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PENETRATION OF MFIS AMONG INDIAN STATES: AN UNDERSTANDING THROUGH MACRO VARIABLES

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Penetration of MFIs among Indian States:

An Understanding Through Macro Variables

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Abstract

The Indian Microfinance Industry witnessed one of the fastest growths in the recent times. However, the sticking feature of the growth is that the Microfinance Institutions (MFIs) are concentrated in only some regions of the country. There is a huge geographical skew in the distribution of the MFIs. In this paper an attempt has been made to explain these geographical skew by using the macro variables at the state levels. The purpose of this study is to identify the causes for the regional disparity of the growth of MFIs. The analysis is likely to help in identifying factors which need attention for developing the MFIs in states which are lagging behind and also in framing necessary regulations which can ensure uniform growth of MFIs among all the states. The study suggests that state level macro factors are significant in explaining the geographical skew. MFIs in India have concentrated in states which are richer, have good rural infrastructure, lack adequate banking facility and have low human capital.

Key Words: Microfinance Institutions, Penetration, Regional disparity, Macro variables

JEL Classification: G210, E44, R5, E44.

Introduction

Microfinance as a term has come to be used for various kinds of formal and informal arrangements of offering financial services to the poor. Over centuries, poor people have been excluded, either partially or completely, from the formal financial system. Consequently, a wide variety of informal community based financial arrangements were formed to meet the requirements of the poor. Such arrangements have existed in some form or the other in different parts of the world. The rise of microfinance industry is comparatively a recent phenomenon and can be linked to the humble beginning made by Dr. Muhammad Yunus in Bangladesh during the 1980s to try and help the poor by providing small loans. With the passage of time Dr. Yunus realized the potential of using such micro / small credits in eradication of poverty and this led to the establishment of Grameen Bank in the early 90s. Grameen continues to be one of the most successful microfinance institutions in the world and the model used by the bank has been widely replicated in various other parts of the world. The total number of active borrowers of microfinance around the world, as on 2009, stands at about 84 million with an outstanding loan portfolio size of $24.25 billion (Consultative Group to Assist the Poor, Washington, DC, 2011). The micro-credit campaign report of 2011 indicates that the global microfinance sector is well on its way to achieve the target of servicing 175 million poor families by the year 2015. About 100 million poor household have already been facilitated to raise their income levels beyond US$1.25 per day (Purchasing Power Parity). As of December 2009, 3,589 microcredit institutions reported reaching 190 million clients, 128 million of

whom were among the poorest when they took their first loan. The proportion of women clients among these poorest clients stand at 104 million, which is 81.7 percent of the total client.

The Indian Microfinance sector is one of the largest microfinance sectors of the world and has witnessed significant development in the last two decades. There are about 31.4 million borrowers with outstanding accounts as on March 2011. The growth during the last few years, particularly from 2006 till 2010, has been really remarkable. As per Micro Credit Rating International Ltd (M-CRIL) estimates, the annual growth rate of clients and portfolio was 81.9% and 98.6% respectively among the 24 largest Microfinance Institutions (MFIs) in India. The sector emerged as one of the fastest growing sector in the world during this period. The growth of the sector attracted lot of attention from the investors resulting in huge flow of fund - both in the form of equity and debt investments. There was also substantial increase in the revenue and the profits leading to fabulous valuations of the equity paid by the investors. As the existing MFIs started growing, there was an influx of new MFIs resulting in steep increase in competition, primarily because the new MFIs started their operations in established markets. The existing Non-Governmental Organisations (NGOs) working as MFIs also started transforming themselves into Non-Bank Financial Companies (NBFCs). The industry realized that the legal form of NBFCs enabled them to better access to commercial funds on the presumption that such an institutional form entailed better governance structures, greater management oversight and more systematic planning leading to organizational efficiency. The commercial lenders were more willing to provide large sums of money to NBFCs than to NGOs. The NBFC was also seen to be the legal form most appropriate for investment by private equity firms and, in the long run, for a public share offering. These contributed MFIs to grow rapidly and in expanding their portfolios. But they did so without spending time that were earlier invested in relationship building with clients through careful client selection, training, staff orientation and systems development by the pioneers of the microfinance revolution in India. Both the transformed and new, as well as start-up MFIs were able to grow rapidly through better access to funding and by using the proven methodology of a mono-product offering rolled out over large numbers of branches and in diverse locations using standard processes.

