

Linking Social Outreach and Portfolio at Risk: A Panel Data Analysis on Selected Indian Microfinance Institutions

Joyeeta Deb¹ & Samapti Nath²

¹Assistant Professor & ²Research Associate, Department of Commerce, Assam University, Silchar

ABSTRACT :

India has emerged as one of the fastest growing economies of the world as reflected by its GDP. Nonetheless, a large mass of population still live a susceptible life being excluded from the ambit of formal financial system. Thus, majority of them are bound to approach their last resort i.e. the private money lenders who charge exorbitant interest rates. Microfinance Institutions (MFIs) endeavour to address and tender solutions to the constraints that exclude the poor people from partaking in the financial sector. In the pursuit of making financial services approachable to the poor people and to release them from the predatory lending practices of the money lenders, MFIs provide collateral free micro credit and other related financial services to the self employed poor people. But when the MFIs target the poorest of the poor with an aim to achieve their social mission of deeper outreach, their risk profile also increases. The financial performance in the short run and the financial self-sufficiency in the long run gets hindered. There is a growing debate whether MFIs can be financially sustainable and risk free at the same time by serving the poor as it is likely to affect the riskiness of their advances. The present study is an attempt to study in Indian context, how increasing outreach is linked with the MFI's risk profile measured in terms of their portfolio at risk. The study uses secondary data from MIX Market on 55 number of Indian MFIs for 6 years period from 2009 to 2015 and makes use of statistical tools like averages, growth rate, panel data regression etc. for empirical analysis.

Key words : microfinance, social performance, financial self- sufficiency, outreach, risk profile.

BACKGROUND OF THE STUDY:

The strive towards financial inclusion in the developing countries has been the major objective of the policy makers. Micro finance has emerged over the years as an instrument to provide and expand financial services to the poor people and low income individuals who are outside the ambit of formal financial system and lack access to the modern commercial banking facilities.

The poorer section of the society, along with the host of other factors, does not have sufficient collateral. Consequently, they are waved out of the formal financial sector for credit purpose and majority of the poor people remain unbanked. Due to narrow access to the organised sector, the poor resort to the private money lenders in order to meet their immediate needs. This provides an opportunity to the money lenders and the indigenous bankers to charge exorbitant rates of interest that leads to repayment default and financial crimes. As a result, the growth and sustainability of the small and micro enterprises is also impeded. These kinds of constraints and inefficiencies of the formal and the informal sector led to the unfolding of micro finance in developing countries more than 30-40 years ago. The present day micro finance emerged in India sometime around 1980's in the form Self Help Groups followed by the development of Grameen Bank in Bangladesh by the founding father of micro-finance.

The MFIs aim to widen their social outreach while functioning as the traditional financial institutions. This duality in the mission of MFIs demands a trade off between social performance and financial performance. Since MFIs have become a very broad movement, a lot of different players (such as specialised microfinance banks, commercial banks etc.) with diverse goals have entered the market. As a result, it is observed that the MFIs drifted from their core mission of serving the poorest of the poor towards catering to the needs of the profitable poor borrowers or the less poor borrowers.(Krishnaswamy, k. 2007).

According to the Bharat Microfinance Report 2017-2018, MFIs currently operate in 29 states, 4 union territories and 563 districts in India. The reported 168 MFIs with a branch network of 10,233 and 89,785 employees have reached out to 29 million clients with an outstanding loan portfolio of 46,842crore. The average loan outstanding per borrowers stood at Rs 12,751 and 85% of loans were used for income generation purposes. Outreach fell by 26% and loan outstanding grew by 27% over the previous year. Outreach proportion of urban clientele has decreased significantly as against rural population. The government of India and the RBI have created conducive policy and regulatory framework for MFIs to operate in the country. This has further induced the MFIs to move towards commercialisation of their objective. It is, thus, seen that the simultaneous achievement of the contradictory goals of social performance and financial performance has become a great challenge for the MFIs.

Furthermore, the provision of financial services without any suitable guarantees to the poor clients poses greater risk to the MFIs and their portfolio at risk increases. Resultantly, this hampers their financial position in the short run. With the deterioration of the primary revenue earning source in the short run, there is a serious threat on their

sustainability in the long run too. Therefore, the present study is an attempt to make an analysis in the Indian context as to how the increase in outreach is impacting the financial position and the credit risk profile of the MFIs measured in terms of their Portfolio at Risk.

