PERFORMANCE ANALYSIS OF MICROFINANCE INSTITUTIONS OF INDIA [*]

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Abstract

This is a study of Microfinance Institutions-MFIs of India. It includes analysis of MFIs of India. This study includes analysis of performance of microfinance institutions with reference to both financial and non-financial ways. Performance of microfinance institutions is measured using four parameters, which are sustainability/profitability, outreach, operational and financial efficiency. Data is taken of 99 Microfinance Institutions of India from the Microfinance Information Exchange for a period of 11 years. Variables of this study are both in absolute and relative terms. The endogenous variables are Return on Assets and Return on Equity for sustainability, Number of Borrowers per Staff Member for operational efficiency, Cost per Borrower for financial efficiency, and Number of Active Borrowers for outreach. Panel data analysis is done after checking the assumptions of the model. Hausman Test is applied to find out the suitability of Fixed or Random Effect Model. Both random and fixed effect were found suitable for application. In addition to this descriptive analysis of the variables is also done. The results show that most of the variables used in the study are significant in outreach model; other than rank, financial revenue to assets ratio, portfolio at risk, deposits, and capital to assets ratio all other variables are significant in case of sustainability using ROA model and same variables are found insignificant in ROE model except financial expense to assets ratio; in financial efficiency model both significant and insignificant variables are found; and in case of operational efficiency all variables are found significant.

Keywords: Microfinance; Return on Assets, Return on Equity; Panel Data; India.

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[*] The views or opinions expressed in this manuscript are those of the author(s) and do not necessarily reflect the position, views or opinions of the editor(s), the editorial board or the publisher.
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INTRODUCTION

This research is about the analysis of Microfinance Institutions-MFIs operating in India. The analysis of Microfinance Institutions is done with reference to their performance in the areas of outreach, profitability and sustainability, and efficiency including both financial and operating efficiencies. Most of the bigger MFIs of India are included in the research, which constitute about 80 percent of the total capital of microfinance in the country. Analysis is done using ratios and absolute figures of 11 years. Although, microfinance institutions are of different types and have varied scope of operations but some measures are common and can be applied to all types of MFIs to assess their performance.

History of microfinance can be traced back to eighteenth century in Europe, in India and China it is even older (Seibel, 2005). 1970s were the period of micro credit revolution in which Grameen Bank of Bangladesh presented a new model (Sengupta & Aubuchon, 2008). In 1990s came the microfinance revolution in which the major contributor was Consultative Group to Assist the Poor-CGAP (Gregorian, 2007). In 1960s some experimentation was done to find out the approach of microfinance providers and to set the approach of MFIs. Subsidized financing and flexible repayment plans were not very successful and sustainable institutions approach developed, which is still prevailing. Viability, Sustainability and Self-reliance are the terms used to make MFIs effective (Robinson, 2001).

Looking in the history of microfinance in India it is seen that microfinance developed in the late sixties when banks were nationalized and then in mid-seventies when Regional Rural Banks-RRBs were formed. Cooperatives formed for microfinance initially were not successful due to corruption and mismanagement. Integrated Rural Development Program-IRDP of India was at one time the largest microfinance program of the world, in terms of the fund base and number of beneficiaries; performance of IRDP went down due to many factors such as political influence and poor management; later institutions like SEWA bank, Annapurna MahilaMnadal, and Working Women's Forum filled the gap; in late nineties cooperatives were reformed and Mutually Aided Cooperative Societies-MACS was formed; National Bank for Agriculture and Rural Development-NABARD, Small Industries

Development Bank of India-SIDBI and RshtriyuMahilaKosh-RMK provide large amounts to several Self-Help Groups-SHGs (The World Bank, 2007).

Netscribes (2009) stated that there are three forms of MFIs in India having their own philosophies i.e. non-profit organizations including trusts, societies and companies formed under section 25 of company law of India; mutual benefit groups including Self Help Groups, co-operative societies; and for profit organizations including non-banking financial corporations.