The success stimulated growth of MFIs not only increased the level of competition but also adversely affected these institutions and their clients. Most of these MFIs started concentrating in markets which were developed and established. This is because they wanted to take advantage of the effect of training and screening of the clients already done by the existing lenders. Therefore, every one landed up targeting the same set of clients. This has enhanced the number of options available to the clients to have multiple loans from various lenders operating in the area. Form the client's point of view; there can be a number of reasons for taking multiple loans. This has increased the over-indebtedness and often resulted in loan defaults. There are wide spread reports of suicide in the state of Andhra Pradesh and it is believed to be a result of the excessive growth and competition among MFIs in the state.

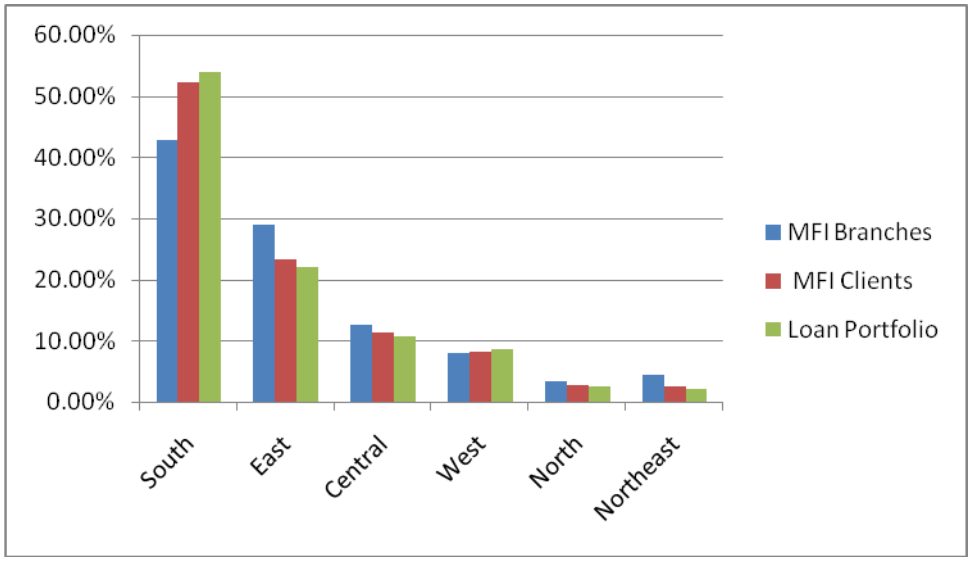
It is also suggested that MFIs are taking advantage of the poor and there is a direct link between the MFI performance and suicides in Andhra Pradesh. Looking into the gravity of the matter, the state government has passed the Andhra Pradesh Microfinance Ordinance, 2010 which has greatly restricted the activities of microfinance institutions in the state. The Ordinance resulted in a sharp fall in loan repayment rates. MFIs which had exposure in Andhra Pradesh suffered significant losses. Banks became more cautious and almost stopped lending to microfinance institutions all over India fearing the occurrence of similar incidents in other parts of the country. This resulted in a liquidity crunch for microfinance institutions and pushed the sector to a standstill situation. Such incidents call for microfinance institutions, microfinance clients, banks, investors, and local governments to have new regulations to address the above issues. The Reserve Bank of India (RBI) had appointed sub-committee know as the Malegam Committee to address the customer complaints, including inappropriate collection and selling practices, and usurious interest rates that resulted in over-indebtedness leading to crisis.

Regional Spread of MFIs in India

One of the striking features of the growth of microfinance institutions in India has been the wide regional disparity. There is huge amount of unevenness in the spread of microfinance across the country. The reports and studies analyzing the growth of Indian microfinance reveals that MFI's have penetrated south Indian regions more than the other regions. The concentration of microfinance in the three southern states of Andhra Pradesh, Karnataka and Tamil Nadu is comparatively much higher than the other states in the country. In fact, Srinivasan, (2011) mentions that there have been three microfinance loans for every two households in the state of Andhra Pradesh. The number of microfinance loans also exceeds the number of poor households in the states of Tamil Nadu, Karnataka, West Bengal, and Orissa. The southern region, in terms of the number of branches, number of clients and loan portfolio size shows a marked difference when compared with other regions of the country.

