
An Analysis of Sustainability of Microfinance Institutions & Its Determinants: Using Institutionalists Approach

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The commercialization of microfinance industry has brought paradigm shift in its delivery models, target audience and its mission. The underlying assumption of institutionalist approach is to create a financial system that serves the needs of not so poor class (instead of poorest) on sustainable basis and also earn profits. The sustainability and profitability of micro-finance institutions has become a question mark today and microfinance (commercialized) is gradually losing its identity by evading its original social service responsibility. The present paper analyzes profitability of these microfinance institutions and explores whether commercialized MFIs, as expected earlier by institutionalists, exhibit better financial performance and chances of sustainability compared to traditional non for profit MFIs. The empirical analysis of profit motivated MFIs reveals that profit motivated MFIs have higher odds of sustainability. Further, the factors affecting the Financial Self-Sufficiency of the MFIs are identified by literature review and their impact on Financial Self-Sufficiency is studied by using Logistics Regression.

Keywords: *Microfinance, Institutionalists Approach, Welfarists Approach, Sustainability*

INTRODUCTION

Microfinance is generally an umbrella term that refers to the provision of a broad range of financial services such as deposits, loans, payment services, money transfers and insurance to poor and low-income households and their micro-enterprises (Sharma, 2001). These services are provided by Non Governmental Organizations (NGOs), Banks, Non-Banking Financial Institutions (NBFIs), Cooperative credit societies known as Microfinance institutions (MFIs).

Sustainability of microfinance institutions refers to capacity of MFI to cover all its expenses through revenue generated from its operations. There are two approaches related to the sustainability: Institutionalists Approach and Welfarists Approach. Modruch (2000) refers to these two different schools of thought as “microfinance schism”. As pointed out by Bhatt N and Tang S. (2001), the welfare oriented programs insists that depth of outreach and alleviation of material and non material poverty are key to building a sustainable development apparatus through provision of financial and non-financial services even though some of these services might require subsidies.

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According to this approach, microcredit (in its original form) is provided to poorest people with the help of donors' funds. It is a developmental activity principally conducted by NGOs so as to increase welfare of poorest people. Prof. Mohammad Yunus was awarded Nobel Prize in 2006 for his early initiatives & his movement in this field. Later on, emergence of institutionalist school transformed microcredit into microfinance, NGOs were converted into profit motivated microfinance

institutions, donors were replaced by venture capitalists and poorest people were replaced by not so poor class. The commercialized approach also known as institutionalists approach argue that the key

role of microfinance is financial “broadening”; that is helping build a system that can provide financial services to large number of poor people on a sustainable basis.

Brau and Woller (2010) reviewed 350 articles published in various journals, for introducing the microfinance in academic community. They observed that the microfinance industry is dominated by an institutionist paradigm. However, this transformation has exposed the system and revealed new challenges of sustainability and transparency in its mechanism.

Table 1: Trends in Microfinance Industry at Global Level

Fiscal Year	Gross Loan Portfolio (GLP) in USD	Number of Active Borrowers (NAB)	Total Number of MFIs reported to Mix Market		
			Non for Profit	For Profit	Total
2004	12,284,341,358	33,380,370	567	411	978
2005	18,245,053,208	48,884,649	675	519	1194
2006	25,678,772,295	59,634,530	683	593	1276
2007	38,230,007,419	68,328,363	769	649	1418
2008	44,736,225,305	84,099,703	772	666	1438
2009	74,022,906,783	116,173,210	732	713	1445
2010	89,371,223,485	102,576,160	650	577	1227
2011	90,759,649,586	103,122,975	523	498	1021

Source: Secondary Data from Mix Market

Table 1 shows the trends in microfinance industry. The microfinance industry faced downturn in its size (GLP), outreach (NAB) and total number of MFIs reporting to Mix Market after the fiscal year 2009. In last couple of years the growth rate in Gross Loan Portfolio has deteriorated and has increased marginally. On the other side, one can find negative growth in Number of Active Borrowers in the fiscal year 2010 indicating trend reversal in the industry. Moreover, from 2009 onwards, the gap between total number of profit motivated MFIs and not for profit MFIs, compared to earlier years, has reduced i.e. we find increasing proportion of profit motivated MFIs in the industry.

