Research Paper *IJMSRR*
*Impact Factor :**3.029*** *E- ISSN - 2349-6746*
ISSN -2349-6738

FINANCIAL PERFORMANCE OF MFIs IN INDIA – A MULTIPLE REGRESSION ANALYSIS

Dr. Mrs. R.Rupa
Associate Professor, School of Commerce (PG), C M S College of Science and Commerce, Coimbatore, Tamilnadu.

Abstract
Microfinance initially has been a form of voluntary help to most deprived population but today it represents a market solution to mitigation of poverty and acts as a development and economic tool in bringing about financial inclusion in India. The institutions that are providing microfinance services such as savings, credit, insurance and remittance services to poor are called Microfinance Institutions (MFIs). The study aims at analyzing the financial performance of MFIs in India by employing multiple regression analysis. The data have been collected from Microfinance Information Exchange from the fiscal year 2007 to 2011. The statistical tools numerical scoring and multiple regression analysis have been used for analyzing the data. It is found that the average loan balance per borrower/GNI per capita, return on asset and yield on gross portfolio(nominal) have been the cause for the decline in the overall performance during the study period.

Key words: Financial Performance, Microfinance Institutions, Multiple Regression Analysis.

1.1 INTRODUCTION

Finance is an extra ordinary effective tool in spreading economic opportunity and fighting against poverty. Access to finance allows the poor to use their rich talents or open avenues for greater opportunities. Providing sustained credit services is one of the means to increase income and productivity of poor. Starting with the Grameen bank founded by Mohammed Yunus in 1970s microfinance represented a method of lending that is to be tailored specifically to the world's poorest population. MFIs are commonly known as "Bank for the poor". MFIs play a significant role in financial sector development, and thereby, overall development.

1.2 STATEMENT OF THE PROBLEM

India is a developing economy and poverty is a common problem. It becomes imperative to formulate specific situational poverty alleviation policies and programmes for generation of minimum level of income for rural poor which forms substantial percentage of national population in developing societies. Microfinance is an option to resolve this problem of poor people. The microfinance industry in India started with informal Self Help Group (SHG) to access the much – needed savings and credit services in the early 1980's and today it has evolved into a vibrant industry exhibiting variety of business model. To provide microfinance and other support services MFIs should be able to sustain for long period. In order to sustain operations, MFIs must generate enough revenues from financial services to cover their financial and operating cost and in many cases, build institutional capital through profit. The present study is an attempt to assess the financial performance of Microfinance Institutions operating in India during fiscal year period 2007 to 2011 (2007-08 to 2011-12). By applying numerical scoring the overall performance of MFIs selected for the study has been arrived at and multiple regression analysis has also been employed to identify the effect of selected parameters on the overall performance score of MFIs in India.

1.3 OBJECTIVES OF THE STUDY

The study focuses on the objective:

1. To analyse the financial performance of MFIs in India
2. To identify the effect of selected parameters on the overall performance score of MFIs in India.

1.4 SCOPE OF THE STUDY

The study is pertaining to microfinance institutions in India. The comprehensive financial performance indicators model used by Microfinance Information Exchange (MIX) has been chosen for the study. The variables, such as institutional characteristics, financing structure, outreach indicators, overall financial performance indicators, revenue and expenses, efficiency and risk and liquidity have been considered to analyse the financial performance.

1.5 RESEARCH METHODOLOGY

1.5.1 SOURCE OF DATA

The study is primarily based on secondary data. The data have been collected from Microfinance Information Exchange (MIX) i.e., www.mixmarket.org. The period undertaken for the study is from fiscal year 2007 to 2011 (2007-08 to 2011-2012).

1.5.2 SAMPLE AND SAMPLING DESIGN

The MFIs which have fulfilled the disclosure guidelines laid down by Consultative Group to Assist the Poor (CGAP), the global body of dominant donors of MFI space, providing details on all indicators of financial reporting are considered in this study. There are 122 MFIs in India which have reported their financial information to CGAP through MIX in the fiscal year 2011. The MFIs for which the financial details have been reported atleast for 5 years continuously have been identified. It is noted that only 71 MFIs of which 46 MFIs in India have fulfilled the requirement and all these MFIs are taken for the study.