Geographically, the skew has continued to exist for long but in the recent past there has also been a slow shift of clients and loan portfolios towards other states. However, the growth rate of MFI clients has also been vigorous in some of the other states such as Manipur, Pondicherry, Orissa and Sikkim and is evident from the penetration index data. The Microfinance State of the Sector Report provides two indexes regarding the penetration of the MFIs across the states. The indexes are referred as Microfinance Penetration Index (MPI) and Microfinance Poverty Penetration Index (MPPI). MPI denotes a state's share of MFI clients relative to the total MFI clients in the country. On the other hand, MPPI is calculated by dividing the share of a state's microfinance clients with the share of the state's population of poor. A high score indicates better penetration of the MFIs in that particular state. The top five states, as reported in the report of 2011 are given in table 1.

Figure 1: Region wise distribution of MFI in India (2010)



**Source: Institute for Financial and Management Research (IFMR), Center for Microfinance (2010)*

Table 1: Top 5 states as per MPI & MPPI

State	**MPI**		**State**	**MPPI**
Manipur	4.23		Manipur	7.26
AndhraPradesh	4.20		AndhraPradesh	7.03
Pondicherry	2.57		Pondicherry	3.36
TamilNadu	2.00		TamilNadu	2.47
Orissa	1.63		Sikkim	2.12

**Source: Microfinance India Sate of the Sector Report 2011.*

McCarthy (2001) had acknowledged the importance of examining the variables that influence microfinance penetration because such information can be helpful in framing policy for the future. It is also an accepted fact that microfinance has the potential to help households to move out of poverty. Therefore, there is a need to ensure that MFIs are spread uniformly in all parts of the country. In this context, an effort has been made to explain this variation in the outreach of microfinance institutions with the help of some of the state level macro variables. The purpose of this study is to analyze the causes of regional disparity with respect to the growth of MFIs. The analysis is likely to be helpful in identifying factors that need attention for developing and expanding MFIs in states which are lagging behind and also in framing necessary regulations to ensure uniform growth of MFIs across states.

Theoretical Underpinnings

In recent times, a number of studies have tried to explain why economic development has varied across countries. La Porta et al. (1997, 1998) argued that the origin of the legal code substantially influences the treatment of creditors and shareholders, and the efficiency of contract enforcement. It has been observed that countries with legal code like Common Law tend to protect private property owners, while countries with a legal code like French Civil Law tend to care more about the rights of state and less about the rights of the masses. Acemoglu et al. (2001) and Beck et al. (2003) also put forward the settler mortality hypothesis in explaining development. According to them, extractive colonizers in an inhospitable environment aimed to establish institutions that privileged small elite groups rather than private investors, while the settler colonizers in more favorable environments were more likely to create institutions that supported private property rights and balanced the power of the state, therefore, favoring economic development. So, it can be argued that countries or regions which have better legal code and are developed may not have the requirement of microfinance institutions.

The existing literature on economic development suggests that the type and quality of institutions play an important role in determining the development of financial sector of a country. There is however hardly any literature available explaining the reasons for the regional disparity in the growth of MFIs among Indian states.

As discussed earlier, microfinance tries to provide credit without any collateral. So, regions where there are well defined property rights and efficiency in contract system may not require MFIs. But at the same time, it may be argued that such institutions will help MFIs to operate better and achieve efficiency and in tern, can make them sustainable. The political liberalization intending to limit the influence of the elite group over policy making can be another factor. Countries that respect basic political rights and civil liberties can contribute positively to the development of microfinance institutions. Similarly, the role of human capital in the development is widely recognized. Countries which facilitate the development of

human capital in the form of higher education and literacy rate are like to enhance the reach and success of MFIs.