The differentiating factors of MFIs in India are legal model, loan repayment structure, mode of interest rate calculation, product offering and legal structure: Indian MFIs with reference to lending models are classified as individual and group lenders, of the two group-lending is more popular; group lending models are of two types i.e. Self Help Groups model and Joint Liability Group-JLG/Solidarity Group model; in JLG model the most popular models in India are Grameen Bank model and Association for Social Advancement-ASA and Individual lending model which is very similar to retail individual loans; differentiating factors of MFIs in India include loan repayment structures, MFIs using JLG model have weekly or fortnightly repayment plans, whereas SHGs model have monthly repayment plans, some MFIs in giving loans to traders take repayment on daily basis and in case of agricultural loans the payment are also linked with the crops sale and cash realization; in case of the third differentiating factor i.e. interest rate, generally MFIs using JLG model charge 12-18% flat interest rates on the amount of loan, whereas in case of SHGs interest rates vary from 18-24% on reducing balance method. Some MFIs also charge processing fee from the borrowers; products of microfinance in India are many but most of the MFIs only offer micro credit facility, only a few MFIs offer savings/thrift, insurance, pension, and remittance facilities. Finally, with reference to legal structure the differentiation is of three types in India, 'Not for Profit' organizations including Societies (Bandhan and RashtryaSewaSamithi), Public Trusts (Shri KshetraDhamasthala Rural Development Project, and Community Development Center), and Non-profit Companies (Indian Association for Savings and Credit and Cashpor Micro Credit); Mutual Benefit organizations including Registered Cooperatives and Mutually Aided Cooperative Societies-MACS; and 'For-profit' organizations including Non-banking Financial Corporations-NBFC (BhartiyaSamruddhi

Financials Limited, Share Microfinance Limited, SKS Microfinance Limited, and SpandansSphoorthy Financials Limited), Producer Corporations (Sri VijayaVisakha Milk Producers Company Limited), and Local Area Banks (Krishna BhimaSamurdhi Local Area Bank) (CRISIL, 2009).

In 1972 a group of women formed and organization by the name of Self Employed Women's Association-SEWA, with the objective of "strengthening its members' bargaining power to improve income, employment and access to social security"; to address poverty and to bring women from the eternal debt they formed the bank called MahilaSewa Cooperative Bank and is providing microfinance to millions of people in India (Shri Mahila Sewa Sahkari Bank Ltd., 2006).

LITERATURE REVIEW

Nawaz (2010) gathered data of 204 MFIs of 54 countries to see the performance of these MFIs with reference to what is called the mission drift in microfinance i.e. mainly focusing from poverty alleviation to institutional sustainability. There are studies in which researchers analyzed the performance of MFIs with reference to the two main issues i.e. sustainability and outreach (Cull, Demirguc-Kunt, & Morduch, 2007), (Hudon & Traca, 2011), and (Merslan & Strom, 2007). Cull, Demirguc-Kunt, and Morduch (2007) used data of 124 MFIs selected from 49 countries; they used Oprational Self-Sufficiency-OSS and Retrun on Assets to determine sustainability, other variables in the form of ratios related to outreach were taken. The paper of Cull, Demirguc-Kunt, and Morduch (2007) includes OLS and descriptive analysis of ratios. The results showed high interest rates lead to low profits; trade-off between profitability and serving the poor exists; when better-off customers are served the benefit of cost cut diminishes.

Assefa, Hermes, and Meesters (2010) indicated that performance of MFIs is measured in the areas of outreach, repayment, efficiency and financials. This article indicates that competition among MFIs resulted into deterioration in the performance. The data was of three sixty two MFIs taken from seventy three countries over a period of fifteen years i.e. 1995-2009.

Cull, Kunt, and Morduch (2007)in financial performance and outreach analysis microfinance banks of the world used indicators such as financial self-sufficiency, operational self-sufficiency, return on assets, for-profit status, age of MFI, size of loan portfolio, average loan size to GNP per capita, nature of MFI, capital costs to assets, real gross portfolio yield, labor cost to assets, loans to assets, donations to loan portfolio, average loan size, women borrowers, and average loan size to GNP per capita of the poorest 20%. They took data of one twenty four MFIs in forty nine developing countries from 1999-2002 and applied the given indicators to evaluate the performance. Lafourcade, Isern, Mwangi, & Brown (2005) conducted a research for MIX in the region of Sub Saharan Africa in which they used Outreach (both breadth and depth[*]) including Borrowers Number of active borrowers with loans outstanding, GLP, unadjusted Percentage of Women Borrowers Number of women borrowers/number of borrowers, Average Loan Balance per Borrower GLP/number of borrowers, Average Loan Balance per Borrower/GNI per Capita Average loan balance per borrower/GNI per capita, Savers Number of savers with passbook and time deposit accounts, Savings Total value of passbook and time deposit accounts, Average Savings Balance per Saver , Savings/Number of savers; Financial Structure including Savings-to-Liabilities Ratio Total savings/total liabilities, Capital-to-Asset Ratio Total equity/total assets; Financial Performance including Return on Assets (ROA) Net operating income, net of taxes/average total assets, Return on Equity (ROE) Net operating income, net of taxes/average total equity, Operational Self-Sufficiency (OSS) Financial revenue/(financial expense + net loan loss provision expense + operating expense), and Financial Revenue Ratio Financial revenue/average GLP; Efficiency and Productivity including Operating Expense/GLP Operating expense/average GLP, Cost per Borrower Operating expense/average number of borrowers, Cost per Borrower/GNI per capita Cost per borrower/GNI per capita, Cost per Saver Operating expense/average number of savers, Cost per Saver/GNI per capita Cost per saver/GNI per capita, Borrowers per Staff Member Number of borrowers/number of personnel, and Savers per Staff Member Number of savers/number of personnel; Portfolio Quality including PAR > 30 days.

