

Performance and Sustainability of Microfinance Institutions In India

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Abstract

A financial institution specializing in banking services for low-income groups or individuals is known as Micro Finance Institution (MFI). MFIs are not granted subsidies nor do they depend entirely on donations, then how are funds being managed by them. Are they able to sustain and cover their costs? This article focuses on performance of select NBFC-MFIs in India, and tries to identify the factors that influence their sustainability. Data for the study was gathered from themix website. Performance with respect to sixteen parameters is considered. The mean values for all parameters are compared across MFIs and a one way ANOVA was performed to test if they differ significantly. To study the sustainability of MFIs, Operating Self Sufficiency is taken as a proxy for sustainability, it is the dependent variable. A multiple regression was carried out. Sustainability was found to be dependent on Return on Assets, Operating expenses per loan portfolio, Debt Equity Ratio and Portfolio at Risk.

Keywords

Microfinance, Performance, Sustainability, Multiple Regression, Microfinance Institutions.

I. Introduction

Microfinance deals with lending of small amounts of money to entrepreneurs who lack the kind of credentials and collateral demanded by banks. Microfinance is the provision of financial services to low income people. It provides low-income households access to high-quality and affordable financial services to finance income-producing activities, build assets, stabilize consumption and protect against risk (CGAP) [3]. The financial services include savings and credit, but some Micro Finance Institutions (MFIs) are providing insurance and money transfers as part of financial intermediation. Unlike banks, these MFIs are not granted subsidies by the Government, nor do they depend entirely on donations. How are funds being managed by them and how do they perform? Sustainability means the ability of the MFI to continuously carry out its activities and services in line with its objectives. Long term sustainability requires MFIs to manage delinquency, keep their cost of capital low, rotate their portfolio efficiently, keep operating cost to minimum and set interest rates to cover all these costs. In tackling the quest for sustainability, many MFIs have chosen to target better off among poor (Hudson, Traca, 2010) [11]. MFI loan officers are responsible for creating and safeguarding quality of assets as well as for generating the income (Holtmann, 2001) [10]. Are these MFIs able to sustain and cover their cost? This article focuses on performance of select MFIs in India, and tries to identify the determinants of sustainability.

II. Literature Review

Anand Rai (2012), in his paper studied twenty six MFIs from India and Bangladesh during the period 2005-2010. He found that Portfolio at Risk (PAR), operating expenses/loan portfolio and capital asset ratio had influence on Operating Self Sufficiency (OSS). A model of financial sustainability index was developed [1]. Charles and Stephen (2013) have elucidated that sound

risk management policies impact sustainability of MFIs. For the study five MFIs from Ghana were taken and primary data was collected by administering a questionnaire. The paper examined the impact of experience, use of loan proceeds, profit maximization motive and loan maturity on sustainability. Result from a multiple regression suggests that all these independent variables impacted sustainability [4]. Rupa and Padmaja (2014) analyzed the financial performance of forty six MFIs in India during 2007-2011. Descriptive statistics and growth rates were used. It was found that Indian MFI's reach and depth was good, risk coverage was high, Return on Equity (ROE) was good and growth rate of active borrowers was high. The authors suggest that the MFIs should increase gross loan portfolio and efficiently manage their assets [15]. A study was conducted for Specialized Financial and Promoting Institution (SFPIs) in Ethiopia. Gebremichael and Chawla (2016) examined the financial and operating performance of SFPIs. Fifteen years data from 2000-2014 was taken. They found that outreach showed an improvement, however financial sustainability and profitability was going down. SFPIs had high ROE but less Return on Assets (ROA) as compared to industry average. The authors suggest that SFPIs should increase their ROA, ROE, OSS and yield on gross portfolio [7]. The above studies have focused either on performance or sustainability of MFIs though both are interrelated. Very few studies were taken up on Indian MFIs. MFIs belong to various categories like for profit, non-profit, NGOs, NBFC-MFIs etc. Comparing across these MFIs, working under different legal and regulatory environment leads to conflicting results. This study considers only NBFC MFIs and studies both performance and sustainability.

III. Research Method

The study is restricted to four NBFC- MFIs from India, with limited indicators used to study the performance. Data during pre microfinance crisis is taken. The study is conducted for a period of nine years from 2005 to 2013. The data used for analysis is secondary and has been gathered from websites "www.mixmarket.org" and "www.themix.org"[18]. Only NBFC- MFIs were selected for the study to facilitate comparison. The following NBFC-MFIs were selected

- Asmitha Microfinance Ltd. (AML)
- Bandhan Microfinance
- SKS Microfinance (Renamed as Bharat Financial Inclusion)
- Spandana Sphoorthy Finance Ltd.

