Chapter-5

Trade-off Between Financial Performance and Poverty Outreach

CHAPTER 5

TRADE-OFF BETWEEN FINANCIAL PERFORMANCE AND POVERTY OUTREACH

5.1 Introduction

Over the years, two different schools of thought, viz., *Welfarist* and *Institutionalist* have emerged for the functioning of MFIs (Bhatt & Tang, 2001; Wooler & Woodworth, 2001). In policy circles there is a growing debate on the operating principle of MFIs based on these two competing approaches (Robinson, 2001). Proponents of the first School known as "Welfarist" [1] argues that the prime goal of any MFI must be to target the poorest of the poor and thereby reduce poverty of the recipient clients (Wooler, 2002; Weiss & Montgomery, 2005; Hashemi & Rosenberg, 2006). In the process they justify the role of subsidies and grants for the fulfillment of this objective. On the other hand "Institutionalist School"[2] strongly favors the financial sustainability of MFI for serving the poor (Isern & Porteous, 2006; Christen, 2001; Rhyne, 1998). They believe that MFIs must free themselves from subsidies and generate enough resources for serving large number of the poor in developing countries. Though both schools share the same passion for ultimate objective of MFIs, which is to serve poor, they are however of different opinion on how the institutional structure of MFIs should be.

The difference in two approaches can be explained in three ways (Wooler & Woodworth, 2001). The first difference lies in the design of service delivery to the target population i.e. loan delivery model (individual, group based or village bank) adopted by MFIs. The second lies in the institutional structure and financing, to support these services. Institutionalist argued that MFIs viability and efficiency can only be attained if subsidies and grants are completely eliminated by adopting commercial principles. Welfarist support subsidies and grant on the belief that it is the only way to serve the poorest of poor at low interest rate. The third difference is in the population segment served by MFIs. By adopting commercial principles, MFIs may free themselves from subsidies and thus be able to make a dent on poverty, but in the

1 Also known as Poverty Lending School
2 Also known as Financial Sustainability School

process an MFI may divert from its original mission of serving the poorest segment of the population.

5.1.1 Institutionalist Approach or Financial System Approach

The Institutionalist focuses on sustainability of the MFIs themselves. There are a number of perspectives among those who advocate a financial systems approach to microfinance, but broadly, proponents argue that MFIs are most effective when they stick to their core competency of providing financial services (Christen, 2001; Littlefield, Morduch & Hashemi, 2003; Cull, Demiguc-Kunt & Morduch, 2007). According to this view, the financial health of institutions is seen as a reasonable measure of the impact of loans on recipient livelihoods. Proponents of this vision argue that providing the best possible financial services to clients ensures their economic success, thereby providing a stable and sustainable base for the institution to continue providing services. As recipients thrive, repay, and take out new loans, and as new customers are attracted to the MFI, the organization will become financially sustainable and no longer need subsidies or donor support.

While the financial sustainability is the ultimate goal of MFIs following financial system approach, it is not the case that all MFIs practicing this approach are entirely financially self-sustaining[3]. In fact, only a minority of MFIs operate today without donor subsidies, though they represent a very large market share. This is reflected by the belief that a primary goal of microfinance should be to operate at a very large scale, and to do so it is necessary to be commercially profitable in order to attract investments from the private sector. Financial systems practitioners regularly cite "double bottom line" of social and financial returns. Though opponents often argue that profitability and poverty reduction are mutually exclusive, the double bottom line philosophy undergirds the social entrepreneurship movement, which claims adherents among financial systems and poverty-lending approaches alike[4].

A number of the early advocates and practitioners of microfinance pioneered the financial systems approach. These organizations saw their role as providing ways

3 MFIs practicing this approach represent NGOs and commercial MFIs alike. Many NGOs which practice this approach to microfinance delivery continue to raise money from private donors. The use of donor funds is considered to be one of the opportunities for innovation in the field and expansion to new markets (both geographically and socioeconomically).

4 In recent years, it has also become common to claim a "Triple Bottom Line," also known as "people, planet, profit," or "the three pillars," which incorporates a concern for environmental impact. This approach has been embraced by institutions as large as the United Nations.

for economically productive individuals whose primary limitation was access to credit for developing entrepreneurial ventures in the informal sector. The key assumption behind this approach is that the financially self-sustaining MFIs will be able to reach more clients and help more people than could be serviced through donor-supported programs.

While the financial services approach has many proponents, it also has many detractors. A common criticism of the financial systems approach is that it subordinates the needs of borrowers to those of the institutions. As a result, microfinance providers end up looking more like debt collectors than service providers. If the main aspiration of microfinance is to have a major impact on poverty reduction, an overwhelming focus on debt servicing can appear mercenary or opportunistic.

An equally salient concern raised by detractors of the financial systems approach is the apparent belief that lack of credit is the primary structural condition of poverty. Through this lens, food, health care, and education can be most efficiently secured by the poor by taking out loans that enable them to generate income. What these assumptions miss is the reality that conditions of poverty, such as hunger, lack of business know-how or restricted market opportunities often prevent recipients from effectively using their loans for entrepreneurial ventures.

Indeed, this reality contradicts the largely accepted notion that microfinance loans are used for entrepreneurial or business expansion purposes. Recipients, who live on the margins of extreme poverty, struggle to repay such loans and often find themselves enmeshed in cycles of debt and credit dependency rather than breaking out of cycles of poverty. With the adoption of financial system approach other problematic realities may occur on the ground. For example, in Bangladesh the growth of microfinance programs is rapidly outstripping the number of NGOs that provide other critical rural services. Indeed, many organizations that previously focused on issues such as medical services are switching over to microfinance because it is easier to secure funding for microfinance than other kinds of development programs.

Advocates of the financial systems approach are more likely to support the provision of services to the "economically active poor," suggesting that the poorest of

the poor, who are not economically active, may not be able to use loans effectively. This reasoning highlights a major debate within the microfinance sector: whether the poorest should be targeted or even made eligible for microfinance loans and whether lending to the poorest can be profitable enough to ensure the financial sustainability of NGOs or commercial lending institutions.

However, lack of access to credit is only one structural aspect of poverty. Failure to understand how all aspects of poverty work together can lead to disastrous outcomes for loan recipients. In such conditions, it may be the case that the sustainability of lending institutions is secured at the expense of the livelihoods of its clients.

5.1.2 The Welfarist Approach

The Welfarist approach is explicit in its commitment to reach the very poor first, while it acknowledges the need to tackle world poverty on a large scale and to strive for increased financial self-sufficiency (Woller et al., 1999). Yet they do not believe that full financial self-sufficiency, i.e., being profitable and independent of subsidies, is a prerequisite for them to be able to fulfil their social mission (Woller et al., 1999). They are less interested in banking per se than in using financial services as a means to alleviate directly the worst effects of deep poverty among participants and communities, even if some of these services require subsidies.

