

Effect of Scaling Up on the Financial and Social Performance of the Microfinance Institutions in India

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Abstract: In this study, authors consider 94 MFIs over the period 2000-13. The data have been taken from MixMarket, a non profit organization that collects data and helps its exchange between them, in Microfinance sector. This paper discusses the effect of scale, which is defined by the Gross Loan Portfolio of the MFIs, on financial profitability and social outreach of MFIs in India during 2000-13. The results indicate that the financial performance of MFIs is positively related with their scaling up. The result also shows that in large MFIs as the percentage of female borrower increases, the Return on Asset and Operational Self Sufficiency of the MFIs also increase. This may be due to the fact that female borrowers generally tend to repay all outstanding balance hence improving the MFIs financial performance.

Keywords: Financial Performance, Gross Loan Portfolio, Microfinance Institutions, Mission drift, Social Performance

I. INTRODUCTION

The aim of Microfinance Institutions (“MFIs”) is to provide loans to people who are otherwise unable to access them through other mediums. This is one of the reasons they have achieved significant growth in numbers in the world and especially in India. MFI’s have achieved a tenfold growth in terms of the households they serve in a span of ten years i.e. from 1997-2007 (Esubalew Assefaa, Niels Hermesb and Aljar Meestersb, 2013).

MFIs are very different from normal banking institutions. They provide small amounts of loans to people who are poor usually without collateral and depend on volumes. So as they grow in size over time and expand their operations it becomes hard for MFIs to be able to control both their bottom lines (Bottom lines stand for financial self-sustainability and larger outreach for better social performance).

MFIs are setup up to fulfill two fundamental aims i.e. to become financially sustainable and to be able to reach the poorest of the population. But they may often have to make tradeoffs between the two especially when they grow over time. Over the last decade we have seen many MFIs grow rapidly in terms of scale from small to large enterprises. This recent development may lead to a very interesting question- Does scaling up have an impact on these double bottom lines? Do Microfinance Institutes deviate from their social goal to achieve financial sustainability? (Mission Drift,

Ashim Kumar Kar, 2012) (Mission drift is a term given to MFI’s that have moved away from their mission to provide financial inclusion for their own profitability and sustainability). This is one of the main questions this study aims to answer.

The literature on the efficiency of MFIs as they scale up is still very limited and should be explored further. This study aims to look at Microfinance institutes in India over a time period to evaluate if their size and growth affects their financial and social parameters. This study will help to find which size of Microfinance Institutes are optimum to be both financially and social sustainable and if their growth has indeed helped to alleviate poverty and make a social impact.

II. LITERATURE REVIEW

Firstly the effects of MFI’s in reducing the income inequality of a country were seen (Niels Hermes, 2014). Data from 70 developing countries was taken into account and it could be seen that higher microfinance participation is associated with lower income inequality. At the same time it could also be seen that the impact is low as compared to the size of the economies of the countries. Therefore it can be seen that although the growth of Microfinance Industry has been rapid it is still insignificant in comparison to the demand that is actually present in the world especially in the third world nations.

Studies have also been conducted to see why some MFIs perform better than others and if mission drift can be eliminated (Ashim Kumar Kar, 2011). Findings indicate that MFIs can still attain sustainability without necessarily

increasing average loan size or interest earning. Implementation of a better interest rate policy and solidarity-group-based loan method and scaling-up by increasing the breadth of outreach help make that possible. By doing so, focus on the poor can be kept and, simultaneously, concerns for mission drift can greatly be avoided.

The general theory that MFIs have to make certain trade-offs between their financial and social bottom lines has been prevalent since the beginning. But literature shows that the empirical evidence does not support the hypothesis of mission drift (Ashim Kumar Kar, 2013), where mission drift is defined as the trade-off between profits and outreach excluding the effect of scale. Even when scale was taken into account the results were inconsistent.

More rigorous analysis of the same can be done by taking into account the change in behavior of MFIs like their transformation from non-profit to profitable entities to check whether the hypothesis still fails to hold true even in the above scenario. This will give a clearer picture as to how well MFIs are able to protect themselves from the concept of mission drift.

Marketing also has a significant impact on the double bottom lines of MFIs (Jayashankar, Priyanka, Goedegebuure and Robert V, 2012). It can be very clearly seen that marketing strategies have a significant impact on the financial self-sufficiency of MFI's although their impact on the return on assets is relatively insignificant. It can be seen that the effect of marketing strategies on both social and financial performances is significant and can help MFIs to meet their double bottom lines.

