

© Journal of Contemporary Issues in Business Research
ISSN 2305-8277 (Online), 2016, Vol. 5, No. 4, 92-99.
Copyright of the Academic Journals JCIBR
All rights reserved.

DETERMINANTS OF FINANCIAL SUSTAINABILITY OF MICROFINANCE INSTITUTIONS IN PAKISTAN *

MUHAMMAD USMAN †

SOHAIL AHMED

University of Central Punjab, Lahore, Pakistan

TARIQ MEHMOOD

University of the Punjab, Lahore, Pakistan

NAVEED UL HAQ

University of Management and Technology, Lahore, Pakistan

ABSTRACT

Microfinance institutions contribute a lot in reduction of poverty by providing access to finance to the poor's. The purpose of this paper is to identify those factors that have significant impact on financial sustainability of microfinance institutions in Pakistan. Panel data analysis is used as a technique to analyze the data of 49 MFIs in Pakistan. The results show that Size of MFIs, Capital to Asset ratio, Yield on Gross Portfolio, Operating Expense to Asset ratio and Portfolio at Risk are found to be important factors in determining financial sustainability of MFIs in Pakistan. However, Breadth of Outreach, Cost per borrower, Capital structure, Productivity and Debt to Asset ratio shows insignificant impact on financial sustainability that means these variables have no significant association with financial sustainability of microfinance institutions in Pakistan.

Keywords: Microfinance Institutions; Financial Sustainability; Pakistan.

INTRODUCTION

This research paper is to analyze those factors that are affecting the financial sustainability of Microfinance Institutions (MFIs) in Pakistan. Financial sustainability of microfinance institutions is probably the key dimension of microfinance sustainability. It refers to the ability of MFIs to cover all its costs from its own generated income from operations without depending on external support or subsidy. In this study, Depth of Outreach, Cost per Borrower, Size of MFIs, Capital Structure, Capital to Asset ratio, Yield on Gross Portfolio, Operating Expense to Asset ratio, Productivity, Portfolio at Risk and Deposit to Asset are used to analyze the effect of these on financial sustainability of MFIs.

Poverty is the main issue all over the world especially in under developed and developing countries. Banks and the governments of the countries make efforts to reduce the

* The views or opinions expressed in this manuscript are those of the author(s) and do not necessarily reflect the position, views or opinions of the editor(s), the editorial board or the publisher.

† Corresponding author

poverty in their countries but there are lots of issues still prevailing when governments are taken steps to reduce it. The role of Bank is to give loan to the people but not to the poor people that is the main problem. Banks charge high rate of interest and give credit to those people who have some type of collaterals. The issue arises for the poor's because they have no collaterals to get credit easily from the banks. To overcome this problem, the first step was taken by Dr. Muhammad Yonus in Bangladesh, he started Grameen Bank to give small loans to the poor with no collaterals behind (American Sociological Association, 2012). The aim of Grameen bank is to get the people out of poverty and it mainly supports the women who are the sole bread earner of the family that is the concept of women empowerment (American Sociological Association, 2012). Grameen Bank creates a revolution of the new concept in the world to reduce poverty. Now more than 1000 of micro finance institutions are running all over the world, these institutions provide loans to poor people who have ability to run some type of small businesses and return money to MFIs after earning from their businesses.

Micro-Financial Institutions (MFIs) are contributed a lot in developing process of a country (Bassem, 2014). They have targeted the lowest-income families and provide lot of financial services to the lowest-income households in the country (Bassem, 2014). Now, MFIs also transfer their focus from the social objective of reduction of poverty towards economic objective of market based services and sustainability (Bassem, 2014). The main purpose of MFIs is to providing a small credit to the poor and low-income groups to alleviate the poverty (Hermes, Lensink, & Meesters, 2011). MFIs give loan to those people who have no access to the commercial banks and those who wants to earn some money by doing some business for their families. MFIs are subsidized by Donors, NGOs and most of the time government to help these MFIs financially with a aim to alleviate the poverty in the world (Hermes, Lensink, & Meesters, 2011). MFIs are operating as credit unions, Non-Government organizations, non-bank financial intermediaries or commercial banks. Due to risk of default and lack of collaterals, most of the MFIs charge high interest rate as compared to commercial banks. Micro-finance programs serve over 67 million households globally (Mwangi, 2015).