Welfarists fear that the commercialisation of microfinance, more precisely, the need to be financially self-sufficient (profitable) in order to attract private capital, will divert the industry from its paramount goal of poverty alleviation (Woller et al., 1999). Indeed, an MFI achieves financial self-sufficiency by increasing its efficiency, and also by charging sustainable effective interest rates. Welfarists do not accept the Institutionalist view that raising interest rates does not substantially diminish the demand for loans by poor people (Morduch, 2000). The problem is that there is much semantic confusion surrounding the word "poor". Although they accept that there are poor households that are able to pay high interest rates, they also believe that there are many borrowers, who are poorer and harder to reach, that are unable to pay such high interest rates. In other words, the poorest are not the ones that are necessarily able to pay the highest rates

of interest, as the declining marginal return on capital would imply. Rather, the ability to pay high interest rates depends on the amount of capital and other inputs being used, therefore, on the occupation of the borrower and the use made of the loan (Morduch, 2000). Thus, the win-win situation advocated by Institutionalists is, in practice, much more complicated to achieve than they claim.

Furthermore, welfarists fear that "the drive to define and codify best practices risks the imposition of a blueprint approach to microfinance that will stifle innovation and experimentation in the design of new products and delivery systems for the very poor" (Woller et al., 1999). Finally, welfarists do not agree that donors should concentrate only on programmes which have attained or seek to attain financial self-sufficiency, regardless of the impact of the actual programmes. They argue that, although most programmes, targeting the very poor, currently rely on subsidies and will most likely continue to do so in the future (Morduch, 2000), this does not imply that these very poor are not creditworthy. If social benefits outweigh social costs, there is no reason why donors' finance should dry up in the long run (Woller et al., 1999).

There is a significant debate about the trade-offs between these two paradigms. As described above, the microfinance think tank community is divided between those who argue poverty alleviation is a primary goal for MFIs and those who argue that the priority is to achieve financial self-sustainability. However, a third paradigm has recently emerged. This paradigm promotes a "middle ground" of balancing the goals of poverty alleviation and financial self-sustainability (Christen, 1995; Woller et al., 1999). They noted that if institutions develop service delivery methods that meet client needs at an affordable rate, then financial viability as well as poverty outreach could be achieved. This is ultimately contingent on how interest rates are set. It has been shown that charging full interest rates does not reduce client demand. Rhyne (1998) used a mathematical framework of maximization and constraints to determine if the trade-off occurs. Outreach or scale is the only objective and financial sustainability is but the means to achieve it; and that the debate is not "either-or" but about degrees of emphasis and about what happens when trade-offs occurs (Rhyne, 1998).

What is the evidence on this trade-off between financial performance and outreach? In the policy circles, there has been a wealthy debate on this issue between

the welfarists, who propagate the dominance of the outreach goal (Woller, 2002; Montgomery and Weiss, 2005; Hashemi and Rosenberg, 2006), and the institutionalists, who stress the importance of sustainability and efficiency (Rhyne, 1998; Christen, 2001; Isern and Porteous, 2005). Both the camps provide anecdotal evidence to support their view. In the academic literature, however, we find surprisingly few rigorous studies on this issue.

5.2 The Data

The major source of the data used in the study is the online database of Microfinance Information Exchange Program (MIX Market)[5]. Unbalanced panel of 55 microfinance institutions covering the period 2005-2009 is taken[6]. Only few studies in the past used panel data for exploring the relationship between poverty outreach and financial performance (Hartarska & Nadolnyak, 2007). The study uses panel data for fulfillment of its objective as panel data possesses more information and certain other advantages. Some advantages of panel data are:

1. Panel data allows us to control for unobserved heterogeneity. In general, any unobserved heterogeneity component that remains fixed over time can be handled thus reducing considerably the omitted variable bias problem.
2. They offer obvious statistical advantages. They may help us reduce the problem of collinearity among variables, and may give us more precise estimates due to the efficiency gain brought by more data.

Such high quality panel dataset is appropriate for addressing such concerns and to complement previous studies.

List of MFIs included in the study is given in Appendix Table 2. Selection of MFIs is based upon the availability of data. The MIX Market uses 'diamonds' to rank MFIs, where the rank of 5 diamonds means the best quality[7]. Most of the MFIs included in the sample are ranked either with 4 or 5 diamonds and only few with 3 diamonds. Also, only those MFIs are selected for the study for which data of at least 3

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5 The MIX Market ™ is a global, web-based (www.mixmarket.org) microfinance information platform. It provides information to sector actors and the public at large on microfinance institutions (MFIs) worldwide, public and private funds that invest in microfinance, MFI networks, raters/external evaluators, advisory firms, and governmental and regulatory agencies.

6 Data accessed on 10-October-2009.

7 The level of disclosure of MFI is indicated through diamonds system where higher number of diamonds shows higher level of disclosure by MFI.

years were available. For various institutional characteristic variables like credit delivery methods used by MFI, location of MFI etc., study uses other sources like Bharat Microfinance-Quick data and annual reports and audited financial statements of various MFIs. The sample includes all types of MFIs covering all age groups (New, Young and Mature), various legal status (Not for profit NGOs, section 25 Companies, Co-operatives, Non-Banking financial Companies), various credit delivery methods (Individual, Self Help Groups, Grameen). MFIs of all major states of India are included in the sample to improve the representativeness of the data. The study sample possesses a good deal of diversity and includes a number of MFIs that are disclosing relevant information on financial statement to MIX Market. The study sample includes a small number of MFIs in comparison to total MFIs operating in the country but client outreach of sample MFIs is a large portion of total microfinance outreach. However we cannot rule out bias in sample as there is no acceptable estimate of the population of all MFIs in the country. Despite this randomness in the selection of MFI is present in the sample.

5.3 Empirical Specification of Model, Variables and Summary Statistics

As already mentioned the objective of the study is to explore the trade-off between financial performance and depth (Poverty) outreach of MFI in India. We adopted panel data regression framework for understanding the relation between financial performance and depth of outreach. The panel data model is expressed as

$$Y_{it} = \beta' X_{it} + u_i + e_{it} \qquad (1)$$

Where Y_{it} is a measure of depth of outreach of ith MFI at time t. X_{it} is a (1× k) vector of covariates that are variables over time and space. u_i is the MFI's individual unobserved effect and e_{it} is an error term.

The first issue in panel data model is to decide the empirical estimation technique used (Usually random effect or fixed effect). One of the shortcomings of the fixed effect model is that it rules out inclusion of time invariant variables. The study includes many time invariant variables as they are expected to be significant determinants of poverty outreach of an MFI. Next alternative available for estimation is random effect model. Though the random effect model allows inclusion of time invariant variables it is based on the assumption that explanatory variables are

uncorrelated with the unobserved MFI heterogeneity term c_i, that is it assumes that Cov $(x_{it}, c_i) = 0$. If this orthogonality assumption does not hold i.e. Cov $(x_{it}, c_i) \neq 0$ then random effect estimator will be biased. Unobserved MFI heterogeneity term c_i means unobserved firm characteristics such a managerial quality or firm structure (Hartarska & Nadolnyak, 2007). There is a strong case to believe that managerial qualities or other firm characteristics may be correlated with regulatory status of MFI or with other explanatory variables. For example, managers may have different perceptions towards regulated and unregulated MFI. An independent manager may choose to work for unregulated MFI as regulation may curb his abilities to innovate. The significant heterogeneity of MFIs actually suggests that managerial quality is probably correlated with MFI characteristics including regulatory status. Empirically, a Hausman test is used to determine whether this proposition is true[8].