Performance of the above MFIs is studied with respect to Outreach Indicators, Financing Structure, Overall Financial Performance, Efficiency and Productivity indicators and Portfolio Quality indicators. Several parameters under each indicator are taken, and their means are compared using ANOVA, to test if they differ significantly. Parameters selected under each indicator are mentioned below

A. Outreach Indicators

This indicates how many clients are being served. To judge the outreach indicators, Average Loan Balance (ALB), Number of

Active Borrowers (NAB), Number of Loan Officer (NLO) are considered

2. Financing Structure

It indicates the financing structure of the MFI. Two parameters, Capital Asset Ratio (CAR) and Debt Equity Ratio (DER) are considered as parameters.

3. Overall Financial Performance

It indicates if the MFI is able to maintain and expand its services. Operating Self Sufficiency (OSS), Return On Asset (ROA) and Return On Equity (ROE) are considered.

4. Efficiency and Productivity Indicators

It indicates how well MFI's controls their operative costs. Borrower per Loan Officer (BLO), Cost Per Borrower (CPB), Loans Per Staff member (LPS), Operating Expenses/Assets (OEA), Operating Expenses/Loan Portfolio (OELP) are considered.

5. Portfolio Quality

These ratios provide information on the percentage of non-earning assets, which cause decrease in revenue and liquidity position of MFIs. Loan Loss Ratio (LLR), Portfolio At Risk > 30 days, (PAR) and Write Off Ratio, (WOR) are taken. The above indicators are explained and calculated for all the NBFC-MFIs under consideration.

Sustainability indicates the ability of the MFI to continuously carry out its activities and services in line with its objectives. A stepwise multiple regression is carried out to identify the variables which influence sustainability of these MFIs. Taking Operating Self Sufficiency (OSS) as a proxy for sustainability, the regression equation Model can be written as

$$OSS = \beta_0 + \beta_1 ROA + \beta_2 PAR + \beta_3 OELP + \beta_4 DER + \epsilon \quad (1)$$

Where OSS, is the dependent variable.

IV. Objectives of the Study

- To study the performance of select NBFC-MFIs in India during the period 2005 to 2013
- To study the relationship between sustainability and performance indicators of MFIs under study.

V. Hypothesis

H₀₁: There is no significant difference in ALB, NAB and NLO parameters of all MFIs with respect to Outreach Indicator.

H₀₂: There is no significance difference in CAR and DER among MFIs with regard to Financing Structure Indicator.

H₀₃: There is no significant difference in OSS, ROA and ROE among MFIs with regard to overall financial performance.

H₀₄: There is no significant difference in BLO, CPB, LPS, OEA and OELP among MFIs with regard to Efficiency and productivity indicators.

H₀₅: There is no significant difference in LLR, PAR and WOR among MFIs with regard to Portfolio Quality Indicator.

H₀₆: Sustainability is independent on all the above parameters.

A. Performance of MFIs

1. Outreach Indicators:

The following parameters are considered under Outreach Indicators.

(a). Average Loan Balance per Borrower (ALB): It is defined as Deposits/Number of Deposit accounts. A higher rate is preferred. The mean for all years was highest for AML and least for SKS.

(b). Number of Active Borrowers (NAB): It is defined as number of borrowers with loan outstanding, adjusted for standardized write-offs. The mean value of active borrowers over the years was highest for SKS and least for AML. To convert inactive borrowers to active borrowers, MFIs should appoint skillful staff members (Veenapani and Surekha, 2015) [19].

(c). Number of Loans Outstanding (NLO): It is the portion of loan that has not been paid. As payments are applied towards the loan balance, the amount outstanding decreases. To test the hypothesis H₀₁, that there is no significant difference between MFIs with respect to ALB, NAB and NLO, a one way ANOVA was performed, the values are tabulated in Table 1.

The significant value p > 0.050 signifies that there is no significant difference among MFIs with respect to mean of ALB, NAB and NLO at 5% Level Of Significance (LOS). There is no statistically significant difference between group means as determined by one-way ANOVA, this shows that MFIs do not differ with respect to Outreach indicators.

Table 1: ANOVA for Outreach Indicators

		Sum of Squares	df	Mean Square	F	Sig.
ALB	Between Groups	13143.222	3	4381.074	2.141	.115
	Within Groups	65495.333	32	2046.729		
	Total	78638.556	35			
NAB	Between Groups	2.100E13	3	6.998E12	2.781	.057
	Within Groups	8.053E13	32	2.517E12		
	Total	1.015E14	35			
NLO	Between Groups	2.425E13	3	8.082E12	2.889	.051
	Within Groups	8.951E13	32	2.797E12		
	Total	1.138E14	35			

Source: Data collected from themix.org, and compiled by the author

2. Financing Structure

(a). Capital /Asset Ratio (CAR): It is a key financial ratio measuring MFI's capital adequacy or financial stability. As a general rule, higher the ratio, more sound the MFI. It is defined as adjusted total equity/adjusted total assets. The mean value over the years was high for SKS and low for AML.

