**Educational Administration: Theory and Practice**
2024, 30(5), 12791-12795
ISSN: 2148-2403
https://kuey.net/

**Research Article**

# Evaluation Of Credit Risk Management For Sustainability Of Microfinance Institutions

Dr. Sonia Gupta[1*], Dr. Jyoti Singhal[2]

[1*]Bharati Vidyapeeth Institute of Management studies & Research)
[2]Vijay Patil School of Management ( DY Patil deemed to be University, Navi Mumbai)

**Citation:** Dr. Sonia Gupta, et al (2024), Evaluation Of Credit Risk Management For Sustainability Of Microfinance Institutions, *Educational Administration: Theory and Practice*, *30*(5), 12791-12795,
Doi: 10.53555/kuey.v30i5.3960

**ARTICLE INFO**

**ABSTRACT**

Micro financing is a relatively new financial concept in developing countries, providing alternative source of savings and credit availability for people who, otherwise, cannot get access to those services from the mainstream financial intermediaries. It provides alternative savings opportunities and cheaper source of credit to members, notably of credit unions. Thus, microfinance institutions (MFIs) perform very important role in economic development. Sound risk management policies impact on the sustainability of MFIs. One study noted that low credit risk is directly related to the application of sound qualitative and quantitative risk management tools. Among those qualitative and quantitative risk management tools are the explanatory variables in this study. This paper examined the impact of business experience, use of loan proceeds, loan maturity, and profit maximization motive on MFIs' sustainability, the dependent variable. Results of the multiple regression were significant, $F$ (5, 82) = 78.24, $p < .005$; suggesting policy prescription for MFIs: In making loans, MFIs must consider their own business experience, nature or use of loan proceeds by borrowers, maturity or how long the loan funds will be tied up, and MFIs own profit maximization motive because they do impact on credit risk and of consequence MFIs sustainability.

**Keywords:** Credit risk, microfinance institutions, sustainability, business experience, loan maturity.

**JEL Codes:** E4, E5

## I. INTRODUCTION

Microfinance is a relatively new invention that emerged as a source of finance developmental vehicle especially in developing countries following the seminal works of McKinnon (1973) and Shaw (1973). Ledgerwood (1999) observed that microfinance has evolved as an economic development approach through the provision of alternative savings opportunities and cheaper credit to members, notably of credit unions. Ledgerwood's observation is buttressed by Patil (2011) regarding microfinance institutions' (MFIs) very important role as vehicles of economic development. Gupta, Chaula, & Harkawat (2012) have reported that huge number of people resident in developing countries have gained access to mainstream financial services through microfinance programs. Nevertheless, the authors noted that resources are still very limited in serving the numerous people who still remain un-served because the demand for financial services far exceeds the currently available supply. Thus, to provide financial services to poor people in developing countries on continuing basis requires that microfinance institutions employ prudent credit risk practices.

However, all too frequently, poor credit risk management adversely impact on the sustainability of MFIs (e.g. Rwanda: Microfinance Sector, 2006; Alexander-Tedeschi, 2006). Jorion (2007) expanded this frontier of thought by defining credit risk as involving the risk of losses arising out of unwillingness or inability of counterparty to a lender-borrower transaction to fulfill its contractual obligations, and this is a direct result of credit risk managers not fully availing themselves of the benefits of better predictors of credit risk.

Ayayi (2012), shares the latter view by noting that credit risk can be improved by applying sound qualitative and quantitative risk management tools. Thus, this paper examined some of those qualitative and quantitative factors that contribute to the success or failure of microfinance institutions, as suggested by the latter panelists.

Specifically, this paper examined the impact of (1) lender business experience, (2) nature or use of loan proceeds, (3) maturity period of loan, and (4) profit maximization motive on credit risk management and sustainability of MFIs.

### A. Variables undertaken

#### *1. Lender Business Experience*

The more the years of working experience obtained by a credit union, the better it enables it to recognize and deal with the different levels of risks associated with the provision of credit to their stakeholders.

#### *2. Nature of Business*

Credit union borrowers constitute the primary source of credit risk to the union. A borrower's desire to undertake an activity that would yield greater returns is also associated with greater risk. In the event of business failures, default often tends to be the likely outcome. Thus, the nature of business or use of loan proceeds can have adverse impact on a credit union.

#### *3. Maturity*

The length of maturity of loans and credit to be repaid with applicable interest can also have adverse impact on repayment. Generally, loans that have longer maturity periods are more likely to go into default as compared with shorter maturity loans. Thus, it is also a very important variable for this study.

