# A study on Determinants of Loan Repayment Performance: The case of Sidama Micro Financing Institution, Sidama Zone, SNNPR, Ethiopia

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**Abstract:**

The objective of this study looks to analyze and identify the determinants of loan repayment performance of borrowers in the study area. The survey data were collected through primary and secondary data. Multi- Stage stratified sampling technique was followed to select sample respondents from the whole population for this study. Three branches were selected purposively, and 296 borrowers (defaulters and non defaulters) were selected through probability sampling technique using proportional to size sampling. Result of the econometric model indicated that age, education, time laps between loan application and disbursement, loan size, loan diversion, repayment period, number of dependants, training, and supervision were important variables which had significantly determined loan repayment rate. Therefore, the overall finding of the study underlined the high importance of institutional support in the areas of training and continuous follow-up borrowers, especially for youngsters and low educated and or illiterate borrowers. In addition, timely release of loan, allowing suitable

*repayment period, and approving equitable loan size that suffices to borrowers' business proposals are some suggested variables, assuming that these enhance loan repayment performance. Hence, institution should give emphasis on these variables to improve such institutional issues so as to achieve high repayment rate.*

**Key words:** Repayment performance, default rate, micro finance, micro financing institution

## Introduction

In developing countries, including Ethiopia, micro financing institutions (MFIs) emerged with unique opportunity to poor people who do not have access to commercial Banks. Microfinance involves the provision of micro-credit, savings, and other services to the poor that are excluded by the commercial banks for physical collateral and other reasons (Zerai and Rani, 2012).

The main objective of the these institutions are delivering micro-loans, micro-savings, micro-insurance, money transfer, leasing, etc services to a large number of productive yet resource-poor people in the country in a cost-effective and sustainable way. Many of the MFIs in Ethiopia provide similar financial products and use predominantly the group lending methodology, while individual lending is employed to a limited extent (Amaha, 2008). Because group lending methodology addresses the asymmetric distribution of information by transferring the burden of default risk to the contracting borrowers, thus transfers the costly screening to be done by the borrowers themselves. Screening borrower's risk is critical since, it affects loan repayment and lenders profit thereby. Group lending schemes induce borrowers to engage in assortative matching wherein local knowledge about each other's assets, capabilities, character traits are used to sort and self-select (Rejaul and karim, 2008).

## Statement of Problem

The primary objective of MFIs is to provide financial services (credit and saving) to the poor in order to relieve financial constraints and help alleviate poverty (Fikirte, 2011). For such MFIs to be successful, they should be sustainable both financially as well as institutionally (Abafita, 2003). To attain both financially and institutionally sustainability, MFIs must reach at the position of high repayment rate because achieving high repayment rate benefits both lenders as well as borrowers in the long run growth. 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 (Nawai and Shariff, 2013).

Therefore, most MFIs try to maximize their repayment performance as high repayment rates allow the MFI to lower the interest rate or raise new funds and thus give access to credit to a larger range of the poor population. A profitability improvement could also help reduce the dependence on subsidies and lead the MFI to a better sustainability level. It is also argued that high repayment rates reflect the adequacy of MFIs' services to clients' needs and restrict the cross subvention of the borrowers (Godquin, 2004).

## Objective of the Study

General objective of this thesis project is to analyze and identify the major determinants of loan repayment performance of the borrowers in SMFI, SNNPR.

The specific objectives of the thesis project intend to achieve the following:

➢ To analyze and identify the major socio-economic factors that influence loan repayment rate of the borrowers in SMFI.

➢ To investigate and identify loan and business related factors that influence loan repayment performance of borrowers in SMFI

## Research Questions

Therefore, it is hoped that the study will answer the following questions:

➢ What are the major socio-economic factors that influence loan repayment performance of borrowers in SMFI?

➢ What are loan and business related factors that influence the loan repayment performance of borrowers in SMFI?

## Review of Related Literature

Several studies have been conducted in different developing countries regarding determinants that affect loan repayment performance. Then illustrations begin by those that focus on loan repayment performances. Acquah and Addo (2011) employed multiple regression analysis in their study about determinants of loan repayment performance of fishermen, Ghana. 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.

Fikirte (2011) studied that the determinants of loan repayment performance with the specific reference of Addis credit and saving institution, Addis Ababa, Ethiopia. To

estimate the effect of hypothesized explanatory variables on repayment performance of borrowers, the weighted logistic model was employed. Her result reveals that age was found to be statistically significant i.e as age increased; the probability of being defaulter is decreased. She also found that sex, business experience, dependency ratio and five explanatory variables namely baltina & petty market, kiosk & shop, services providing, weaving & tailoring and urban agriculture had significant effect on the probability of being defaulter in case of group lending scheme. On the other hand, in case of individual lending scheme baltina and petty market, weaving and tailoring, service providing, and urban agriculture were statistically significant.

Abrham (2002) evaluated and obtained result that having other source of income, education level, work experience in related economic activity before the loan and engaging on economic activities other than agriculture are enhancing loan repayment while loan diversion, being male borrower and giving extended loan repayment period are affects performance of projects negatively.

Abafita (2003) studied factors that influence micro finance and loan repayment performance with particular reference to the Oromia Credit and Savings Share Company (OCSSCO) in Kuyu, through the application of descriptive statistics and the probit model, shows that education, income, loan supervision, suitability of repayment period, and availability of other credit sources are important and significant factors that enhance the loan repayment performance.

## Research Design and Approach

To conduct consistent study, choosing appropriate research design plays an important role on the finding of the research. In

order to choose appropriate research design, it is important to consider factors that impact the finding of the research.