Today, sustainability and profitability of micro-finance institutions has become a question mark. Commercialized micro-finance institutions have been criticized as they are not different from traditional moneylenders except more institutionalized form of exploitation. In recent years many of the world's biggest financial institutions - including Citigroup, Barclays, Morgan Stanley and BNP Paribas - have entered the sector, by opening credit lines to microfinance institutions, taking equity stakes in them or creating funds allowing investors to gain exposure to the fast-growing field. But many in the industry fear the profit motive is driving reckless lending. According to Ashfaq Ahmad Khan (2008) microfinance (commercialized) is gradually losing its identity by evading its original social service responsibility. The present paper analyzes profitability of these microfinance institutions and explores whether commercialized MFIs, as expected earlier by institutionalists, exhibit better financial performance and chances of sustainability compared to traditional non for profit MFIs.

LITERATURE REVIEW

As cited by Burgis Tom (2008), Prof. Muhammad Yunus warned against commercialization saying “When you are making profits you are moving into the mentality of the loan shark, we are trying to get that loan shark out”. Further, as M. S Sriram (2010) predicted “The poor are smart, sometimes smarter than the people who are lending to them..... If the MFI gives the sense to the borrower that it is unscrupulous, the borrower will take the MFI for a ride sooner or later! The day they reach a tipping point where they think enough is enough, they will default.” This statement soon became reality for microfinance industry. As pointed out by Evans J. (2010), the microfinance market in Bosnia and Herzegovina has been growing at rates of around 60% a year. The average percentage of loan portfolios for which a monthly payment was missed rose from 2% in 2008 to 8% in 2009. Chen et al. (2010) found that Pakistan microfinance was hit by a wave of borrower groups refusing to repay their loans in late 2008 in the central part of Punjab Province in semi-urban areas adjacent to the provincial capital of Lahore. The impact was initially concentrated in one MFI, but at least one other MFI has had a sharp rise in PAR in 2009, and it is likely that at least three MFIs lending in this same region now face significant repayment difficulties. The Nicaraguan microfinance industry suffered a profound crisis in 2009 and 2010 as a result of both the international financial downturn and the domestic No Pago (No Payment) Movement (Centre for Financial Inclusion, 2010). Further, Evans J.

(2010) observed that Morocco, which was one of the fastest-growing microfinance markets, the percentage of loans for which a monthly payment was missed increased from 1.9% in 2007 to 10% in June 2009.

The best example of commercialized microfinance and its collapse could be Indian microfinance industry and SKS Microfinance more specifically. It is the first ever MFI in India that went public. The company was working to become world's largest microfinance institution (MFI) in 2011 by overtaking Muhammad Yunus' Grameen Bank. It soon became obvious that there was an internal conflict of sorts between the social mission of providing banking to the unbanked and the inevitable profit motive that commercial capital was bringing in (Nath, S. 2010). In just about 10 months, SKS is a story of rags-to-riches-to-rags. The company, which was started with Rs 1 lakh in 2003, rose to a peak valuation of Rs 10,000 crore in late 2010. It is worth less than Rs 2,000 crore now (2011) (Rao H., 2011). It was not only SKS microfinance that was affected but other profit motivated MFIs were on heat especially when government of Andhrapradesh passed a resolution in 2010. However, Chen et al. (2010), rightly listed out the factors responsible for crisis, that include concentrated market competition and multiple borrowing, overstretched MFI systems and erosion of MFI lending discipline.

Profitability-Sustainability of MFIs and Institutional Factors

The recent literature in microfinance industry, followed by crisis in several countries, focused on the factors that govern sustainability of microfinance institutions. Hermes N., Lensink R. and Meesters A. (2008), conducted an in-depth analysis of the tradeoff between self-sufficiency and depth of outreach and observed a shift from subsidizing MFIs to a focus on financial sustainability and efficiency of the institutions. They found that outreach is negatively related to efficiency of MFIs. More specifically, MFIs that have lower average loan balance, which is a measure of the depth of outreach, are also less efficient. Ayayi G. A. and Sene M, (2010) identified the factors determining the sustainability of microfinance institutions. They found that a high quality credit portfolio is the most determining component of financial sustainability of MFIs, followed by the application of adequate interest rates and effective management to control personnel expenses. Further, they observed that the client outreach of microfinance programs and the age of MFIs, whose coefficients are positive and statistically significant, have a lesser influence on financial sustainability of MFIs.