Hausman and Taylor (1981) provide a convenient solution for above problem. In Hausman and Taylor framework model 1 may be expressed as

$$Y_{it} = \beta_1' X_{1it} + \beta_2' X_{2it} + \delta_1' Z_{1i} + \delta_2' Z_{2i} + u_i + e_{it} \qquad (2)$$

Where Y_{it} is a measure of depth of outreach of i-th MFI at time t. X_{it} is a (1× k) vector of covariates that are varying over time and space. Z_i is a vector of time invariant variables included in the model. Subscript 1 denotes exogenous variables while subscript 2 denotes endogenous variables. u_i is the MFI's individual unobserved effect and e_{it} is an error term.

Hausman and Taylor (HT) technique requires that the number of exogenous time-variant variables (the number of X_{1it} variables) be at least as large as the number of endogenous time-invariant variables (the number of Z_{2i} variables). Additional requirement of model is that there should be sufficient correlation between the endogenous time-invariant variables and the instruments obtained in the process (wooldridge, 2002). To check the robustness of Hausman and Taylor model, other plausible model (Pooled OLS, Fixed Effect and Random Effect) have also been reported. The study also conducted Hausman Taylor specification test for testing the appropriateness of HT model over fixed effect model.

8 To decide between fixed or random effects Hausman test can be used where the null hypothesis is that the preferred model is random effects vs. the alternative the fixed effects (Green, 2008). It basically tests whether the unique errors (ui) are correlated with the regressors, the null hypothesis is they are not.

As mentioned, our objective is to understand the trade-off between financial sustainability and poverty outreach of MFIs; there are two indicators of poverty outreach of MFI which have been used in the study. The first is the average loan size (average loan balance per borrower) and the second is per cent of women clients of MFI. If loan size of a MFI increases as it becomes more financially sustainable there is an evidence of trade off. Again if per cent of women client decreases as MFI becomes more financially sustainable, this is also a sign of trade-off. Hence in our regression framework if the sign of the estimated parameter of average loan size is positive and that of per cent of women clients is negative then trade off exists.

Table 5.1 Description of Variables Included in Model

Variable Name	Definition[9]
Dependent Variable *Average Loan Size (ALB)*	Loan Portfolio, Gross / Number of Active Borrowers
Per Cent of Women Borrowers (PWB)	Number of Active Borrowers who are women / Number of Active Borrowers
Independent Variables ***I. Performance Indicators*** *Return on Assets (ROA)*	(Net Operating Income, less Taxes)/ Assets, average
Operational Self Sufficiency (OSS)	Financial Revenue / (Financial Expense + Impairment Loss + Operating Expense)
II. Other Control variables *Assets (SIZE)*	Total Assets of MFIs in INR
Age (EXPR)	Years of Experience of MFI (Number of Years since inception
Number of Active Borrowers (NAB)	The Number of individuals or entities who currently have an outstanding loan balance with the MFI or are primarily responsible for repaying any portion of the Loan Portfolio, Gross[10].
Individual (INDV)	A dummy variable that equal to 1 if the MFI adopts Individual delivery model, 0 otherwise
Grameen (GRM)	A dummy variable that equal to 1 if the MFI adopt Grameen delivery model, 0 otherwise
Profit Status (NBFC)	A dummy variable that equal to 1 if the MFI is NBFC[11], 0 otherwise
Location (SOUTH)	A dummy variable that equal to 1 if the MFI is located in South Indian States[12], 0 otherwise

9 Definitions of all variables included in the study are from mix market glossary.
10 Individuals who have multiple loans with an MFI should be counted as a single borrower.
11 MFIs in India have various legal forms like NBFCs, NGOs, Section-25 Companies, Banks and Co-Operatives. NBFC-MFIs are regulated by Reserve Bank of India (RBI). Legal form of NBFCs provides easy root of commercialization.
12 South Indian states in this study include Kerala, Tamilnadu, Andhra Pradesh and Karnataka.

Dependent Variable

Average loan size is the most frequently used proxy variable of poverty outreach of MFIs (Christen et al., 1995; Cull et al., 2007; Mersland and Storm, 2010; Schreiner, 2002). Smaller loan balance is an indication of better poverty outreach of MFI. Number of Studies (Cull et al., 2007; Hermes, Lensink, and Meesters, 2011; Mersland and Storm, 2010) in the past have used average loan balance per borrower or average loan balance per borrower/ GNI per capita (in case of cross country studies) as a measure of poverty outreach of MFIs. It is believed that poor clients need small loans and hence MFIs with smaller loan size are targeting more poor. Though the average loan balance per borrower is a frequently used measure for poverty outreach it has some limitations and could be seen only as a rough measure of poverty outreach (Cull, 2007; Montgomery and Weiss, 2011; Schreiner, 2001). A larger loan size of any MFI may simply be due to maturity of the institutions where it is providing repeated larger loans to existing clients. The study uses Average loan balance per borrower (*ALB*) as a proxy measure of poverty outreach as this is the best available option as far as time and resources are concerned.

Depth of outreach or poverty outreach is one of the indicators for assessing whether MFIs are meeting social objectives. Besides reaching the poor, targeting of women is one of the basic objectives of microfinance. Drifting from female clients to male clients is another indication of mission drift in microfinance (Schreiner, 2001). Relying on this fact, study uses per cent of women borrowers (*PWB*) as another measure of outreach. MFIs targeting more female clients should be seen as more conscious towards social objectives[13].

The use of such simple measures of poverty outreach as average loan size and share of women borrowers as indicators of an MFI outreach has received criticism (Polanco, 2005; Hatch & Frederick, 1998; Schreiner, 2001). These measures have been accused of being exceedingly rough and inaccurate measure that fails to take into account other important aspects of the MFIs business practices (Armendariz & Szafarz, 2009). For example, an MFI might choose always to disburse loans of the same size to first time borrowers. Therefore, additional information should preferably

13 Acording to Schreiner, 2001 other measures of depth of outreach discussed in the literature are location (rural clients), education (less education of clients shows more depth), ethnicity (minorities), housing (small, flimsy house), and access to public services (lack of access).

be used along with loan sizes. But as extensive and quality data are often hard to find, these simple and rough measures are still very common and useful, and are readily available and comparable across institutions.

Independent Variables

Financial Performance Variables

Commonly used measures of financial performance of MFIs are return on assets (*ROA*), operational self-sufficiency ratio (*OSS*), financial self-sufficiency ratio (FSS) and subsidy dependence index (*SDI*). *ROA* reflects MFIs ability to deploy its assets profitably. Financial Self-Sufficiency *(FSS)* is a subsidy-adjusted indicator often used by donor-funded microfinance NGOs. It measures the extent to which an MFI's business revenue—mainly interest received—covers the MFI's adjusted costs. If the FSS is below 100 per cent, then the MFI has not yet achieved financial break-even. *OSS* measures how well the microfinance covers its costs through operating revenues. There is a wide disagreement over the appropriateness of one measure over another for the measurement of financial performance of MFI. Mix Market provides data of *ROA* and *OSS*. Mix market does not report data of *FSS* for individual MFIs. Following the past empirical studies (Hartarska and Nadonyak, 2007; Quayes, 2012) this study uses *OSS* and *ROA* as a measure of financial performance.