## Data sources and Methods of data collection

The data employed in this study was both primary and secondary. The primary data was collected using structured both closed-ended and open-ended questionnaire. The secondary data sources include published and unpublished documents and reports from books, internet, and from the relevant organizations' were gathered to supplement primary data and provide the theoretical framework for the study. Populations of interest in this study were 2960 borrowers from branches of Arbegona, Bensa, and Bona in Sidama micro financing institution. For this study multi-stage sampling techniques were used to select sample area and sample respondents:

### I.     Data processing and analysis
The qualitative and quantitative data were processed manually and using computer software STATA 11, respectively.

### II.     Model Specification
Descriptive statistics does not tell the probability of falling down into loan defaulter or non-defaulter. Therefore, economic model was employed to further analyze and identify which and how much the hypothesized explanatory variables were related to borrowers' loan repayment performance. As already well-known, the dependant variable, repayment, is a dummy which takes a value of zero or one depending on borrowers loan repayment status i.e borrowers' were classified between defaulters and non-defaulters. However, explanatory variables were discrete and continuous.

Hosmer and Lemeshew (1989) pointed out that the logistic distribution (logistic) has got advantage over the others in the analysis of dichotomous outcome variable in that it is extremely flexible and easily used model from mathematical point of view and results in a meaningful interpretation. Hence, for this particular study, binary logistic model was selected. Therefore, the cumulative logistic probability is econometrically specified as follows (Hosmer and Lemeshew 1989).

$$P_i = F(Z_i) = F\left(\alpha + \sum \beta_i X_i\right) = \frac{1}{1 + e^{-Z_i}}$$

Where, Pi is the probability that borrower will be defaulter; e denotes the base of natural logarithms, which is approximately equal to 2.718; Xi represents the $i^{th}$ explanatory variables; and α and ßi are parameters to be estimated. Zi is the function of a vector of n explanatory variables.

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

Therefore,

$$\left(\frac{P_i}{1 - P_i}\right) = \left(\frac{1 + e^{Z_i}}{1 + e^{-Z_i}}\right) = e^{Z_i}$$

Or, taking natural logarithms

$$Z_i = Ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_m X_m$$

If the error term (ui) is taken in to account, the logistic model becomes:

$$Z_i = \alpha + \sum_{i=1}^{m} \beta_i X_i + u_i$$

The unknown parameter $\beta's$ are estimated by likelihood function.

## Result and Discussion

**Table 1: Determinants of defaulting rate of the borrowers based on logistic model**

| Variables | Coefficient | Robust St.d.Err | Z | Marginal effect (dy/dx) | X |
|---|---|---|---|---|---|
| AGE | -2.916829 | .665311 | -4.38*** | -.6107361 | .533784 |
| EDUC | -1.580378 | .6432627 | -2.46** | -.3382401 | .783784 |
| DEPED | 1.884724 | .6472124 | 2.91*** | .4140013 | .652027 |
| FSIZE | -.8277275 | .5666018 | -1.46 | -.2006601 | .510135 |
| DIBURSE | -1.280693 | .5255751 | -2.44** | -.2968897 | .638514 |
| REPAY | -2.183623 | .5102048 | -4.28*** | -.455813 | .695946 |
| BORR | -.4450457 | .8190449 | -0.54 | -.106542 | .824324 |
| LSIZE | -1.920882 | .4657626 | -4.12*** | -.4222942 | .641892 |
| LUSEGE | -2.604841 | .6952843 | -3.75*** | -.4863769 | .780405 |
| BTYPE | -.4057198 | .5823169 | -0.70 | -.0989534 | .594595 |
| BEXPE | .7659217 | .5859011 | 1.31 | .1890668 | .77027 |
| TRANING | -4.344912 | .8156121 | -5.33*** | -.564404 | .864865 |
| SUPERVISION | -2.523493 | .6913431 | -3.65*** | -.5333091 | .60473 |
| _cons | 15.33138 | 1.884517 | 8.14 | | |
| Number of observation | 296 | | | | |
| Wald chi$^2$(14) | 106.84 | | | | |
| Prob>chi$^2$ | 0.0000 | | | | |
| Pseudo R$^2$ | 0.6644 | | | | |
| Log preudolikelihood | -68.84762 | | | | |

**, *** significant at less than 5% and 1% probability level, respectively.
Source: own computation (2014).

## Conclusion

According to the model, supporters of large number of dependents and having the responsibility to shoulder large family members had the` higher probability of being defaulters. And those respondents who have not additional sources of incomes from business were found having high defaulting probability than the respondents who had their income from different source. The time laps between loan application and disbursement was found as most significant predictor of loan defaulting rate. The Complicated loan processing procedures which might delay disbursement, most likely have high default rate. When borrowers receive delay released loan they may

purchase their business inputs in costly prices thereby in the long run it affects the selling price of the product and results positive impact on defaulting rate. While those borrowers who had timely disbursement and used entire loan for intended yet productive purposes were found as they had lower defaulting probability than others in the same variables. This means that diverting loan into non-income generating activities increases defaulting rate. The post-disbursement follow-up of borrowers on the status or progress of the business undertaken and some technical assistance undermine the defaulting rate of borrowers. It helps to evaluate the borrowers' loan utilization and repayment status. However, the supervision made by the loan officers was not seen as such sufficient. This was due to on average one loan officer supervises 250 borrowers. This shows that the number of borrowers and loan officers are not comparable.

The improper use of loan, market failure or loss, and using entire loan for different personal problems were major causes for withholding outstanding loan on the side of borrowers. On the another hand, delaying on loan disbursement, approving inequitable loan size that was not suffices to borrowers business proposal, loan diversion toward unproductive businesses, unsuitability of repayment period, supporting large number of dependants in the family, absence and/or delivering unorganized training services, and shortage of continuous follow-up were found to be the cause for enhance high defaulting rate.

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