CONCEPTUAL FRAMEWORK :

The basic and generalised concept of microfinance is quite simple, access to the financial services, which includes credit by the poor and the low income clients so as to improve their standard of living in the long run. The success of a microfinance institution can be judged on the basis of its outreach. Outreach can be mainly illustrated from two view points. First, the breadth of outreach and second the depth of outreach. Breadth of outreach refers to the potential of the MFIs to arrange better and improved finance services to a large mass of clients wide spread over a particular geographical area. Depth of outreach portrays the extent up to which the MFIs have been successful in earmarking the base level of the poorer section of the society. Although, embracing the poorest is the depth, but extending microfinance to a large number of people who may be comparatively less poor depicts the breadth of the outreach (Schreiner, M. 2002, Brau, J. C. & Woller, G. M. 2004). Schreiner, however, focussed on a more exhaustive view of outreach and suggested six dimensions of outreach i.e., depth of outreach, breadth of outreach, length of outreach, scope of outreach, worth of outreach, cost of outreach. Researchers and policy makers mainly focus on the breadth and depth of outreach in order to interpret the social performance of the MFIs.

The past two decades have seen swift growth and expansion in the microfinance industry in terms of its outreach, products and services, technology used, workforce etc. According to the Bharat Microfinance Report 2017-18, 56% increase in loan disbursements was seen in 2017-2018 over the previous year, there was also a 24% growth in the workforce during last one year. Again with adaption of technology, loan disbursement in the sector has greatly become cashless. Similar growth trend has also been reported in the Status of microfinance in India report 2017-18, where it is reported that loan outstanding of SHGs increased by 22.75% in March 2018 as against March 2017. With this rapid growth, the risk profile of the MFIs has also varied significantly. Along with the traditionally identified credit risk, the MFIs are vulnerable to various other kinds of risks-interest rate risk, foreign currency risk, liquidity risk, fraud risk, regulatory and legal compliance risk, governance risk etc., (Fernando, N. A. 2008). The credit risk inherent in microfinance operation has always been an issue of grave concern. Credit risk refers to the risk associated with non repayment as well as delayed repayment of loan obligations by the clients. It is magnified by lack of symmetrical information among the borrowers and lenders as well as lack of guarantees from the clients. Furthermore, growing competition and commercialisation in the microfinance sector in the recent years have summoned the problem of multifarious

borrowings by the clients which in turn burdens them with heavy debt. These highly indebted clients show poor loan repayments, ultimately deteriorating the portfolio quality. (Assefa, E. et al. 2010).

In microfinance literature, various authors have measured the credit risk in terms of the MFIs Portfolio at Risk > 90 days and Portfolio at Risk> 30 days. (Abdullah and Quayes, 2016; Agier and Szafarz, 2013; Chikalipah,2017), which is also considered as the standard measure of credit risk and portfolio quality in banking sector. Portfolio at Risk > [xx] days implies the value of all loans outstanding that have one or more instalments of principal past due more than [xx] days. This includes the entire unpaid principal balance, including both the past due and future instalments, but not accrued interest. It also includes loans that have been restructured and rescheduled. (www.themix.org). A simpler expression of the term PAR>90 days represents quality of portfolio beyond 90 days and PAR>30 days depicts quality of portfolio after 30 days.

$$PAR > 30 = \frac{\text{loan outstanding for more than 30 days}}{\text{total Outstanding Gross Loan Port folio}}$$

$$PAR > 90 = \frac{\text{loan outstanding for more than 90 days}}{\text{total Outstanding Gross Loan Port folio}}$$

STATEMENT OF THE PROBLEM :

There are two dimensions associated with the Microfinance Institutions. On one hand, the MFIs aim to go deep in serving the poor clients. There are unanimous views in various empirical banking literatures that higher default risk is associated with smaller loan sizes. Thus, there is a general view that the poorer cannot be the good borrowers. This is because they cannot repay back the loan amount in time plus there are greater chances of default as they do not have fixed, promising and regular income sources of income. This amounts to poor loan recovery and the portfolio at risk of the MFIs increases. Delinquency in loan repayment poses a serious threat to the maintenance of the quality of the loan portfolio as well as squeezes the income of the microfinance institutions, thereby threatening their sustainability in long run.

On the other hand, the microfinance sector is mushrooming with a large number of players which provides wider choices to the borrowers seeking credit. Consequently, there arises the problem of double dipping and multiple borrowing on the part of the poor borrowers. As a result, the poor borrowers become over indebted and this poses greater threat to the MFIs' loan portfolio. Both the portfolio at risk>90 days and portfolio risk> 30

days increases implying a concern towards the risk position of the MFIs. Given, these two dimensions, it is necessary in Indian context to gauge whether MFI's role as a financier to the poor is justified and how their social outreach is associated with their risk profile measured in terms of the Portfolio at Risk, as the balance between the two goes in to a larger extent to determine the ultimate sustainability of the MFIs.