(b) Debt to Equity Ratio (DER): This reveals the proportion of debt and equity a company is using to finance its business. It measures MFIs borrowing capacity given by adjusted total liabilities to adjusted total equity. The debt to equity ratio had declined for all institutions during the year 2005-13. To test H₀₂, if there is any significance difference in CAR and DER under financing structure among MFIs, ANOVA is performed and results are tabulated in Table 2. As the value of p is greater than 0.05, it implies that MFIs do not differ with respect to CAR and DER at 5% LOS. This shows that the MFIs do not differ with respect to their financing structure.

Table 2: ANOVA for Financing Structure

		Sum of Squares	df	Mean Square	F	Sig.
CAR	Between Groups	3423.552	3	1141.184	2.289	.097
	Within Groups	15954.443	32	498.576		
	Total	19377.995	35			
DER	Between Groups	3336.555	3	1112.185	1.483	.238
	Within Groups	24000.372	32	750.012		
	Total	27336.928	35			

Source: Data collected from themix.org and compiled by the author

3. Overall Financial Performance

(a). Operating Self Sufficiency (OSS): It measures how well a MFI can cover its costs through operating revenues. It is also defined as financial revenue/ (financial expense + Impairment losses on loans + operating expense). Operating self-sufficiency is measured as percentage which indicates whether or not enough revenue has been earned. An OSS of 90%-100% shows good self sufficiency. Bhandhan maintained an OSS of above 100% all the years. The mean value over the years was above 100% for all MFIs with Bhandhan having the highest.

(b). Return on Assets (ROA): It is defined as the measure of how well the MFI uses its assets to generate returns. This ratio is (adjusted net operating Income – Taxes)/ Adjusted Average total assets. A ratio between 2% - 5% is preferred.

(c). Return on Equity (ROE): It measures a firm's profitability by revealing how much profit a company generates with the money shareholders have invested. It is the amount of net income returned as percentage of shareholders equity. It is also defined as (Adjusted net operating income – Taxes)/adjusted average total equity. MFIs that offer savings are usually highly leveraged. Local banking regulations in most countries will place a limit or a restriction to a bank or MFI's Debt/Equity ratio (e.g. 7:1 or 13:1) in order to protect savers' deposits. Regulated MFIs and banks monitor this ratio very regularly. To test H_{03} , the significance of parameters under financial performance one way ANOVA was performed, (Table 3). Since the value of p is greater than 0.05 at 5% LOS, the MFIs means are not significantly different with respect to ROA and ROE. However the value of p is less than 0.05 for OSS, which implies that there is a significant difference with respect to the mean value of OSS among the MFIs.

Table 3: ANOVA for Overall Financial Performance

		Sum of Squares	Df	Mean Square	F	Sig
OSS	Between Groups	15103.419	3	5034.473	3.066	0.042
	Within Groups	52547.091	32	1642.097		
	Total	67650.509	35			
ROA	Between Groups	752.399	3	250.800	1.102	0.363
	Within Groups	7282.441	32	227.576		
	Total	8034.840	35			
ROE	Between Groups	47349.492	3	15783.164	1.649	0.198
	Within Groups	306246.504	32	9570.203		
	Total	353595.996	35			

Source: Data collected from themix.org and compiled by the author

4. Efficiency and Productivity

Efficiency and productivity of MFIs can be measured through the following parameters

(a). Borrowers/Loan Officer (BLO): It measures the average number of borrowers managed by each loan officer. It is defined as adjusted number of active borrowers / number of loan officers.

(b). Cost Per Borrower (CPB): It is defined as expenses such as interest payments incurred from taking out a loan or any other form of borrowing. It is defined as Adjusted Operating Expense/ Adjusted Average Number of Active Borrowers. The average cost per borrower was the least for Bandhan and highest for SKS at Rs. 19.

(c). Loans Per Staff Member (LPS): It is defined as Adjusted Number of Loans Outstanding/ Number of personnel. The mean was maximum for AML and minimum for SKS during the period of study.

(d). Operating Expenses/ Assets (OEA): It measures the institutional cost of delivering loan services. The lower the operating expense ratio, the higher the efficiency. It is also defined as Adjusted Operating Expense/Adjusted Average Total Assets.