Financial sustainability is the main concern for the MFIs now a day. Many researchers have defined financial sustainability in different ways. Kinde (2012) defined financial sustainability as ability to keep on going towards microfinance objective without continued donor support. MFIs want to cover the operating cost without the help of external support like donors, NGOs or government. If MFIs are not able to cover the cost of lending and dependent on external support that means MFI are not financially sustainable and there is a chance of closing down those MFI in near future who are not able cover their costs without external help. Meyer (2002) identified two ways of measuring financial sustainability that are Operational Self-Sufficiency (OSS) and Financial Self-Sufficiency (FSS). Operational self-sufficiency is ability of sufficient operating income to cover operating cost like loan losses, salaries, supplies and other administrative cost whereas, Financial Self-Sufficiency is a ability to cover both operating and financing cost and market price of other form of subsidy from their own generated income.

In Pakistan, poverty is on peak, there is also many social and economic factors that cause poverty in the country. Some of the factors are large family size, poor educational facilities, poor health, skewed pattern of land ownership, disadvantageous consumption pattern, and weak rule of law. Microfinance has gained popularity among both public and private sector gradually but the issue of unawareness of the people regarding MFIs is still present. According to MIX market, there are 49 micro financial institutions that are mainly categorized into three types that are operating in Pakistan includes Microfinance Banks, NGOs and Non-Bank Financial Intermediaries (NBFIs). Apna Microfinance Bank, FINCA microfinance bank, Khushhali Bank Ltd, Akhuwat and National rural support programme Bank Ltd are some of the names among all MFIs in Pakistan. Now, the government and

international donors are taking interest in it to promote microfinance and providing huge amount of funds for the development of microfinance institutions. Pakistan Poverty Alleviation fund (PPAF) was created by government to alleviate poverty from the country. Donors give funds to PPAF and it provides these funds to institutions who are involved in alleviation of poverty whether in public or private sector. Security and exchange commission of Pakistan is the regulatory body for PPAF.

The main concern for the developing countries now a day for the alleviation of poverty is to have financially sustainable MFI's, if micro-financial institutions are not financially sustainable then it is very difficult for the MFIs to continue their work in near future (Hollis & Sweetman, 1998). Unsustainable MFIs may help the poor's now but they will not continue to help the poor because unsustainable MFIs will be gone (Schreiner, 2000). So, it is very important for the countries to find out those significant factors that are affecting the financial sustainability of MFIs and these factors are varying from country to country due to change in geographical location.

The purpose of this research paper is to explore the factors that are affecting the financial sustainability of micro-financial institutions in Pakistan. Hypothesis of this study is the selected variables have significant impact on financial sustainability of MFIs in Pakistan.

LITERATURE REVIEW

Reviewing the literature on the financial sustainability of MFIs, it is observed that different researches are conducted to analyze the factors that affecting the MFIs financial sustainability and these researches are conducted in different countries but not in Pakistan yet. Some of the countries are United Kingdom (Mwangi, 2015), East Africa (Tehulu, 2013), Ethiopia (Kinde, 2012), India (Zerai & Rani, 2012). Most of the recent studies have used descriptive analysis to analyze the relationship of different factors and financial sustainability of MFIs (Mwangi, 2015; Rahman & Mazlan, 2014; Tehulu, 2013; Kinde, 2012).