Ashim Kumar Kar (2011a) found that increase in leverage raises profit efficiency in MFIs while cost efficiency deteriorates with decrease in leverage. Further he observed negative impact of leverage on depth of outreach.

RESEARCH METHODOLOGY

The central focus of the study is to analyze the general assumption that for profit microfinance institutions (institutionalists approach) are expected to exhibit better financial performance (profitability & sustainability) than non for profit MFIs (welfarists approach); as they focus on provision of financial services on 'sustainable' basis. To answer the same, sub-objectives of the study are as follows:

1. To analyze the trends in financial performance (measured by ROA, ROE and OSS) of profit and non-profit MFIs in two distinct phases of its growth.
2. To analyze the odds of profit motivated MFIs for attaining sustainability compared to non-profit MFIs under the study period and to identify the factors determining sustainability of micro-finance institutions for the study period.

To satisfy these objectives, the data were collected from Mix Market, a web based platform that contains extensive financial and outreach information for MFIs.

Changing Trends in Financial Performance of For Profit and Non for Profit MFIs

The microfinance received consensus as poverty alleviation tool in 2005 as it was celebrated as the year of Microcredit by United Nations. It was the time when institutionalists' approach of microfinance got wide acceptance compared to welfarists' approach. However, the commercialized microfinance witnessed crisis in most of the countries and literature started raising doubts about its sustainability very few years after its growth phase especially after 2009. As pointed out by Johnson S. (2009), microfinance is found to be dead and problems of delinquency and high systematic risk were found in microfinance industry (Lützenkirchen C. and Weistroffer C., 2012, Viada L. A and Gaul S. 2012, Beirne C. 2008). To analyze this trend reversal in microfinance industry, present research study compares these two distinct phases of microfinance growth story where first phase

comprises of two fiscal years i.e. 2005 and 2006 and the second one includes 2010 and 2011. We found this trend reversal at the time of analysis of size of microfinance industry at global level also (see introduction).

To gauge financial performance of MFIs, three measures of profitability and sustainability ratios of MFIs have been used i.e., include Return on Assets (ROA), Return on Equity (ROE) and Operational Self Sufficiency (OSS). These indicators, as listed out (in Table 2) by Ziagham R. & Asghar N. (2011), have been identified and accepted as indicators of sustainability according to Institutional Paradigm. The significant differences in means of above mentioned ratios for the study period are tested using One-way ANOVA; further year by year differences are analyzed with the help of Post-hoc analysis. The description of each of these variables is given in table no. 2. Data of profit and non for profit MFIs ranges from minimum of 300 MFIs to 550 MFIs representing at least 80 countries has been used. The microfinance institutions having at least four years (study period) of consistency in submission of financial data have been included in sample.

Table 2: Description of Sustainability Indicators According to Institutional Paradigm

	Variable (Dependent)	Description	Source
1.	Return on Assets (ROA)	The Return on Assets measures the net income earned on the assets of an MFI (Ledgerwood, 1999). The formula is: (Net Operating Income, less Taxes)/ Assets, average)	Conning (1999); Meyer and Zeller (2002); Hulme and Mosley (1996); Schreiner and Woller (2003)
2.	Return on Equity (ROE)	The ROE refers to the rate of return earned on the invested equity (Ledgerwood, 1999). The formula for ROE is: Net Operating Income, less Taxes)/ Equity, average	Conning (1999); Morduch (1999); Andogo and Stork (2005)
2.	Operational Self Sufficiency (OSS)	The degree to which internally generated operational revenue covers all operating expenses from the MFI's core business of providing financial services. It is known as Operational Self Sufficiency (OSS). (Ruth Dueck Mbeba, 1998) The formula of OSS is Financial Revenue/(Financial Expense + Impairment Loss + Operating Expense).	Meyer and Zeller (2002); Schreiner and Woller (2003); Khandker (1998); Hulme and Mosley (1996)

As shown in the Table 3, the test results of One-way Anova ($p < 0.05$) and post hoc analysis confirmed that profit motivated MFIs have suffered from low Return on Assets (ROA) and Return on Equity (ROE) in second phase of study period. The Levene statistics of 0.387 and 0.167 satisfied the homogeneity of variance assumption for ROA and ROE of for profit MFIs.

