

Is Microfinance Outreach at the cost of Profitability? A Case of the Microfinance Institutions in Assam

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Microfinance provides a source of motivation for the entrepreneurial poor in the form of microfinance services for those who cannot access traditional source of finance. About 18 million people or 60% of the population are poor and mostly out of the scope of the formal banking sector (Omino, 2005). Microfinance Institutions (MFIs) are special financial institutions. They have both a social nature (outreach) and a for-profit (profitability) nature. Thus, managing performance of MFIs is very challenging compared to other forms of business organisations.

The paper examines the performance of MFIs in relation to outreach and profitability. An attempt is also made to find out the relationship between outreach and profitability of the MFIs of Assam. A primary survey of 34 MFIs is conducted in 2010 covering 14 districts of Assam. The results of the study indicate that there exists negative relationship between outreach and return on asset (ROA) and this correlation is found to be statistically significant at the 0.01 level (2-tailed). Moreover, the average ROA and ROE declines as the number of active loan clients increases beyond 2000.

Keywords: Microfinance, Profitability, Microfinance Institution (MFIS)

Introduction

It is well recognised that microfinance is the best way that the financial sector can reach those 'at the bottom of the pyramid' (Prahalad, 2005). Microfinance's core competency is in reaching the poorest, which ordinarily would be outside the ambit of commercial banks and financial institutions. Microfinance today has become one of the most debated and documented but still much confused buzzwords in banking and developmental policymaking fields. Actually in some form or the other, the concept of "microfinance" always existed in almost each and every society. But as a more formal process, the history can be traced back to portions of the Marshall Plan at the end of second world war in the middle of the 20th century and the writings of abolitionist/legal theorist Lysander Spooner who wrote about the benefits of numerous small loans to the poor as a way to alleviate poverty (Khandelwal, 2007). Microfinance was born as a response to the frustrated development resulting from subsidised rural credit in the 1950s and 1960s (Adams & Fitchett, 1992; Mersland, 2009).

The microfinance revolution, particularly the success stories of institutions like Grameen Bank in Bangladesh, Banco Sol in Bolivia, and Bank Rakyat in Indonesia, attracted several economists to study microfinance in the latter half of the 1990s. The United Nations Year of Microfinance in 2005 and the Nobel Peace Prize to Mohammed Yunus in 2006 and performance of Grameen Bank till 2008, have given considerable public recognition to microfinance as a development tool. Christen et al. (2004) reports an astonishing 500 million persons served, mostly with savings accounts, while the Microfinance Summit in the 2006-

meeting in Halifax celebrated the milestone of 100 million borrowers reached. Nevertheless, microfinance still reaches only a fraction of the world's poor (Robinson, 2001; Christen et al., 2004). Hence, there is a supply challenge in the industry (Helms, 2006; CGAP, 2004, 2006).

Over the last decade the microfinance field has expanded substantially both in terms of number of institutions and the size of these institutions. While such scaling up is applauded for its progress in spreading the benefits of microfinance services to a greater number of poor and for achieving sustainability, there is a concern that scaling-up may lead to a drift from the microfinance institutions (MFIs) original poverty alleviation mission (Hishigsuren, 2004). Christen et al. (2004) reported an astonishing 500 million persons served, mostly with savings accounts, while the Microcredit Summit in the 2006 meeting in Halifax had celebrated the milestone of 100 million borrowers reached. These worldwide developments promoted the acceptance of microfinance as a poverty reduction tool and greater emphasis was begun to be given on the performance of the Microfinance Institutions (MFIs). There is scope for large-scale and profitable microfinance because commercial moneylenders often extract monopoly profits from their borrowers and microfinance institutions (MFIs) are more capable of sorting clients and enforcing contracts than predicted by the adverse selection and moral hazard arguments of the asymmetric information paradigm (Robinson, 2001). Microfinance Institutions (MFIs) are special financial institutions. They have both a social nature and a for-profit nature. Thus, the performance measurement and dynamics of the MFIs is considered as the

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major area of this study.

Assessment of performance of the MFIs is useful for customers, donors, investors and practitioners. Donors want to know whether their support for microfinance programs conforms to the focus and priorities of their agencies. Practitioners want to know whether they are reaching their program objectives and how to improve their services by comparing their performance to the industry benchmarks. The performance of the MFIs needs to be monitored and regulated. For doing this, one requires adequate information of various kind like financial parameters, social contribution etc. considering the special nature of the MFIs. During 1990s, many researchers suggested a framework, based on the dual concepts of outreach and sustainability, for the assessment of MFIs performance [Yaron, (1992, 1994, 1997); Gurgand et al. (1996); Larrivière & Martin (1998); Gibbons & Meehan (1999); Kereta (2007)]. In 1995, a consortium of 33 public and private development agencies created the Consultative Group to Assist the Poor (CGAP) to expand access to financial services for the poor in developing countries. In 1996, CGAP also suggested the use of outreach and sustainability as two key criteria to evaluate the performance of MFIs. In terms of financial sustainability, Khandker et. al. (1995) pointed out that loan repayment (measured by default rate) as an indicator for financial sustainability of MFIs; because, low default rate would sustain its lending business. On the other hand, Hulme & Mosely (1996) argued that there is inverse relationship between outreach and financial sustainability. According to them, higher outreach means higher transaction costs in terms of processing information to judge creditworthiness of clients and hence will make MFIs financially unsustainable. Llantó, Garcia and Callanta (1997) assessed the capacity and financial performance of microfinance institutions. According to them, outreach to the poor depended on effective targeting and exclusivity of focus; institutional capacity; range of financial services provided; technical assistance for poor clients; regular or periodic impact evaluation of credit programs for the poor.