The determinants of the social and financial performance have also been talked about in a recent study (Karel Janda & Batbayar Turbat, 2013). The study concluded that targeting women borrowers' increases portfolio yield and good governance leads to higher portfolio yield. However the other indicators like return on assets were not taken into account and can be used to get a more complete picture. Also other factors of riskiness like portfolio at risk should be included to improve the studies explanatory power and make it more extensive.

Theoretically, regulation may also affect the sustainability and outreach of MFIs. But it has been seen that regulatory involvement does not affect either sustainability or outreach (Valentina Hartarska & Denis Nadolnyak, 2007). The implications are that MFIs which transform into regulated financial institutions are not likely to be more financially sustainable or reach more poor borrowers than MFIs who remain unregulated. However, the finding that MFIs collecting savings achieve better outreach suggests that there may be indirect benefits from regulation, if regulation is the only way for MFIs to access savings.

MFIs have seen significant increase in their numbers in the last decade. This may be due to the fact that the Microfinance industry in overall is very alluring, as it has huge untapped potential especially in the developing countries of the world. But this growth has also raised many concerns around the world. This competition, if it grows at this pace may lead to lower stability due to rapid commercialization (Esubalew Assefa, Niels Hermes & Aljar Meesters, 2013). It can be seen that higher competition indicates lower levels of loan

repayment. In all the study concludes that increased competition and commercialization of the microfinance sector is a potential threat to its longer term stability and success especially in financial terms.

As the commercialization in the Industry has increased in the recent years, it has led to different forms of capital and financing structures. Studies show that an increase in leverage, i.e. a reduction in capital to assets ratio, indeed raises profit-efficiency. In addition, cost-efficiency deteriorates with increasing capital to assets ratio.

There have been very limited studies on the impact of scale on the sustainability and outreach of MFIs particularly in India. Our objective of the study is to see how this growth has affected the profitability and outreach in India.

III. RESEARCH METHODOLOGY

A comprehensive data of 94 MFIS in India ranging from the years 2000-2013 has been taken. The data has been taken from Mix Market, a non-profit-organization that collects data and helps its exchange between them, in the Microfinance sector.

Out of the 201 MFIs listed on MIX in India the MFIs with data before the year 2000 and 2013 were removed to improve accuracy. Also there were some MFIs that had not shown any growth in their *scale* (*With respect to India small MFIs are those with a Gross Loan Portfolio less than 2 million\$, medium with a Gross Loan Portfolio between 2 million- 8 million \$ and large with a Gross Loan Portfolio larger than 8 million \$ as defined by Market MIX. Dummy variables have been taken for them*), i.e. from small to medium or medium to large. These were also removed to result in a set of 94 MFIs that the analysis was done upon.

Scale has been defined on the basis of the Gross Loan Portfolio of the MFIS in terms of US dollars. The MFIs have been divided in three categories, i.e. small, large and medium.

Conceptual Framework

To understand the efficiency of MFIs we will look at several factors that affect both financial and social performance.

The financial factors that are a measure of its sustainability are Return on Assets, Operating Expense/Loan Portfolio, Operational Self Sufficiency and the Yield on Gross Portfolio (nominal).

The social factors include both the depth and breadth of outreach i.e. Average Loan Balance/Borrower and Number of Active Borrowers respectively.

Model

Multivariate regressions with different sets of data have been done in this report.

Performance = $\alpha + \beta (\text{scale}) + \epsilon$

Two levels of analysis have been undertaken in the following study. First regressions are done on the overall sample to understand the relations between the different variables and scale. Scale has been taken in two forms i.e. the Gross Loan

Portfolio and the different variables taken for scale (Small, Medium, and Large).

Then regressions are done using the same variables by dividing the sample into three sets (small, medium and large). Portfolio at Risk-30 days, Percent of female borrowers, Debt to equity ratio, Current legal status, Age of the MFI have also been included as independent variables in the above regression model.

Explanation of Variables

Gross Loan Portfolio- All outstanding principal for all outstanding client loans, including current, delinquent and restructured loans, but not loans that have been written off. It does not include interest receivable. It does not include employee loans. (themix.org)

Return on Assets- It is a profitability ratio that denotes the amount of revenue the company can generate with its current assets i.e. the number of dollar's a company can generate per dollar of asset they control. It comprises of both debt and equity.