However, we do not find any significant differences in mean ROI and ROE of non for profit MFIs in post hoc analysis and failed to satisfy the assumption of homogeneity of variance (Table 3 and 4). The gap between mean ROA and ROE of both categories of MFIs has reduced in last couple of years.

Table 3: Return on Assets (ROA): One Way ANOVA – Post hoc Output

For Profit MFIs								
Variable	Descriptive – One way ANOVA					Post-hoc		
	Year	N	Mean	Std. Dev.	Sig.	(I) F.Y.	(J) F. Y.	M.D. (I-J)
ROA	2005	304	2.87%	5.82%	0.000	2005	2006	-0.1380074%
							2010	1.6404276%*
							2011	1.4171709%*
	2006	385	3.01%	6.87%		2006	2005	0.1380074%
							2010	1.7784351%*
							2011	1.5551783%*
	2010	436	1.23%	7.58%		2010	2005	-1.6404276%*
							2006	-1.7784351%*
							2011	-0.2232568%
	2011	370	1.45%	6.79%		2011	2005	-1.4171709%*
							2006	-1.5551783%*
							2010	0.2232568%
Total	1495	2.07%	6.91%			2006	-1.5551783%*	
						2010	0.2232568%	
Levene Statistics					0.387			
Non-Profit MFIs								
ROA	2005	358	-0.064%	14.49%	0.029	2005	2006	0.1311982%
							2010	-1.2297109%
							2011	-1.7026115%
	2006	427	-0.19%	13.12%		2006	2005	-0.1311982%
							2010	-1.3609091%
							2011	-1.8338096%
	2010	538	1.16%	7.76%		2010	2005	1.2297109%

							2006	1.3609091%
							2011	-0.4729006%
	2011	436	1.63%	7.42%		2011	2005	1.7026115%
	Total	1759	.701%	10.81%			2006	1.8338096%
							2010	0.4729006%
Levene Statistics					0.000			

* The mean difference is significant at the 0.05 level.

Table No. 4 Return on Equity (ROE): One Way ANOVA – Post hoc Output

For Profit MFIs								
Variable	One-Way ANOVA					Post-hoc		
	Year	N	Mean	Std. Dev.	Sig.	(I) F. Y.	(J) F. Y.	M. D.(I-J)
ROE	2005	305	14.40%	27.12%	0.000	2005	2006	-2.3915261%
							2010	11.6856213%*
							2011	7.5215206%*
	2006	385	16.80%	30.97%		2006	2005	2.3915261%
							2010	14.0771473%*
							2011	9.9130467%*
	2010	435	2.7%	71.09%		2010	2005	-11.6856213%*
							2006	-14.0771473%*
							2011	-4.1641007%
	2011	370	6.88%	28.48%		2011	2005	-7.5215206%*
	Total	1495	9.76%	45.81%			2006	-9.9130467%*
							2010	4.1641007%
Levene Statistics					0.167			
Non for Profit MFIs								
ROE	2005	359	-.868%	77.11%	0.165	2005	2006	-1.5350855%
							2010	-6.2724177%
							2011	-9.6344231%
	2006	427	.666%	77.07%		2006	2005	1.5350855%
							2010	-4.7373322%
							2011	-8.0993376%
	2010	538	5.40%	52.90%		2010	2005	6.2724177%
							2006	4.7373322%
							2011	-3.3620054%
	2011	436	8.76%	70.39%		2011	2005	9.6344231%
	Total	1760	3.80%	68.86%			2006	8.0993376%
							2010	3.3620054%
Levene Statistics					0.001			

* The mean difference is significant at the 0.05 level.

As shown in the Table 5, Average Operational self-sufficiency of profit motivated MFIs shows negative trend in two extreme years while it has positively increased in last year in case of non for profit MFIs. Post hoc analysis shows no significant difference in mean OSS over study period for both categories of MFIs.