Literature Review

The performance of the MFIs can be measured from various dimensions. But some researches evaluated the performance of MFIs in terms of a single dimension. Like any other business organisations, the overall performance assessment of MFIs was done only in terms of financial performance [Tucker, 2001; Abate et al, 2002; Stauffenberg, Jansson, Kenyon & Barluenga-Badiola, 2003; Barres et al, 2005; CGAP, 2009; Tulchin, Sassman, Wolkomir, 2009]. Then many researches pointed out that only financial performance is not sufficient. Lafourcade, Isern, Mwangi, and Brown (2005) assessed outreach and financial performance of MFIs in Africa with 22 indicators. Luzzi and Weber (2006) offered new insights in the context of MFIs performance evaluation by illustrating some statistical tools like factor analysis and cluster analysis. Crombrughe, Tenikue and Sureda (2008) conducted performance analysis for a sample of 42 MFIs in India. They

used regression analysis to understand the determinants of self-sustainability. They investigated particularly three aspects of sustainability: cost coverage by revenue, repayment of loans and cost-control. Cull, Demirgüç-Kunt, Morduch (2007) assessed financial performance and outreach by conducting a global analysis of leading Microbanks and explored patterns of profitability, loan repayment, and cost reduction of 124 institutions in 49 countries. Bruett (2005) measured performance of MFIs and provided a framework for reporting, analysis, and monitoring.

Some researchers considered that only sustainability measures the overall performance of the MFIs (Schreiner, 1999; Adongo & Stork, 2005; Crabb, 2006; Ahlin & Lin, 2006; Acharya & Acharya, 2006; Schicks, 2007; Crombrughe, Tenikue & Sureda, 2008; Thapa, 2009). Considering the nature of MFIs, some developmental organisation and many independent researchers evaluated the social performance (Zeller, Lapenu, & Greeley, 2003; Sinha, 2006; Crompton, Woller, & Deshpande, 2006; Hashemi, 2007; Psico & Dias, 2008). Again it was felt that for MFIs to become sustainable, they need to be efficient. Some researchers also assessed the efficiency of MFIs in terms of cost efficiency and operational efficiency to evaluate the overall performance of the MFIs. (Gregoire & Tuya, 2006; Martínez-González, 2008; Zacharias, 2008; Caudill, Gropper and Hartarska, 2009; Haq, Skully & Pathan, 2009).

Olszyna-Marzys (2006) analysed the MFIs of Central and Eastern Europe and Central Asia (ECA) region using econometric analysis. The results showed that MFIs in ECA had the potential to achieve significant increase in depth of outreach in these coming years without jeopardizing their profitability. Olszyna-Marzys assessed the MFIs along two performance dimensions viz., outreach and profitability. According to this study, both financial self-sufficiency and depth of outreach can be attained in the medium run. Thus, at given point in time, when the MFI had achieved sufficient financial sustainability, an increase in the depth of outreach should not negatively impact the MFI's profitability level. Finally no clear trade-off between financial self-sufficiency and depth of outreach was found. Cull, Demirguc-Kunt and Morduch (2007) explored patterns of profitability and outreach of 124 institutions in 49 countries. The evidence showed the possibility of earning profits while serving the poor, but a trade-off emerges between profitability and serving the poorest. Mersland and Strøm (2008) measured outreach by average loan amount and sustainability by ten financial ratios. Vanroose and D'Espallier (2009) analysed the relationship between performance of MFIs and the development of the formal financial sector of the country in which the MFI is active. They also found that MFIs reach more clients and are more profitable where access to the formal financial system is low.

Cull, Demirguc-Kunt and Morduch (2009) examined the implications for the institutions' profitability and their

outreach to small-scale borrowers and women. In this study, outreach was measured by average loan size, percentage of women borrowers and profitability was measured by financial self-sufficiency, return on equity (ROA) etc. Mersland and Strom (2007) examined MFI performance in terms of risk, financial aspects, and outreach. They concluded that external governance mechanisms in general seem to have limited influence on MFI performance including financial, outreach and risk performance. Kyereboah-Coleman and Osei (2008) tried to evaluate how governance indicators impact on performance measures of outreach and profitability in MFIs. They measured outreach by the annual rate of change of active clients of an institution. Profitability was measured by only ROA.

Cull, Demirgüç C, & Morduch (2007) reported that some institutions that have both achieved profitability and meaningful outreach to the poor but disaggregation by lending-type reveals trade-offs between the two objectives. Individual-based lenders as a group have the highest average profit levels but they perform least well on measures of outreach. Taking average loan size as a proxy for the poverty level of customers (smaller loans indicate poorer customers), individual-based institutions lend with an average size of \$1,220, while village banks (the most subsidy-dependent category of institutions) lend with an average loan size of \$148. Village banks also serve a much larger fraction of women (88%) relative to individual-based lenders (46%).