The next major influencing factor is the policy. The macro-economic factors which influence the growth of MFIs can include the income level, economic stability, external financing and industrialization. Regions with higher level of income are likely to have no requirement for MFIs. Individuals and micro-entrepreneurs with higher incomes have more opportunities to self-finance through savings. Normally, microfinance focuses on the poor excluded clients, so microfinance should be reaching more clients in regions that are poor. Macro-economic instability is also put forward in the literature as a factor influencing development. Goldfajn and Rigobon (2000) showed that macro-economic stability, determined by stable inflation and real interest rates, plays a major role in financial sector development. Vander Weele and Markovich (2001) provide evidence of the devastating effects of inflation, and especially hyperinflation, on the performance of MFIs. One could thus argue that inflation is one of the hindering factors in the development of the sector. It erodes the capital basis and diminishes the value of the currency. For the borrowers, high inflation means high interest rates and thus increasing repayment problems, although the real value of the remaining part of the loan decreases. This could hinder the development of microfinance, by discouraging potential providers. Countries enjoying macroeconomic stability may not encounter these problems. So, it can be argued that in high inflation areas, banks would be reluctant to serve poor clients and so there would be a bigger potential for microfinance institutions. Finally, the success of the sector would depend on the utilization of the credit by the clients. Economies that are less industrialized and are more service based is likely to have a higher demand for microfinance as service providers are a major market for MFIs. This would mean that microfinance is less developed in the industrialized regions.

The availability of resources is another important factor for economic development. Regions have rich presence of natural resources in the form of minerals and fertile land can result in better development. The presence of resources provides citizens with more possibilities of income generation and as a result there may be fewer requirements for MFIs. Moreover, good interconnectivity between regions, the availability of electricity, communications and sanitation networks will help lower the cost of operation of financial sector. A high population density will also help, because for MFIs the loan size are small and they need to scale up their operation so that it becomes sustainable. According to Sriram and Kumar (2005), two contradictory arguments could be made. The first is that formal financial institutions may be more developed in regions with higher population density and good regional interconnectivity. Thus, the need for specific MFIs may not be present. The second is that, if the development of the two sectors is complementary, these factors could eventually also stimulate the development of the microfinance sector. Rhyne (2001) provides evidences from Latin American which shows that urban MFIs are more common than rural ones. Schreiner and Colombet (2001) argue that the absence of an adequate infrastructure plays a hindering role for the development of microfinance. Vanroose (2008) based on his cross-country analysis of 115 countries concludes that MFIs are concentrated more in richer developing countries and countries which receive more international support. The population concentration also plays a positive relation in the growth of MFIs at the country level.

Based on the above discussion, we come up with a list of hypothesis to explain the regional spread of MFIs in India. The hypotheses are discussed in the next section.

Hypothesis and Variables:

Microfinance Institutions are meant to provide services to the poor section of the society. Therefore, the MFIs should be operating in those states which are relatively poorer. The MFIs provide loan which are very small in size. In terms of cost it make sense for the MFIs to operate in areas which have higher concentration of rural population so that they can serve large number of clients which results in lower operating cost per client. The next factor that should be considered is the level of human capital. Loans from MFIs are to be used for some productive purpose. The ability of the clients to use the loan

effectively will be higher if the level of human capital is high. Similarly, rural infrastructure is expected to facilitate the growth of MFIs. The accessibility of the rural regions would be better provided the state has adequate rural roads. The availability of roads in the rural region not only helps MFIs to reach the rural area but also helps the rural entrepreneurs in getting better access to market their products. However, the availability of banks will however have a negative effect on the growth of MFIs. In terms of business, MFIs would be able to get more clients only if the formal banking infrastructure is inadequate or insufficient, particularly, in the rural region. The hypotheses which would be tested are, therefore, listed down in table 2. The dependent variable is the penetration by microfinance within each state. It is quantified by using the percentage of state's population below the poverty line to those of the number of MFI clients in the state.

Table 2: Hypothesis and Variables

Hypothesis to be tested	**Variable Used**	**Expected effect**
MFI penetration should be more in state with lower income	State Per Capita GDP	Negative
MFIs penetration would be higher in states with higher rural population density	Rural population density	Positive
MFIs penetration would be higher in states with better human capital	Literacy Rate	Positive
MFIs penetration would be lower in states which have better banking facilities	Rural Bank penetration	Negative
MFIs penetration would be higher in states which have better infrastructure	Proportion of rural roads	Positive

Source: Author's observations

Data Source and Methodology:

There are 28 states and 7 union territories in India which provides a scope of 35 observations in a cross-sectional study. However, in our study we have 30 observations which include 26 states and 4 union territories. The states of Jammu & Kashmir, Arunachal Pradesh, Lakshadweep, Daman & Dui, and Dadra & Nagar Haveli have been omitted because of non-availability of data. The dependent variable is penetration by microfinance which is measured as the ratio of microfinance clients to the state's population below poverty line. The independent variables are state per capita GDP, rural population concentration, state's literacy rate, and concentration of banks in rural region and state infrastructure. For the purpose of our study, we consider the data related to the year 2010.