REVIEW OF LITERATURE:

Devi, P. S. and Shaikh, A. M. (2017) in the paper "Risk management practices of select microfinance institutions in Telangana State, India" attempted to identify the risk management practices of the MFIs in the Telangana State of India and to find whether any association existed among years of operation of the MFIs, active borrowers and loan portfolio. The study used both primary and secondary data considering six numbers of MFIs as the sample. The study discovered a positive relationship between risk management practices and the risk variables. Also the loan portfolios of the MFIs are open to various kinds of risk especially the credit risk. However, no association was found among years of operation of the MFIs, active borrowers and loan portfolio.

In the study entitled "Do Microfinance Institutions benefit from integrating financial and Non-Financial services?" conducted by Lensink, R et. al., it was revealed that provision of financial services neither affected the financial sustainability nor efficiency of the MFIs. The authors however acknowledged that the provision of social services is linked with deeper outreach of the microfinance institutions which consequently improves their loan portfolio having lower portfolio at risk. The study used secondary data collected from rating agencies. The author used two indicators of the portfolio quality: Portfolio at Risk; 30 days and Write off ratio and three indicators of social outreach: Number of Clients, Average loan size and Percent of Female Borrowers to measure the social performance. Another study conducted by Rosales T, Hockerts, K and Khorunzhina, N. (2014) identified that social outreach has negative impact on the Portfolio at Risk as the MFIs who cling to their social goals responsibly, have the quality of their portfolio even improved to a slight extent.

Shu, C. A. and Oney, B. (2014). In their study selected six MFIs in Cameroon in order to investigate if there exist a trade-off between performance and outreach. The authors identified that these institutions have a limited outreach. Also, these institutions are exposed to high default risk as they are not well efficient in their risk management practices. The authors, thus, did not make any direct attempt to study the impact of increased outreach on loan repayment rates.

Yet another study “Examining the Trade-off Between Social Outreach and Financial Efficiency: Evidence from Microfinance Institutions in South Asia.” conducted by Huq, A. B. I. et.al (2017), examined the existence of a trade-off between financial performance and social performance and reveals that the MFIs drifted from their original mission of deeper social outreach due to an increase in their portfolio at risk.

Bassem, B. S. (2012) in the paper entitled “Social and Financial performance of microfinance institutions: Is there a trade-off?” found that a higher portfolio at risk is not necessarily linked with the poorer clients and thus, the study could not identify any contradiction towards the achievement of the twin aim of social outreach and improved financial position.

Chikalipah, S. (2018). In the paper “Credit risk in microfinance industry: Evidence from sub-Saharan Africa” conducted a study comprising of 632 microfinance institutions taken from 37 countries of the sub-Saharan African (SSA) region over the period 1995 to 2013. As opposed to the widely held views in various literatures that smaller loans are generally associated with high default risk and vice-versa; their study indicated a positive association between credit risk and loan size among microfinance institutions operating in SSA. Thus, the author acknowledges that this positive association confirms the conception that poor borrowers pay their loan obligations honestly.

OBJECTIVE OF THE STUDY:

The key objective of this paper is to *examine the association between social outreach (depth and breadth of outreach) and portfolio at risk* of the MFIs. In addition to this, the study aims:

- (1) To study the trend in loan portfolio and the associated risk of the MFIs in India.
- (2) To study the trend in social performance in terms of depth and breadth of outreach of selected MFIs in India.

DESCRIPTIVE STATISTICS OF KEY SOCIAL PARAMETERS

In this section the social performance of the micro finance institution is studied based on the two broader parameters as already discussed i.e., breadth of outreach and depth of outreach. However, prior to examining the social outreach of the select MFIs for the 7 years period, let us have a look at the gross loan portfolio and the portfolio at risk of the MFIs as reflected in Table 1.

Table-1 exhibits a positive growth rate in the Gross Loan Portfolio excepting the year 2011 where a remarkable negative annual growth rate of -19.08 is studied. This situation is associated with the Andhra crisis. Nonetheless, the situation recovered from 2012 onwards and the overall compound annual growth rate of Gross Loan Portfolio is estimated at