From this data base, we have selected only those MFIs that are continuing microcredit operations for the last three years. After

Research Methodology

The primary objective of this paper is to evaluate the performance of MFIs in relation to outreach and financial sustainability. An attempt is also made to find out the relationship between outreach and financial performance of the MFIs of Assam. A primary survey of 34 MFIs is conducted in 2010 covering 14 districts of Assam. In the analysis process, the study has adopted simple correlation and descriptive analysis techniques.

To achieve this objective, a sample survey is conducted during June – October, 2010 in the various districts of Assam. Database of the Centre for Microfinance Livelihood (CML), 2010 is considered to select the samples. Final samples are selected based on the MFIs' outreach i.e., number of clients reached by the MFIs, NGOs & NGO-MFIs in Assam. Only those MFIs are selected that has been offering micro finance services to their beneficiaries for the last three years. The total sample size considered for the study is 40. Finally with six rejections, 34 samples are considered for the study.

After selecting the research tool, sample survey is conducted in the different districts of Assam. Firstly, to select the representative number of MFIs for the study, the data base of Centre for Microfinance Livelihood (CML) is considered. The CML data base is published in February 2010 focusing the sector overview of NGOs, NGO-MFIs and MFIs of Assam.

this first level screening, the number of available MFIs comes down from 212 to 79 as shown below.

Table 1. MFIs in Assam

| Institutions | Numbers |
|--------------|---------|
| NGO-MFIs | 84 |
| MFIs | 7 |
| NGOs | 121 |
| TOTAL | 212 |

Source: CML, Sector Overview, 2010

Thus, we have finally selected 34 MFIs (43% of the sample population) based on the MFI's outreach i.e., number of

clients served by the MFIs. This study is conducted in 2010 considering the financial year 2009-2010.

Table 2. MFIs in Assam doing Microcredit

| Institutions | Numbers |
|--------------|---------|
| MFI | 6 |
| NGO | 8 |
| NGO-MFI | 65 |
| TOTAL | 79 |

Source: Compiled by Author from CML

Performance of MFIs in relation to outreach

As explained in the methodology section, total 34 MFIs, NGOs & NGO-MFIs were selected based on the number of

active clients of these institutions. The results of the primary survey of the client outreach by the MFIs of Assam over the last three years are outlined below:

Table 3. Client Outreach of MFIs in Assam

| MFIs | Active Borrowers (As on 31 st March) | | | | RANK OF MFIs (On Average Outreach) |
|----------------------|---|----------|----------|---------|---------------------------------------|
| | 2008 | 2009 | 2010 | Average | |
| RGVN | 101996 | 128066 | 145385 | 125149 | 1 |
| RGVN NE Microfinance | 44722 | 65052 | 101389 | 70388 | 2 |
| ASOMI | 3719 | 5129 | 40449 | 16432 | 3 |
| NCS | 1480 | 4280 | 10611 | 5457 | 4 |
| GS | 1084 | 4200 | 6946 | 4077 | 5 |
| SATRA | 2247 | 3464 | 5634 | 3782 | 6 |
| MZGPS | 2690 | 4021 | 4394 | 3702 | 7 |
| CRD | 3031 | 3652 | 4400 | 3694 | 8 |
| SSUS | 2890 | 2115 | 2528 | 2511 | 9 |
| PROCHESTA | 2890 | 2115 | 2528 | 2511 | 10 |
| ASC | 985 | 2512 | 3390 | 2296 | 11 |
| SDC | 1600 | 1897 | 2587 | 2028 | 12 |
| MACC | 1800 | 1450 | 847 | 1366 | 13 |
| DC | 1800 | 1450 | 847 | 1366 | 14 |
| PANCHARATNA | 850 | 1870 | 2785 | 1835 | 15 |
| AGUP | 1435 | 1495 | 1800 | 1577 | 16 |
| GVM | 559 | 661 | 964 | 728 | 17 |
| WDS | 535 | 570 | 613 | 573 | 18 |
| AGUS | 82 | 82 | 1250 | 471 | 19 |
| MASK | 331 | 442 | 589 | 454 | 20 |
| ROAD | 224 | 288 | 315 | 276 | 21 |
| RMI | 262 | 250 | 308 | 273 | 22 |
| RENEISSANCE | 214 | 233 | 352 | 266 | 23 |
| GSEDC | 253 | 270 | 267 | 263 | 24 |
| JPYS | 232 | 240 | 240 | 237 | 25 |
| LSS | 120 | 190 | 283 | 198 | 26 |
| PRDS | 180 | 200 | 205 | 195 | 27 |
| BJS | 1700 | 2000 | 2400 | 2033 | 28 |
| DPYS | 200 | 250 | 350 | 267 | 29 |
| MANDAL | 200 | 250 | 274 | 241 | 30 |
| GM | 85 | 197 | 430 | 237 | 31 |
| AAMIVA | 21 | 52 | 132 | 68 | 32 |
| DASK | 34 | 40 | 67 | 47 | 33 |
| AD | 19 | 17 | 20 | 19 | 34 |
| Total | 1,80,470 | 2,39,000 | 3,45,579 | 255016 | |

Source: Primary Survey

Analysing the above data we find that the number of active borrowers in Assam has grown at the rate of 32.43% in 2009 and 44.59% in 2010. Over the two years period the growth rate is 91.49% during 2008-2010. Thus we may conclude that the presence of MFIs in Assam is very less compared to the presence of MFIs in other regions, but the client outreach of the MFIs is growing exponentially during 2008-2010.