Operating Expense/ Loan Portfolio- Operating expense defines the amount of money spent on operating expenses like personnel, depreciation etc. per dollar of principals due the clients have to repay. It does not include loans that have been repaid and the interest receivable on the current loans.

Operational Self Sufficiency (OSS) - OSS is the ratio of the financial revenue and the expenses of the organization. It is an indicator of how well the organization is currently operating with its current income and if it is able to cover all its expenses like salaries, bad debt, depreciation costs and other administrative costs.

Yield on Gross Loan Portfolio (nominal) - It is a ratio of the interest and fees received and the loan portfolio. It does not take into account the inflation rates.

Average Loan Balance/Borrower- It is the ratio of the loan portfolio and number of active borrowers.

Number of Active Borrowers- All outstanding principal for all outstanding client loans, including current, delinquent and restructured loans, but not loans that have been written off. It does not include interest receivable. It does not include employee loans. (mixmarket.org)

Current Legal Status- The current legal status defines whether the MFI is a Non-governmental Organization (NGO), Non-banking Financial Institution (NBFI) or Credit Union/Cooperative.

(Dummy variables have been taken for NGO, NBFI and Credit Unions. Rural Banks have been dropped because of their insignificance in numbers with respect to the other three. 1 has been taken for yes and 0 for no for each of the three categories)

Age- It is a measure of the number of years the MFI has been into existence since its inception. The social and financial performance may vary with age as the MFIs get a better understanding of their market therefore may lead to reduced risks and more impact.

(Mix Market defines 'Age' in three categories- New, Young and Mature. All the MFIs that are 1-4 years old have been classified as new, 5-8 years as young and more than that as Mature. Dummy Variables have been defined for them. 1 for yes and 0 for no, each for new, young and mature)

Portfolio at Risk (30 days) - The value of all loans outstanding that have one or more installments of principal past due more than 30 days. This includes the entire unpaid principal balance, including both the past due and future installments, but not accrued interest. It also includes loans that have been restructured or rescheduled. (mixmarket.org)

Regulation- It defines whether a MFI is regulated or not. Dummy variables have been taken into account for it.

IV. ANALYSIS OF DATA

The analysis of data has been broken into two parts. Analysis 1 has been done on the overall sample taking into account both the natural log of Gross Loan Portfolio (an indicator of scale) as well as the dummy variables for scale taking small as the reference point. Analysis 2 has been done by dividing the sample on the basis of scale.

Analysis 1

The analysis of both the financial as well as social indicators has been done by taking scale as both a numerical value i.e. the natural log of Gross Loan Portfolio as well as taking into account the dummy variables of scale. The equations are as follows:

$$Y = \alpha + \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \beta_4(X_4) + \beta_5(X_5) + \beta_6(X_6) + \beta_7(X_7) + \epsilon \quad (1)$$

- Y= Return on Assets (ROA), Operating Expense/ Loan Portfolio (OE/LP), Operational Self Sufficiency (OSS), Yield on Gross Portfolio (YGP), Average Loan Balance/Borrower, Number of Active Borrowers
- X₁= Natural log of Gross Loan Portfolio, Dummy variables for scale
- X₂= Portfolio at Risk 30 days (PAR)
- X₃= Percentage of Female Borrowers (PFB)
- X₄= Debt to Equity Ratio (DOE)
- X₅= Dummy variable for Regulated/Non-Regulated. 1 for regulated and 0 for non-regulated.
- X₆= Dummy variables for current legal status
- X₇= Dummy variables for Age

Table 1 denotes the Impact of scaling up has on the financial performance of MFI's in India. The table includes both the forms of analysis i.e. with the natural log of GLP as well as

the dummy variables of scale with small MFI's as the reference point.

Table 2 denotes the same analysis but to measure the social performance of the MFI's as they scale up.