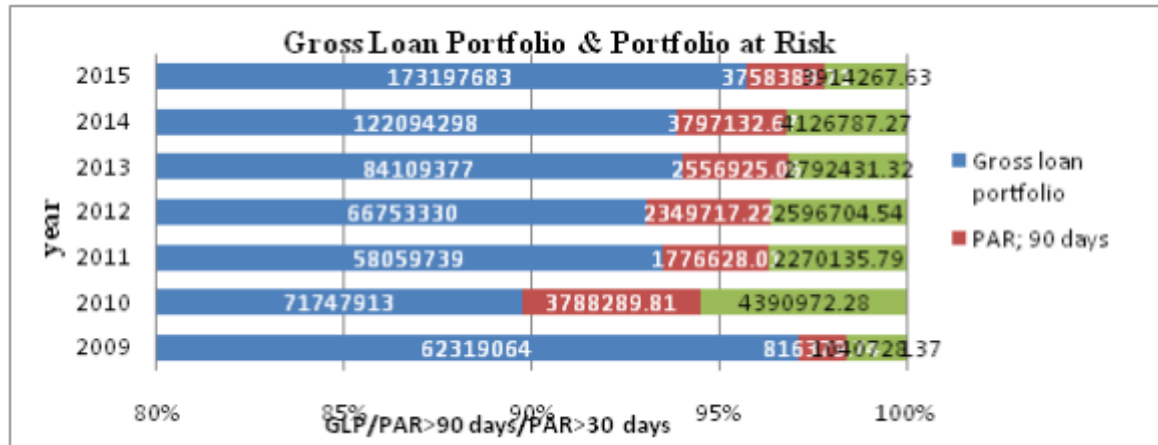
17.44%. Cross comparing the Gross Loan Portfolio and the Portfolio at Risk, it has been seen that in the initial years of study the Portfolio at Risk also showed a high positive growth rate, the situation reversed and a negative average annual growth rate of -42.05% and -36.11% is seen in the year 2011 for both Portfolio At Risk>90 Days and Portfolio At Risk>30 Days respectively. This is also probably due to the Andhra crisis which led to a fall in the Gross Loan Portfolio, consequently reducing the Portfolio at Risk. However, post crisis period attracted various regulations on the MFIs and they became risk cautious and gross loan portfolio got controlled. Consequently, their risk position revamped as mostly indicated by the negative average annualised growth rate in both the Portfolio at Risk>90 days and Portfolio at Risk> 30 days.

Table - 1
Descriptive statistics of gross loan portfolio and portfolio at risk

DESCRIPTIVE STATISTICS OF KEY PARAMETERS						
Year	GLP		PAR;90 DAYS		PAR;30 DAYS	
	Rs.	Growth Rate %	%	Growth Rate	%	Growth Rate
2009	62319064		1.31		1.67	
2010	71747913	15.13	5.28	303.05	6.12	266.47
2011	58059739	-19.08	3.06	-42.05	3.91	-36.11
2012	66753330	14.97	3.52	15.03	3.89	-0.51
2013	84109377	26.00	3.04	-13.64	3.32	-14.65
2014	122094298	45.16	3.11	2.30	3.38	1.81
2015	173197683	41.86	2.17	-30.23	2.26	-33.14
mean	91183057.67	20.67	3.07	39.08	3.51	43.40
SD	42104554.91	23.32	1.22	130.98	1.42	125.61
CAGR	17.44		1.62		-1.57	

Note : GLP= Gross Loan Portfolio, PAR= Portfolio at Risk, SD= Standard Deviation, CAGR= Compound Annual Growth Rate, PAR= Portfolio at Risk.

The following chart shows the proportion of Portfolio at Risk> 90 Days and Portfolio at Risk > 30 days in the Gross Loan Portfolio of each year from 2009-2015.



OUTREACH BREADTH :

The study further analyses the breadth of outreach of the 55 MFIs. Various measures can be employed to study the breadth of outreach. However, for simplicity, the present study considers the two widely used measures in the literature i.e., Number of Active Borrowers, Average Loan Balance per Borrower. **Table 2** shows that there is a consistent growth in the number of active borrowers excluding the year 2011 which was characterised by the Microfinance crisis. Average Loan Outstanding, when measured from social angle, indicates that the MFIs have shown a mixed trend in the growth rate. A portion of the Gross Loan Portfolio becomes outstanding loan which is yet to be repaid by the borrowers. The table shows that from 2010 to 2012 and from 2013 to 2015 there is positive growth in the Average Loan Outstanding which indicates that there is wider/broader outreach. However, from the risk point of view it is undesirable, as more outstanding balance indicates more credit risk associated with the advances.