This study is based on secondary data from the following sources:

1. Data related for MFI distribution among state-Institute of Financial Management and Research (IFMR), Center for Microfinance 2010

2. Data related to state level indicators – Planning Commission, Govt. of India 2012 and State Infrastructure Report 2010.

3. Data related to distribution of bank offices – RBI, 2012

The relationship between the independent and dependent variables is determined using ordinary least squares (OLS) regressions. The model tries to seek an explanatory relationships between the independent and dependent variables to examine the spatial variation in microfinance across the states.

The functional specification of the model is as follows:

Model1

$$MFPN_i = \alpha_i + \beta_1 \ln(SPGDP_i) + \beta_2 RPDN_i + \beta_3 LIT_i + \beta_4 RBPN_i + \beta_5 STIN_i + \varepsilon_i$$

where, *SPGDP* is state per capita gross domestic product, *RPDN* is the population density, *LIT* is the literacy rate, *RBPN* is the penetration of rural banks in states and *STIN* is the state level infrastructure. The dependent variable, MFI penetration is denoted as *MFPN*. As the MFI penetration data vary considerable across the regions, we built another two models to capture and control the effects of the regions by introducing the regional dummies. The country is divided into 6 regions, viz. north, south, east, west, north-east and central. We use the region "north" as the base for the comparison.

Model 2

$$MFPN_i = \alpha_i + \beta_1 S + \beta_2 E + \beta_3 W + \beta_4 NE + \beta_5 C + \beta_6 \ln(SPGDP_i) + \beta_7 RPDN_i + \beta_8 LIT_i + \beta_9 RBPN_i + \beta_{10} STIN_i + \varepsilon_i$$

Model 3

$$MFPN = \alpha_i + \beta_1 S + \beta_2 E + \beta_3 W + \beta_4 NE + \beta_5 C + \varepsilon_i$$

In model 2 we have the regional dummies along with the macro factors while in model 3 we use only the regional dummies. The results of the three models are discussed in the following section.

Results and Interpretation

The results of the regression analysis do suggest that the state level macro factors are able to explain the disparity of microfinance institutions in India. The explanatory factors considered in our model turns out to be significant except for the rural population density. It is understandable that profit seeking MFIs are not concerned about the availability of clients because the rural population in India is very high compared to most of the countries in the world. Moreover, because of the low cost of employees of the MFIs, it does not matter much whether the population density is high or not. Therefore, the MFIs are more concerned about the other factors such as the availability of banking and state level infrastructure or accessibility. As expected, the MFIs have concentrated in states which have relatively poor banking penetration and better accessibility. The result which turns out surprising is related to the state per capita GDP and literacy rate. As evident from model 1 and model 2, the relation of microfinance penetration with the state per capita GDP and literacy rate is positive and negative respectively. It means that the MFIs have concentrated on states which are relatively rich but has low manpower quality. The selection of richer states may be because the MFIs assumed that they would have better repayment possibilities. The negative relation with literacy rate suggests that MFIs have not concerned about the level of human capital. It points to that fact that loans not always used for productive purposes. Clients borrow from MFIs for various other purposes such as consumption, social requirements like marriage and urgent requirements like illness and crop failure. Model 3 confirms the fact that the penetration in the southern region is significantly different from the other regions. However, when we look into the result of model 2, we find that the regions are not significant. This is because of the fact that, historically the southern states

Table 2: Results of the OLS models

Explained Variable	**MFPN - Microfinance Penetration**		
Explanatory Variable	**Model 1**	**Model 2**	**Model 3**
Ln(SPGDP)	0.280609	0.456047	
	(0.139111)**	(0.171185)**	
RPDN	-0.00000742	0.0000189	
	(0.000274)	(0.000341)	
LIT	-1.080181	-1.193253	
	(0.64858)*	(0.670173)*	
RBPN	-1680.278	-1588.311	
	(451.7029)***	(614.5688)**	
STIN	0.305589	0.286862	
	(0.079654)***	(0.109551)**	
dS		0.180249	0.567606
		(0.201353)	(0.192432)***
dE		0.294512	0.096781
		(0.178064)	(0.192432)
dW		-0.083314	0.055267
		(0.183958)	(0.224702)
dNE		0.230967	0.053723
		(0.163425)	(176795)
dC		0.226602	0.28771
		(0.188673)	(0.205124)
Constant	-2.141197	-4.065721	0.017946
	(1.285020)*	(1.66624)**	(0.129723)
N	30	30	30
R^2	59.6623	67.7669	32.4204
F-statistic	(7.099804)***	(3.99455)***	(2.302735)*

