

## **DETERMINANTS OF CREDIT DEFAULT RISK OF MICROFINANCE INSTITUTIONS, IN ASSOSA ZONE**

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### **ABSTRACT**

The paper deals with assessment of the determinants of default risks, in microfinance institutions in Assosa zone. The problem identified was that, microfinance programs perform meagerly, because of delay in repayment and high default rates. Hence, it has been essential to establish if, these limitations prevailed in the selected 8 MFIs, in the zone schemed by determining the default rate and the grounds of the observed series. Therefore, in order to address those issues, the researchers collected primary data, collected through structured questionnaire and captured secondary sources of data. The data analysis tools used were descriptive and inferential analysis. The logistic probit model was employed, to estimate the determinants of credit default risk and the repayment performance. The finding shows that credit diversion is positively related to the number of dependents supported by the borrower, use of financial records, credit/loan size and number of times borrowed (sig 10%) from the same source. Income from other sources than a credit / loan, loan supervision made to the borrower and suitability of credit repayment period (1%) were found to be negatively related to loan diversion. The negative sign probably implies the use of diverting funds for non-income generating purposes, and it is significant at 5%. In addition gender, credit/loan size and number of dependents are all negatively related to the probability of credit repayment. Only suitability of the repayment period is significant at the 1 % level. So, the MFIs are recommended to solve problems observed in its rationing mechanism. Moreover, the processes should be worked out to identify borrower capacity and any obligations that may interfere with repayment. Finally, they should intensify recovery of outstanding balances from defaulters through increased borrower follow-up.

**KEYWORDS:** MFIs, Credit Default, Credit Diversion, Loan Rationing, Creditworthy

### **INTRODUCTION**

Microfinance has evolved as an approach to economic development intended to benefit low income women and men. It expanded enormously in the 1990s (Ledger wood, 1999). Policy makers, donors, practitioners and academics underline the role of microfinance as a powerful tool for poverty alleviation and economic development. The formal financial sector has failed to reach the majority of the rural as well as urban poor. This has forced the poor to turn to the informal and semi-formal financial sources. However, credit from such sources is not only inadequate, but also exploitative and costly. In Ethiopia, microfinance services were introduced after the demise of the Derg regime, following the policy of economic liberalization.

## STATEMENT OF THE PROBLEM

The major objective of MFIs is to provide banking and credit facilities to the poor and to micro-entrepreneurs, who otherwise would lack access to financial services (Akintoye, 2007), cited in Mojisola Oguntoyinbo (2011). However, lending to micro-entrepreneurs is based on a promise to pay without collateral. Such transactions entail risk to the financial institution: when borrowers fail to pay, the default constitutes loss to the institution concerned, which eventually impacts negatively on the capital of the institution. It is generally accepted that credit, which is put to productive use, results in good returns. But credit provision is such a risky business that, in addition to other reasons of varied nature, it may involve fraudulent and opportunistic behavior.

Given the above mentioned problem, the performance of most microfinance programs, however, has not been encouraging. Many have been plagued with such problems as high default rates, inability to reach sufficient numbers of borrowers, and a seemingly unending dependence on subsidies. Few of them have lived up to their original objective of "including the excluded" (Bhatt, 1997). For such MFIs to be successful, they should be sustainable both financially as well as institutionally. On top of sustainability, one has to include developmental effects like income on the target group as a core measure of success. For agencies that are involved in the development or in assisting the development of a microcredit institution, it is recommended that profitability and sustainability should be the final goals, and therefore, the only indicators of success (Rudkius, 1994). Although, the performance of the MFIs in the region has been impressive, since their establishment, they are experiencing default problems.

This study endeavored to investigate credit default risk in microfinance institutions. Eventhough, many researchers undertake a research on credit default risk in the micro finance institution, the study did not conduct in Asossa zone microfinance institutions, regarding the following problems indicated. The problem identified is that, microfinance programs perform poorly, because of slow repayment and high default rates. Hence, it is important to establish, if these limitations prevail in the selected credit and saving institutions of Assosa Zone scheme, by determining the average repayment delay and default rate, and the causes of the observed trends.

Set the above discussed problems in the credit and saving institution, along with the gap in the literature, with regard to credit default risk in microfinance, the study attempts to assess the gap in credit repayment, with reference to the aforementioned microfinance institutions in the Assosa Zone, in order to forward suggestions for microfinance institutions, as such problems raised.