Table 2
Descriptive statistics of Breadth of Outreach

Year	NOAB		ALO	
	no.	growth rate	Rs.	growth rate
2009	374207		141	
2010	457537	22.27	138.89	-1.50
2011	377805	-17.43	144.44	4.00
2012	414883	9.81	159.24	10.25
2013	503455	21.35	159.08	-0.10

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2014	604130	20.00	175.15	10.10
2015	792435	31.17	184.62	5.41
MEAN	503493	14.53	157.49	4.69
SD	150605.07	17.07	17.52	4.95
CAGR	11.68		5.01	

Note : NOAB= Number of Active Borrowers, ALO=Average Loan outstanding, SD= Standard Deviation, CAGR= Compound Annual Growth Rate.

Now, it is of interest to know how the MFIs behave in terms of their scale of operations. From the following figure-I, which represents the annualized growth rate of variables, it can be seen that the small MFIs are very volatile than the medium and large MFIs. NOAB for all the MFIs rises during 2009-2010 and falls sharply from 2010 to 2011, followed by an increasing trend from 2011 onwards.

Figure-II shows that during the year 2011 to 2012 there is a sharp increase in the Average Loan Outstanding of all the MFIs and from 2012 to 2013 there is a sharp decline in the growth rate of all the categories of the MFIs. This is followed by a sharp increase in the trend for all the MFIs in 2013 and again a declining trend in the year 2014-2015. Thus, the growth in Average Loan Outstanding shows an erratic trend during the study period.

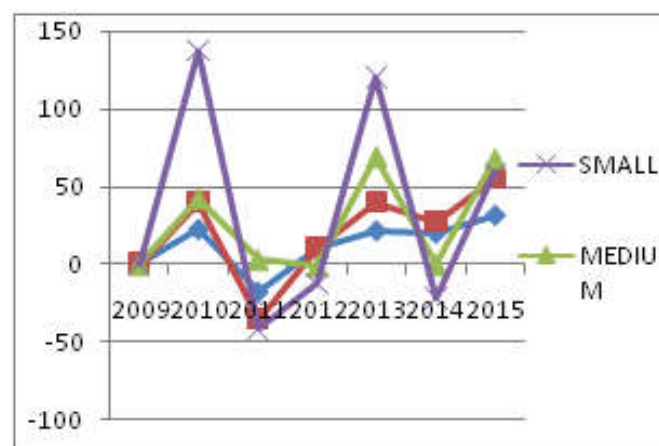


Fig. I : Average Annualised Growth Rate of Number of Active Borrowers

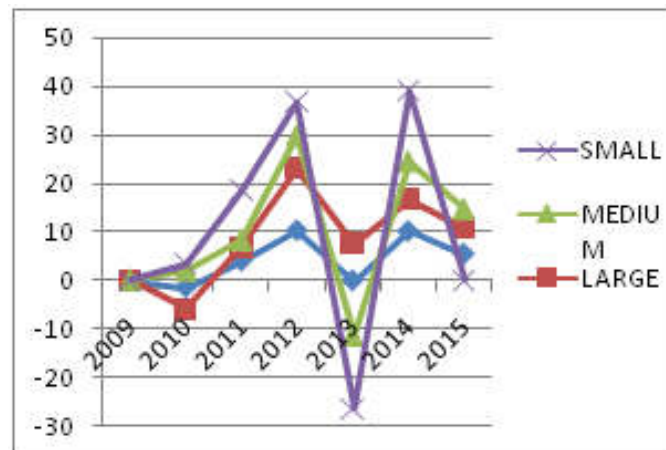


Fig. II- Average Annualised Growth Rate of Average Loan Outstanding

OUTREACH DEPTH :

For analysing depth of outreach, the popular measures as used in various empirical literatures, Average Loan Balance per Borrower, Average Loan Balance per Borrower/GNI per capita, and Percentage of Female Borrowers are taken into account. In Table 3, the study identifies that on an average the Average Loan Balance per Borrower shows an increasing trend. In the year 2010 there is a negative growth rate, however, in all the subsequent years there has been a positive growth rate, the maximum growth being found in the year 2014. This indicates that the MFIs have been concentrating more on the better of clients as against the poorest of the poor. The Compound Annual Growth Rate of the ALBPB/GNI per capita shows that out of the total loan portfolio, 1.98 percent of the loan is given to the poorest borrowers. In case of the Percentage of Female Borrowers, it is seen that MFIs have been almost consistent in targeting the female borrowers till 2014. However, a negative average annualised growth rate is studied in the year 2015. As a result, an overall negative compound annual growth of -0.63% is studied in the percentage of female borrowers.