1. Impact of scaling on Financial performance of
MFI's in India

VARIABLES	ROA	OE/LP	OSS	YGP	ROA	OE/LP	OSS	YGP
log_GLP	0.0457***	-0.184***	0.178***	-0.00837				
	(0.00631)	-0.0196	(0.0145)	-0.00523				
Medium					0.0908***	-0.235***	0.249***	0.0293***
					(0.0123)	(0.0390)	(0.0287)	(0.0111)
Large					0.0944***	-0.282***	0.331***	7.84e-05
					(0.0126)	(0.0403)	(0.0301)	(0.0112)
PAR	-0.0328***	-0.00916	-0.121***	-0.0157**	-0.0346***	-0.00361	-0.127***	-0.0148**
	(0.0102)	-0.0318	(0.0264)	-0.00742	(0.0102)	(0.0325)	(0.0268)	(0.00735)
PFB	0.0176	0.0404	-0.0172	0.0384	0.0201	0.0275	0.00300	0.0294
	(0.0298)	-0.0924	(0.0692)	-0.025	(0.0296)	(0.0945)	(0.0702)	(0.0249)
DOE	3.00e-06	-2.09e-05*	2.36e-06	-5.39e-05**	3.14e-06	-1.74e-05	-6.60e-08	-5.28e-05**
	(3.98e-06)	-0.0000123	(1.03e-05)	-0.000023	(3.95e-06)	(1.26e-05)	(1.04e-05)	(2.29e-05)
Regulation	-0.0258*	0.0745	-0.150***	-0.0111	-0.0223	0.0735	-0.154***	-0.00865
	(0.0149)	-0.0457	(0.0365)	-0.0112	(0.0148)	(0.0468)	(0.0369)	(0.0111)
Ngo	0.0297*	-0.101**	-0.00859	-0.0384***	0.0192	-0.0462	-0.0473	-0.0430***
	(0.0155)	-0.0475	(0.0377)	-0.0116	(0.0154)	(0.0485)	(0.0381)	(0.0115)
CreditUnion	0.0321	-0.121*	0.0408	-0.0636***	0.0147	-0.0476	-0.00359	-0.0704***
	(0.0237)	-0.0732	(0.0576)	-0.0181	(0.0236)	(0.0750)	(0.0585)	(0.0179)
New	-0.0173	0.113***	0.0369	0.00827	-0.0142	0.120***	0.0339	0.0107
	(0.0135)	-0.0418	(0.0330)	-0.0104	(0.0135)	(0.0429)	(0.0335)	(0.0104)
Mature	-0.00627	-0.0089	-0.0386	-0.0257***	0.00475	-0.0508	-0.00651	-0.0232***
	(0.0101)	-0.0312	(0.0254)	-0.00784	(0.00997)	(0.0317)	(0.0257)	(0.00773)
Constant	-0.325***	1.386***	-0.00744	0.300***	-0.0945***	0.350***	0.951***	0.236***
	(0.0551)	-0.171	(0.127)	-0.0465	(0.0341)	(0.109)	(0.0820)	(0.0289)
Observations	814	816	894	723	814	816	894	723
R-squared	0.103	0.159	0.187	0.1	0.117	0.123	0.167	0.119