Performance of MFIs in Relation to Financial Profitability**(a) Return on Asset (ROA)**

Profit is one of the major outcomes of any successful business operation. Profitability measures, such as return on assets, tend to summarise performance in all areas of the company. To understand nature of profitability of these MFIs, a popular financial ratio - Return on Asset (ROA) is used. ROA indicates how well an MFI is managing its assets to optimize its profitability. The ratio includes not only the return on the

portfolio, but also all other revenue generated from investments and other operating activities. If an institution's ROA is fairly constant, this ratio can be used to forecast earnings in future periods. Unlike ROE, this ratio measures profitability regardless of the institution's underlying funding structure; it does not discriminate against MFIs that are funded primarily through equity. ROA is used by many past researchers to find the profitability of the MFI (Makame &

Murinde, 2008; Mersland & Strom 2008; Zacharias 2008; Martínez-González 2008; Bassem 2008).

In this study, since the sample is only 34 MFIs and the data has been utilized for 2008, 2009 & 2010 only, it is too small to lend itself to rigorous multivariate analysis. Therefore the methodology used is difference of means test for the purpose of comparing the performance of these MFIs of Assam. The

Table 4. Return on Assets of the MFIs of Assam

| MFI Name | Return on Asset (As on 31 st March) | | | | RANK OF MFIs (On Average ROA) |
|-------------|--|--------|-------|---------------|----------------------------------|
| | 2008 | 2009 | 2010 | Average (ROA) | |
| JPYS | 12.01 | 108.61 | 101.6 | 74.07 | 1 |
| ROAD | 72.33 | 33.96 | 23.76 | 43.35 | 2 |
| DPYS | 26.1 | 34.86 | 63.72 | 41.56 | 3 |
| AGUP | 37.18 | 26.56 | 15.83 | 26.52 | 4 |
| BJS | 22.11 | 2.65 | 38.66 | 21.14 | 5 |
| MANDAL | 14.98 | 26.71 | 19.38 | 20.36 | 6 |
| AD | 10.75 | 12.16 | 13.35 | 12.09 | 7 |
| RENEISSANCE | 20.72 | 3.76 | 10.15 | 11.54 | 8 |
| GM | 10.35 | 12.95 | 10.68 | 11.33 | 9 |
| GSEDC | 12.46 | 8.22 | 5.75 | 8.81 | 10 |
| GVM | 0.52 | 11.27 | 11.27 | 7.69 | 11 |
| LSS | 7.5 | 10.19 | 5.11 | 7.60 | 12 |
| PANCHARATNA | 7.11 | 6.42 | 6.79 | 6.77 | 13 |
| SONALI | 4.95 | 8.14 | 2.51 | 5.20 | 14 |
| DASK | 3.31 | 3.27 | 8.16 | 4.91 | 15 |
| AAMIVA | 7.78 | 1.54 | 4.03 | 4.45 | 16 |
| RGVN | 2.59 | 10.16 | 0.08 | 4.28 | 17 |
| CRD | 10.81 | 0.9 | 0.89 | 4.20 | 18 |
| PROCHESTA | 1.13 | 8.14 | 2.51 | 3.93 | 19 |
| SATRA | 8.37 | 0.33 | 1.8 | 3.50 | 20 |
| RAINBOW | 2.67 | 3.54 | 4.08 | 3.43 | 21 |
| MASK | 1.28 | 2.37 | 6.57 | 3.41 | 22 |
| MZGPS | 2.86 | 4.61 | 2.38 | 3.28 | 23 |
| WDS | 2.51 | 1.78 | 3.69 | 2.66 | 24 |
| RGVN NE | 0.31 | 4.76 | 1.15 | 2.07 | 25 |
| ASC | 2.32 | 0.28 | 2.67 | 1.76 | 26 |
| PRDS | 0.82 | 1.3 | 2.36 | 1.49 | 27 |
| MACC | 2 | 0.97 | 1.34 | 1.44 | 28 |
| DC | 2 | 0.02 | 1.34 | 1.12 | 29 |
| NCS | 0.26 | 0.97 | 2.11 | 1.11 | 30 |
| GS | 0.08 | 0.61 | 1.74 | 0.81 | 31 |
| ASOMI | 0.25 | 0.22 | 0.46 | 0.31 | 32 |
| SDC | -4.07 | -4.33 | 0.25 | -2.72 | 33 |
| AGUS | -12.71 | -25.47 | 10.2 | -9.33 | 34 |