1.5.3 TOOLS FOR ANALYSIS

Multiple Regression analysis

Multiple Regression is mainly building an equation wherein the predictor variables' coefficients are found out. The general Multiple Regression equation is of the form,

$Y= a0+a1X1+a2X2+.....anXn$

where Y - the dependent variable

a0 - constant

a1, a2,.....an are the regression coefficients for the independent variables X1, X2,.....Xn respectively.

Multiple Regression analysis is used in this study mainly to find the effect of several performance indicators on overall performance scores of MFIs.

1.6 LIMITATIONS OF THE STUDY

The study is subject to the following limitations:

- The limitations inherent in statistical tools apply to this study also.
- Non availability of continuous data from MIX for more than five years has restricted the period and number of MFIs in this study.

2.1 REVIEW OF LITERATURE

There is plethora of literature on performance of MFIs across globe, though only few studies have been carried out on the topic related with performance of Indian MFIs. The methodologies to study financial sustainability are also fewer. It is seen that without sound financial performance the sustainability of these MFIs is not possible.

Sen Mitali (2008)[1], in his study on "Assessing Social Performance of MFIs in India" examined the design and effectiveness of public policy tools relating to the rapidly developing micro finance institutions. The study has revealed that even financially self-sufficient MFIs maintain a high ratio of equity to total assets. It has been found that the form of support for MFIs may significantly affect the performance of these institutions and value to society. The study has concluded that there are good reasons to provide support for MFIs largely because of an informational advantage, the MFIs can be more efficient than either other financial institutions in bringing benefits to the parts of society. The study has suggested that MFIs often improve their profitability as they mature, primarily by lowering their average cost.

Pankaj K. Agarwal and S.K.Sinha (2010)[2], in their study on "Financial performance of microfinance institutions of India: A cross sectional study", has analysed and compared the financial performance of MFIs primarily from a sustainability stand point. The study has been conducted during 2008 with a sample of 22 MFIs which are five stars rated and data have been collected from mix market. The financial performance has been done based on six parameters, namely, financial structure, revenue, expense, efficiency, productivity and risk. The difference of means test has been used to compare the performance of star performers. The study have concluded that the most of the best performing firms were following different business model in India, this has been reflected in 13 out of 22 parameter studied.

Bayeh Asnakew Knide (2012)[3], in this article on "Financial sustainability of microfinance institutions in Ethiopia" has aimed at identifying factor affecting financial sustainability of MFIs in Ethiopia. The study has followed a quantitative research

approach using a balanced panel data set of 126 observations from 14 MFIs over the period 2002 to 2010. The indicators, namely, financial sustainability, subsidy and sustainability, breadth of outreach, depth of outreach, capital structure and efficiency have been taken for analysis. The data has been analysed using descriptive statistics and econometric test. The study has found that microfinance breadth of outreach, depth of outreach, dependency ratio and cost per borrowing has affected the financial sustainability of micro finance institutions in Ethiopia. The study has concluded that capital structure of micro finance institutions and staff productivity has created significant impact on financial sustainability of MFIs in Ethiopia for study period.

Zohra Bi, Ajita Poudelm Junaid Saraf (2013)[4] in their paper titled "Performance and Sustainability of MFIs in India" have aimed to study the contribution and growth of Indian microfinance system, outreach of Indian MFIs and operating efficiency and portfolio quality of Indian MFIs. The indicators, namely, outreach, portfolio size and operating efficiency have been used for analysis. They have highlighted that MFIs have been concentrating in southern region of India and majority of MFIs have been NBFC. The study also found that large NBFC MFIs have maximum outreach due to their efficiency and sustainability.

The review of literature has revealed that the sustainability of MFIs is not possible without sound financial performance.

3.1 PERFORMANCE INDICATORS OF MFIS IN INDIA - NUMERICAL SCORING SYSTEM

The financial performance of the selected MFIs has been analysed using selected performance indicators. Since each performance indicator/variable is measured for a specific purpose, comparison among the variables and ranking them into standard units is be difficult. Hence, these variables have been converted into Z-scores with a mean of 0 and standard deviation of 1. These Z-scores are free from units of measurements and hence comparable across variables. The variables converted into Z-scores have been further grouped based on percentile values. The ratings ranging from 1 to 10 has been assigned to each variable for each institution and for each year based on the percentile value ranges within which the Z-score values fall. The table 3.1 shows the descriptive statistics of numerical scoring of MFIs in India.