Mwangi (2015) used Generalized Method of Moment estimation technique of panel to find out the effect of capital to asset ratio on financial sustainability. Rahman and Mazlan (2014) used multiple regression as a model to check significant relationship among different variables and financial sustainability. Tehulu (2013) used binary probit and ordered probit regression model which is applied on un-balanced panel of 23 MFIs in East Africa to find out the significant factor of financial sustainability. Kinde (2012) applied Random Effect Model of panel data to find out the significant factors that affect the financial performance of MFIs. Zerai and Rani (2012) applied correlation matrix analysis to find out the correlation between financial sustainability and other factors. Schafer and Fukasawa (2011) applied OLS regression on different factors that are used in study to analyze the affect on MFIs financial sustainability.

There are many factors that are taken by the researchers in their studies that affect the financial sustainability of MFIs (Tehulu, 2013; Kinde, 2012; Schafer & Fukasawa, 2011). Breadth of Outreach, Portfolio at Risk, Size of MFIs, Cost per Borrower, Capital Structure and Capital to Asset ratio are the variables that are mostly used in different studies (Mwangi, 2015; Rahman & Mazlan, 2014; Kinde, 2012).

The Breadth of Outreach means the number of poors which are served by microfinance institutions. Most of the studies have used the number of borrowers to measure the breadth of outreach (Rahman & Mazlan, 2014; Tehulu, 2013; Kinde, 2012). According to Kinde (2012) and LOGOTRI (2006), Breadth of Outreach indicate the postive relationship with financial sustainability that means increase in number of borrower will increase the financial sustainability of MFIs. On the contrary, study of Rahman and Mazlan (2014) on Bangladesh shows significant but negative affect of breadth of outreach on financial

sustainability of MFIs. Whereas, (Tehulu, 2013) conducted a reasearch on MFIs of East Africa and shows that breadth of outreach has no affect on financial sustainability of MFIs.

Various sources of Capital like loans, deposits, savings can affect the profitability therefore, capital structure is also another variable that is used in different studies to find out the relationship of capital structure and finacial sustainability of MFIs. Rahman and Mazlan (2014) and Kinde (2012) found that capital structure has insignificant and negative impact on financial sustainability that means different sources of capital do not improve the financial sustainability of MFIs.

The effieciency could be measured by its productivity which is measured by number of borrowers per staff member (Kinde, 2012). The result of Kinde (2012) shows that productivity has positive but insignificant relationship with finacial sustainability. Ganka (2010) found that productivty has negative but significant impact on financial sustainability.

Portfolio at Risk is the unpaid principal balance including both the past due and future installments. It also includes loans that are restructured or rescheduled. Most of the researchers have used portfolio at risk in their studies to check its relationship with sustainability of MFIs. Tehulu (2013) and Schafer and Fukasawa (2011) found that portfolio at risk has negative impact on financial sustainabilty of MFIs that indicates the inverse relation between both portfolio at risk and sustainability.

Size of MFIs is measured by the value of assets in MFIs and some of the studies used size of asset to analyze its relationship with financial sustainability (Rahman & Mazlan, 2014; Kinde, 2012). According to Rahman and Mazlan (2014) size of MFIs has positively explain the financial sustainability of MFIs in Bangladesh.

Deposit to Asset Ratio is also another variable which is used by different researhers. It measures the portion of total asset of MFIs that is funded by deposits. According to Mwangi (2015) and Muriu (2011) Deposit to Asset Ratio has positive and significant affect on MFIs financial sustainability. He justified that large deposits will lead to reduction of cost of funds of MFIs that may be the reason of improved profitability of MFIs and thus financial sustainability.

DATA AND METHODOLOGY

This study examines the financial sustainability of MFIs in Pakistan. The research which is used in this study is of quantitative nature. Financial sustainability of MFIs is a dependent variable in this study but it is very difficult to measure financial sustainability. Meyer (2002) identified two ways of measuring financial sustainability that are operational self-sufficiency and financial self-sufficiency. Some of the studies used financial self-sufficiency to measure financial sustainability Rahman and Mazlan (2014) and some of the studies used operational self-sufficiency to measure sustainability Schafer and Fukasawa (2011). In this study, operational self-sufficiency is used to measure financial sustainability of MFIs in Pakistan. Operational self-sufficiency is an ability of sufficient operating income to cover its operating cost like loan losses, salaries, supplies and other administrative cost of MFIs.