Institutional Characteristics

Various institutional characteristic variables like size, experience, and outreach are expected to affect depth of outreach of a particular MFI. Keeping this in mind the study includes some institutional characteristic variables into the regression model as control variables.

The study includes Assets (*SIZE*) as one of the control variable which shows the size of the MFI. Size of an MFI is expected to be a significant determinant of poverty outreach. As the size of an institution increases it becomes more cost efficient due to economies of scale. If a particular MFI is concerned with poverty outreach the larger size of MFI is expected to affect Average Loan Size negatively while it will affect Per Cent of Women Borrowers positively.

As MFI gains more experience in providing financial services to poor clients with innovative approaches and also with trained human resources, it can reduce cost of providing financial services significantly which may lead to lower loan size and

higher proportion of women in client pool. Hence the estimated parameter of variable *EXPR* is expected to be inversely related with *ALB* while directly to *PWB*.

Prior expectation about the relationship between outreach and poverty outreach is ambiguous. As the number of borrowers of a particular MFI increases, it may reduce the loan size due to economies of scale. It can also be argued that as the number of borrowers increases the loan size may increase due to progressive lending[14] approach adopted by MFIs.

Besides these variables the study includes three qualitative variables which accounts for a regulatory status of MFI, lending approach adopted by MFI and geographical location of MFI. During the recent years a number of MFI have been transforming themselves into regulated entities. Initially most of the MFI were working as NGOs, but of late there has been a rush to transform from NGO to NBFC or more appropriately from non-profit orientation to profit orientation (Sriram, 2010). Most of the regulated MFIs in India are NBFC which are commercially oriented. Hence it is likely to affect the average loan size same way as quantitative variable for financial orientation (*OSS*). Most of the microfinance activity in India is concentrated in the southern states. Hence it is hypothesized that poverty outreach differs significantly across regions. The study includes qualitative variable *SOUTH* equal to one if MFI is situated in southern states

Table 5.2 Description of panels

Year	Observations
2005	40
2006	41
2007	49
2008	48
2009	51
Total	229

Observations	No. Of MFIs
3	18
4	10
5	27

Description of panels in Table 5.2 shows the number of observations available for each year. Total observations available in the panel data set are 229. There are 27

14 Progressive lending refers to lending policy adopted by most of the MFI where initially it provides smaller loan to client and loan size increases as the client repays the loan successfully.

MFIs in panel for which observations of all the years are available. 10 MFIs have observations of 4 years while 18 MFIs have data of 3 years.

Table 5.3 Summary Statistics

Variable		Mean	Std. Dev.	Min	Max
Ln(ALB)	overall	8.538	0.768	4.564	10.279
	between		0.706	4.809	10.146
	within		0.254	7.619	9.977
PWB	overall	0.926	0.175	0.026	1.000
	between		0.163	0.297	1.000
	within		0.061	0.655	1.478
ln(OSS)	overall	0.093	0.362	-2.016	1.211
	between		0.304	-1.353	0.664
	within		0.209	-1.295	0.874
ROA	overall	0.005	0.113	-1.044	0.298
	between		0.099	-0.655	0.103
	within		0.059	-0.383	0.450
ln(SIZE)	overall	19.814	1.830	14.153	24.422
	between		1.677	15.101	22.949
	within		0.751	17.164	22.127
ln(NAB)	overall	11.033	1.662	6.089	15.573
	between		1.534	7.387	14.182
	within		0.726	6.588	13.747
ln(EXPR)	overall	1.853	0.768	0.000	3.555
	between		0.752	0.597	3.511
	within		0.287	0.895	2.695
SHG	overall	0.441	0.498	0.000	1.000
	between		0.501	0.000	1.000
	within		0.000	0.441	0.441
GRM	overall	0.253	0.436	0.000	1.000
	between		0.429	0.000	1.000
	within		0.000	0.253	0.253
INDV	overall	0.303	0.461	0.000	1.000
	between		0.474	0.000	1.000
	within		0.000	0.303	0.303
SOUTH	overall	0.607	0.489	0.000	1.000
	between		0.498	0.000	1.000
	within		0.000	0.607	0.607
NBFC	overall	0.406	0.492	0.000	1.000
	between		0.494	0.000	1.000
	within		0.000	0.406	0.406

Summary statistics of all the variables used in the study are provided in Table 5.3. All quantitative variables show large variability. Range of dependent variable (*ALB*) is large, as shown by the maximum and minimum values. Financial performance variables *ROA* and *OSS* also show large variability. Hence there are some MFIs performing poor while at the same time others are financially self-sufficient. The study sample includes MFIs of varying level of experience as the minimum value of variable *EXPR* is 1 while the maximum value is 35.

44 per cent of Sample MFIs are using SHG model for delivery of microfinance to clients while 25 per cent are using Grameen model. Remaining 31 per cent MFIs are using other delivery models (Individual model, co-operative model etc.). Around 40 per cent MFIs included in the study sample are NBFC while 60 per cent are of different legal forms (NGOs, Banks, Section-25 companies, etc.). The sample includes around 60 per cent MFIs from South Indian States.

Summary Statistics

Summary statistics by loan delivery models, regulatory status and level of financial sustainability are reported below. Results suggest that Grameen model has deepest outreach but at the same time it also has a low level of financial sustainability. Hence it can be argued that MFIs following Grameen model are targeting relatively poorer clients, but does not perform well on the financial front. Further, Grameen model is more prevalent among southern region while two other models (SHG and Individual) are distributed evenly across northern and southern regions. 65 per cent of MFIs following individual model are NBFCs.

Summary statistics by regulatory status provided in Table 5.5 confirms the widely held belief that regulated for-profit MFIs have larger average loan size. The finding is similar as envisaged by Cull et al., 2009. Further, regulated MFIs following profit path are targeting less women as compared to unregulated MFIs. Looking at financial performance indicators (*OSS* & *ROA*) it can be concluded that regulated MFIs have significantly larger value of *OSS* and *ROA*. Hence it can be concluded that regulated MFIs are targeting less poor and women clients in pursuit of financial goals.

Table 5.5 Summary Statistics by Regulatory Status

	NBFCs			Others		
Variable	**Obs**	**Mean**	**Std. Dev.**	**Obs**	**Mean**	**Std. Dev.**
Ln(ALB)	93	8.732	0.449	136	8.405	0.902
PWB	93	0.906	0.230	136	0.940	0.124
ln(OSS)	93	0.134	0.314	136	0.065	0.390
ROA	93	0.013	0.050	136	0.000	0.140
ln(SIZE)	93	20.897	1.527	136	19.074	1.646
ln(NAB)	93	11.938	1.707	136	10.415	1.316
ln(EXPR)	93	1.761	0.791	136	1.915	0.749
SHG	93	0.215	0.413	136	0.596	0.493
GRM	93	0.301	0.461	136	0.221	0.416
INDV	93	0.484	0.502	135	0.178	0.384
SOUTH	93	0.785	0.413	136	0.485	0.502