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

2. Impact of scaling up on the Social Performance of MFI's
in India

VARIABLES	ROA	OE/LP	OSS	YGP	ROA	OE/LP	OSS	YGP
log_GLP	0.0457***	-0.184***	0.178***	-0.00837				
	(0.00631)	-0.0196	(0.0145)	-0.00523				
Medium					0.0908***	-0.235***	0.249***	0.0293***
					(0.0123)	(0.0390)	(0.0287)	(0.0111)
Large					0.0944***	-0.282***	0.331***	7.84e-05
					(0.0126)	(0.0403)	(0.0301)	(0.0112)
PAR	-0.0328***	-0.00916	-0.121***	-0.0157**	-0.0346***	-0.00361	-0.127***	-0.0148**
	(0.0102)	-0.0318	(0.0264)	-0.00742	(0.0102)	(0.0325)	(0.0268)	(0.00735)
PFB	0.0176	0.0404	-0.0172	0.0384	0.0201	0.0275	0.00300	0.0294
	(0.0298)	-0.0924	(0.0692)	-0.025	(0.0296)	(0.0945)	(0.0702)	(0.0249)
DOE	3.00e-06	-2.09e-05*	2.36e-06	-5.39e-05**	3.14e-06	-1.74e-05	-6.60e-08	-5.28e-05**
	(3.98e-06)	-0.0000123	(1.03e-05)	-0.000023	(3.95e-06)	(1.26e-05)	(1.04e-05)	(2.29e-05)
Regulation	-0.0258*	0.0745	-0.150***	-0.0111	-0.0223	0.0735	-0.154***	-0.00865
	(0.0149)	-0.0457	(0.0365)	-0.0112	(0.0148)	(0.0468)	(0.0369)	(0.0111)
Ngo	0.0297*	-0.101**	-0.00859	-0.0384***	0.0192	-0.0462	-0.0473	-0.0430***
	(0.0155)	-0.0475	(0.0377)	-0.0116	(0.0154)	(0.0485)	(0.0381)	(0.0115)
CreditUnion	0.0321	-0.121*	0.0408	-0.0636***	0.0147	-0.0476	-0.00359	-0.0704***
	(0.0237)	-0.0732	(0.0576)	-0.0181	(0.0236)	(0.0750)	(0.0585)	(0.0179)
New	-0.0173	0.113***	0.0369	0.00827	-0.0142	0.120***	0.0339	0.0107
	(0.0135)	-0.0418	(0.0330)	-0.0104	(0.0135)	(0.0429)	(0.0335)	(0.0104)
Mature	-0.00627	-0.0089	-0.0386	-0.0257***	0.00475	-0.0508	-0.00651	-0.0232***
	(0.0101)	-0.0312	(0.0254)	-0.00784	(0.00997)	(0.0317)	(0.0257)	(0.00773)
Constant	-0.325***	1.386***	-0.00744	0.300***	-0.0945***	0.350***	0.951***	0.236***
	(0.0551)	-0.171	(0.127)	-0.0465	(0.0341)	(0.109)	(0.0820)	(0.0289)
Observations	814	816	894	723	814	816	894	723
R-squared	0.103	0.159	0.187	0.1	0.117	0.123	0.167	0.119

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The results indicate that the financial performance of MFIs is positively related with their scaling up. It can be seen that both ROA and OSS show significant results and are positively related with the GLP of MFIs. Also the operating expense decreases with the increase in GLP. Although the Yield on the Gross portfolio is statistically insignificant it can be said that the financial performance increases in overall as the Gross Loan Portfolio increases.

It can also be seen that as the MFI grows from small to medium or large the ROA and OSS increase and have a significant impact whereas the operating expense decreases. In this case the Yield on Gross portfolio is statistically significant and positive for medium MFI's but still insignificant for large ones with respect to small MFI's. Here also it can be said that the growth of an MFI from small to medium or large has a positive effect on the financial performance of MFIs.

As it can be seen that both the forms of analysis i.e. with the natural log of GLP and taking dummy variables with scale show that scaling up has a positive impact on the overall financial performance of MFI's.

Further it can be seen that as the portfolio at risk decreases the ROA, OSS and Yield on Gross Portfolio increase hence increasing the financial performance.

For the social performance of MFI's it can be seen that the Gross Loan Portfolio has a positive significant effect on the average loan balance per borrower as well as the number of active borrowers. Even when seen for medium and large MFI's the average loan balance and number of active borrowers have a significant positive increase although for medium the number of active borrowers is insignificant. But in overall it can be seen that scaling up has a positive effect on the social performance of MFI's.

To sum up both the results it can be seen that in all scaling up has a positive effect on both the financial and social performance of MFI's in India.

Analysis 2

The sample data has been broken down into small, medium and large on the basis of scale. A separate analysis has been done for both the financial and social variables on all of the three sample data sets

$$Y = \alpha + \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \beta_4(X_4) + \beta_5(X_5) + \beta_6(X_6) + \varepsilon \quad (2)$$

- Y= Return on Assets (ROA), Operating Expense/ Loan Portfolio (OE/LP), Operational Self Sufficiency (OSS), Yield on Gross Portfolio (YGP), Average Loan Balance/Borrower, Number of Active Borrowers
- X₁= Portfolio at Risk 30 days (PAR)
- X₂= Percentage of Female Borrowers (PFB)
- X₃= Debt to Equity Ratio (DOE)
- X₄= Dummy variable for Regulated/Non-Regulated
- X₅= Dummy variable for current legal status (Ngo, Credit Union, NBFI)
- X₆= Dummy variable for Age