(e). Operating Expenses/Loan Portfolio (OELP): It is defined as Adjusted Operating Expenses/Adjusted Average Gross Loan Portfolio. This measures the operating efficiency of an MFI. Optimal range for this indicator as measured by ACCION CAMEL is less than 20%. However none of the MFIs under study have crossed 20%. To test the significance of Efficiency and Productivity Indicators, H_{04} a one way ANOVA was performed and results are tabulated in Table 4. Since the value of p is greater than 0.05 at 5% (LOS), the MFIs do not differ significantly with respect to mean BLO. However the value of p is less than 0.05 for CPB, LPS, OEA, and OELP, which implies that there is significant difference among MFIs for these parameters.

Table 4: ANOVA for Efficiency and Productivity Indicator

		Sum of Squares	df	Mean Square	F	Sig.
BLO	Between Groups	130549.639	3	43516.546	2.107	.119
	Within Groups	660835.111	32	20651.097		
	Total	791384.750	35			
CPB	Between Groups	322.750	3	107.583	19.341	.000
	Within Groups	178.000	32	5.562		
	Total	500.750	35			
LPS	Between Groups	476614.972	3	158871.657	31.930	.000
	Within Groups	159222.000	32	4975.688		
	Total	635836.972	35			
OEA	Between Groups	139.677	3	46.559	11.557	.000
	Within Groups	128.918	32	4.029		
	Total	268.595	35			
OELP	Between Groups	194.867	3	64.956	14.458	.000
	Within Groups	143.765	32	4.493		
	Total	338.632	35			

Source: Data collected from themix.org and compiled by the author

5. Portfolio Quality

(a). Loan Loss Ratio (LLR): It is defined as (Adjusted Write offs - Value of Loans recovered)/Adjusted Average Gross Loan Portfolio. It is preferable to have a loan loss ratio less than 4%.

(b) Portfolio At Risk > 30 days (PAR): Portfolio at Risk (PAR) measures the portion of a portfolio which is deemed at risk because

payments are overdue. A value of PAR > 30 implies that the portion of the portfolio whose payments are more than 30 days is past due. PAR above 5% or 10% is a sign of trouble in microfinance, (Sa-dhan) [16]. It is defined as Outstanding balance, portfolio overdue > 30 days +renegotiated portfolio / Adjusted Gross Loan Portfolio. It was above 5% for AML and Spandana, which will result in high delinquency. The mean PAR is within limits for all years from 2005 to 2009, but a sharp increase is observed from 2010-2013. This rise is a sign of trouble for MFIs. The mean PAR for AML and Spandana are above 10% which indicates riskiness.

(c) Write Off Ratio (WOR): This indicator represents the loans that the institution has recovered from its books because of substantial doubt that they will be recovered. It represents the percentage of MFI's loan that has been removed from the balance of the gross loan portfolio because they are unlikely to be repaid. MFI's write off policies vary. It is defined as adjusted value of loans written off/ Adjusted Average Gross Loan Portfolio. After 2005, MFIs showed a good loan recovery. A one way ANOVA was performed to test the hypothesis H_{05} . The results of one way ANOVA are tabulated in Table 5.

Table 5: ANOVA for Portfolio Quality

		Sum of Squares	df	Mean Square	F	Sig.
LLR	Between Groups	141.596	3	47.199	.898	.453
	Within Groups	1682.172	32	52.568		
	Total	1823.768	35			
PAR	Between Groups	5796.666	3	1932.222	4.675	.008
	Within Groups	13225.505	32	413.297		
	Total	19022.171	35			
WOR	Between Groups	134.874	3	44.958	.827	.489
	Within Groups	1738.595	32	54.331		
	Total	1873.469	35			

Source: Data collected from themix.org and compiled by the author

The value of p is less than 0.05 for PAR, which implies that there is significant difference among MFIs. No significant difference is found among MFIs with respect to WOR and LLR at 5% LOS.

B. Sustainability of MFIs

Sustainability means the ability of the MFI to continuously carry out its activities and services in line with its objectives. It also refers to long term continuation of the Microfinance programme after the project activities have been discontinued. The MFI should be able to meet the needs of the members through resources raised on their own strengths (Sa-Dhan). Taking OSS as a proxy for sustainability, the regression equation can be written as

$$OSS = \beta_0 + \beta_1 ROA + \beta_2 PAR + \beta_3 OELP + \beta_4 DER + \epsilon \quad (1)$$

Where OSS- Operating Self Sufficiency is taken as a proxy to sustainability and is the dependent variable which is being predicted. β_0 is the constant or intercept, β_1 is the slope for ROA, which is the first independent variable, β_2 is the beta coefficient/slope for PAR and β_3 is the coefficient for OELP and β_4 is the coefficient for DER, ϵ is the error term. A stepwise regression with all variable was run using SPSS version 16 and four models were extracted, (Table 6). Model 4 was the best fit as the value of R square was large, hence it is selected. We find that adjusted R square of model 4 is 0.903 with R square = 0.914, which means

that the linear regression explains 91.4% of the variance in the data. The Durbin Watson value $d = 2.32$, lies between the two critical values, $1.5 < d < 2.5$ and therefore we can assume that there is no first order linear auto correlation in our multiple linear regression data.