#### *4. Profit maximization motive on credit risk management*

Generally, the amount of net profits to be generated by undertaking a particular activity or granting of credit or loans to borrowers also do influence the choice of solutions used against risks associated with such profits. High earning profit activities are associated with higher risks and vice versa.
The study used a case analysis from India evidence suggests that those study independent variables have direct impact on credit risk and of consequence MFIs sustainability.

## II. LITERATURE REVIEW

One study (Pollio & Obuobie, 2010) noted that Microfinance, however measured, has grown very rapidly in India in the last decade at an annual rate of 20-30 percent. According to this study, Microfinance Institutions (MFIs) supply financial services to an estimated 15 percent oftotal population of about 25 million people compared with 10 percent by the commercial banking sector. Lending exposure constitutes the most material risk concentrations in lending institutions, and MFIs are no exception. Lending involves a major risk of default that can potentially put an MFI out of business. Factors that impede sound credit risk management policies can whittle away MFIs financial sustainability and impede MFIs complementary role in economic development (Aveh, Krah, & Dadzie, 2013). Gregoire and Tuya (2006) noted among other factors that MFIs with highest levels of efficiency and sustainability are characterized by business experience, which supports one of the variables being examined by this study. The literature is limited on how the intended use of credit facility does impact on loan default. However, the few that do only caution lenders generally to pay attention to their risk recognition ability to enable them spot, among others, high risk ventures to which loan proceeds may be channeled into (e.g., Tyrone, Chia-Chi, & Chun-Hung,
2011). Thus, this general caution hews in closely with this study's investigation into whether the nature or use of loan proceeds can affect the sustainability of MFIs. That is, this study addresses this shortfall in the literature regarding the need for caution by lenders as to the riskiness of the venture or the nature of business to which loan proceeds may be applied.

Abdus (2004) noted that the demand for loans with higher risks are the ones that yield greater returns for lending institutions as compared with loans which carry lower risk. Thus the propensity for MFIs to go for higher risk loans is likely to be much greater because of the higher returns associated with them. In another expression, this tendency may be manifested or evidenced by lenders as net profit or profit maximization motive, which is one of the variables of investigation in this study. In one study (Bogan, 2012), it was observed that the capital structure of lending institutions has become an increasingly prominent issue in the world of finance. The study further noted that the rise of MFIs as invaluable lending institutions in the economic development process can be attributed to market capitalization. Although, commercial microfinance operations have generally achieved a greater degree of operational efficiency that compares favorably with medium sized MFIs internationally restrictions imposed by capital have limited the growth of microfinance programs, leading to MFIs' having varying degrees of sustainability. Thus, the question of how best to finance MFIs becomes a key issue. For this reason, the propensity to increase capital structure by MFIs through internally generated funds could lead to making risky loans that also entail higher risk of default and financial sustainability; an observation that supports Abdus' (2004) observation above. This study, therefore, explored how profit maximization motives or net profit or the desire to increase capitalization do impact on MFIs financial sustainability.

Thus MFIs are left to juggle the giving out of loans which, although have a higher degree of risk, but would accrue a greater profit to the institution and at the same time being risk averse. This observation relates closely with one conclusion of the Capital Assets Pricing Theory: risk and return are positively related (Downes & Goodman, 1995). This is a well grounded and widely acclaimed theory, yet there appears to be little work as to how this concept ties in closely to MFIs and the riskiness of borrower projects for which they extend credit. This in effect makes this study timely because it identifies an important loan contract content that may avert default of MFI loans, and thus assures their sustainability.

While the literature on financial intermediation focuses on determinants and costs of accessing credit for small businesses (e.g., Glennon, 2005), there has been little study done on examining the repayment behavior of microfinance borrowers who actually receive credit extension; or whether loan default behavior has any link to the maturity of a loan. This study addresses this shortfall in the literature by examining loan maturity and its impact on defaults and sustainability of MFIs.

## III. DATA AND METHODOLOGY

### A. Description of the Data

The core objective of this study is to ascertain the relationship between credit risk and its consequence on MFI's sustainability. The dependent variable in the model is MFI sustainability. The independent variables are (a) length of lender business experience, (b) intended purpose or nature of use of loan proceeds, (c) maturity period of loan, and (d) profit maximization motive or net profit of lender. These explanatory variables constitute some kind of proxy variables for credit risk, which has direct impact on MFI's sustainability.
The primary data used for the study were from survey questionnaires of five MFIs in India. One conservative rule of thumb for sample size determination is derived from the formula, $n > 50+8m$ where, n = sample size, and m = number of predictors (as cited by statistics solutions, 2005, p. 2.) Substituting the number of predictors into the above formula yielded 82 as sample size. The STATA statistical software was used to analyze data. The study data was generated from primary sources, involving survey questionnaires that were administered to respondents. To enhance the reliability of the study, close-ended questionnaires that guide respondents were utilized, rather than open-ended questionnaires that have the potential to generate irrelevant data.