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[*]Breadth is the number of clients served and volume of services, whereas depth is the socioeconomic level of clients that MFIs reach

Imai, Gaila, Thapa, Annim, and Gupta (2012) developed a model of find out the financial performance of MFIs of the world. They used Macro level indicators such as GDP per capita, share of domestic credit to GDP; Characteristics of MFIs such as size, age, and legal status; and Institutional factors such as political stability, voice and accessibility, control on corruption, and rule of law. As this research was from both macroeconomic and institutional perspectives so the variables used are unique, which are generally not used by other researchers.

Hermes, Lensick and Meesters (2011) conducted MFIs analysis to find out the relationship between outreach and efficiency using stochastic frontier analysis and found that there is a negative relationship between the two. Armendariz and Labie in The Handbook of Microfinance (2011) has written that social, financial and efficiency indicators should be used to measure the performance of MFIs.

TABLE 1

Variable Description

Variable	Description	Formula
Assets	Assets	Total Assets
adpd	Average deposit balance per depositor	Total Deposits / Number of Depositors
adpdpc	Average deposit balance per depositor / GNI per capita	Average Deposit Balance per Depositor / GNI Per Capita
alpb	Average loan balance per borrower	Gross Loan Portfolio / Number of Active Borrowers
alpbpc	Average loan per borrower per capita	Average Loan Balance per Borrower / GNI Per Capita
nobpsm	Number of Borrowers per Staff Member	Number of Active Borrowers/Number of Personnel
bor	Borrowings	
car	Capital/asset ratio	Borrowings
cpb	Cost per borrower	Total Equity/Total Assets
der	Debt to equity ratio	Operating Expenses/Average Number of Active Borrowers
dpsm	Depositors per staff member	Total Liabilities/Total Equity
dep	Deposits	Number of Depositors/Number of Personnel
rank	Diamonds	Total Value of All Deposit Accounts

Variable	Description	Formula
equity	Equity	Ranking
fear	Financial expense/ assets	Equity
frar	Financial revenue/ assets	Financial Expense/Average Total Assets
glp	Gross Loan Portfolio	Financial Revenue/Average Total Assets
noab	Number of active borrowers	Gross Loan Portfolio Number of Borrowers with Loan Outstanding
nod	Number of depositors	Number of Depositors with any type of Deposit Account
oear	Operating expense/ assets	Operating Expenses/Average Total Assets
oelp	Operating expense/ loan portfolio	Operating Expenses/Average Gross Loan Portfolio
person	Personnel	Total Number of Staff Members
pfar	Portfolio at risk &gt. 30 days	Outstanding balance, portfolio overdue > 30 Days + renegotiated portfolio / Gross Loan Portfolio
pflita	Provision for loan impairment/ assets	Impairment Losses on Loans/Average Total Assets
roa	Return on assets	Net Operating Income – Taxes/Average Total Assets
roe	Return on equity	Net Operating Income – Taxes/Average Total Equity
nowb	Women borrowers	Number of women borrowers in
wor	Write-off ratio	Value of Loans Written-off/Average Gross Loan Portfolio
ygpf	Yield on gross portfolio (nominal)	Financial Revenue from Loan Portfolio/Average Gross Loan Portfolio