Source: Estimations by the Authors
Values of standard error in parentheses
** Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level*

have better rural infrastructure and more developed financial system as indicated by Chavan & Birajdar (2009).

The above results leads us to conclude that the decision of the microfinance institutions to setup a branch in a particular location was taken based on the business objective rather than on social objective. And because of the non existence of the regulatory framework during this phase it has resulted in concentration of the MFIs in only certain regions of the country.

Concluding Observations

The potential of microfinance institutions is well recognised, but the uncontrolled growth has been a major cause of concern for the sector. The microfinance sector in India till 2010 has almost remained unregulated and as a result the MFIs have focused in states which were rich and had better developed infrastructure. This resulted in the concentration of MFIs in some regions while neglecting other backward states. There has also been increased commercialization of the microfinance sector which has put pressure on the MFIs to earn profits rather than maintain the social cause for which microfinance was originally intended. This pressure for generating profits has led to institutional malpractice, especially in southern India, characterized by irresponsible lending and strong-arm collection practices. Particularly in the state of Andhra Pradesh saw huge amount of suicides as a result of undue pressure and over-indebtedness among the clients. The situation has prompted the government to enact policy that restrained microfinance in the state as well as across the nation.

The Dr. Rangarajan Committee (2007) on financial inclusion considers that it is important to provide timely access to adequate credit to the weaker sections and low-income group at affordable cost. The financial inclusion space has, however, always continued to belong to the banks. But studies indicate that bank have either been reluctant or has failed to carter to the needs of the poor. As pointed out by Sahu, G.B. et al. (2004), credit flow to agricultural sector had been declining from 1991 across all banks. Similarly, Chowdhury, B (2007) observed that despite RBIs efforts, access to banking has remained limited among the middle and lower class people. The banks are hesitant to open branches in rural areas and banking facilities are largely confined to urban areas. Karmakar and Mohapatra (2007) pointed out that almost 50 per cent of the rural population does not have access to credit either through institutions like Banks, Cooperative Societies, and Government or through non- institutional sources like moneylenders, traders, relatives, friends, etc. Various supply side constraints such as lack of rural orientation of staff, concern for viability of branches, weaknesses of the Cooperative Credit System, legal impediments, physical outreach, low levels of loan recovery, high transaction costs for banks and demand side bottlenecks such as lack of financial information, lack of awareness, low literacy levels and lack of entrepreneurship, effective cost and pricing of financial products, dearth of suitable credit product, risks faced by borrowers, lack of adequate infrastructure, lack of extension services have come in the way of effective credit dispensation. On the other hand, the microfinance movement initiated in the early 90s has been able to provide financial access to an estimated 395.90 lakh poor households in the country. Therefore, the importance of the MFIs cannot be ignored and there is an urgent need to frame appropriate policy for the development of the microfinance sector across all regions of the country.

The Micro Finance Institution (Development and Regulation) Bill 2011 brings the MFIs under the preview of RBI. Any entity willing to operate in the microfinance sector will now have to obtain a certificate of registration from the RBI. The applicant needs to have a net owned fund of at least Rs 5 lakh. The net owned fund refers to the aggregate of paid up equity capital and free reserves on the balance

sheet. The RBI also needs to be satisfied with the general character or management of the institution. There are also other restrictive measures such the MFIs will have to create a reserve fund and the RBI may specify a percentage of net profit to add to this fund. There can be no appropriation from this fund unless specified by the RBI. The creation of District Micro Finance Committees and Micro Finance Development Fund will ensure that MFIs focus in area where it is needed the most and serve the people who are in serious need for financial access across the country.