### B. The model

The study used a multiple regression model given by:

$$S_d = \beta_o + \beta_1 Exp_i + \beta_2 NetP_i + \beta_3 Nat_i + \beta_4 Mat_i + \varepsilon_i$$

where,
$S_d$ = Sustainability of MFI, the dependent variable, which is a function on a set of independent variables (i.e., $Exp_i$ = Business Experience of MFIs; $Netp_i$ = Profit maximization motive of MFI as measured by Net profit; $Nat_i$ = Nature of use of loan proceeds; $Mat_i$ = Maturity or how long the loan funds will be tied up.) $\varepsilon_i$ = Error term accounting for other variables not captured but which, may be relevant to this study. $\beta_i$, where, i =1, 2, 3, 4 are the parameters of the model. The method of Ordinary Least Squares (OLS) was used in estimating the parameters of the multiple regression model.

### C. Analysis of Variance

The Coefficient of Determination, $R^2$ is interpreted as the goodness of fit of a regression. The higher the coefficient of determination, the better the variance that the dependent variable is explained by the independent variable (Coefficient of determination definition, 2013). In this case, the value of 0.6756 (Table 1) is high; the degree of freedom, *F* statistic, had a value of 78.24 (Table 1), which is significant.

**Table 1. Model Summary**

| Number of observations: | 82 |
|---|---|
| *F* (5, 82) | 78.24 |
| Prob > F | 0.0000 |
| R- Squared | 0.6756 |
| Adj R-squared | 0.6665 |
| Root MSE | 4.2134 |

**Table 2. Collinearity Statistics**

| Variable | VIF | 1/VIF |
|---|---|---|
| Nat | 0.98 | 0.664321 |
| Mat | 1.52 | 0.964202 |
| Netp | 1.12 | 0.754632 |
| Exp | 1.67 | 0.683418 |
| | Mean VIF | 1.32 |

## IV. EMPIRICAL RESULTS

The findings suggest that there is a positive relationship between the independent or explanatory variables and the dependent variable. That is, the explanatory variables do influence changes in the dependent variable (i.e., MFI sustainability through sound credit risk management practices.) This study used the VIF analysis, which quantifies the severity of multicollinearity in an ordinary least squares regression analysis. The mean VIF was 1.32 (Table 2) for the independent variables, which is relatively small. Kutner (2004) proposed 10 as a cut off value of VIF. Multicollinearity and Heteroskedasticity tests did not present any concern, and the error term had a constant variance. These suggest that the use of those variables would result in the use of effective risk management practices that leads to financial sustainability of MFIs.

Although, India's commercial microfinance operations have generally achieved a greater degree of operational efficiency that compares favorably with medium sized MFIs internationally from the perspective of financial sustainability, there is still more room for improvement. The benefits of MFIs in alleviating poverty and improving macroeconomic activities have been established, yet MFIs face challenges in minimizing default rates .

This study has highlighted some of those challenges and identified focus areas for MFIs to attain sustainability through sound credit risk practices. For example, Pollio and Obuobie (2010) observed that the probability of loan default declines by 28 percent as the number of years a borrower has been in business increases. This produces two pronged effects: First, the more the years of working experience obtained by a MFI, the better it enables it to recognize and deal with the different levels of risks associated with the provision of credit to their borrowers. Second, as borrowers gain substantial experience, it results in improved productivity and capital base, which minimizes the likelihood of default as compared with their less experienced counterparts. Alternatively stated, substantial experiences by borrowers imply that established businesses, with their assured revenues and diversified cash flows, represent better credit risks than inexperienced borrower firms.

Our findings regarding the adverse impact of longer maturities on credit risk and MFI sustainability were sharply contrasted by one study (Pollio & Obuobie, 2010), who argued that default is less because, for a given interest rate, longer maturities imply lower periodic installments, creating some kind of incentive to repay a loan. But Gürtner and Heithecker (2005), observed that generally the longer the maturity of a loan, the higher the risk of default, which supports our findings. Thus our findings on this explanatory variable (i.e., maturity) can hardly be said to be conclusive. Pollio and Obuobie (2010), however, noted that the nature or intended purpose of loan proceeds should present a concern for lenders, which was consistent with our findings. For example, they noted that loans utilized for working capital appear less risky than those used for acquisition of fixed assets, which locks up funds for repayment as they do not generate income. Those findings imply that good credit risk management practices involving the explanatory variables employed in this study can minimize loan defaults and improve the sustainability of MFIs.

