at P=0.000) reveals as there is significant difference between the two groups of borrowers in terms of suitable loan repayment period.

However, according to the respondents response to an interview, the main reasons for unsuitability of repayment period is that starting time to repay is too early (i.e., 3 months grace period is not enough), repayment period is short and amount of payment per period is too high. Also loan officer was interviewed with the interview question “Whether the repayment period scheduled by DECSI consider the nature of business in the manufacturing or not?” Loan officer has replied that repayment period scheduled once for all borrowers including group borrowers operating in the manufacturing sector without considering types of activities going on in the sector (i.e., for all group owned MSEs in the manufacturing sector grace period is 3 months, amount of repayment per period is calculated in proportion to the loan size that can be completed in maximum three years). The respondents tried to suggest that it will be better if repayment period set to start repayment is increased on current grace period and the amount of each installment required to be decreased.

As presented in Table 4.5 above, 22(64.70 percent) of borrowers responded that they received sufficient loan from DECSI microfinance institution whereas the remaining 12(35.30 percent) of borrowers responded that they do not received enough loan that match their intended purpose. As presented in Table 4.5, with regarding to sufficiency of loan amount 66.67 percent of non defaulter borrowers responded that they received sufficient loan from DECSI microfinance institution whereas 57.14 percent of defaulter borrowers responded that they have received enough loan that can match to their intended purpose. Here majority of borrowers in the two types of group perceived that the loan amount received from DECSI microfinance institution is enough to accomplish their project. However, the chi-square statistics analysis (Chi<sup>2</sup>=0.221, P=0.638) shows there is no significant association between group loan repayment performance in terms of amount of loan received from DECSI microfinance institution.

From this result, it can be summarized that the relationship between loan size and group loan repayment performance in some extent positive as expected, although the difference is statistically insignificant. This may be because larger loans are sufficient enough to generate cash flow for the borrowers. Furthermore, the larger the loan the higher is the penalty cost associated with any default and this puts more pressure on the group to reduce default.

#### **b) LOAN REPAYMENT BY LOAN SUPERVISION AND TRAINING, AND COMPARISON OF NON DEFAULTERS AND DEFAULTERS**

The Table 4.6 below reveals the comparison of credit worthy and non-credit worthy group borrowers by using

loan supervision and training.

**Table 4.6: Distribution Sample Group Borrowers by Loan Supervision and Training**

Lender Specific Factors	Categories	Group Loan Repayment				Total		Chi <sup>2</sup>	P-value
		Non defaulters		Defaulters		Freq.	Percent		
		Freq.	Percent	Freq.	Percent				
Loan Supervision	Supervised	12	44.44	1	14.29	13	38.24	2.141	0.143
	Not supervised	15	55.56	6	85.71	21	61.76		
	Total	27	100	7	100	34	100		
Training	Trained	23	85.19	2	28.57	25	73.53	9.154*	0.000
	Not Trained	4	14.81	5	71.43	9	26.47		
	Total	27	100	7	100	34	100		

Source: Own Survey (2014)

\*Significant at 1 percent level

As indicated in the Table 4.6 above, out of the total observation, 61.76 percent of the respondents replied that they have not supervised by DECSI's loan officers or staffs whereas 38.24 percent said that they have supervised by DECSI's staff on how they are utilizing the loaned money. As indicated in the Table 4.6 above, out of the total non defaulter group borrowers, only 44.44 percent of the respondents replied that they have supervised by DECSI's loan officers or staffs whereas 14.29 percent of defaulter said that they have supervised by DECSI's staff on how they are utilizing the borrowed fund. This study implies that loan supervision by DECSI's staffs has a positive relationship with group loan repayment performance. Here on loan supervision loan officer is interviewed to know if there is any loan supervision is made by DECSI staffs with interview question "How frequent should visits to borrowers be made by your institution?" Then he reported that even though loan supervision made so far is not enough because of mismatch between large number of clients and the existing number of loan officers, there is follow up by loan officer on how group borrowers are utilizing the borrowed fund for intended purpose. Even if it seems like there is slight mean difference in loan repayment performance among non defaulter and defaulter group borrowers, the difference is statistically insignificant according to the chi-square test (Chi<sup>2</sup>=2.141, P= 0.143).