To solve the mentioned problems, the following are research questions:

- What are the causes influencing the credit default problem of borrowers, financed by credit and saving institutions?
- What are the determinants of credit default risk and the outcome of credit repayment on MFIs, families, and the community?
- How much screening mechanism microfinance institutions influence default?
- To what extent the default affect the MFIs, families, and the community?

## Objective of the Study

The general aim of this study was to assess the Determinants of credit default risk of the Microfinance Industry in Assosa Zone.

The specific objectives were:

- To identify the causes which are influencing the credit default problem of borrowers financed, by credit and saving institutions;
- To investigate determinants of credit default risk and the outcome of credit repayment on enterprises, families, and the community;
- To evaluate the impact of selected microfinance institutions screening mechanism on default;
- To assess the effect of default on enterprises, families, and the community.

## SIGNIFICANCE OF THE STUDY

The study will also reveal the weaknesses of the institutions and enable policy changes that will not only energize the organizations concerned, but also strengthen them so that they develop the capacity to surmount identified environmental challenges. Overall, access to microfinance by the poor segment of the society will be enhanced, which will ultimately raise the levels of income, employment, welfare, and national development.

## MATERIAL AND METHODS

The study adopts a descriptive survey and inferring design. The technique was appropriate as it involved a careful in depth study and analysis determinants, of credit default in the micro finance industry in Asossa zone. Further, this section organized into two components. The first section describes about research approach (philosophy).

The base for drawing the sample size is the total number of 11857 customers in Asossa zone micro finance institution. Because, the sample size was determined by the statistical formula as follows;-

- If  $N \geq 10000$ , then sample size =  $n = z^2 * pq / d^2$
- If  $N \leq 10000$ , then sample size =  $n = n / 1 + n / N$

$P$  = the proportion of the target population estimated to have characteristics being measured or probabilities of success = 0.5

$Q$  = levels, probability of failure

$$q = 1 - p = 1 - 0.5 = 0.5$$

$d$  = the level of statistical significance set = 0.05

$z$  = the standard normal variable at required level of confidence (95 = 1.96)

$$n = 1.96^2 * 0.5 * 0.5 / 0.05^2$$

$$n = 384$$

Then, since the sample size is determined from different wereda or strata, using the proportional method as

follow. If  $P_i$  represents the proportion of the population included in stratum  $i$ , and  $n$  represents the total sample size, the number of elements selected from stratum  $i$  is  $n \cdot P_i$ . To illustrate it, let us suppose that, we want a sample of size  $n = 384$  to be drawn from a population of size  $N = 11,857$ , which is divided into eight strata of size  $N_1 = 3838$ ,  $N_2 = 2435$ ,  $N_3 = 645$ ,  $N_4 = 1169$ ,  $N_5 = 1308$ ,  $N_6 = 1137$ ,  $N_7 = 749$  and  $N_8 = 576$ . Adopting proportional allocation, we shall get the sample sizes as under for the different strata (Kohatari, 2004).

For strata with  $N_1 = 3838$ , we have  $P_1 = 3838/11857$  and hence  $n_1 = n \cdot P_1 = 384 (3838/11857) = 124$ . Therefore, the formula stands for all woredas in selecting sample size. In addition, from the offices thirteen (13) managers are purposefully selected.

Therefore, the researchers of this work only include five year round of credit disbursement of the maturity of which has passed at the time of data collection to be used i.e. credit extended during the last 5 years of rounds from 2010/11 through 2014/2015. The data will be collected by distributing structured questionnaires i.e. open-ended and closed-ended questionnaires to clients that will be self-administered defaulters and non-defaulters in order to dig out borrower's repayment; business performance; and the effect of credit repayment on the enterprise, family, and community. The data collected through questionnaires was tabulated and analyzed using the Statistical Package for the Social Sciences (SPSS) software package 21 these includes mean and standard deviations. Descriptive statistics and regression analysis were used to analyze data.

## RESULTS AND DISCUSSIONS

### Operations in the Study Areas

**Table 1: Number of Clients Being Served By the Elected 8 MFIs**

S.No	Branches	Number of Customers	Selected Samples From Customers	Number of Employees	Selected Sample From Officials
1	Assosa	3838	124	10	2
2	Bambasi	2435	79	11	2
3	Mao Komo	645	20	3	1
4	Oda	1169	39	3	1
5	Homosha	1308	42	3	1
6	Mengie	1137	37	4	1
7	Sherkole	749	24	3	1
8	Kurmuk	576	19	4	1
	Zone Head office	-		7	3
	<b>Total</b>	<b>11857</b>	<b>384</b>	<b>48</b>	<b>13</b>

Source: Compiled from survey, 2016

As shown in table 1 above, the current total number of clients stands at 11,857. The total number of female beneficiaries is 7546 (63.64%), while that of the male beneficiaries is 4311 (36.36%).