Table 3.1 Numerical scoring - Descriptive Statistics of MFIs in India

Indicators	N	Minimum	Maximum	Mean	SD
Assets (US $)	230	211442	952929294	74222649.77	157117220.94
Capital/asset ratio (%)	230	-6.57	92.14	18.97	15.18
Debt to equity ratio (%)	230	-16.23	302.56	10.96	27.22
Gross loan portfolio to total assets (%)	230	31.97	121.64	83.46	15.59
Number of active borrowers	230	2410	6242266	425661	914478.83
Average loan balance per borrower (US $)	230	60	494	145.48	65.78
Average loan balance per borrower/GNI per capita (%)	230	0.00	50.30	12.15	6.02
Average outstanding balance (US $)	230	60	11939	189.69	780.77
Return on assets (%)	230	-97.21	30.82	0.19	10.78
Return on equity (%)	230	-1258.17	212.17	11.31	96.61
Operational self-sufficiency (%)	230	-12.24	335.65	112.60	34.54
Financial revenue/ assets (%)	230	-2.82	54.50	21.78	7.41
Profit margin (%)	230	-1492.80	916.79	-2.40	129.80
Yield on gross portfolio (nominal) (%)	230	-3.87	81.95	24.28	8.69
Total expense/ assets (%)	230	0.79	118.38	20.84	10.93

Financial expense/ assets (%)	230	2.38	19.31	8.79	2.52
Provision for loan impairment/ assets (%)	230	-1.60	10.64	0.95	1.43
Operating expense/ assets (%)	230	0.78	109.16	11.00	9.62
Operating expense/ loan portfolio (%)	230	0.85	187.08	14.71	17.04
Average salary/ GNI per capita	230	0.00	4.16	1.77	0.89
Cost per borrower (US $)	230	1.00	196.00	19.94	20.88
Loans per staff member	230	1.00	1430.00	282	194.77
Personnel allocation ratio (%)	230	0.00	92.19	57.36	22.39
Portfolio at risk > 90 days (%)	230	0.00	512.58	9.02	44.04
Risk coverage (%)	230	0.00	196015.69	1924.46	16511.56
Non-earning liquid assets as a per cent of total assets (%)	230	0.00	63.35	16.25	12.70

Source: Computed

Table 3.2 Numerical scoring – Percentile value and Z score of MFIs in India

Indicators	**Percentiles**								
	10	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
Zscore: Assets	-0.463	-0.440	-0.420	-0.396	-0.351	-0.311	-0.241	-0.059	0.995
Zscore: Capital/asset ratio	-0.989	-0.766	-0.529	-0.397	-0.274	-0.102	0.179	0.611	1.361
Zscore: Debt to equity ratio	-0.348	-0.312	-0.276	-0.232	-0.197	-0.162	-0.109	0.031	0.343
Zscore: Gross loan portfolio to total assets	-1.215	-0.552	-0.307	-0.120	0.154	0.301	0.451	0.632	1.084
Zscore: Number of active borrowers	-0.455	-0.437	-0.411	-0.391	-0.344	-0.293	-0.223	-0.073	0.826
Zscore: Average loan balance per borrower	-0.356	-0.347	-0.335	-0.314	-0.279	-0.241	-0.183	-0.080	0.507
Zscore: Average loan balance per borrower/GNI per capita	-0.838	-0.636	-0.477	-0.350	-0.242	-0.051	0.138	0.417	0.810
Zscore: Average outstanding balance	-0.130	-0.116	-0.103	-0.094	-0.082	-0.070	-0.056	-0.042	0.002
Zscore: Return on assets	-0.299	-0.002	0.035	0.080	0.129	0.177	0.270	0.390	0.532
Zscore: Return on equity	-0.221	-0.105	-0.069	-0.031	0.007	0.070	0.127	0.258	0.507
Zscore: Operational self-sufficiency	-0.818	-0.325	-0.227	-0.135	-0.047	0.044	0.220	0.530	1.064
Zscore: Financial revenue/assets	-1.355	-0.729	-0.389	-0.191	0.003	0.270	0.498	0.714	1.075
Zscore: Profit margin	-0.038	0.029	0.055	0.076	0.097	0.115	0.150	0.201	0.280
Zscore: Yield on gross portfolio	-1.109	-0.713	-0.366	-0.150	0.067	0.218	0.406	0.594	0.950