With respect to before loan and after loan training to group borrowers from DECSI, Table 4.6 above revealed that out of the total 34 group borrowers included in this study, 25(73.53 percent) of them have got training relating to saving, recording and loan utilization while only 9(26.47 percent) of group borrowers do not get training. As it is indicated on the above Table 4.6, with respect to training for group borrowers from DECSI, there is significant difference between the two groups, since 85.19 percent of non defaulter received training while only 28.57 percent of defaulter groups gotten training. This clearly exhibits that the more borrowers get training from microfinance institution, the more they perform good loan repayment. This implies that there is a positive relationship between training and group loan repayment performance.

In addition, DECSI loan officer was interviewed whether microfinance is delivering training for group borrowers or not and if so type of training delivered with interview questions "Are any pre and post loans training available for group borrower through your institution?" and "Who deliver this training and on what area(s) it focuses?" Accordingly, the officer replied that the institution deliver training for any borrowers including group borrowers with collaboration of Mekelle City MSEs office before granting the fund (before loan training). Specifically, how to utilize loan, monthly repayment and saving are the kind of training that DECSI deliver according to the officer. Moreover, the Pearson chi-square statistics (Chi<sup>2</sup>= 9.154, P=0.000) shows that there is significant association between group loan repayment performance and training.

### 6.2.2.3 LOAN REPAYMENT AND SOCIO-ECONOMIC SPECIFIC FACTORS

There are different socio-economic factors that can affect group loan repayment, but this study took the critical socio-economic factor that affect group loan repayment, i.e., external shock.

### LOAN REPAYMENT BY EXTERNAL SHOCK, AND COMPARISON OF NON DEFAULTERS AND DEFAULTERS

The following Table 4.7 shows the comparison of non defaulter and defaulter group borrowers by using external shocks.

**Table 4.7: Distribution of Group Borrowers by External Shock**

Socio-Economic Factor	Categories	Group Loan Repayment				Total		Chi <sup>2</sup>	P-value
		Non defaulters		Defaulters		Freq.	Percent		
		Freq	Percent	Freq.	Percent				
External Shock	Faced external shock	2	7.40	5	71.43	7	20.59	13.94*	0.000
	Not faced external shock	25	92.60	2	28.57	27	79.41		
	Total	27	100	7	100	34	100		

Source: Own Survey (2014)

\*Significant at 1 percent level

The motive of Table 4.7 above is to examine whether socio-economic factors, i.e., external shocks makes a difference at all on group loan repayment of both credit worthy and noncredit worthy group borrowers. The survey result presented in the Table 4.7 above, reveals that out of the total 34 group borrowers incorporated in this study only 7 (20.59 percent) of respondents replied that in their group members has encountered some external shocks and these groups have a highest loan default, which is 5(71.43 percent) of the groups have defaulted with only 2(7.40 percent) groups repaying the loan on time. This implies that the relationship between external shocks and loan repayment performance seems to be negative as expected. Besides, the chi-square statistics (Chi<sup>2</sup>=13.9356, P=0.000) reveals that there is a significant association between group loan repayment and external shocks. This is due to external shock involved different types of family emergencies, income/market losses, etc in the short term as reported by respondents. Thus, from this result it can be summarized that as the number of group member facing shocks increase, the probability of group loan default increases.

Generally, the above sections (6.2.1 – 6.2.2) dealt with the descriptive statistics and Chi-square test statistic to compare non defaulter and defaulter group borrowers and to indicate the significance of the mean deference between the two groups in terms of each explanatory variable.

## 7. CONCLUSIONS AND RECOMMENDATIONS

### 7.1 CONCLUSIONS

This study was intended to analyze the statistical association of the determinants of group loan repayment with the group loan repayment performance. It covered determinants of group loan repayment performance by considering group specific, lender specific and socio-economic specific factors.