### Effect of Repayment on Enterprises, Families, and the Community

Borrowers said that they were using means beyond business to repay their credits. Some credit recipients even admitted suffering from depression as a result of the repayment burden, and they said the depression was affecting relationships with customers and was leading to poor business performance. As a result of repayment, some businesses had closed their doors. Those who were repaying were doing so to maintain trust with the lending institutions to avoid prosecution. Some borrowers explained that repayment was a burden only when sales were low.

With respect to the burden on borrowers’ families, around 20% no effect on the family. The remaining 80% said that repayment reduced family income and that children’s school fee payment repayment was expensive because they had to spend a lot more on transportation.

Meanwhile, 66.19% of the borrowers also were aware of the effect of their repayment on the community. They said that community members benefited by credit/loan repayments. Some respondents noted that good repayment encouraged other community members to take credits and start businesses that provided needed goods and services to the community. They also pointed out that credit defaults cause the community to lose those goods and services and that poor credit repayment makes community members hesitant to take any credit for development.

**Determinants of Credit Repayment Performance**

To obtain the robust standard errors, it is only a matter of adding the robust option to the interval regression. Accordingly, an interval regression is estimated using the variables generated from the dependent variable in the same way as explained above and on the other hypothesized explanatory variables. Next, the robust option is used on the same regression to correct for the problem of heteroscedasticity. The final estimates so obtained are given below.

**Table 2: Maximum Likelihood Estimation for Credit/Loan Diversion**

				Number of obs = 337
				Wald chi2(8) = 15.64
				Prob > chi2 = 0.0478
	Log likelihood = -106.99844			
	Coefficients	Robust Std. Err.	Z-value	Sig.
D	-0.2056432***	0.113016	-1.81	0.067
CSZ	0.0000411	0.0001404	0.29	0.770
SRP	-0.3266075*	0.1147342	-2.85	0.004
INCA	-0.0000298	0.0001758	-0.17	0.865
FR	0.1500751	0.1702739	0.88	0.378
SPV	-0.0172498	0.0985662	-0.18	0.861
NDP	0.0004972	0.0191063	0.03	0.979
NTB	0.0754362***	0.0481348	1.57	0.117
Cons	-0.2642259	0.2515055	-1.05	0.293
/sigma	0.5177089	0.0467682		
	*significant at 1%	***significant at 10%		

The estimated model is significant at the 5% level. As shown in the table 2, suitability of repayment period was found to be significant at 1%, while the education and the number of times borrowed were found to be significant at 10%.

The sign of the variable representing the use of financial recording systems, has an unexpected sign i.e. positive however insignificant. The reason for this could be the fact that, even the few educated ones are unable to use modern and accurate methods of keeping financial records. The rest of the variables have exhibited the expected signs. Further, the results indicate that education, number of times borrowed and suitability of repayment period are significant determinants of credit diversion.

**Table 3: Maximum Likelihood Estimate of a Probit Model for Credit Default**

Probit Estimates					Number of obs	= 337
					Wald chi2(10) = 53.07	
					Prob>chi2	= 0.0000
					Pseudo R <sup>2</sup>	= 0.8070
CD	Coefficients	Robust Std. Err.	Z- value	Sig.		
D	1.218347***	0.6817127	1.79	0.074		
GEN	-0.1295234	0.6335709	-0.2	0.838		
AG	0.0077951	0.1234208	0.06	0.95		
AGSR	-0.00043	0.0013922	-0.31	0.757		
INCOM	0.0346739	0.0145101	2.39	0.017		
SRP	2.166316*	0.6107892	3.55	0.000		
NDP	-0.0415804	0.1120186	-0.37	0.710		
CSZ	-0.0020723**	0.001014	-2.04	0.041		
SPV	0.9705793***	0.5811818	1.67	0.095		
FITCDR	-9.794303**	4.710661	-2.08	0.038		
Cons	-3.491235	2.933985	-1.19	0.234		
*significance at 1%		**significance at 5%	*** significance at 10%			

Among these variables, only credit/loan size is significant at the 5 % level. This shows that the higher the credit/loan size, the lower the probability of repaying the credit/loan. On the other hand age was found to be positive, while age squared turned out to be negative. This shows that, as age increases, the probability of credit repayment increases up to a certain level of age beyond which performance will decline i.e. there is a non-linear relation. Both these variables are statistically insignificant.