Table 5: Operational Self-Sufficiency (OSS): One Way ANOVA – Post hoc Output

For Profit MFIs								
Variable	One-Way ANOVA					Post-hoc		
	Year	N	Mean	Std. Dev.	Sig.	(I) F. Y.	(J) F.Y	M. D.(I-J)
OSS	2005	369	121.65%	68.30%	0.010	2005	2006	4.1427428%
							2010	9.4386881%
							2011	7.9206100%
	2006	431	117.50%	33.37%		2006	2005	-4.1427428%
							2010	5.2959453%
							2011	3.7778672%
	2010	445	112.21%	35.86%		2010	2005	-9.4386881%
							2006	-5.2959453%
							2011	-1.5180781%
	2011	382	113.73%	25.07%		2011	2005	-7.9206100%
							2006	-3.7778672%
							2010	1.5180781%
		1627	116.11%	43.15%				
Levene Statistics					0.001			
Non for Profit MFIs								
OSS	2005	422	110.27%	39.26%	0.026	2005	2006	-6.198483%
							2010	-6.0375269%
							2011	-5.1473155%
	2006	485	110.89%	34.94%		2006	2005	0.6198483%
							2010	-5.4176786%
							2011	-4.5274672%
	2010	556	116.31%	42.52%		2010	2005	6.0375269%
							2006	5.4176786%
							2011	0.8902114%
	2011	438	115.42%	35.16%		2011	2005	5.1473155%
							2006	4.5274672%
							2010	-0.8902114%
		Total	1901	113.38%	38.37%			
Levene Statistics					0.003			

* The mean difference is significant at the 0.05 level.

Financial Sustainability of Profit Motivated and Non-Profit MFIs:

As pointed out by Ziagham and Ashgar (2011), the conceptual foundations of the institutionist paradigm stem to a large degree from the work of researchers at the Ohio State University's Rural Finance Program. According to the research, it was analyzed that failure of many rural credit programs during 1960-1970 was a direct result of a lacking "institutional viability". This analysis derived two key conclusions:

1. To deliver financial services to the poor, successfully, it is crucial to have institutional sustainability;
2. Financial sustainability is a pre-requisite for institutional sustainability (Gonzalez-Vega (1994)).

Therefore, most literature pertaining to Microfinance, relates the concept of sustainability to attainment of 'financial' sustainability. In context of financial sustainability concept, being referred to as 'sustainability', most researchers have disintegrated the terms into two distinct levels, these are: Operational Self sufficiency and Financial Self sufficiency. The first level refers to cost-covering capability of MFIs, that is, whether they are able to generate sufficient revenues to cover operational costs (not essentially the entire cost of capital). The subsequent level of Financial Sustainability indicates whether or not enough revenue has been earned to cover both direct costs, including financing costs, provisions for loan losses, and operating expenses, and indirect costs, including the adjusted cost of capital (Ledgerwood, 2009).

We used Operational Self-Sufficiency (OSS) as proxy for MFI sustainability, and not Financial Self Sufficiency (FSS) as OSS is likely to be a more reliable approximation of financial sustainability of MFIs than FSS (Ashish Kumar Kar, 2011b, Hartarska and Nadolnyak 2007).

Further, to analyze the odds of attaining sustainability of profit motivated MFIs and the factors affecting it, logistic model developed by Shakil Quayes (2012) has been used with introduction of type of MFI and Average Loan Balance per Borrower as independent variables for all MFIs while we exclude type of MFIs at the time of studying the same relationship in case of profit motivated MFIs specifically. Following logistic model has been used to estimate the impact of type of MFIs and other variables on self-sustainability of MFIs:

$$P(\text{FSS}) = \alpha + \beta_1 \text{TYPE} + \beta_2 \ln \text{GLP} + \beta_3 \ln \text{TEQ} + \beta_4 \text{DER} + \beta_5 \text{TER} + \beta_6 \text{LLR} + \beta_7 \ln \text{NAB} \\ + \beta_8 \text{ALBB} + \epsilon_i$$

We used logistic regression, to test the model in its original form, as the dependent variable i.e. Financial Sustainability (FSS) is a binary variable which takes value of 1 (if $\text{OSS} \geq 100$) and 0 otherwise. The description of each variable used in the model and its source is given in Table No. 6.