Size of MFIs, Breadth of Outreach, Cost per Borrower, Debt to Equity Ratio, Capital Structure, Yield on Gross Portfolio, Operating Expense to Asset Ratio, Productivity, Portfolio at Risk and Deposit to Asset are the variables that are used in this study, there are many other variables that was used by the previous researchers in their studies these are Dependency Ratio, Personnel Productivity Ratio, Average Loan Balance per Borrower, Deposit Mobilization, Management Inefficiency, Depositors to Borrowers Ratio and Market Penetration but these variables are excluded from this study because this study only include those factors that are mostly used by different researchers in their studies. Secondary data is used to analyze the impact of these variables on financial sustainability. All the data is

collected from MIX data base website over the period of 1997 to 2014. There are 49 MFIs of Pakistan in MIX market website and some of the data of MFIs of different years is missing so there is unbalanced panel of 49 MFIs in MIX data base.

This article is a descriptive study, panel data model that include fixed effect and Random effect is a suitable model that is applied on unbalanced panel in this research. Fixed effect and Random effect model basically explores the relationship between dependent and independent variables and this type of effect are involved in analyzing the impact of variables over time. Hausman Test is used to check whether fixed effect show accurate results or random, Stata is a software that is used in this study to apply panel data analysis on unbalanced panel of 49 MFIs in Pakistan.

$$Y = f(X_1, X_2, X_3, X_4, \dots, n)$$

The reduced form of equation by estimated the association between dependent and independent variables by ordinary least square is given below;

$$Y_{it} = \alpha_i + \beta X_{it} + \varepsilon_{it}$$

The operational model which is used in this study for empirical investigation is given as;

$$\begin{aligned} OSS_{it} = & \beta_0 + \beta_1(SIZE_{it}) + \beta_2(BOR_{it}) + \beta_3(CPB_{it}) + \beta_4(CS_{it}) + \beta_5(CAR_{it}) \\ & + \beta_6(YGP_{it}) + \beta_7(OPER_{it}) + \beta_8(PROD_{it}) + \beta_9(PAR_{it}) + \beta_{10}(DAR_{it}) \\ & + \mu_{it} \end{aligned}$$

Where OSS_{it} is operational self-sufficiency for firm i , in time period t , which is used as a measure of financial sustainability of MFIs in Pakistan. $Size_{it}$ is a size of MFIs for firm i , in time period t , which is measured by log of total asset of MFIs. BOR_{it} is a breadth of outreach for firm i , in time period t , which is measured by number of active borrowers. CPB_{it} is a cost per borrower for firm i , in time period t , CS_{it} is capital structure for firm i , in time period t , which is measured by debt to equity ratio, CAR_{it} means capital to asset ratio for firm i , in time period t , YGP_{it} means yield on gross portfolio for firm i , in time period t , $OPER_{it}$ means operating expense ratio for firm i , in time period t , $Prod_{it}$ is a productivity of firm i , in time period t , which is measured by borrowers per staff member, PAR_{it} is a portfolio at risk for firm i , in time period t , DAR_{it} is a deposit to asset ratio for firm i , in time period t and μ_{it} is a error term for firm i , in period t .

DATA ANALYSIS AND ESTIMATED RESULTS

First step is to verify the specification of homogeneity or heterogeneity of data set, after applying LM test verified the existence of fully heterogeneity model therefore panel regression is applied. The prob. value of chi-square in hausman test is 0.0001 that shows null hypothesis is rejected and alternative is accepted. Therefore, fixed effect model is an appropriate model for this study. The result of fixed effect is given in above table. The econometric result of unbalanced panel of 49 MFIs shows that size of MFIs has positive and significant impact on financial sustainability because the p-value of size is 0.002 which is less than 0.05 that means increase in size of MFIs will lead to increase in total assets of the MFI that will improve the financial sustainability of MFIs in Pakistan.