Moreover, income from activities financed by the credit/loan and suitability of repayment period are positively and significantly related to loan repayment performance.

#### Evaluation of the Loan Rationing Mechanism

**Table 4: Maximum Likelihood Estimate of a Logit Model for Loan Rationing**

Probit Estimates					Number of obs	= 337
					Wald chi2(10) = 22.95	
					Prob > chi2	= 0.0180
Log likelihood = -72.055849					Pseudo R <sup>2</sup>	= 0.1246
CRAT	Coefficients	Robust Std. Err.	Z- value	Sig.		
D	-0.5928361**	0.2545076	-2.33	0.020		
GEN	0.1747426	0.2897258	0.6	0.546		
AG	0.1202621***	0.064093	1.88	0.061		
AGSR	-0.0013319***	0.0007051	-1.89	0.059		
INCOM	-0.0073434	0.0050361	-1.46	0.145		
SRP	0.5073275***	0.3421386	1.78	0.108		
NDP	-0.1135034**	0.0502756	-2.26	0.026		
CSZ	0.0002257	0.0004294	0.53	0.599		
SPV	0.0408717	0.2420632	0.17	0.866		
FITCDR	-2.878546***	1.72271	-1.67	0.095		
Cons	-1.534739	1.475238	-1.04	0.298		

\*\*significance at 5% \*\*\*significance at 10%

With this brief description of the estimation result, the evaluation of the loan rationing (screening mechanism), according to Hunte (1996), if a variable is positively signed in both equations, then the borrower with such a characteristic

is correctly identified as creditworthy. If it is negatively signed in both equations, then the borrower with such a characteristic is correctly identified as non-creditworthy and hence should be rationed.

Meanwhile, if on the other hand a variable is positive in the credit repayment equation and negative in the rationing equation, then the screening technique is incorrectly rationing a creditworthy borrower. Likewise, if a variable is negative in the repayment equation, but positive in the rationing equation, it implies that the borrower having such a characteristic that results in poor credit recovery is less rationed while he/she must have been rationed more. In view of that, borrowers who are aged perceive the repayment period as suitable, perceive credit/loan supervision as adequate are correctly identified as being creditworthy and were not rationed or are less rationed. Correspondingly, borrowers who are credit diverters and support a larger number of dependents are correctly identified as being non-creditworthy, and hence are rationed.

Conversely, borrowers who earn more income from activities financed by the credit/loan and who are more educated are incorrectly rationed despite being creditworthy, while those who applied for the larger credit amount and those who are male are less rationed in spite of the fact that they contribute to poor loan recovery rate. Overall, according to the evaluation technique given above the screening mechanism employed by selected MFIs seems to be sound, since in most of the variables, the criteria used were correct. In concluding this slice, it is important to point out that although in over half of the criteria discussed above the screening technique was sound in the selected 8 MFIs.

## CONCLUSIONS AND RECOMMENDATIONS

The rationale of this last chapter is to review the intact thesis and bring to light future research directions. Accordingly, section one presents an abridgment of the study and its major findings. Section two presents recommendation and section three are about implication for further study.

Based on the result of the findings the following conclusions were made:

With the aim of identifying the determinants of credit default, an attempt was made to judge against defaulters with non-defaulters. Accordingly, it was found to be, on average a bit younger with a more proportion of them being male, illiterate, and loan diverters. They also receive a smaller credit amounts, earn smaller income, and support more dependents than the non-defaulters. The difference between the two groups was found to be significant in terms of credit/loan diversion and income.

The findings of the econometric analysis reveal that, education, number of times borrowed and suitability of repayment period are significant determinants of credit diversion.

The gender, credit/loan size and number of dependents are all negatively related to the probability of credit repayment. Among these variables, only credit/loan size is significant at the 5 % level. This shows that the higher the credit/loan size, the lower the probability of repaying the credit/loan.

Moreover, income from activities financed by the credit/loan and suitability of repayment period are positively and significantly related to loan repayment performance.

It was found that the credit scheme has contributed positively towards improving the income, access to education, and access to the health service of borrowers. Overall, it seems that the scheme is contributing towards reducing poverty.

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