Table No. 6 Description of Variables Used in Logistic Model

	Variable (Dependent)	Description	Source
1.	Financial Self-Sufficiency (FSS)	The degree to which internally generated operational revenue covers all operating expenses from the MFI's core business of providing financial services. It is known as Operational Self Sufficiency (OSS). The formula of OSS is Financial Revenue/(Financial Expense + Impairment Loss + Operating Expense). It is a dependent variable which takes value of 1 if OSS is greater than or equal to 100 and 0 if OSS is less than 100.	Shakil Quayes (2012), Ashim Kumar Kar (2011a), Ruth Dueck Mbeba (1998)
2.	Type of MFI (TYPE)	The type of microfinance institutions viz. profit motivated and non for profit. Profit Motivated MFIs include banks, NBFIs and Rural Banks while Non-for Profit include NGOs, Cooperatives or Credit Unions. Profit Motivated MFIs are coded as 1 and Non-for Profit as 0.	Hermes N., Lensink R. and Meesters A. (2008)
3.	Gross Loan Portfolio (GLP)	All outstanding principals due for all outstanding client loans. This includes current,	Ayayi G. A. and Sene M, (2010), Shakil Quayes

		delinquent, and renegotiated loans, but not loans that have been written off. It does not include interest receivable. It is measured in dollar amount.	(2012)
4.	Total Equity (TEQ)	Total of all equity accounts, less any distributions. It is in dollar amount.	Shakil Quayes (2012)
5.	Debt to Equity Ratio (DER)	Liabilities/ Equity. It is an independent variable.	Shakil Quayes (2012)
6.	Total Expense Ratio (TER)	(Financial Expense + Impairment Loss + Operating Expense) / Assets, average).	Shakil Quayes (2012)
7.	Loan Loss Rate (LLR)	(Write-offs - Value of Loans Recovered)/ Loan Portfolio, gross, average	Hermes N., Lensink R. and Meesters A. (2008), Shakil Quayes (2012)
8.	Number of Active Borrowers (NAB)	Number of individuals who are active borrowers and/or savers with the MFI. A person with more than just one such account (i.e. with a loan and a savings account) is counted as a single client in this measure.	Shakil Quayes (2012)
9.	Average Loan Balance Per Borrower (ALBB)	Loan Portfolio, Gross / Number of Active Borrowers.	Shakil Quayes (2012)

Following Table 7, describes the details of sample size based on various fiscal years for analyzing determinants of sustainability.

Table 7: Sample Size of Microfinance Institutions for Logistic Regression Analysis

Fiscal Year	No. of Countries	No. of MFIs*	No. of Profit Motivated MFIs	No. of Non for Profit MFIs
Phase – I				
2005	101	1194 (803)	519	675
2006	100	1276 (954)	593	683
Phase – II				
2010	109	1227 (1032)	577	650
2011	100	1021 (844)	498	523

*Note: Figures in parenthesis indicate actual sample size (excluding missing cases) used for logistic regression analysis.

Table 8 shows the SPSS output for the Logistic Regression Model. The statistical significance of individual regression coefficients (i.e. β s) is tested using the Wald chi-square statistic and accordingly coefficients having p value less than 0.05 were found to be significant. The model summary includes the goodness of fit statistics. The log-likelihood ratio test with 8 degrees of freedom in case of all MFIs and seven degrees of freedom in case of only profit motivated MFIs is found to be significant and the results of Hosmer-Lemeshow test suggest that the logistic model fit to the data as the p value is greater than 0.05.

It is expected that profit motivated MFIs have higher probability of attaining sustainability than non for profit MFIs. Our result supports the same argument for the first two fiscal years and it is found that profit motivated MFIs were having 90% and 65% higher odds of achieving sustainability than non for profit MFIs in 2005 and 2006 respectively (Table 8 and 9).

However, the result is consistent with the trend reversal found in microfinance industry after the year 2009; we found no significant higher odds of profit motivated MFIs for the sustainability in the second phase of study period.

Table 8: Financial Sustainability – Logistic Regression Analysis Output (2005-2006)