Table 6: Model Summary

Model	R	R square	Adjusted R square	Std Error of the Estimate	Durbin-Watson
1	0.867 ^a	0.752	0.745	22.197	2.321
2	0.894 ^b	0.800	0.788	20.246	
3	0.945 ^c	0.893	0.884	15.005	
4	0.956 ^d	0.914	0.903	13.659	

Source: Data collected from themix.org and computed by author

(a). Predictor: (Constant), ROA; (b). Predictors: (Constant), ROA, PAR; (c). Predictors: (Constant), ROA, PAR, OELP; (d). Predictors: (Constant), ROA, PAR, OELP, DER

Table 7 shows the F-Test, which is highly significant, thus we can assume that there is a linear relationship between the variables in our model.

Table 7: ANOVAe

	Sum Of Squares	df	Mean Square	F	Sig.
4 Regression	61866.164	4	15466.541	82.890	0.000 ^d
Residual	5784.346	31	186.592		
Total	67650.509	35			

Source: Data collected from themix.org and computed by author

d. Predictors: (constant), ROA, PAR, OELP, DER
e. Dependent Variable OSS

Un standardized coefficient (Table 8) indicates how much the dependent variable varies with an independent variable, when all other independent variables are held constant. As per the model, coefficient β_1 (B), for ROA is 2, which indicates that for a unit increase in ROA, sustainability increases by two units. The other variables seem to have a negative impact on sustainability. Table. 8 also checks for multi co-linearity in the multiple regression models. Multi co-linearity is a state of very high interrelation among independent variables, which creates disturbance in data and statistical inferences may not be reliable. This occurs when variables are highly correlated to each other. This was tested using SPSS package. Multi co-linearity exists when Tolerance value is less than 0.1 and VIF (Variance Inflation Factor) is above ten. Table 8 checks for multi co linearity. Tolerance value is greater than 0.1 and VIF (Variance Inflation Factor) is less than ten for all variables; hence no multi co linearity exists.

Hence equation (1) can be written as

$$OSS = 174.47 + 2 * ROA - 0.962 * PAR - 4.77 * OELP - 0.284 * DER \quad (2)$$

Table 8: Coefficients

Model	Unstandardized Coefficient		Standardized Coefficient	T	Sig	Co linearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
4 (constant)	174.470	8.244		21.163	.000		
ROA	2.002	.187	.690	10.717	.000	.665	1.503
PAR	-.962	.139	-.510	-6.907	.000	.506	1.977
OELP	-4.772	.832	-.338	-5.739	.000	.797	1.255
DER	-.284	.103	-.180	-2.760	.010	.646	1.547

Source: Data collected from themix.org and computed by author

VI. Conclusion

Average Loan Balance was high for AML and least for SKS. There was no significant difference in the outreach indicator as Average Loan Balance, Number of Active Borrowers and Number of loan officers showed no significant difference among MFIs. There was no significant difference among MFIs with respect to CAR and DER. No significant difference was found among MFIs with regard to ROA and ROE, but a significant difference was found with respect to OSS. Under Efficiency and Productivity indicators, significant difference was found with respect to CPB, LPS, OEA and OELP. Portfolio quality was weak for AML and Spandana. MFIs differed with regard to PAR, unlike LLR and WOR. Un-standardized coefficient indicates how much the dependent variable varies with the independent variable, when all other independent variables are held constant. According to equation 2, un-standardized coefficient β_1 for ROA is two, which means that for a unit increase in ROA, Sustainability (OSS), increases twice. The other variables seem to have a negative impact. The performance of select NBFC-MFI was studied, and it was found that sustainability is related to ROA positively. As Portfolio at Risk >30 days increases by one unit, sustainability decreases by 0.96 units, similarly as OELP increases by one unit, sustainability decreases by 4.77 units, as DER increases by one unit, sustainability decreases by 0.28 units. Hence a reduction in PAR, Operating Expenses per Loan Portfolio (OELP), and DER will enable MFIs to sustain their business.

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