TABLE 2

MFIs Corporate Structures

	NBFIs	NGOs	Credit Unions/Cooperatives	Banks Others	Total
Pakistan	14	2	0	8	24
India	51	37	7	2	97
Bangladesh	0	30	1	1	32
Total	65	69	8	11	153

Outreach

The details of the variables and the formulae of variables are also given below the equations. The best measure to find out the outreach of MFIs is with reference to the number of active borrowers, more borrowers mean more outreach. The following are the probable

models to be developed in the light of this research, first in the area of outreach in FEM and REM respectively:

$$noab = \beta_{1i} + \beta_{2it}\,nod + \beta_{3it}nowb + \beta_{4it}adpd + \beta_{5it}alpb + \beta_{6it}adpdpc + \beta_{7it}alpbpc + \beta_{8it}glp + \beta_{9it}dep + \mu_{it}$$

$$noab = \beta_{1i} + \beta_{2it}\,nod + \beta_{3it}nowb + \beta_{4it}adpd + \beta_{5it}alpb + \beta_{6it}adpdpc + \beta_{7it}alpbpc + \beta_{8it}glp + \beta_{9it}dep + \varepsilon_{it} + \mu_{it}$$

Profitability and Sustainability

In the area of profitability and sustainability two models are anticipated, one with reference to return on total assets and the other with reference to return on equity. These two models are given under, both with FEM and REM respectively:

$$roa = \beta_{1i} + \beta_{2it}assets + \beta_{3it}bor + \beta_{4it}car + \beta_{5it}der + \beta_{6it}dep + \beta_{7it}rank + \beta_{8it}pfar + \beta_{9it}pflita + \beta_{10it}wor + \beta_{11it}ygpf + \beta_{12it}fear + \beta_{13it}oear + \beta_{14it}frar + \mu_{it}$$

$$roa = \beta_{1i} + \beta_{2it}assets + \beta_{3it}bor + \beta_{4it}car + \beta_{5it}der + \beta_{6it}dep + \beta_{7it}rank + \beta_{8it}pfar + \beta_{9it}pflita + \beta_{10it}wor + \beta_{11it}ygpf + \beta_{12it}fear + \beta_{13it}oear + \beta_{14it}frar + \varepsilon_{it} + \mu_{it}$$

The same model will also be used with return on equity as dependent variable as given under again with FEM and REM respectively:

$$roe = \beta_{1i} + \beta_{2it}assets + \beta_{3it}bor + \beta_{4it}car + \beta_{5it}der + \beta_{6it}dep + \beta_{7it}rank + \beta_{8it}pfar + \beta_{9it}pflita + \beta_{10it}wor + \beta_{11it}ygpf + \beta_{12it}fear + \beta_{13it}oear + \beta_{14it}frar + \mu_{it}$$

$$roe = \beta_{1i} + \beta_{2it}assets + \beta_{3it}bor + \beta_{4it}car + \beta_{5it}der + \beta_{6it}dep + \beta_{7it}rank + \beta_{8it}pfar + \beta_{9it}pflita + \beta_{10it}wor + \beta_{11it}ygpf + \beta_{12it}fear + \beta_{13it}oear + \beta_{14it}frar + \varepsilon_{it} + \mu_{it}$$

Operational Efficiency

Operational efficiency is with reference the achievement of ultimate objective of MFIs i.e. servicing the borrowers and financial efficiency is with reference to the cost incurred by an MFI in servicing a borrower. Operational efficiency is measured using the following equation in terms of Number of Borrowers per Staff Member as given in the following equation:

$$nobpsm = \beta_{1i} + \beta_{2it}\,noab + \beta_{3it}nowb + \beta_{4it}nod + \beta_{5it}dep + \beta_{6it}person + \beta_{7it}wor + \beta_{8it}glp + \mu_{it}$$

$$nobpsm = \beta_{1i} + \beta_{2it}\, noab + \beta_{3it}nowb + \beta_{4it}nod + \beta_{5it}dep + \beta_{6it}person + \beta_{7it}wor + \beta_{8it}glp + \varepsilon_{it} + \mu_{it}$$