Table 3
Descriptive statistics of Depth of Outreach

YEAR	AVG LOAN BAL PER BORROWER		ALBPB/GNI per capita		PERCENT OF FEMALE BORROWERS	
	Rs.	Growth Rate	%	Growth Rate	%	Growth Rate
2009	146.65		12.71		96.27	

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2010	142.55	-2.80	9.77	-23.13	96.44	0.18
2011	150.6	5.65	10.16	3.99	96.93	0.51
2012	163.58	8.62	11.04	8.66	96.65	-0.29
2013	169.83	3.82	11.32	2.54	97.04	0.40
2014	192.33	13.25	12.25	8.22	97.24	0.21
2015	198.96	3.45	12.66	3.35	90.22	-7.22
MEAN	166.36	5.33	11.42	0.60	95.83	-1.04
SD	22.21	5.39	1.18	11.91	2.50	3.04
CAGR	6.01		1.98		-0.63	

Note : ALBPB=Average Loan Balance per Borrower, POFB=Percentage of Female Borrowers, ALBPB/GNI per capita= Average Loan Balance per Borrower per Gross National Income per capita, SD= Standard Deviation, CAGR= Compound Annual Growth Rate. When observed in terms of scale of operations of the MFIs, it can be observed that the small MFIs are more volatile than the large and the medium ones (similar to the breadth of outreach measures). In figure-III, it is seen that ALBPB for all the MFIs shows an overall increasing trend with minor decline in the ratio for the period 2012-13 and 2014-15. Figure-IV, however, reflects that growth rate of POFB shows an almost mixed trend except for the period 2014-15 where a sharp decline is noted.

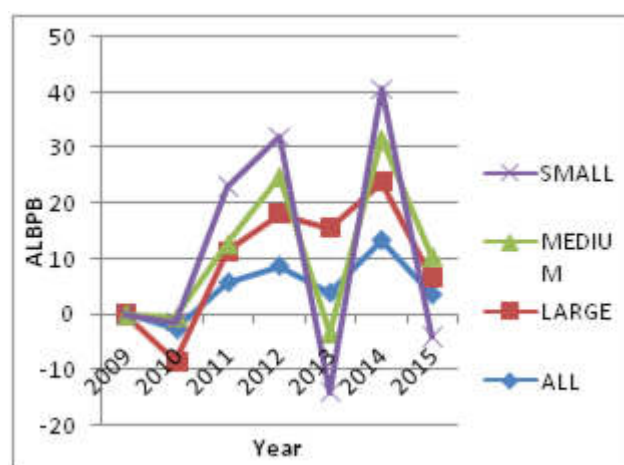


Fig. III :
Average Annualised Growth Rate of Average
Loan Balance per Borrower

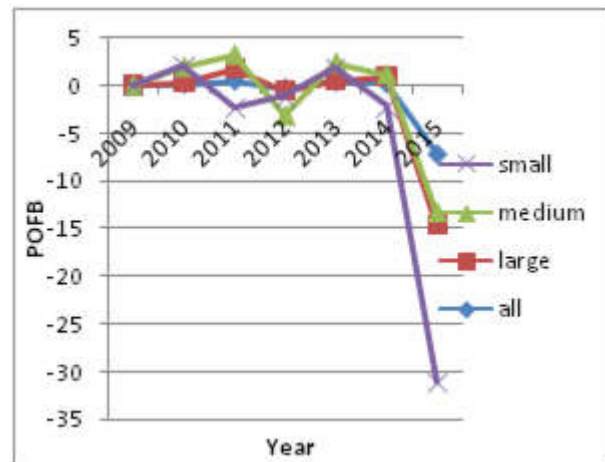


Fig. IV :
Average Annualised Growth Rate of
Percent of Female Borrowers

IMPACT OF MFIS SOCIAL PERFORMANCE ON THEIR PORTFOLIO AT RISK:

In order to ascertain the relation between the MFIs social performance and Portfolio at Risk, the study uses panel data regression analysis considering two models. In model 1, the dependent variable is PAR>90 days and in model 2, the dependent variable is taken as PAR>30 days which is more conservative in its approach and the explanatory variables for both the models are NOAB, ALO, ALBPB, ALBPB/GNI per capita, POFB, Scale, Regulation, Age, Competition, GDP, Inflation, Rural population growth.

Before proceeding for regression analysis, co linearity among the variables has been diagnosed. It is found that multi co linearity exists among the two variables viz. ALBPB and ALBPB/GNI, having VIF greater than 10. Hence, ALBPB is excluded from further regression analysis.