TABLE 1
Econometric Results for Determinants of Financial Sustainability

Variable	Coefficient	t-statistics	Prob.
Size	0.136044	2.31	0.022
BOR	-0.0163608	-0.30	0.767
CPB	-0.0003151	-1.59	0.113
CS	-0.0011021	-1.27	0.207
CAR	0.237256	2.35	0.020
YGP	0.7555681	4.54	0.000

OPER	-1.032617	-4.65	0.000
Prod	0.0004678	1.17	0.245
PAR	-0.7269963	-3.84	0.000
DAR	0.2350105	1.20	0.231
R square = 0.4331		Prob.(F-statistics = 0.0000)	significant at 5%

The result of Breadth of outreach shows, that there is a negative and insignificant impact of number of active borrowers on financial sustainability, these result supports the findings of (Ganka, 2010), he justified as increase in number of borrowers result an increase in inefficiency and transaction cost and hence make the MFIs financially unsustainable.

The coefficient of cost per borrower is statistically insignificant at 5% significance level and has negative impact on financial sustainability that means increase in cost per borrower decreases the operational self-sufficiency of MFIs in Pakistan. These results are contrary to the findings of Rahman and Mazlan (2014) and Kinde (2012) who found negative and significant impact of cost per borrower on the financial sustainability of microfinancial institutions in Malaysia and Ethiopia respectively.

Capital structure in this study represents the debt to equity ratio. The result indicates that capital structure has negative and statistically insignificant impact on financial sustainability; it means increase in debt to equity ratio decreases the financial sustainability of MFIs. It also implies that most of the MFIs are debt financed as compared to other sources of finance that also makes the financial institutions unsustainable. The result of capital structure is similar to the findings of Rahman and Mazlan (2014) and Kinde (2012) who found that capital structure has insignificant and negative impact on financial sustainability.

The coefficient of Capital to Asset Ratio is positive and statistically significant at 5% significance level because the p-value of CAR is 0.020 which is less than 0.05. Capital to asset ratio measures, whether financial institutions has sufficient capital to support its assets, therefore, increase in the ratio makes the institutions healthier that improves the financial sustainability of MFIs. The coefficient value is 0.755 and p-value is 0.000 of Yield on gross portfolio also shows a positive and significant impact on financial sustainability. Yield on gross portfolio means Adjusted Financial Revenue from Loan Portfolio to Adjusted Average Gross Loan Portfolio. So, increase in yield on gross portfolio increases the financial revenue from loan portfolio of MFIs that increases the profitability, hence financial sustainability.

Operating Expense to Asset Ratio is calculated by Adjusted Operating Expense / Adjusted Average Total Assets. Operating expense ratio has significant and negative impact on financial sustainability that means increase in operating expense that includes salaries, administrative expense, depreciation and board fee, reduces the profitability of institutions and it may be a reason of MFIs financially unsustainable. These finding of operating expense ratio is similar to the findings given by (Rahman & Mazlan, 2014).

Productivity shows a positive impact on financial sustainability that means increase in productivity has increase the financial performance of MFIs but result of productivity is statistically insignificant at 5% significance level that justify as increase in the number of borrowers per staff indirectly increases the microfinance efficiency in utilizing its staff and thus improve the financial sustainability of MFIs. This result is very much similar to (Kinde, 2012) who found that productivity has positive but insignificant relationship with financial sustainability.

Portfolio at Risk is very useful measure of portfolio quality. It is calculated by dividing the outstanding balance of all loans including arrears over 30 days, plus all restructured loans by the outstanding gross portfolio as of a certain date. It indicates the risk of repayment of loan which is past due. Portfolio at risk indicates significant but inverse relationship with financial sustainability. The p-value which is 0.000 shows that portfolio at

risk has significant impact on financial sustainability. If portfolio at risk increases, the potential for loss in revenue increases that negatively affect the profitability and hence decreases the operational self-sufficiency of financial institution.