Financial Efficiency

Financial efficiency is measured in terms of cost per borrower. Financial efficiency is related to the efficiently utilizing the funds towards providing loans to the borrowers. Higher financial efficiency leads to the saving funds for more lending, hence maximizing the amount available for lending. The relevant ratios are operating expenses to assets ratio, financial expenses to assets ratio, financial revenue to assets ratio, yield on gross portfolio, write off ratio, return on equity and return on assets. The following are the equations related to financial efficiency with reference to cost per borrower:

$$cpb = \beta_{1i} + \beta_{2it}\, oear + \beta_{3it}fear + \beta_{4it}frar + \beta_{5it}ygpf + \beta_{6it}wor + \beta_{7it}roa + \beta_{8it}roe + \mu_{it}$$

$$cpb = \beta_{1i} + \beta_{2it}\, oear + \beta_{3it}fear + \beta_{4it}frar + \beta_{5it}ygpf + \beta_{6it}wor + \beta_{7it}roa + \beta_{8it}roe + \varepsilon_{it} + \mu_{it}$$

The performance of MFIs is tested using panel data regression analysis indicating the impact of independent variables on selected dependent variables in the four areas of outreach, sustainability, efficiency and compliance. To apply panel data analysis all assumptions are checked.

TABLE 3

Descriptive Statistics of Variables for MFIs of India

Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
assets	.00	1.70E9	67617720.0294	2.12535E8	5.049	.121	28.976	.241
adpd	.00	192.40	33.9830	22.01221	2.971	.121	17.226	.241
adpdpc	.00	.00	.0000	.00000	.	.	.	.
alpb	.00	274.00	93.9357	42.15058	.938	.121	1.274	.241
alpbpc	.00	.00	.0000	.00000	.	.	.	.
nobpsm	.00	331.00	146.1635	54.58922	.961	.121	1.179	.241
bor	.00	2.98E8	12622103.487	30301987.130	6.639	.121	51.628	.241
car	.00	.00	.0000	.00000	.	.	.	.
cpb	.00	71.00	13.1587	6.40309	2.879	.121	19.197	.241
der	-93.05	95.79	6.1192	10.97775	-3.920	.121	58.360	.241
dpsm	.00	444.00	113.3873	102.84203	.317	.121	-.830	.241
dep	.00	1.65E9	33759951.899	1.59279E8	7.730	.121	65.657	.241

	Minimum	Maximum	Mean	Std. Deviation	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
rank	1.00	5.00	3.5809	.98805	-1.908	.121	2.472	.241
equity	-22037595	3.99E8	14922996.448	50396808.3533	5.080	.121	29.312	.241
fear	.00	.00	.0000	.00000	.	.	.	.
frar	.00	.00	.0000	.00000	.	.	.	.
glp	17709.00	1.01E9	49890226.7304	1.44651E8	4.192	.121	18.299	.241
noab	341.00	6610000.00	514641.6299	1334153.97855	3.351	.121	10.369	.241
nod	.00	8359993.00	586595.2083	1647983.17899	3.466	.121	11.137	.241
oear	.00	.00	.0000	.00000	.	.	.	.
oelp	.00	.00	.0000	.00000	.	.	.	.
person	.00	34841.00	2379.3186	5324.92241	3.359	.121	11.066	.241
pfar	.00	.00	.0000	.00000	.	.	.	.
pflita	.00	.00	.0000	.00000	.	.	.	.
roa	.00	.00	.0000	.00000	.	.	.	.
roe	.00	.00	.0000	.00000	.	.	.	.
nowb	.00	6371379.00	465646.9265	1234796.57502	3.452	.121	11.156	.241
wor	.00	.00	.0000	.00000	.	.	.	.
ygpf	.00	.00	.000	.00000	.	.	.	.
Valid N (list wise)								

Source. All calculations are based on data from Microfinance Information Exchange at 5% significance level.

In the current study many variables were not linear or normally distributed. Due to such problems variables are transformed by taking log (log) of them. These transformations have sorted out the problems of basic assumptions of data required for analysis.

Assumptions of the Models

The assumptions are important to approximate the exact association among variables. These assumptions consist of normality tests which are checked by histograms, linearity is checked by normal probability plot, though linearity and normality is not considered a serious problem in panel data analysis. Multicoliearity is checked by VIF test, autocorrelation is checked by Correlogram and Heteroskedasticity is checked by Heteroskedasticity tests and graphs. Five models are considered in study for each sector. The brief detail and graphs of these assumptions and models are discussed in this section.