First, the study analyzed about the status of group loan repayment (group borrowers that do not defaulted and defaulted on their loan) followed by analysis of demographic characteristics of respondents. Secondly, the study dealt with group specific factors, such as group composition (homogeneity), group initiation (self-selection), peer pressure, and internal rule and regulation. Thirdly, it also analyzed lender specific factors/variables such as extent of suitability of loan repayment period set by DECSI microfinance institution, loan supervision, loan size and training. Finally, the study dealt with socio-economic factor that determine group loan repayment, i.e., external shock that was assumed to have significant influence in determining group loan repayment performance. Therefore, based on the research findings, the following conclusions are drawn:

- Regarding the status of group loan repayment, it has been found that about 79.41 percent of group borrowers were non defaulters and about 20.59 percent of them were defaulters. It was also found that the basic reasons as to why members want engaging in group borrowing are lack of collateral security to take loan individually when they want, required by DECSI, and easy to get loan in group than on individual basis.
- Groups with homogeneous group members showed the highest percentage loan repayment as compared to groups with heterogeneous members.
- Groups initiated based on self-selection of members themselves showed good loan repayment performance as compared to those groups initiated by other than member self selection (by outside agent or promoters).
- Existence of peer pressure among group members proves to be positive and meaningfully contribute to improve the group loan repayment performance.
- Internal rule and regulation, even though, it is statistically insignificant, group borrower that have internal rule and regulation are most probably repaying loan successfully as compared to defaulter groups and positively related to group loan repayment performance.
- Those groups (MSEs) who seek suitable repayment period were found to be good performers in loan repayment as compared to those MSEs who do not found suitable repayment period.

- Group borrowers who supposed that granted loan size is enough to conduct the intended investment poorly perform loan repayment than those group borrowers agreed granted loan size is not as much enough to carry out investment.
- The more borrowers get training from microfinance institution and the more they get continuous follow-up (loan supervision), the more they perform good loan repayment, although these variables found statistically insignificant.
- In relation to external shock, as number of group member facing shocks increase, the probability of group loan default increases.

## 7.2 RECOMMENDATIONS

Based on the above conclusions drawn, the following recommendations are forwarded:

As per the discussion held with the loan officer of DECSI, one reason for low loan repayment by MSEs is wrong credit perception of borrowers. That is borrowers consider loan as donation and opted-not-to pay back. Therefore, DECSI should create awareness among clients before disbursing loan through giving short training about its objectives (i.e., its source of funds and convincing them the advantages why they are required to repay back the borrowed fund) that the loan has to be repaid so that DECSI can have sustainable and viable operation. This enables DECSI to reach millions of poor people in the region thereby eradicating poverty.

The homogeneous group, self initiated groups, and peer pressure groups (i.e., groups with strong social ties) were found to have statistically significant association with loan repayment performance. Thus, DECSI should consider these factors while screening group borrowers. This could reduce significantly loan default and DECSI is sustaining since creditworthy borrower can be selected from the very beginning.

The other factor related to the lender-specific factor which has significant association on loan repayment performance is loan size. In order to make group borrowers run effective business, the availability of sufficient loan size is one important factor. Thus, it is recommended to compare loan size with the business proposal of the client before loan disbursement and should revise the rule and regulation of the institution based on the current economic condition of the country.

Suitable loan repayment period was found to have significant association on loan repayment performance. Therefore, DECSI should set business and income based suitable loan repayment period (i.e., enough grace period, amount repayment per period, and repayment time) as per the type of businesses in the sector.

Although continuous follow up and supervision is important for loan repayment, there is not enough supervision made by loan officers. This is due to the increasing number of clients in the institution. Therefore, it is recommended to make the number of clients and loan officers comparable. In recent years, the institution has not giving enough training for the clients specially post loan training.

External shock was also found to have significant association on loan repayment performance. Most of these groups operating in the manufacturing sectors have witnessed lower loan repayment performance. This sector has lower loan repayment due to shortage of market for their output and frequent increase in price of inputs that the sector uses. As number of group member facing external shocks increase, the probability of group loan default increases. Therefore, especial attention is needed by the concerned stakeholders (DECSI, Bureau of Trade and Industry, and Regional MSEs development agency) in creating market linkage to sell their output; and sustainable supply of inputs at fair price until these group owned MSEs build capacity to operate on their own. Especial attention is also needed for this sector because the sector can play decisive role in reducing unemployment level in the city since the sector is labor intensive.

Finally, this study finding may not be used to generalize about the determinants of the group loan repayment because the study has focused on only the manufacturing sector and confined only to the Mekelle city. The study has only through a light on the factors that determine group loan repayment performance. Thus, comprehensive and comparative studies are recommended in order to have holistic picture on the group loan repayment performance by considering wide area and all the MSEs subsectors.

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