3. Impact on different financial and social factors
in small MFI's in India

VARIABLES	ROA	OE/LP	OSS	YGP	Average Loan Balance/ Borrower	Number of Active Borrowers
PAR	-0.188	-0.448	-0.745***	-0.186**	44.15	-1,073
	(0.145)	(0.591)	(0.179)	(0.0738)	(47.12)	(6,593)
PFB	-0.116	0.712	-0.0706	0.0445	-224.6***	8,735
	(0.165)	(0.672)	(0.176)	(0.193)	(46.27)	(6,474)
DOE	4.12e-06	-1.87e-05	5.43e-06	-1.15e-05	-0.00146	-0.0750
	(7.41e-06)	(3.02e-05)	(1.25e-05)	(3.48e-05)	(0.00330)	(0.461)
Regulation	0.0735	0.00761	0.0748	-0.00183	41.87**	5,053*
	(0.0596)	(0.243)	(0.0837)	(0.0394)	(19.58)	(2,740)
Ngo	0.198***	-0.486*	0.163**	-0.0846**	57.86***	1,022
	(0.0607)	(0.248)	(0.0828)	(0.0359)	(19.81)	(2,772)
CreditUnion	0.146	-0.390	0.164	-0.114*	27.16	29,411***
	(0.112)	(0.459)	(0.150)	(0.0659)	(31.88)	(4,462)
New	-0.0521	0.360*	0.00613	0.0136	-36.74*	-1,288
	(0.0505)	(0.206)	(0.0744)	(0.0345)	(19.17)	(2,682)
Mature	0.0660	-0.0773	0.108	0.0142	-10.34	2,256
	(0.0513)	(0.209)	(0.0737)	(0.0399)	(19.01)	(2,660)
Constant	-0.116	-0.114	0.767***	0.222	296.4***	-3,591
	(0.170)	(0.695)	(0.199)	(0.184)	(51.00)	(7,136)
Observations	135	135	192	77	204	204
R-squared	0.217	0.163	0.150	0.209	0.172	0.267

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4. Impact on different financial and social factors in medium
MFI's in India

VARIABLES	ROA	OE/LP	OSS	YGP	Average Loan Balance/ Borrower	Number of Active Borrowers
PAR	-0.0154	0.0302	-0.129	-0.0112	-0.278	-13,133
	(0.0204)	(0.0482)	(0.102)	(0.0386)	(51.44)	(11,826)
PFB	0.0173	0.0251	0.103	0.0617	-569.0***	44,418***
	(0.0216)	(0.0510)	(0.103)	(0.0565)	(52.26)	(12,014)
DOE	-9.84e-05***	-9.33e-05	-0.000614***	-0.000183***	-0.0121	-9.354
	(2.64e-05)	(6.22e-05)	(0.000130)	(5.00e-05)	(0.0658)	(15.12)
Regulation	-0.0480***	0.105***	-0.264***	-0.0141	-38.64*	2,344
	(0.00817)	(0.0189)	(0.0402)	(0.0149)	(20.03)	(4,604)
Ngo	-0.0363***	0.0516**	-0.175***	-0.0489***	-14.90	2,946
	(0.00869)	(0.0201)	(0.0426)	(0.0159)	(21.41)	(4,923)
CreditUnion	-0.0302**	-0.00970	-0.174***	-0.0825***	110.4***	13,171*
	(0.0127)	(0.0299)	(0.0619)	(0.0247)	(29.97)	(6,891)
New	0.0131	0.00966	0.0821*	0.00484	12.76	1,057
	(0.00889)	(0.0210)	(0.0432)	(0.0169)	(21.82)	(5,016)
Mature	-0.00262	-0.00908	-0.00975	-0.0219*	15.96	3,013
	(0.00652)	(0.0153)	(0.0322)	(0.0128)	(16.28)	(3,743)
Constant	0.0423*	0.0500	1.242***	0.244***	707.5***	-5,630
	(0.0217)	(0.0511)	(0.104)	(0.0558)	(52.50)	(12,069)
Observations	308	310	327	280	329	329
R-squared	0.163	0.141	0.206	0.166	0.345	0.064

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5. Impact on different financial and social factors in large
MFI's in India