Table 5.6 Summary Statistics by Level of Financial Sustainability

	OSS ≥1			OSS <1		
Variable	**Obs**	**Mean**	**Std. Dev.**	**Obs**	**Mean**	**Std. Dev.**
ln(ALB)	196	8.562	0.809	33	8.399	0.428
PWB	196	0.922	0.187	33	0.954	0.074
ROA	196	0.029	0.031	33	-0.134	0.248
ln(SIZE)	196	19.983	1.788	33	18.809	1.780
ln(NAB)	196	11.205	1.574	33	10.013	1.829
ln(EXPR)	196	1.920	0.726	33	1.450	0.893
SHG	196	0.423	0.495	33	0.545	0.506
GRM	196	0.250	0.434	33	0.273	0.452
INDV	195	0.323	0.469	33	0.181	0.392
SOUTH	196	0.617	0.487	33	0.545	0.506
NBFC	196	0.434	0.497	33	0.242	0.435

Table 5.7 Correlation Matrix

	ln(ALB)	*PWB*	*ln(OSS)*	*ROA*	*ln(SIZE)*	*ln(NAB)*	*ln(EXPR)*	*SHG*	*GRM*	*NBFC*	*SOUTH*
ln(ALB)	1										
PWB	-0.364	1									
	0.00										
ln(OSS)	0.073	0.008	1								
	0.27	*0.91*									
ROA	0.033	-0.004	0.836	1							
	0.62	*0.95*	*0.00*								
ln(SIZE)	0.493	-0.013	0.301	0.230	1						
	0.00	*0.85*	*0.00*	*0.00*							
ln(NAB)	0.072	0.167	0.384	0.295	0.892	1					
	0.28	*0.01*	*0.00*	*0.00*	*0.00*						
ln(EXPR)	0.106	-0.172	0.220	0.250	0.306	0.281	1				
	0.11	*0.01*	*0.00*	*0.00*	*0.00*	*0.00*					
SHG	0.001	-0.021	0.050	0.072	-0.148	-0.164	0.150	1			
	0.99	*0.75*	*0.45*	*0.28*	*0.02*	*0.01*	*0.02*				
GRM	-0.187	0.239	-0.054	0.037	-0.038	0.059	-0.038	-0.517	1		
	0.00	*0.00*	*0.42*	*0.58*	*0.57*	*0.38*	*0.57*	*0.00*			
NBFC	0.210	-0.096	0.194	0.160	0.490	0.451	-0.099	-0.376	0.091	1.000	
	0.00	*0.15*	*0.06*	*0.08*	*0.00*	*0.00*	*0.14*	*0.00*	*0.17*		
SOUTH	-0.023	0.151	0.065	0.097	0.285	0.338	0.046	-0.168	0.222	0.301	1
	0.73	*0.02*	*0.33*	*0.14*	*0.00*	*0.00*	*0.49*	*0.01*	*0.00*	*0.00*	

5.4 Findings and Discussions

The, prime objective of this study is to empirically ascertain the relationship between financial orientation of MFIs and their poverty outreach in Indian context. Keeping in mind the sensitivity of estimated parameters for different proxy variables used, two different measures of financial performance (*OSS* & *ROA*) as well as of depth of outreach (*ALB* & *PWB*) have been used. Although the study relied mainly on the HT-model due to the inclusion of time invariant regressors which make fixed effect model inapplicable, the assumptions underlying random effect model are not fulfilled, other plausible models (pooled OLS, fixed effect & random effect) are also reported to check the sensitivity of the estimated coefficients for different estimation framework.

HT-model works best in case of sufficient correlation between time varying exogenous variables and time invariant endogenous variables (Wooldridge, 2002). Correlation coefficients reported in Table 5.7 demonstrate that there is sufficient correlation between time invariant endogenous variable (*NBFC*) and time varying exogenous variables (*OSS* & *ROA*). Another condition for applicability of HT-model is that the number of time varying exogenous variables must be at least as large as the number of time invariant endogenous variables. Endogenous variables included in models shows sufficient within panel variation to serve as their own instrument (Table 5.3).

Table 5.8 provides estimates of HT-model using *ALB* as the dependent variable (proxy for depth of outreach) and *OSS* as financial performance indicator. Three different HT-models (HT-1, HT-2 & HT-3) based on different specifications are reported. HT-1 model includes all control variables as well as different interaction variables. HT-2 model excludes interaction variables while HT-3 model also exclude dummy variables which accounts for different lending approaches besides interaction variables. Hausman specification test shows the superiority of the estimated HT-model over fixed effect model[15]. Wald χ^2 reported in Table 5.8 shows the overall goodness of fit. Estimated coefficient of *OSS* in all three models is positive and significant. First specification using *ALB* as a measure of depth of outreach and *OSS* as a measure of financial performance suggests a trade-off between two. Interaction

15 Hausman specification test between fixed effect and random effect model have been carried out which shows the superiority of fixed effect model over random effect model.

between different lending approaches and financial performance does not give significant coefficients. Findings of the study differ from the study of Cull et al. (2007) which finds the significance of lending delivery approaches in the trade-off.

Interaction variable (*OSS*NBFC*) which account for the interaction between financial performance and for profit NBFCs, gives a positive and significant coefficient. Positive coefficient shows that trade-off is more pronounced in case of NBFC-MFIs. During last decade there a rush among non-profit MFIs to convert themselves into for profit NBFCs to access commercial sources of funding's with ease. The findings of the study suggest that regulated for profit commercially oriented MFIs are diverting to less poor borrowers in the pursuit of financial sustainability.

By looking at the estimated coefficient of variable *EXPR,* which is a proxy for experience of MFIs, it can be concluded that the relation between depth of outreach and experience is quadratic. Initially depth of outreach increases with the increase in experience but after a certain threshold relation works in the opposite direction. Hence estimated model refutes earlier belief that poverty outreach of MFIs may increase as it attains more experience.

Further, Depth of outreach is inversely related with the size of MFI as the coefficient of *SIZE* is positive and significant. It also suggests a diversion of MFIs from poor clients as they become larger. Higher outreach is associated with lesser depth of outreach as the coefficient of *NAB* is negative and significant. Different impacts of the size and outreach of MFIs on depth of outreach is contradictory as generally large MFIs also have larger outreach (it is also shown by pair wise correlation between *NAB* and *SIZE* reported in Table 5.7).

Time invariant variables included in the model does not have a significant role in determining average loan size. Though the coefficient of individual lending approach is positive it is not significantly different from zero. Further location of MFIs does not seem to affect average loan size and MFIs across different regions have almost the same average loan size. Dummy variable *NBFC* which accounts for for-profit status and regulatory status of MFIs has a negative coefficient though it is not significant. As discussed above coefficient of the interaction variable between *OSS* and *NBFC* is positive and significant. A different sign of these two variables suggests that NBFC-MFIs which do not give much emphasis on financial orientation

are reaching the poor borrowers well. Findings suggest that legal form per se is not responsible for mission drift, but actually it is a financial orientation which matters.