Source: Primary Survey

dataset represents a moderate sample ($n = 34$), which is greater than 30. So we can rely on the Central Limit Theorem to assert that the sampling distribution is approximately normal. However, since we do not know, the population standard deviation, we use t test (Carver & Nash, 2007, pp. - 116). The

application of difference of means test has been done at $\alpha = 0.05$ for various categories the analysis is as follows. We are interested in testing the null hypothesis assumption that the average ROA performance of the MFIs of Assam is equal to the national average of 1.4. So, we conduct one-tailed t test with

the followings hypothesis:-

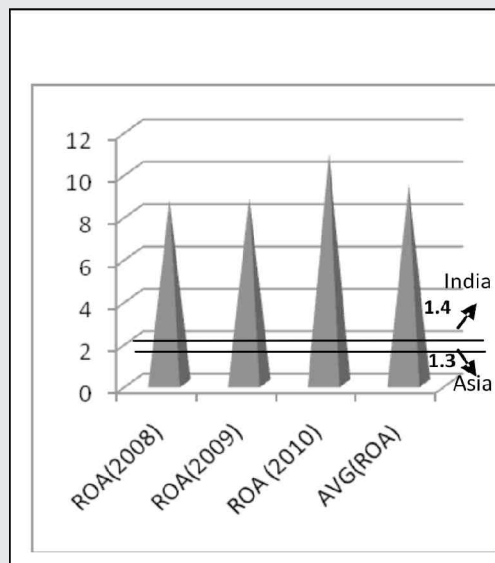
Null Hypothesis, $H_0: ROA = 1.40$ and,

Alternative Hypothesis, $H_1 : ROA > 1.40$

Table 5. Descriptive Statistics of ROAs of MFIs

| Descriptive Statistics | ROA (2008) | ROA (2009) | ROA (2010) | ROA (Avg.) |
|---|------------|------------|------------|------------|
| Mean | 8.65 | 8.77 | 10.87 | 9.43 |
| Std. Deviation | 14.61 | 20.54 | 20.31 | 15.76 |
| Std. Error | 0.40 | 0.40 | 0.40 | 0.40 |
| Minimum | -12.71 | -25.47 | 0.08 | -9.33 |
| Maximum | 72.33 | 108.61 | 101.60 | 74.07 |
| Sum | 293.99 | 298.26 | 369.53 | 320.58 |
| Range | 85.04 | 134.08 | 101.52 | 83.40 |
| Skewness | 2.82 | 3.66 | 3.47 | 2.75 |
| Kurtosis | 10.71 | 17.49 | 13.00 | 8.57 |
| Variance | 213.40 | 421.91 | 412.68 | 248.48 |
| df | 33.00 | 33.00 | 33.00 | 33.00 |
| N | 34.00 | 34.00 | 34.00 | 34.00 |
| 95% Confidence Interval of the Difference-Upper | 13.74 | 15.94 | 17.96 | 14.93 |
| 95% Confidence Interval of the Difference-Lower | 3.55 | 1.61 | 3.78 | 3.93 |
| t | 3.45 | 2.49 | 3.12 | 3.49 |
| P Value (Two -tailed) | 0.0015 | 0.0180 | 0.0037 | 0.0014 |
| P Valuc (One -tailed) | 0.00075 | 0.0090 | 0.00185 | 0.0070 |

Figure 1. Return on Assets of MFIs



The average ROA benchmark for India and Asia for the year 2008 is 1.4 and 1.3 respectively. This benchmark is published by MIX on March 2010. As the p values of the one-tailed t test of 0.00075, 0.0090, 0.00185 & 0.0070 are less than 0.05, so we would reject the null hypothesis. Therefore we may conclude that most of the MFIs of Assam are earning higher ROAs compared to the national average ROA of 1.40 during 2008-2010 and this result is found to be statistically significant

at 5% level of significance.

Analysing the data further at an individual MFI level, we try to find out the MFIs that are earning exceptionally higher and lower ROAs in Assam. Only those individual average ROAs of the MFIs are considered to be exceptionally high and low if it falls beyond 95% upper and lower confidence interval respectively.

Table 6. High ROA Performers

| MFI Name | ROA (Avg.) | Scale |
|----------|------------|--------|
| JPYS | 74.07 | Medium |
| ROAD | 43.35 | Medium |
| DPYS | 41.56 | Small |
| AGUP | 26.52 | Medium |
| BJS | 21.14 | Small |

Table 8. Scale of MFIs

| Total Asset (Rs.) | Scale | Nos. (%) |
|-------------------------|--------|----------|
| > 1,00,00,000 | Big | 15 (44) |
| 10,00,000 - 1,00,00,000 | Medium | 13 (38) |
| < 10,00,000 | Small | 6 (18) |

Table 7. Low ROA Performers

| MFI Name | ROA (Avg.) | Scale |
|----------------------|------------|--------|
| SATRA | 3.50 | Big |
| RMI | 3.43 | Medium |
| MASK | 3.41 | Medium |
| MZGPS | 3.28 | Big |
| WDS | 2.66 | Medium |
| RGVN NE Microfinance | 2.07 | Big |
| ASC | 1.76 | Big |
| PRDS | 1.49 | Medium |
| MACC | 1.44 | Big |
| DC | 1.12 | Big |
| NCS | 1.11 | Big |
| GS | 0.81 | Big |
| ASOMI | 0.31 | Big |
| SDC | -2.72 | Big |
| AGUS | -9.33 | Medium |

Analysing the possible reasons of extraordinary high and low ROAs, we could draw the following propositions:-

- (I) Deposit mobilisation MFIs are having high ROAs (JPYS, AGUP)
- (ii) MFIs following bank linkage model are having extraordinary high ROAs. (DPYS, BJS)
- (iii) Small and medium MFIs are having extraordinary higher ROAs.
- (iv) As the MFIs grows larger, ROAs declines.
- (v) Big MFIs are not having higher ROAs like small and medium MFIs.
- (vi) 67% of the Big MFIs are having low ROAs compared to

the 38% of the medium MFIs in the sample.