The residuals are considered distributed normal if the Jarque-bera value is less than round off to 6, value of Skewness is round off to zero and value of kurtosis is near to 3. Linearity is checked by normal probability plot. The histograms and normal probability plots of all variables are checked and data are found normally distributed and linear.Multicoliearity

is checked using Variance Information Factor-VIF and the cutoff value of VIF is taken as 10. The results indicate that the there is no problem of multicoliearity.Heteroskedasticity is checked using scattered diagram. The charts indicated no serious problem of Heteroskedasticity.

Outreach

Both Fixed and Random Effect Models are applied. The results of Hausman Test are used to select the suitable model. The probability of the Hausman Test is less than 0.05 so Fixed Effect model is accepted. The results of the Fixed Effect suggest that logalpb is significant at 10% level of significance with positive value of beta coefficient. Logdep, lognod, lognowb, logglp are significant at 1% level of significance with positive values of beta coefficient. Logadpd, logadpdp, logalpbp are significant at 1% level of significance with negative values of beta coefficient. At 5% level of significance the following model is applied:

$$noab = -1.654433 + 0.172703\ nod + 0.278958\ nowb - 0.266815\ adpd - 0.335749\ adpdpc - 0.291125\ alpbpc + 0.453501\ glp + 0.096884\ dep + \mu_{it}$$

Sustainability using ROA

The results of Hausman Test show that random effect model is accepted. The accepted model represents that logbor, logder and logfear are significant at 5% level of significance with negative values of beta coefficients. Logpflita and logygpf are significant at 5% level of significance with positive values of beta coefficients. Logasset and logwor are significant at 10% level of significance with positive value of beta coefficients. Logoear is significant at 1% level of significance with positive value of beta coefficient. Rank, Logfrar, logpfar, logdep and logcar are insignificant.

$$roa = -0.668900 - 0.065884\ logbor - 0.050288\ logder - 0.075569\ logfear + 0.071122\ logpflita + 0.0234767\ logygpf + 0.150545\ logoear + \mu_{it}$$

Sustainability using ROE

The probability of Hausman Test is more than 0.05 which shows that Fixed Effect model is rejected and random effect model is accepted. The accepted model suggests that

logbor, logcar are significant at 1% level of significance with negative values of beta coefficients. Logder is significant at 1% level of significance with positive values of beta coefficient. Logdep is significant at 5% level of significance with negative value of beta coefficient. Logpfar is significant at 10% level of significance withpositive values of beta coefficients. The remaining variables are insignificant.

$$roe = 0.316988 - 0.021835logdep + 0.071122logpflita - 0.081781\ logbor - 0.148969\ logcar + 0.169008\ logder + \mu_{it}$$

Financial Efficiency

The probability value of Hausman Test is less than 0.05 which shows that Fixed Effect model is accepted showing that logfear is significant at 5% level of significance with negative values of beta coefficients. Logroa is significant at 1%. Logoear, logfrar, logygpf, logwor and logroe are insignificant variables.

$$cpb = 1.574739 - 0.070062\ fear + 0.096851\ roa + \mu_{it}$$

Operational Efficiency

$$nobpsm = \beta_{1i} + \beta_{2it}\ noab + \beta_{3it}nowb + \beta_{4it}nod + \beta_{5it}dep + \beta_{6it}person + \beta_{7it}wor + \beta_{8it}glp + \mu_{it}$$

The probability value of Hausman Test is less than 0.05 so Fixed Effect model is accepted. According to the accepted model lognoab and logwor are significant at 5% level of significance but lognoab has positive values of beta coefficient and logwor has negative value of beta coefficients. Lognod, logdep, logperson are significant at1% level of significance with negative values of beta coefficients and lognowb and logglp are significant at 1% level of significance with positive values of beta coefficients. The following is the actual model:

$$nobpsm = 1.552329 + 0.060885\ noab + 0.111322\ nowb - 0.350923\ nod + 0.181472\ dep - 0.214279\ person - 0.054106\ wor + 0.193889\ glp + \mu_{it}$$

CONCLUSIONS

It is concluded by the results that most of the factors included in the models are significant. Considering the significance of these factors it can be concluded that these are good indicators of performance analysis of MFIs. Number of depositors, number of women borrowers, total deposits and gross loan portfolio has positive relationship and hence need to be increased in order to increase outreach. Only financial expense to assets ratio is found significant in ROA model but not in ROE model, rest of the variables are similar in the two models. In case of financial efficiency only financial expenses to assets ratio and return on assets are significant, showing very few known factors in the model. Finally, in case of operational efficiency all included variables are found to be significant and included in the fitted model.

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