Table 5.8 Hausman Taylor Estimates with Average Loan Size (Depth of Outreach) and Operational Self-sufficiency (Financial Performance)

	HT1	HT2	HT3
TV Exogenous			
ln(OSS)	0.110	0.257	0.258
	0.09	*0.00*	*0.00*
*ln(OSS)*GRM*	0.190	—	—
	0.18		
*ln(OSS)*INDV*	0.003	—	—
	0.98		
*ln(OSS)*NBFC*	0.352	—	—
	0.01		
TV Endogenous			
ln(EXPR)	-0.127	-0.090	-0.091
	0.07	*0.22*	*0.21*
Sq ln(EXPR)	0.044	0.016	0.017
	0.14	*0.61*	*0.58*
ln(SIZE)	0.732	0.720	0.719
	0.00	*0.00*	*0.00*
ln(NAB)	-0.666	-0.613	-0.613
	0.00	*0.00*	*0.00*
TI Exogenous			
GRM	0.018	0.104	—
	0.86	*0.69*	
INDV	0.074	0.285	—
	0.50	*0.54*	
SOUTH	0.001	0.075	0.101
	0.99	*0.77*	*0.77*
TI Endogenous			
NBFC	-0.220	-0.678	-0.745
	0.17	*0.47*	*0.54*
Cons	1.473	1.228	1.372
	0.00	*0.00*	*0.01*
N	228	228	229
σ_u	0.25	0.39	0.46
σ_v	0.13	0.15	0.15
P	0.78	0.88	0.91
χ^2	640.86	522.24	525.61
	0.00	*0.00*	*0.00*
Hausman (χ^2)	3.73	0.00	0.00
	0.88	*1.00*	*1.00*

Table 5.9 Hausman Taylor Estimates with Average Loan Size (Depth of Outreach) and Return on Assets (Financial Performance)

	HT4	HT5	HT6
TV Exogenous			
ROA	0.580	0.387	0.390
	0.10	*0.05*	*0.04*
*ROA*GRM*	0.108	—	—
	0.89		
*ROA*INDV*	-0.447	—	—
	0.27		
*ROA*NBFC*	1.886	—	—
	0.01		
TV Endogenous			
ln(EXPR)	-0.114	-0.082	-0.083
	0.13	*0.29*	*0.26*
Sq ln(EXPR)	0.025	0.005	0.007
	0.43	*0.87*	*0.82*
ln(SIZE)	0.702	0.685	0.684
	0.00	*0.00*	*0.00*
ln(NAB)	-0.601	-0.548	-0.548
	0.00	*0.00*	*0.00*
TI Exogenous			
GRM	-0.017	0.019	—
	0.87	*0.94*	
INDV	0.048	0.173	—
	0.68	*0.73*	
SOUTH	-0.033	-0.009	0.106
	0.71	*0.97*	*0.91*
TI Endogenous			
NBFC	-0.187	-0.453	-0.891
	0.28	*0.66*	*0.79*
Cons	1.435	1.280	1.466
	0.00	*0.01*	*0.13*
N	228	228	229
σ_u	0.26	0.34	0.62
σ_v	0.14	0.15	0.15
$P\chi$	0.76	0.83	0.94
χ^2	527.16	461.95	490.42
	0.00	*0.00*	*0.00*
Hausman (χ^2)	2.78	0.00	0.00
	0.95	*1.00*	*1.00*

Results of HT-model with *ALB* as a measure of depth of outreach and *ROA* as financial performance indicator are reported in Table 5.9. All other covariates remain as in the previous models. Most of the earlier findings remain same across the three models. These models also support the earlier findings of trade-off between depth of outreach and financial sustainability of MFIs which is more pronounced in case of NBFCs with higher emphasis towards financial sustainability. Hence our model is not sensitive for different measures of financial sustainability.

To check the sensitivity of coefficient for different estimation framework used, the study reported estimation output of all other plausible models (Pooled OLS, fixed effect & random effect) besides HT-model. With *ALB* as dependent variable Table 5.10 reports the results with *OSS* as financial indicator variable and Table 5.11 reports results with *ROA* as a financial indicator variable. The results are robust as the sign of the estimated coefficient remains the same with use of different estimation techniques. The sign of financial indicator variables *OSS* (Table 5.10) and *ROA* (Table 5.11) do not change by adopting different estimation approaches.

By using average loan size as a measure for poverty outreach of MFIs, the study explores the significance of trade-off between financial sustainability and poverty outreach. Different regression models with a different set of financial performance indicator variables are used to suggest the existence of trade-off. Regulation or profit orientation seems to play a significant role in trade-off. Geographical location and lending approach followed by MFIs does not determine poverty outreach.

Table 5.10 Regression Output with Average Loan Size (Depth of Outreach) and Operational Self-Sufficiency (Financial Performance)

	Pooled OLS1	FE1	RE1	HT1
TV Exogenous				
ln(OSS)	0.314	0.082	0.223	0.110
	0.00	0.26	0.01	0.09
*ln(OSS)*GRM*	0.299	0.241	0.325	0.190
	0.17	*0.11*	*0.07*	*0.18*
*ln(OSS)*INDV*	-0.146	0.087	-0.087	0.003
	0.10	*0.45*	*0.40*	*0.98*
*ln(OSS)*NBFC*	0.086	0.348	0.227	0.352
	0.57	*0.01*	*0.16*	*0.01*
TV Endogenous				
ln(EXPR)	0.074	-0.133	-0.041	-0.127
	0.38	*0.07*	*0.61*	*0.07*
Sq ln(EXPR)	-0.043	0.048	-0.006	0.044
	0.11	*0.16*	*0.83*	*0.14*
ln(SIZE)	0.921	0.723	0.862	0.732
	0.00	*0.00*	*0.00*	*0.00*
ln(NAB)	-0.895	-0.660	-0.819	-0.666
	0.00	*0.00*	*0.00*	*0.00*
TI Exogenous				
GRM	-0.007	___	-0.015	0.018
	0.87		*0.81*	*0.86*
INDV	-0.029	___	-0.032	0.074
	0.37		*0.52*	*0.50*
SOUTH	-0.020	___	-0.024	0.001
	0.502		*0.627*	*0.987*
TI Endogenous				
NBFC	0.002	___	-0.025	-0.220
	0.95		*0.66*	*0.17*
Cons	0.196	1.526	0.586	1.473
	0.35	*0.03*	*0.20*	*0.00*
N	228	228	228	228
σ_u		0.25	0.13	0.25
σ_v		0.14	0.14	0.13
P		0.76	0.47	0.78

Table 5.11 Regression Output with Average Loan Size (Depth of Outreach) and Return on Assets (Financial Performance)

	Pooled OLS2	FE2	RE2	HT4
TV Exogenous				
ROA	1.711	0.454	1.097	0.580
	0.00	*0.09*	*0.01*	*0.10*
*ROA*GRM*	0.000	0.274	0.474	0.108
	1.00	*0.65*	*0.57*	*0.89*
*ROA*INDV*	-1.420	-0.308	-0.903	-0.447
	0.00	*0.26*	*0.02*	*0.27*
*ROA*NBFC*	1.754	1.952	1.921	1.886
	0.17	*0.01*	*0.04*	*0.01*
TV Endogenous				
ln(EXPR)	0.074	-0.116	-0.019	-0.114
	0.38	*0.20*	*0.85*	*0.13*
Sq ln(EXPR)	-0.045	0.025	-0.015	0.025
	0.09	*0.53*	*0.63*	*0.43*
ln(SIZE)	0.915	0.702	0.850	0.702
	0.00	*0.00*	*0.00*	*0.00*
ln(NAB)	-0.882	-0.601	-0.793	-0.601
	0.00	*0.00*	*0.00*	*0.00*
TI Exogenous				
GRM	-0.002	___	-0.021	-0.017
	0.96		*0.73*	*0.87*
INDV	-0.034	___	-0.037	0.048
	0.26		*0.47*	*0.68*
SOUTH	-0.017	___	-0.031	-0.033
	0.58		*0.56*	*0.71*
TI Endogenous				
NBFC	-0.006	___	-0.022	-0.187
	0.87		*0.71*	*0.28*
Cons	0.182	1.357	0.573	1.435
	0.40	*0.06*	*0.25*	*0.00*
N	228.0	228.0	228.0	228.0
σ_u		0.27	0.12	0.26
σ_v		0.15	0.15	0.14
P		0.77	0.41	0.76