- (vii) 33% of the small MFIs and 23% of the medium MFIs are having extraordinary higher ROAs.
- (viii) Only 8.8% of the sample MFIs have earned ROAs less than India average as well as Asia average.

(b) Return on Equity (ROE)

This ratio is a measure of paramount importance since it measures the return on shareholders' investment in the institution. However, given that many MFIs are not-for-profit-organisations, the ROE indicator is most often used as a proxy for commercial viability. A single year's ROE can at times misrepresent the institution's "true" profitability. So the average ROE for the last three years were calculated.

Table 9. Return on Equity (ROE) of the MFIs

| MFI Name | Return on Equity (As on 31 st March) | | | | RANK OF MFIs (On Average ROE) |
|----------------------|---|---------|--------|---------------|----------------------------------|
| | 2008 | 2009 | 2009 | Average (ROE) | |
| ROAD | -111.43 | 296.84 | 89.75 | 91.72 | 1 |
| MZGPS | 22.33 | 53.73 | 198.64 | 91.57 | 2 |
| JPYS | 12.46 | 108.78 | 101.87 | 74.37 | 3 |
| RGVN NE Microfinance | 8.19 | 128.93 | 37.57 | 58.23 | 4 |
| GVM | 18.54 | 77.07 | 77.07 | 57.56 | 5 |
| GSEDC | 62.91 | 33.35 | 23.28 | 39.85 | 6 |
| NCS | 14.59 | 34.7 | 61.14 | 36.81 | 7 |
| GS | 7.57 | 44.54 | 57.34 | 36.48 | 8 |
| SATRA | 71.88 | 5.51 | 30.86 | 36.08 | 9 |
| RMI | 39.24 | 33.19 | 33.03 | 35.15 | 10 |
| CRD | 81.47 | 8.31 | 9.95 | 33.24 | 11 |
| DPYS | 20.57 | 29.78 | 49.34 | 33.23 | 12 |
| BJS | 41.98 | 5.74 | 49.15 | 32.29 | 13 |
| AGUP | 43.93 | 31.37 | 17.15 | 30.82 | 14 |
| PANCHARATNA | 16.39 | 41.13 | 31 | 29.51 | 15 |
| PROCHESTA | 10.64 | 48.06 | 21.43 | 26.71 | 16 |
| ASC | 11.48 | 4.4 | 52.71 | 22.86 | 17 |
| LSS | 16.2 | 32.94 | 16.09 | 21.74 | 18 |
| MANDAL | 14.98 | 26.71 | 19.38 | 20.36 | 19 |
| MACC | 10 | 38.28 | 10 | 19.43 | 20 |
| PRDS | 27.12 | 19.89 | 10.74 | 19.25 | 21 |
| GM | 12.33 | 14.88 | 21.18 | 16.13 | 22 |
| DC | 23.53 | 0.22 | 16.21 | 13.32 | 23 |
| RENEISSANCE | 3.31 | 12.96 | 21.34 | 12.54 | 24 |
| AD | 11.12 | 12.53 | 13.63 | 12.43 | 25 |
| AAMIVA | 11 | 12 | 13 | 12.00 | 26 |
| DASK | 4.15 | 4.1 | 21.26 | 9.84 | 27 |
| RGVN | 4.55 | 19.22 | 0.47 | 8.08 | 28 |
| WDS | 6.53 | 4.8 | 9.88 | 7.07 | 29 |
| MASK | 2.38 | 3.85 | 7.14 | 4.46 | 30 |
| ASOMI | 0.31 | 0.28 | 1.32 | 0.64 | 31 |
| AGUS | -19.08 | -38.48 | 14.52 | -14.35 | 32 |
| SDC | -22.62 | -51.8 | 1.44 | -24.33 | 33 |
| SSUS | 83.15 | -821.00 | -84.48 | -274.11 | 34 |

The application of difference of means test has been done at $\alpha=0.05$ for various categories of analysis viz., ROEs of 2008, 2009, 2010 and average ROE. A null hypothesis was tested with the assumption that the average ROE performance of the

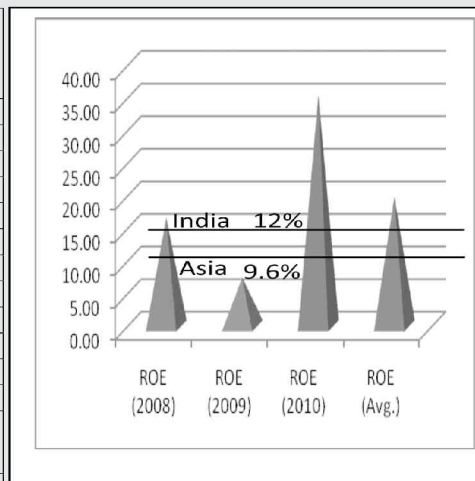
MFIs of Assam was equal to that of the national ROE benchmark of 12. One-tailed t test was conducted with the following hypothesis:-