The following variables are taken as the dependent and independent variables in the regression analysis on the basis of review of the existing literature and author's judgement:

MODEL 1	MODEL 2
Dependent Variable: PAR>90 days	Dependent Variable: PAR>30 days

Explanatory Variables			
Variable Name	Notation	Hypothesis	Sign
Number of Active Borrowers	NOAB	Increase in the NOAB represents broader outreach. But this may succumb the MFIs to poor loan quality as correspondingly outstanding balance also increases. So, it is hypothesised that increasing NOAB will have a positive impact on the MFI's PAR.	(+)
Average Loan Balance per Borrower per GNI per capita	ALBPB/ GNI	ALBPB/GNI indicates the loan balance accounted by one person in relation to country's gross national income. It is hypothesised that an increase in the ALBPB/GNI will have a negative impact on the PAR. It is argued that increase in ALBPB/GNI implies that the MFIs are increasing their breadth of outreach by serving the better off clients who generally show less default in loan repayment. Beg, K. and Bashir, H. A.(2017)	(-)
Average Loan Outstanding	ALO	Average Loan Outstanding indicates loan amount due by one client which is hypothesised to have a positive impact on portfolio at risk of the MFIs; since increase in outstanding balance with the clients increases the default rate too.	(+)
Percent of Female Borrowers	POFB	It is hypothesised that increase in the POFB will have a negative impact on PAR as women are considered to be more disciplined borrowers who would make less default in repayment. Beg, K. and Bashir, H. A.(2017); Lassoued (2017); Mosbah, Slama and Mostorakis, (2008).	(-)
Scale of Operation	Scale	In relation to the scale of operation, is hypothesised that increase in the scale of operations of the MFIs will have a negative impact on their PAR as the large	(-)

		scale MFIs will be more efficient in loan management than the medium and the smaller ones. Beg, K. and Bashir, H. A. (2017)	
Regulatory Status	Regulated	Regulations on the MFIs will influence them to deepen their outreach to poor clientele. Since poor are subject to more default risk due to their low and irregular source of income, it is therefore hypothesised that regulations in force will have a positive impact on their PAR	(+)
Age	-	It is hypothesised that the Matured MFIs will stick to their core mission of deepening outreach than the new and the young MFIs , as such matured MFIs will have a positive impact on their PAR.	(+)
Gross Domestic Product	GDP	It is hypothesised that a positive GDP growth rate will have a negative impact on the PAR as a positive GDP growth rate indicates that the economy is expanding and so is the business, employment and income.	(-)
Inflation	-	Inflation decreases the purchasing power of a nation's currency thereby increasing the cost of living. Thus, it is hypothesised that a positive inflation rate will have a positive impact on the MFIs PAR.	(+)
Rural Population Growth	RPG	It is hypothesised that rural population growth has a positive impact on PAR. This is because as the percentage of rural population increases MFIs will go on serving more number of poor rural populations which is expected to result in more loan recovery problems.	(+)
Competition	competition	Competition is assumed to have a positive impact on Portfolio at Risk since with increasing competition, the problem of double dipping will cause more defaults in loan repayment, thereby degrading the portfolio quality and increasing the Portfolio at Risk of the MFIs.	(+)

EMPIRICAL RESULTS :

As the study is based on panel data of 55 MFIs for 7 years period, panel data regression model has been used to study the impact of commitment to social outreach on portfolio at risk of the MFIs. The results of regression, analysis and interpretation of the results are based on the most apposite model which is selected based on the result of F test in order to determine the best model between pooled OLS and fixed effect model. Next, the Breusch pagan test is applied to choose between pooled OLS and random effect model. Finally, with a view to determine the fit model between random and fixed effect model, Hausman test is used.

It is found that in case of Model- I which takes Portfolio at Risk greater than 90 Days as the dependent variable, fixed effect model is found to be the best and in case of Model- 2 which takes Portfolio at Risk greater than 30 days as the dependent variable, random effect model is found to be the apt one. Accordingly, the results of regression analysis are shown below.

Table 4 reports the results of regression taking Portfolio at Risk > 90 days as the dependent variable. It can be seen that none of the MFI specific variables are significant whereas among the macro economic variables Competition is significant but all the other variables are insignificant.

Table : 4
Model 1

Dependent Variable = PAR > 90			
Variable	Coefficient	Standard Error	p>t
ALBPBGNI	-0.315	0.222	0.156
POFB	-0.018	0.046	0.698
ALO	0.000	0.000	0.826
NOAB	2.26E	1.35E	0.094
SCALE	0.000	0.015	0.964
AGE	0.0225	0.015	0.146
COMPETITION	-3.280	1.222	0.007
GDP	0.000	0.003	0.893
INFLATION	0.001	0.003	0.704
RPG	-0.008	0.074	0.909

In model 2 which takes Portfolio at Risk; 30 days as dependent variable that is more conservative in its approach, it is observed that out of the MFI specific variables ALBPBGNI is significant where as others are insignificant. When it comes to macro economic variables, it is seen from the table that COMPETITION is significant.