Deposits to Assets Ratio measures the relative portion of the MFI's total assets that is funded by deposits. The result from econometric analysis indicates the Deposit to asset ratio has positive but insignificant impact on financial sustainability that means large deposits will lead to reduction of cost of funds that may be the reason of improved profitability of MFIs and thus financial sustainability. These results are similar to García-Herrero, Gavila and Santabárbara (2009) who do not find significant result in the chinese banking industry. According to Mwangi (2015) and Muriu (2011) Deposit to Asset Ratio shows positive and significant affect on MFIs financial sustainability but in Pakistan, it is not found to be a significant factor that impact on financial sustainability.

CONCLUSION

This paper applies fixed effect model of panel data to analyze the impact of different variables on financial sustainability of MFIs in Pakistan. Based on the empirical results from the analysis, size of MFIs, capital to asset ratio, yield on gross portfolio, operating expense to asset ratio and portfolio at risk are found to be important factors in determining financial sustainability of MFIs in Pakistan. In other words, these variables have significant impact on financial sustainability of microfinance institutions. However, breadth of outreach, cost per borrower, capital structure, productivity and debt to asset ratio shows insignificant relationship with financial sustainability that mean these variables has no significant association with financial sustainability of microfinance institutions in Pakistan. So, Microfinance institutions should focus on these significant factors to make the financial institutions sustainable. These results are also helpful for the policy makers to make decisions regarding financial sustainability of MFIs.

REFERENCES

- American Sociological Association. (2012). *Banking on the poor*. Sage publication.
- Bassem, B. S. (2014). Total factor productivity change of MENA microfinance institutions: A Malmquist productivity index approach. *The International Journal of Theoretical and Applied Papers on Economic Modelling*, 39(1), 182-189.
- Ganka. (2010). Financial sustainability of rural microfinance institutions in Tanzania. Australia: University of Greenwich.
- García-Herrero, A., Gavila, S., & Santabárbara, D. (2009). What explains the low profitability of Chinese banks? *Journal of Banking and Finance*, 91(1), 2080-2092.
- Hermes, N., Lensink, R., & Meesters, A. (2011). Outreach and efficiency of microfinance institutions. *Journal of Development Studies*, 39(6), 938–948.
- Hollis, A., & Sweetman, A. (1998). Microcredit: What can we learn from the past? *Journal of Development Studies*, 26(10), 1875-1891.
- Kinde, B. A. (2012). Financial sustainability of microfinance institutons in Ethopia. *European Journal of Business and Management*, 4(15), 1-10.
- LOGOTRI. (2006, Semptember). *Building sustainable microfinance system: A growth of catalyst for the poor*. Local government training and research institute.
- Meyer, R. L. (2002). Track record of financial institutions in assessing the poor in Asia. *ADB institute research paper*, 22-78.

- Muriu, P. (2011, May). *Microfinance profitability: Does financing choice matter?* University of Birmingham , Birmingham Business School.
- Mwangi, M. (2015). The effects of deposit to asset ratio on the financial sustainability of deposit taking micro-finance institutions in Kenya. *International Journal of Economics, Commerce and Management*, 3(8), 504-511.
- Rahman, M. A., & Mazlan, A. R. (2014). Determinants of financial sustainability of MFI's in Bangladesh. *International Journal of Economics & Finance*, 6(9), 107-116.
- Schafer, K., & Fukasawa, Y. (2011). Factors determining the operational self-sufficiency among micro-finance institutions. *Journal of Advances in Business Research*, 2(1), 172-178.
- Schreiner, M. (2000). Ways donors can help the evolution of sustainable microfinance organizations. *Savings and Development*, 24(1), 423-437.
- Tehulu, T. A. (2013). Determinants of financial sustainability of MFI's in East Africa. *European Journal of Business & Managemt*, 5(17), 152-158.
- Zerai, B., & Rani, L. (2012). Is there a trade off between outreach and sustainability of MFIs. *European Journal of Business and Management*, 4(2), 90-98.