H_0 : ROE = 12 and, H_1 : ROE > 12

Table 10. Descriptive Statistics of ROE, 2008-2010

Figure 2. Return on Equity

| Descriptive Statistics | ROE (2008) | ROE (2009) | ROE (2010) | ROE (Avg.) |
|---------------------------------|------------|------------|------------|------------|
| Mean | 16.56 | 7.43 | 35.49 | 19.83 |
| Std. Deviation | 33.28 | 157.37 | 39.48 | 49.06 |
| Std. Error | 5.71 | 26.99 | 6.77 | 8.41 |
| Minimum | -111.43 | -821 | 0.47 | -217.79 |
| Maximum | 83.15 | 296.84 | 198.64 | 91.72 |
| Sum | 563.15 | 252.77 | 1206.65 | 674.2 |
| Range | 194.58 | 1117.84 | 198.17 | 309.51 |
| Skewness | -1.16 | -4.47 | 2.47 | -3.41 |
| Kurtosis | 6.34 | 25.06 | 8.01 | 17.17 |
| Variance | 1107.86 | 24764.12 | 1558.38 | 2406.44 |
| df | 33 | 33 | 33 | 33 |
| N | 34 | 34 | 34 | 34 |
| 95% Confidence Interval - Lower | 4.95 | -47.47 | 21.72 | 2.71 |
| 95% Confidence Interval - Upper | 28.18 | 62.34 | 49.26 | 36.95 |
| t (Test Value = 12) | 2.90 | 0.28 | 5.24 | 2.36 |
| P Value (Two -tailed) | 0.00656 | 0.78467 | 0.00001 | 0.02451 |
| P Value (One -tailed) | 0.00328 | 0.39233 | 0.00000 | 0.01225 |



The average ROE benchmarks for India and Asia for the year 2008 were 12% and 9.6% respectively. This benchmark was published by MIX on March 2010. The sample data reported that the average ROE earned by the MFIs of Assam over the last three years was 19.83%. As the p value of the one-tailed t test of average ROE (0.01225) is less than 0.05, so the null hypothesis would be rejected.

Therefore it may be concluded that most of the MFIs of Assam

were earning higher ROE compared to the national ROE benchmark of 12% during 2008-2010 and this result was found to be statistically significant at 5% level of significance. Only those individual average ROE among the sample MFIs were considered to be exceptionally high and low if it fell beyond 95% upper and lower confidence interval respectively. The MFIs having high ROE and low ROE are shown in the following tables respectively.

Table 11. High ROA Performers

| MFI Name | ROE (Avg.) | Scale |
|-------------------|------------|------------|
| ROAD | 91.72 | Medium MFI |
| MZGPS | 91.57 | Big MFI |
| JPYS | 74.37 | Big MFI |
| RGVN NE Microfin. | 58.23 | Big MFI |
| GVM | 57.56 | Big MFI |
| GSEDC | 39.85 | Big MFI |

Table 12. Low ROA Performers

| MFI Name | ROE (Avg.) | Scale |
|----------|------------|------------|
| ASOMI | 0.64 | Big MFI |
| AGUS | -14.35 | Big MFI |
| SDC | -24.33 | Big MFI |
| SSUS | -274.11 | Medium MFI |

Relationship between Outreach and Profitability of the MFIs

Outreach of MFIs represents its social performance and profitability represents their financial performance. Both of these aspects of performance are important for the MFIs which is not necessary to achieve for banking and other formal financial institutions. The above analysis finds the ranking of the selected 34 MFIs of Assam based on outreach and profitability as given below.

Thus, from the above analysis, it has been seen that the sample MFIs obtained different ranking under the three performance parameters viz., client outreach, return on asset and return on equity. To examine the degree of association among these

parameters, let us formulate the following statistical hypothesis:-

- (a) H_0 : There exists no relationship between outreach and return on asset (ROA)
 H_1 : There exists some relationship between outreach and return on asset (ROA)
- (b) H_0 : There exists no relationship between outreach and return on equity (ROE)
 H_1 : There exists some relationship between outreach and return on asset (ROA)