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Annexure 1: Distribution of MFIs in India (2010)

States / Union Teritories	Number of MFI Branches	Number of MFI Clients	Total Loan Portfolio (Rs)	Penetration of MFI
Andaman & Nicobar Island	1	424	8529958	0,278988483
Andhra Pradesh	2205	6044972	54575151342	0,375923813
Assam	339	465520	3134650004	0,046079934
Bihar	519	973768	7194864876	0,021929636
Chandigarh	1	104	1172000	0,001071821
Chhattisgarh	180	521411	3766312797	0,05139048
Delhi	55	102832	844243174	0,043136262
Goa	6	14564	147136799	0,124216275
Gujarat	161	324743	2584337487	0,02786457
Haryana	51	80152	760836631	0,01885904
Himachal Pradesh	10	7490	58568096	0,012971932
Jharkhand	182	369749	2727227349	0,035094471
Karnataka	836	3290095	26761430710	0,263783013
Kerala	118	336481	2027295203	0,088061788
Madhya Pradesh	410	1028588	8880216103	0,046442153
Maharashtra	631	1603523	14151418418	0,067558677
Manipur	6	7069	31182542	0,006926609
Meghalaya	9	14707	144156973	0,037090319
Mizoram	1	1594	11286719	0,008501837
Nagaland	7	3285	17450000	0,007898201
Orissa	778	1527225	14707803650	0,112149797
Pondicherry	12	22091	218439278	1,937217696
Punjab	4	2145	17955719	0,000553823
Rajasthan	215	435632	3363936557	0,031085968
Sikkim	10	16137	136740460	0,227758118
Tamil Nadu	1100	2804181	22014394362	0,262776074
Tripura	60	93204	687658065	0,167433943
Uttar Pradesh	591	1028165	7407973145	0,01640952
Uttaranchal	78	110982	832200335	0,072628262
West Bengal	1402	2686101	18483864899	0,125477433

Source: Institute for Financial and Management Research (IFMR), Center for Microfinance (2010)

Annexure 2: Regional Distribution.

Region	MFI Branches	MFI Clients	Loan Portfolio
South	**42,80%**	**52,26%**	**53,96%**
East	**28,88%**	**23,23%**	**22,04%**
Central	**12,62%**	**11,24%**	**10,66%**
West	**8,00%**	**8,12%**	**8,63%**
North	**3,37%**	**2,63%**	**2,58%**
Northeast	**4,33%**	**2,52%**	**2,13%**

Source: Institute for Financial and Management Research (IFMR), Center for Microfinance (2010)

Annexure 3: Descriptive Statistics.

	Observations	Mean	Std. Dev.	Maximum	Minimum
MFPN	30	0,150576	0,3516586	1,937217696	0,000553823
Ln(SPGDP)	30	10,53123	0,5192101	11,51342534	9,393661429
RBPN	30	9,55E-05	0,000152	0,000827	1,80E-05
LIT	30	0,695333	0,1075025	0,91	0,47
RPDN	30	274,0463	235,03376	977,83	23,59
STIN	30	0,818762	1,0758065	4,429824561	0,122149183
dS	30	0,166667	0,379049	1	0
dE	30	0,166667	0,379049	1	0
dW	30	0,100	0,3051286	1	0
dNE	30	0,233333	0,4301831	1	0
dC	30	0,133333	0,3457459	1	0

Annexure 4: Correlation Matrix

	MFPN	**Ln(SPGDP)**	**RPDN**	**LIT**	**RBPN**	**STIN**	**ds**	**de**	**dw**	**dne**	**dc**
MFPN	1										
Ln(SPGDP)	0,290	1									
RPDN	0,387	-0,235	1								
LIT	0,182	0,704	-0,194	1							
RBPN	-0,047	0,499	-0,135	0,308	1						
STIN	0,539	0,502	0,350	0,474	0,613	1					
dS	0,563	0,199	0,228	0,206	-0,132	0,430	1				
dE	-0,046	-0,346	0,339	-0,2849	-0,148	-0,232	-0,2	1			
dW	-0,075	0,356	-0,142	0,204	0,073	0,048	-0,1491	-0,149	1		
dNE	-0,126	-0,184	-0,353	-0,0726	-0,051	-0,206	-0,2467	-0,247	-0,184	1	
dC	-0,118	-0,326	-0,002	-0,1961	-0,129	-0,159	-0,1754	-0,175	-0,131	-0,216	1