As mentioned earlier the average loan size is only rough and indirect measure of poverty outreach or more accurately of social orientation of MFIs. Excessive reliance on average loan size as a measure of poverty outreach of MFIs may lead to wrong conclusions. Keeping this in perspective, the study uses percentage of women clients as another measure of social orientation. Targeting women clients and thereby contributing towards empowerment of women is one of the most discussed objectives of microfinance movement. The study tries to examine the impact of financial orientation on the targeting of women clients. Similar methodological approach has been applied as in the case of average loan size for exploring trade-off between the targeting of female clients and financial performance.

Three HT-models based on different specifications (HT-7, HT-8 & HT-9) by using *PWB* as dependent variable and *OSS* as financial sustainability measure are reported in Table 5.12. All the three estimated models suggest the existence of significant trade-off between the targeting of female clients and the financial performance. Negative and significant estimated coefficient of OSS suggests that as the financial sustainability increases, MFIs are targeting less female clients. Interaction of lending approaches with financial sustainability does not produce significant results. Though the coefficients are not significant it seems that individual lenders are targeting less female clients while the Grameen approach is reaching well to females in comparison to SHG approach. These findings support earlier belief that individual model primarily provides loan to male clients engaged in microenterprises. Location and profit orientation or regulatory status does not affect targeting of female clients.

There is a curvilinear relationship between the female clients and the financial performance where it decreases initially with the increase in experience but after certain level the trade-off does not work. Hence more experienced MFIs are likely to target more female clients. Higher managerial skill and staff productivity are contributing positively towards targeting of female clients. Size of MFIs and *PWB* are related inversely as shown by negative and significant coefficient of *SIZE*. Hence large MFIs have less percentage of female clients. Better economies of scale as MFIs grows do not seem to provide space to target more female clients as a part of social objective. Higher outreach is associated with a higher percentage of female clients. The signs of the coefficients of *SIZE* and *NAB* are in line with earlier findings using

average loan size as poverty outreach measure. It is also found that regulated NBFC-MFIs are targeting fewer female clients but the argument is weak due to the insignificance of the estimated parameter.

Table 5.12 Hausman Taylor Estimates with Share of Female Clients (Depth of Outreach) and Operational self-sufficiency (Financial Performance)

	HT7	HT8	HT9
TV Exogenous			
ln(OSS)	-0.056	-0.069	-0.069
	0.08	*0.01*	*0.01*
*ln(OSS)*GRM*	-0.064	—	—
	0.36		
*ln(OSS)*INDV*	-0.009	—	—
	0.88		
*ln(OSS)*NBFC*	0.029	—	—
	0.66		
TV Endogenous			
ln(EXPR)	-0.056	-0.057	-0.057
	0.10	*0.08*	*0.08*
Sq ln(EXPR)	0.019	0.018	0.018
	0.20	*0.21*	*0.20*
ln(SIZE)	-0.040	-0.036	-0.036
	0.03	*0.04*	*0.04*
ln(NAB)	0.068	0.064	0.064
	0.00	*0.00*	*0.00*
TI Exogenous			
GRM	0.056	0.011	—
	0.34	*0.93*	
INDV	-0.041	-0.122	—
	0.50	*0.55*	
SOUTH	0.024	-0.016	-0.005
	0.61	*0.89*	*0.97*
TI Endogenous			
NBFC	-0.063	0.107	0.102
	0.48	*0.80*	*0.84*
Cons	1.017	0.984	0.942
	0.00	*0.00*	*0.00*
N	228	228	229
σ_u	0.14	0.18	0.19
σ_v	0.07	0.07	0.07
P	0.83	0.87	0.89
χ^2	26.66	25.02	22.32
	0.00	*0.00*	*0.00*
Hausman (χ^2)	0.18	0.00	0.00
	1.00	*1.00*	*1.00*

Table 5.13 Hausman Taylor Estimates with Share of Female Clients (Depth of Outreach) and Return on Assets (Financial Performance)

	HT10	HT11	HT12
TV Exogenous			
ROA	-0.159	-0.162	-0.162
	0.33	*0.06*	*0.05*
*ROA*GRM*	-0.173	—	—
	0.63		
*ROA*INDV*	0.029	—	—
	0.88		
*ROA*NBFC*	-0.053	—	
	0.88		—
TV Endogenous			
ln(EXPR)	-0.053	-0.055	-0.055
	0.13	*0.11*	*0.10*
Sq ln(EXPR)	0.018	0.018	0.018
	0.23	*0.20*	*0.19*
ln(SIZE)	-0.029	-0.026	-0.026
	0.10	*0.14*	*0.13*
ln(NAB)	0.054	0.049	0.049
	0.00	*0.00*	*0.00*
TI Exogenous			
GRM	0.063	0.043	—
	0.28	*0.72*	
INDV	-0.034	-0.073	—
	0.60	*0.74*	
SOUTH	0.034	0.017	-0.023
	0.48	*0.89*	*0.95*
TI Endogenous			
NBFC	-0.085	-0.001	0.193
	0.36	*1.00*	*0.88*
Cons	0.954	0.944	0.876
	0.00	*0.00*	*0.02*
N	228	228	229
σ_u	0.14	0.15	0.22
σ_v	0.07	0.07	0.07
$P\chi$	0.82	0.83	0.92
χ^2	23.55	22.47	18.65
	0.00	*0.00*	*0.00*
Hausman (χ^2)	0.02	0.00	0.00
	1.00	*1.00*	*1.00*

Table 5.13 provides estimates of HT-model by using *PWB* as dependent variable and *ROA* as a measure of financial sustainability. Three different HT-models using different specifications (HT-10, HT-11 & HT-12) are reported. The estimated coefficient of financial coefficient variable *ROA* is not significantly different from zero in the first specification (HT-10) but it is significant in other two specifications (HT-11 & HT-12). Negative estimated coefficient again supports earlier findings of trade-off between financial sustainability and targeting of female clients. Though the significance level of most of variables declines by using *ROA* as a measure of financial orientation instead of *OSS*, signs of parameters remain unchanged. Thus from Table 5.12 & Table 5.13 it can be concluded that the finding of trade-off between financial orientation and targeting of women clients is robust and is not sensitive as far as different measures of financial performance are concerned.

Again to check the sensitivity signs of estimated parameters for different estimation frameworks Table 5.14 and Table 5.15 provide estimates by applying different regression methods. Table 5.14 provides estimates of different estimation models by using *PWB* as dependent variable and *OSS* as a measure of financial indicator. All the four models reported suggest a trade-off, though not significant, by pooled OLS and fixed effect models. Most of the signs are quite robust for different estimation frameworks. The estimation output of different models using *PWB* as a measure of depth of outreach and *ROA* as financial performance indicator are reported in Table 5.15. Again most of the signs remain intact by applying different approaches.