Table 13. Ranking Of MFIs Based On Outreach, ROA & ROE

| MFI Name | Ranking of MFIs Based on ... | | |
|-------------|------------------------------|------------|------------|
| | <i>Outreach</i> | <i>ROA</i> | <i>ROE</i> |
| AAMIVA | 31 | 16 | 26 |
| AD | 33 | 7 | 25 |
| AGUP | 16 | 4 | 14 |
| AGUS | 19 | 34 | 32 |
| ASC | 11 | 26 | 17 |
| ASOMI | 3 | 32 | 31 |
| BJS | 28 | 5 | 13 |
| CRD | 8 | 18 | 11 |
| DASK | 32 | 15 | 27 |
| DC | 14 | 29 | 23 |
| DPYS | 29 | 3 | 12 |
| GM | 30 | 9 | 22 |
| GS | 5 | 31 | 8 |
| GSEDC | 24 | 10 | 6 |
| GVM | 17 | 11 | 5 |
| JPYS | 25 | 1 | 3 |
| LSS | 26 | 12 | 18 |
| MACC | 13 | 28 | 20 |
| MANDAL | 34 | 6 | 19 |
| MASK | 20 | 22 | 30 |
| MZGPS | 7 | 23 | 2 |
| NCS | 4 | 30 | 7 |
| PANCHARATNA | 15 | 13 | 15 |
| PRDS | 27 | 27 | 21 |
| PROCHESTA | 10 | 19 | 16 |
| RENEISSANCE | 23 | 21 | 24 |
| RGVN | 1 | 8 | 28 |
| RGVN NE | 2 | 17 | 4 |
| RMI | 22 | 25 | 10 |
| ROAD | 21 | 2 | 1 |
| SATRA | 6 | 20 | 9 |
| SDC | 12 | 33 | 33 |
| SSUS | 9 | 14 | 34 |
| WDS | 18 | 24 | 29 |

To test the above null hypothesis, three statistical tests viz., Pearson Rank Correlations Test, Kendall's Tau, and Spearman's rho Test is conducted at 10% level of significance. The summary of these test statics are given below:-

The results of Kendall's tau b test, Spearman's rho test and Pearson's rank correlations test indicate that there exists some negative relationship between outreach and ROA and this correlation is found to be statistically significant at the 0.01 level (2-tailed). On the other hand, the above three tests confirmed that there exists no relationship between outreach

and return on equity (ROE) and their correlation is not significant at the 0.01 level (2-tailed).

Gonzalez (2008) shows that as MFIs grow beyond 2,000 customers, there are no significant further efficiency gains resulting from economies of scale, controlling for a range of other variables like lending technology, geographical location, etc. On average, most productivity gains therefore are realised during the very early growth phase of an institution. A vast majority

Table 14. Pearson Rank Correlations Test & Spearman's rho Test

| | | OUTREACH | ROA | ROE |
|--|-------------------------|----------|---------|-------|
| OUTREACH | Pearson Correlation | 1 | -.475** | .121 |
| | Sig. (2-tailed) | | .005 | .496 |
| | N | 34 | 34 | 34 |
| ROA | Pearson Correlation | -.475** | 1 | .322 |
| | Sig. (2-tailed) | .005 | | .064 |
| | N | 34 | 34 | 34 |
| ROE | Pearson Correlation | .121 | .322 | 1 |
| | Sig. (2-tailed) | .496 | .064 | |
| | N | 34 | 34 | 34 |
| Kendall's tau_b | | | | |
| OUTREACH | Correlation Coefficient | 1.000 | -.319** | .105 |
| | Sig. (2-tailed) | . | .008 | .382 |
| | N | 34 | 34 | 34 |
| ROA | Correlation Coefficient | -.319** | 1.000 | .234 |
| | Sig. (2-tailed) | .008 | . | .052 |
| | N | 34 | 34 | 34 |
| ROE | Correlation Coefficient | .105 | .234 | 1.000 |
| | Sig. (2-tailed) | .382 | .052 | . |
| | N | 34 | 34 | 34 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | |

of financially sustainable MFIs lie above this threshold of 2,000 borrowers. This might be one of the reasons why there has been little in the way of profitability gains, measured in terms of return on asset.

Table 15. ROA & ROE of MFIs Based on Outreach

| Outreach (Nos.) | Average ROA (%) | Average ROE (%) |
|-----------------|-----------------|-----------------|
| More than 2000 | 3.76 | 6.5 |
| Less than 2000 | 18.85 | 30.66 |

For the sample MFIs of Assam, it has been found that both the average ROA and ROE is relatively higher for MFIs having less than 2000 active loan clients. The average ROA and ROE declines as the number of active loan clients increases beyond 2000.

Conclusion

Microfinance Institutions are special financial institutions. They have both a social nature (outreach) and a for-profit (profitability) nature. Thus, managing performance of MFIs is

very challenging compared to other forms of business organisations. This study examines the performance of MFIs in relation to outreach and profitability. An attempt has also been made to find out the relationship between outreach and profitability of the MFIs of Assam. A primary survey of 34 MFIs is conducted in 2010 covering 14 districts of Assam. The study finds that the number of active borrowers of MFIs in Assam has grown at the rate of 32.43% in 2009 and 44.59% in 2010. Over the two years period the growth rate is 91.49% during 2008-2010. It has been found that most of the MFIs of Assam earns higher ROA compared to the national average ROA of 1.40 during 2008-2010 and this result is found to be statistically significant at 5% level of significance. Similarly, it has been also found that the MFIs of Assam earns higher ROE compared to the national ROE benchmark of 12% during 2008-2010 and this result was found to be statistically significant at 5% level of significance. The results of Kendall's tau b test, Spearman's rho test and Pearson's rank correlations test indicate that there exists negative relationship between outreach and ROA and this correlation is found to be statistically significant at the 0.01 level (2-tailed). Finally, the

study concludes that both the average ROA and ROE declines as the number of active loan clients increases beyond 2000. This finding is similar with that of Gonzalez (2008) who showed that as MFIs grow beyond 2,000 customers, there are no significant further efficiency gains resulting from economies of scale, controlling for a range of other variables like lending technology, geographical location, etc.

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