Table : 5
Model 2

Dependent Variable = PAR > 30			
Variable	Coefficient	Standard Error	p>t
ALBPBGNI	-0.5099	0.2305	0.028
POFB	0.0183	0.0526	0.727
ALO	0.0000	0.0002	0.683
NOAB	1.25e	1.64e	0.445
SCALE	-0.0041	0.0177	0.815
AGE	0.0003	0.0191	0.986
COMPETITION	-3.8789	1.3921	0.006
GDP	0.0010	0.0033	0.747
INFLATION	-2.18e	0.0031	0.999
RPG	-0.0189	0.0745	0.799

DISCUSSION :

From the empirical analysis, it is seen that in both the models i.e., in Model-I and Model-II, **Competition** is found to be significant and has a negative impact on Portfolio at Risk. Thus, the finding rejects our preset hypothesis. The academic literature renders contrasting views and there is a duality of opinion as regards the impact of competition on the MFIs Portfolio at Risk. One school of thought argues that as competition intensifies in the microfinance sector, there are multiple borrowings by the clients and the rapid growing MFIs resort to heedless lending without appraisal of the credit worthiness of the clients. This multiple lending-borrowing structure puts the borrowers in a vicious circle of debt often resulting into non-payment of loan obligations. This in turn increases the Portfolio at Risk of the MFs, thereby, impeding their portfolio quality (Assefa. E, et al., (2010); McIntosh et al., (2005); Purkayastha. D, et. al. (2018)). Thus there is wide recognition among various academicians and practioners of the fact that Credit Information Bureaus need to be introduced in the microfinance sector in order to evade this plight of overlapping clients which is a stumbling block to the maintenance of portfolio quality of the MFIs. However, the other school of thought, in line with our findings, opines that with the increase in the competition among the MFIs, their portfolio quality ameliorates. (Kar. A, K, and Swain. R,

B, 2014). This is probably because an increase in competition in the sector provides wider choices to the clients, who may now resort to other MFIs for meeting their credit needs. This may consequently result in a decline in the market share of the MFIs. Thus, the MFIs in order to remain sustainable target the better off clients who generally have a better repayment capacity than the ones at bottom of the pyramid, thereby, improving their portfolio quality. Hence, with the increase in the competition amongst the MFIs, their Portfolio at Risk decreases.

In Model-II, apart from competition, it is seen that the MFI specific variable **ALBPB/GNI per capita** is also significant and bears a negative association with the Portfolio at Risk of the MFIs. This implies that increasing Average Loan Balance per Borrower/GNI per capita reduces the portfolio at risk greater than 30 days. Thus, the study indicates that when the Indian MFIs concentrate on the better off clients, their loan repayment performance improves and consequently PAR decreases. This finding is in line with the findings of Beg, K. and Bashir, H. A. (2017) whose empirical analysis also revealed that increasing average loan size minimizes overdue loans of the MFIs.

CONCLUSION :

As a whole it can be seen that the Indian Microfinance sector has shown a positive growth rate in their Gross Loan Portfolio. As such their PAR > 90 days also shows a positive compound annual growth rate of 2.17% over the 7 years period. However, when the MFIs follow a conservative approach in their loan recovery practices, it is seen that their Portfolio at Risk decreases as reflected by the negative compound annual growth rate of -1.57% in the Portfolio at Risk greater than 30 days. It is also seen that the MFIs have been broadening their outreach over the period as depicted by the positive compound annual growth rate of 11.68% in NOAB and 5.01% in ALO. Further, it is revealed that the MFIs are not much deepening their outreach as measured in terms of ALBPB, ALBPB/GNI per capita and as reflected by their negative compound annual growth rate in POFB.

The study concludes that the social outreach variables considered in the study have no significant impact on the portfolio at risk greater than 90 days of the MFIs. However, it is revealed that ALBPB/GNI per capita has a significant negative impact on the portfolio at risk greater than 30 days. Also, from the panel data regression analysis, it is evident that competition among the MFIs negatively impacts their portfolio quality as reflected by both portfolio at risk greater than 90 days and portfolio at risk greater than 30 days.

In a nutshell, the concerned study opines that the social outreach variables considered in the study do not have significant impact on the portfolio at risk of the

microfinance institutions with the only exception that as the MFIs increase their breadth of outreach (as measured in terms of the increase in the ratio of ALBPB/GNI per capita) their portfolio at risk greater than 30 days decreases. Thus, it can be said that the Indian MFIs can go on achieving their social mission without affecting their portfolio quality.

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