## IV. CONCLUSION

One study (Miller, 1996) noted that effective credit risk management is a two-step approach involving (a) the decision making process before a credit decision is made, and (b) follow-up of credit commitments including monitoring and reporting processes. This is facilitated when MFIs inquire into the nature of intended purpose of loan proceeds by the borrower; a self-examination by MFIs as to their own level of experience that qualifies them to handle the decision making process; and the maturity of the desired loan. MFI's own desire for excessive profit may also entail higher credit risk that may work against the MFI and consequently its financial sustainability.

Loans having a longer period for maturity carry greater risk as compared with short term loans (Gürtner & Heithecker, 2005). This is supported by the study results, which depicted maturity as having a positive significance to risk management practices. Thus the longer the maturity of a loan, the higher the level of risks associated with it. MFIs need to consider this variable if they intend to avoid losses in lending transactions. It is also important to note that the high level of confidence (95%) shown by the analysis shows that MFIs that employ the use of these variables have a greater chance of reducing the risk associated with their credit

extension and of consequence their sustainability. This study, hopefully, will provide insight to microfinance practitioners, loan officers, and all stakeholders in the microfinance industry in making decisions with regards to loan approval and to become more aware of the drivers of loan default.

## REFERENCES


1. Abdus, S. (2004). Performance of Interest Free Islamic Banks vis-à-vis Interest Based Conventional Banks of Bahrain, IIUM *Journal of Economics and Management*, 12 (2), pp. 115-129.
2. Alexander-Tedeschi, G. (2006), Here today, gone tomorrow: Can dynamic incentives make microfinance more flexible, *Journal of Development Economics,* 80 (1), pp. 84-105.
3. Ayayi, A. G. (2012). Credit risk assessment in the microfinance industry, Economics of Transition, 20 (1), pp. 37-72.
4. Aveh, F. K., Krah, R. Y., & Dadzie, P. S. (2013). An Evaluation of Sustainability and Subsidy Dependence of Microfinance Institutions in Ghana, International Business and Management Vol. 6, No. 1, 2013, pp. 55-63 )
5. Bogan, V. L. (2012). Capital structure and sustainability**:** an empirical study of microfinance institutions, *Review of Economics and Statistics*, 94 (4), pp. 1045-1058.
6. Coefficient of determination definition (2013). Retrieved 12th June 2013 from www.coefficientofdetermination.com/.
7. Downes, J. & Goodman, J. E. (Eds.). (1995). *Dictionary of finance and investment terms* (5th ed.). New York: Baron's Educational Series, Inc.
8. Glennon, D. (2005). An Analysis of SBA Loan Defaults by Maturity Structure, *Journal of Financial Services Research* 28 (1/2/3), pp. 77–111.
9. Gregoire, J. R., Tuya, O. R. (2006). Cost Efficiency of Microfinance Institutions in Peru: A Stochastic Frontier Approach, *Latin American Business Review,* 7 (2), pp. 41-70.
10. Gupta, S. V.; Chaula, P. M.; & Harkawat, S. (2012). Measuring performance of microfinance institutions in India, *Annamalai International Journal of Business Studies & Research*, 7 (1), pp. 14-23.
11. Gürtner, M. & Heithecker, D. (2005). Multi-period defaults and maturity effects on economic capital in a ratings-based default-mode model. Working paper number FW19V2 of Technische Universität Braunschweig, Institute of Finance. Retrieved from www.ideas.repec.org/p/zbw/tbsifw/fw19v2.html
12. Jorion, P. (2007). Value-at-risk: the new benchmark for managing financial risk (3rd ed.). McGraw-Hill: New York.
13. Kutner, N. N. (2004). Applied linear regression models (4th ed.). McGraw-Hill Irwin.
14. Ledgerwood, J. A. (1999). *Microfinance Handbook: An Institutional and Financial Perspective*. Washington, DC World Bank
15. Mckinnon, R. (1973). *Money and Capital in Economic Development*. The Brookings Institution, Washington DC.
16. Miller, R. (1996). The importance of credit risk management. Retrieved November 25th, 2012 from www.riskglossary.com
17. Patil, V. G. (2011). *Golden Research Thoughts*, 1 (5), pp.1-4.
18. Tyrone, T. L., Chia-Chi, L. & Chun-Hung, C. (2011). Impacts of the borrower's attributes, loan contract contents, and collateral characteristics on mortgage loan default, *The Service Industries Journal,* 31 (9), pp. 1385–1404).