VARIABLES	ROA	OE/LP	OSS	YGP	Average Loan Balance/ Borrower	Number of Active Borrowers
PAR	-0.0259***	-0.000606	-0.0787***	-0.00903	35.15***	-28,173
	(0.00843)	(0.00691)	(0.0271)	(0.00676)	(10.76)	(75,330)
PFB	0.0893**	-0.0339	0.312**	0.0313	-335.1***	288,060
	(0.0406)	(0.0332)	(0.130)	(0.0326)	(51.63)	(361,484)
DOE	0.000432***	-5.50e-05	0.00152***	0.000114	-0.196	574.1
	(0.000112)	(9.19e-05)	(0.000361)	(9.00e-05)	(0.143)	(1,003)
Regulation	-0.0754***	0.132***	-0.210**	0.0150	12.34	474,531*
	(0.0273)	(0.0223)	(0.0878)	(0.0219)	(34.80)	(243,697)
Ngo	-0.0666**	0.119***	-0.152*	-0.0156	-10.53	-13,169
	(0.0285)	(0.0233)	(0.0917)	(0.0228)	(36.36)	(254,606)
CreditUnion	0.0242	0.0167	0.315**	-0.0379	1,464***	-14,130
	(0.0493)	(0.0404)	(0.154)	(0.0395)	(61.26)	(428,909)
New	-0.0115	0.00339	-0.0237	0.00421	11.25	-79,086
	(0.0192)	(0.0157)	(0.0618)	(0.0154)	(24.50)	(171,539)
Mature	-0.0107	-0.0391***	-0.0243	-0.0225**	15.47	370,579***
	(0.0119)	(0.00976)	(0.0383)	(0.00957)	(15.18)	(106,272)
Constant	-0.00361	0.0543	1.044***	0.209***	456.6***	-413,381
	(0.0495)	(0.0406)	(0.159)	(0.0398)	(63.08)	(441,661)
Observations	371	371	375	366	375	375
R-squared	0.108	0.180	0.132	0.084	0.861	0.084

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The sample has been broken down into data sets of small, medium and large to a further analysis of which variables impact an MFI at various stages.

In small MFIs it can be seen that a smaller portfolio at risk leads to higher OSS and yield on gross portfolio. It can also be seen that as the percentage of female borrowers increases the average loan balance per borrower also decreases. This may be due to the fact that female's tend to borrow smaller amounts of money to setup up small household level businesses that are less capital intensive. It can also be seen that regulation has a positive effect on the social performance of MFIs. This may be due to the fact that regular intervention and monitoring by regulatory bodies leads to more outreach by the MFIs. We can also see that in small MFIs, NGOs have a positive effect both financially and socially except for the yield on gross loan portfolio with comparison to NBFIs. This may be due to the fact that NGOs focus more on outreach and hence tend to give loans at lower rates. It can also be seen that credit unions have a larger outreach in terms of number of active borrowers but lower yields in comparison to NBFIs. This could be due to the same reason that they are non-profit and their main aim is to provide loans to its members at lower interest rates.

In medium MFIs as the percentage of female borrowers increases the average loan balance decreases. The reason in this scenario could also be the same as discussed in the case of small MFIs. But here the percentage of female borrowers has a positive effect on the number of active borrowers in MFIs. It can further be seen that regulation leads to negative financial performance with comparison to non-regulated ones. This could be due to the fact that regular intervention by regulatory bodies leads to lower interest rates to increase outreach and hence lower performance. The scenario for NGOs and Credit Unions is quite similar in medium MFIs as was a case in small ones.

In large MFIs a similar effect can be seen in terms of portfolio at risk as compared to small and medium MFIs. In terms of regulation status and NGOs also a similar trend can be seen. In large MFIs it can be further noticed that as the percentage of female borrowers increases the ROA and OSS of the MFI also increases. This may be due to the fact that female borrowers generally tend to repay all outstanding balance hence improving the MFIs financial performance.

V. CONCLUSION

It was seen that regulated MFIs tend to perform poorly in financial terms irrespective of size. Also NGOs and Credit Unions also tend to perform poorly independent of scale. It was also seen that as the percentage of female borrowers increase the loan balance decreases in all MFIs independent of size. All these findings are consistent with the literature.

We can clearly see from the first analysis that the scale of a MFI has a statistically significant effect on both the financial and social performance. Moreover it can be seen that scale is positively co-related with both of them. The portfolio at risk reduces as the MFIs grow in size yielding in more profitability. However it can also be seen that the portfolio at risk increases as the average loan balance per borrower is also increased. It can also be seen that regulation tends to affect the number of active borrowers positively.

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