By using share of female clients in total clients as a measure of social orientation of MFIs, empirical analysis conducted shows the existence of trade-off. MFIs achieving financial sustainability are drifting away from female clients. It is also found that Grameen model is the best approach as far as targeting of females is concerned while individual lending approaches have the least targeting of female clients. The legal status of MFIs also differentiates the targeting of female clients and NBFCs are found to be targeting fewer females.

Table 5.14 Regression Output with Share of Female Clients (Depth of Outreach) and Operational Self-Sufficiency (Financial Performance)

	Pooled OLS3	FE3	RE3	HT7
TV Exogenous				
ln(OSS)	-0.031	-0.059	-0.059	-0.056
	0.26	*0.11*	*0.04*	*0.08*
*ln(OSS)*GRM*	-0.079	-0.066	-0.059	-0.064
	0.12	*0.23*	*0.25*	*0.36*
*ln(OSS)*INDV*	0.008	-0.016	0.001	-0.009
	0.81	*0.71*	*0.98*	*0.88*
*ln(OSS)*NBFC*	0.059	0.032	0.018	0.029
	0.26	*0.39*	*0.60*	*0.66*
TV Endogenous				
ln(EXPR)	-0.193	-0.054	-0.071	-0.056
	0.00	*0.28*	*0.14*	*0.10*
Sq ln(EXPR)	0.041	0.018	0.012	0.019
	0.01	*0.20*	*0.30*	*0.20*
ln(SIZE)	-0.057	-0.039	-0.039	-0.040
	0.00	*0.23*	*0.13*	*0.03*
ln(NAB)	0.095	0.068	0.077	0.068
	0.00	*0.25*	*0.11*	*0.00*
TI Exogenous				
GRM	0.059	—	0.055	0.056
	0.01		*0.18*	*0.34*
INDV	-0.047	—	-0.032	-0.041
	0.16		*0.61*	*0.50*
SOUTH	0.047	—	0.034	0.024
	0.04		*0.40*	*0.61*
TI Endogenous				
NBFC	-0.096	—	-0.090	-0.063
	0.01		*0.24*	*0.48*
Cons	1.207	0.989	0.964	1.017
	0.00	*0.00*	*0.00*	*0.00*
N	228	228	228	228
σ_u		0.15	0.14	0.14
σ_v		0.07	0.07	0.07
P		0.83	0.81	0.83

Table 5.15 Regression Output with Share of Female Clients (Depth of Outreach) and Return on Assets (Financial Performance)

	Pooled OLS4	FE4	RE4	HT10
TV Exogenous				
ROA	-0.100	-0.161	-0.158	-0.159
	0.33	*0.18*	*0.12*	*0.33*
*ROA*GRM*	-0.244	-0.172	-0.194	-0.173
	0.40	*0.51*	*0.44*	*0.63*
*ROA*INDV*	0.022	0.026	0.033	0.029
	0.84	*0.83*	*0.74*	*0.88*
*ROA*NBFC*	0.060	-0.049	-0.085	-0.053
	0.85	*0.83*	*0.68*	*0.88*
TV Endogenous				
ln(EXPR)	-0.189	-0.053	-0.069	-0.053
	0.00	*0.31*	*0.16*	*0.13*
Sq ln(EXPR)	0.040	0.017	0.011	0.018
	0.01	*0.23*	*0.33*	*0.23*
ln(SIZE)	-0.057	-0.029	-0.031	-0.029
	0.00	*0.30*	*0.18*	*0.10*
ln(NAB)	0.095	0.054	0.066	0.054
	0.00	*0.28*	*0.13*	*0.00*
TI Exogenous				
GRM	0.054	___	0.057	0.063
	0.01		*0.14*	*0.28*
INDV	-0.047	___	-0.034	-0.034
	0.17		*0.59*	*0.60*
SOUTH	0.047	___	0.037	0.034
	0.04		*0.36*	*0.48*
TI Endogenous				
NBFC	-0.090	___	-0.087	-0.085
	0.02		*0.26*	*0.36*
Cons	1.193	0.933	0.915	0.954
	0.00	*0.00*	*0.00*	*0.00*
N	228	228	228	228
σ_u		0.15	0.14	0.14
σ_v		0.07	0.07	0.07
P		0.83	0.80	0.82

5.5 Conclusions

During the last two decades microfinance has made tremendous quantitative achievement and has emerged as one of the most effective ways of providing financial services on a sustainable basis to the bottom of the pyramid. Various innovative concepts developed by the practitioners of microfinance like group based lending, progressive lending, targeting of women clients, etc. work efficiently to address the issues of asymmetric information faced by the formal financial system in serving the poor. During the early stages of development microfinance was predominantly a private sector initiative with the involvement of NGOs, donors, development organizations for providing financial services to the poor in pursuit of reducing mass poverty prevalent in developing countries. Over the time, a large number of MFIs adopted commercial approaches for financing their activities as they found donations, grants and subsidized fund inadequate for serving larger masses. Two different schools of thought emerged for functioning of MFIs. The first school known as 'Institutionalist' or 'Financial System Approach' emphasizes the root of commercialization for financing microfinance activities. Institutionalist believes that only commercially oriented and financially self-sufficient MFIs can serve poor sustainable over longer period of time. Another approach known as 'Welfarist' or 'Poverty Lending Approach' believe in serving poor clients and reducing poverty. Though both schools share the common goal of serving poor, they differ widely on the path adopted for the mission. In policy circle there is a wide disagreement over the appropriateness of these models. It is argued by the poverty lending approach that commercialization alters the mission of targeting poor clients. The debate and discourse on the issue of trade-off between poverty outreach and financial sustainability is continuing in the absence of rigorous empirical evidence on this particular issue. The current study attempts to explore the trade-off between poverty outreach and financial sustainability in Indian context by using a large panel data set of 55 MFIs over the period 2005-09. The study sample includes small number of MFIs in comparison to total MFIs operating in the country but the client outreach of sample MFIs is a large portion of total microfinance outreach. It is believed that an element of randomness in the selection of MFIs is present in the sample.

The study relied mostly on Hausman Taylor estimation framework due to the likely presence of correlation between unobserved firm characteristics such as managerial quality with the explanatory variables included in the model. This makes the application of random effect unfeasible and inclusion of time invariant variables into model rules out application of fixed effect model. Two different measures of poverty outreach (average loan size and share of female clients) have been utilized due to the different proxy measures suggested by the existing literature.

By using average loan size as a measure for poverty outreach of MFIs, the study explores the trade-off between financial sustainability and poverty outreach. Separate regression models with a different set of financial performance indicator variable used, suggests the existence of trade-off. Regulation or profit orientation seems to play significant role in the trade-off. Geographical location and lending approach followed by MFIs does not affect poverty outreach.

By using share of female clients in total clients as a measure of social orientation of MFIs, empirical analysis conducted shows the existence of trade-off. MFI achieving financial sustainability are drifting away from female clients. It is also found that Grameen model is the best approach as far as targeting of females is concerned while the individual lending approach has least targeting of female clients. Also the legal status of MFIs also differentiates the targeting of female clients and NBFCs are found to be targeting fewer females.