Variables	2005 (All MFIs)			2005 (For Profit Only)			2006 (All MFIs)			2006 (For Profit Only)		
	Co-eff.	Sig.	Exp(B)	Co-eff.	Sig.	Exp(B)	Co-eff.	Sig.	Exp(B)	Co-eff.	Sig.	Exp(B)
Type of MFI	0.640	0.002	1.897				0.500	0.005	1.648			
Gross Loan Portfolio	0.490	0.000	1.632	0.918	0.000	2.505	0.704	0.000	2.023	1.311	0.000	3.711
Total Equity	-0.218	0.035	0.804	0.711	0.004	0.491	-0.294	0.003	0.745	-1.005	0.000	0.366
Debt to Equity Ratio	-0.007	0.015	0.993	0.058	0.002	0.944	-0.004	0.044	0.996	-0.078	0.011	0.925
Total Expense Ratio	-0.032	0.000	0.968	0.033	0.002	0.968	-0.038	0.000	0.963	-0.039	0.000	0.962
Loan Loss Rate	0.000	0.858	0.999	0.087	0.069	1.091	-0.03	0.149	0.971	0.000	0.988	1.000
Number of Active Borrowers	-0.101	0.207	0.904	0.167	0.223	0.846	-0.225	0.002	0.798	-0.246	0.033	0.782
Average Loan Balance Per Borrower	0.000	0.314	1.000	0.000	0.329	1.000	0.000	0.016	1.000	0.000	0.016	1.000
Constant	-1.341	0.078	0.262	0.583	0.661	1.791	-2.221	0.003	0.108	-0.346	0.768	0.708
Model Summary												
LR χ^2 ^a	116.31	0.00		38.0	0.000		174.6	0.000		75.14	0.000	
Hosmer-Lemeshow χ^2 ^b	10.99	0.20		3.40	0.907		5.263	0.729		6.61	0.580	

^a Log-likelihood ratio Chi square with eight degrees of freedom for all MFIs with p-values and seven degrees of freedom in case of for profit MFIs.

^b Hosmer-Lemeshow Chi square with eight degrees of freedom for all MFIs with p-values and seven degrees of freedom in case of for profit MFIs.

Table 9: Financial Sustainability – Logistic Regression Analysis Output (2010-2011)

Variables	2010 (All MFIs)			2010 (For Profit Only)			2011 (All MFIs)			2011(For Profit Only)		
	Co-eff.	Sig.	Exp(B)	Co-eff.	Sig.	Exp(B)	Co-eff.	Sig.	Exp(B)	Co-eff.	Sig.	Exp(B)
Type of MFI	0.228	0.182	1.256				0.08	0.686	1.083			
Gross Loan Portfolio	-0.016	0.890	0.984	0.235	0.264	1.264	0.312	0.025	1.366	0.479	0.058	1.614
Total Equity	0.107	0.305	1.113	0.435	0.047	0.647	0.106	0.381	1.112	-0.245	0.344	0.783
Debt to Equity Ratio	0.000	0.857	1.000	0.065	0.011	0.937	-0.002	0.178	0.998	-0.062	0.011	0.94
Total Expense Ratio	-0.045	0.000	0.956	0.047	0.000	0.954	-0.036	0.000	0.964	-0.036	0.000	0.964
Loan Loss Rate	-0.087	0.000	0.917	0.056	0.029	0.946	-0.041	0.022	0.96	-0.028	0.306	0.973
Number of Active Borrowers	0.098	0.176	1.103	0.275	0.017	1.317	-0.168	0.063	0.846	-0.087	0.523	0.917
Average Loan Balance Per Borrower	0.000	0.537	1.000	0.000	0.722	1.000	0.000	0.987	1.000	0.000	0.874	1.000
Constant	0.304	0.717	1.355	3.229	0.012	25.245	-2.463	0.010	0.085	-0.329	0.831	0.719
Model Summary												
LR χ^2 ^a	141.19	0.000		56.54	0.000		109.41	0.000		51.14	0.000	
Hosmer-Lemeshow χ^2 ^b	5.007	0.757		8.935	0.348		5.614	0.690		5.037	0.754	

^a Log-likelihood ratio Chi square with eight degrees of freedom for all MFIs with p-values and seven degrees of freedom in case of for profit MFIs.

^b Hosmer–Lemeshow Chi square with eight degrees of freedom for all MFIs with p-values and seven degrees of freedom in case of for profit MFIs.

The Gross Loan Portfolio (GLP) is used to measure the size of the firm. The size of the firm can be expected to have a positive association with financial performance of an MFI. We found size of the firm as one of the most important factors determining sustainability of MFIs. In case of all MFIs, it is found that a unit increase in Gross Loan Portfolio; with other variables held constant, the estimated logit of financial sustainability increases by 0.490 and 0.704 in 2005 and 2006 respectively. In case of profit motivated MFIs, GLP is found to be statistically significant and is positively related with financial sustainability in the first phase.

Total Equity (TEQ) and Debt to equity (DEQ) ratio are expected to have either positive or negative relationship with financial sustainability of MFIs. Debt to equity ratio represents the leverage i.e. proportion of borrowed funds to equity and it is found that 1% increase in the leverage of profit motivated MFIs, with other variables held constant, reduces 6% odds of for profit MFIs being sustainable in the fiscal year 2011 (Table 9).

Therefore, we can say that NBFIs and banks should control the excess use of debt in their capital structure. Further, in case of all MFIs, leverage is found to be statistically significant in initial phase only and is negatively related with the dependent variable. On the other hand, total equity is found to be negatively associated with financial performance of for profit MFIs for first three years suggesting greater equity reduce the chances of achieving sustainability. We find no significant relationship for both of these factors i.e. TEQ and DEQ in case of all MFIs in later half of the study period.

Total Expense Ratio (TER) and Loan Loss Rate (LLR) are expected to have negative relationship with financial sustainability of MFIs as they reduce the profitability of firms. TER has been the major determinant of sustainability for both for profit and all MFIs in general and it is negatively related with financial performance of MFIs. For TER, we find consistent exponentiated coefficient of around 0.96 for all MFIs and for profit MFIs throughout the study period and therefore we can say that one percent increase in total expense to total assets ratio on an average, other variables assuming constant, reduces four per cent odds of financial sustainability (table no. 8 and 9). On the other hand, Loan Loss Rate (LLR) is found to be insignificant in the initial phase while in later phase, for both for profit and all MFIs, it is found to be negatively related with financial self-sufficiency. Therefore, we can say that all MFIs need to focus on quality of loan portfolio so as to reduce LLR and thereby to increase profitability.

Number of Active Borrowers (NAB) and Average Loan Balance per Borrower (ALBG) are indicators of breadth and depth of outreach. NAB measures quantity of poor members being served by MFI while ALBG reflect its quality. From table no. 8, it is found that breadth of outreach is negatively related with financial sustainability for profit motivated MFIs and non for profit MFIs in 2006. However, we found positive relationship between NAB and financial sustainability of profit

motivated MFIs in the year 2010 (table no. 9). We do not find any direction of relationship between depth of outreach and sustainability of MFIs throughout the study period.

CONCLUSION

The commercialization of microfinance industry has brought paradigm shift in its delivery models, target audience and its mission. The underlying assumption of institutionalist approach is to create a financial system that serves the needs of not so poor class (instead of poorest) on sustainable basis and also earn profits. An empirical analysis of profit motivated MFIs reveals that profit motivated MFIs have higher odds of sustainability compared to non for profit MFIs in first phase of the study period. In the second phase i.e. in recent years, profit motivation is found to be insignificant in terms of achieving sustainability. We, however, do not conclude that profit motivated MFIs are not sustainable at all but rather they have lost their higher chances of sustainability compared non for profit MFIs. Moreover, the sustainability of profit-motivated- MFIs has deteriorated in last couple of years. The trend in profitability indicators like Return on Assets and Return on Equity also suggests that the gap in mean ROE and ROA of for profit and non for profit MFIs have narrowed down (in fact non for profit performing better than profit for MFIs in a year or two) in last couple of years putting both categories of MFIs at par in terms of profitability and sustainability.

Further, increasing debt proportion (i.e. leverage) in capital structure of profit motivated MFIs reduces the odds of its sustainability. On the other hand, controlling total expenses and increasing efficiency would ensure higher sustainability for profit motivated MFIs. For all type of microfinance institutions, we found that loan loss rate and total expenses are significant factors that reduce the chances of sustainability. It is understood that providing small loans to poor require higher costs for any financial service provider. On the other side, loan loss rate increases due to poor loan management and lower repayment rates. It implies to the same conclusions drawn by Ayayi G. A. and Sene M, (2010); a high quality credit portfolio is the most determining component of financial sustainability of MFIs. All MFIs need to improve the credit risk management and cost efficiency for achievement of financial sustainability. Further, regulating microfinance is one of the suggestions to improve sustainability of microfinance institutions. But, as Sriram (2010) has rightly suggested, it is a

question of intent, if MFIs show responsible behaviour and self-regulate; there is no need for regulations as it meant for deviant behaviour.

However, we find there is further scope of the research to explore the raison d'être for non exhibition of better financial performance of for profit MFIs compared to non for profit ones.

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