(nominal)									
Zscore: Total expense/assets	-0.810	-0.613	-0.418	-0.318	-0.114	0.040	0.175	0.327	0.740
Zscore: Financial expense/assets	-1.284	-0.739	-0.385	-0.184	-0.008	0.210	0.411	0.765	1.200
Zscore: Provision for loan impairment/assets	-0.657	-0.565	-0.450	-0.343	-0.273	-0.154	0.012	0.264	1.000
Zscore: Operating expense/assets	-0.709	-0.572	-0.414	-0.280	-0.193	-0.062	0.113	0.304	0.630
Zscore: Operating expense/ loan portfolio	-0.558	-0.483	-0.345	-0.281	-0.194	-0.081	-0.011	0.112	0.420
Zscore: Average salary/GNI per capita	-1.529	-0.761	-0.529	-0.230	-0.044	0.285	0.564	0.888	1.180
Zscore: Cost per borrower	-0.668	-0.572	-0.428	-0.332	-0.236	-0.189	0.003	0.233	0.860
Zscore: Loans per staff member	-0.920	-0.654	-0.521	-0.349	-0.195	-0.074	0.205	0.462	1.010
Zscore: Personnel allocation ratio	-2.072	-0.375	-0.094	0.051	0.199	0.385	0.536	0.695	0.970
Zscore: Portfolio at risk> 90 days	-0.205	-0.205	-0.203	-0.200	-0.195	-0.189	-0.176	-0.143	-0.030
Zscore: Risk coverage	-0.117	-0.116	-0.116	-0.115	-0.113	-0.111	-0.108	-0.101	-0.080
Zscore: NELA as a per cent of total assets	-1.036	-0.792	-0.625	-0.434	-0.233	0.012	0.295	0.619	1.350

Source: Computed .

Table 3.3 Overall performance score of MFIs in India

Sl No.	MFI	Year					Comprehensive score	Rank
		2007	2008	2009	2010	2011		
1	Adhikar	159	143	152	126	146	726	18
2	AML	136	170	165	135	106	712	21
3	Arohan	123	158	154	126	110	671	28
4	Asirvad	144	153	181	166	149	793	6
5	Asomi	136	152	107	139	148	682	26
6	Bandhan	184	191	183	184	186	928	1
7	BASIX	119	127	149	108	94	597	38
8	BISWA	179	181	157	144	119	780	8
9	BJS	139	141	129	145	156	710	23
10	BSS	157	163	133	151	116	720	20
11	BWDA Finance	159	172	152	160	134	777	10
12	Cashpor MC	115	143	166	151	165	740	15
13	CCFID	126	116	128	137	134	641	32
14	ESAF	117	134	127	125	137	640	33
15	GFSPL	139	128	120	129	121	637	36
16	Grama Vidiyal	173	163	164	156	141	797	4
17	GU	143	150	128	137	104	662	30
18	HiH	99	135	93	93	91	511	45
19	KBSLAB	102	115	109	114	106	546	43

20	Mahasemam	133	142	124	127	145	671	29
21	Mahashakti	139	136	124	124	115	638	35
22	Mimo Finance	102	126	120	120	102	570	41
23	MMFL	175	157	164	156	144	796	5
24	NBJK	145	147	148	144	155	739	16
25	NCS	110	106	125	94	109	544	44
26	NEED	153	135	136	148	150	722	19
27	PWMACS	106	139	131	104	91	571	40
28	RGVN	140	149	152	161	162	764	12
29	Sanghamithra	139	156	160	158	157	770	11
30	Sarala	165	174	188	176	178	881	2
31	Sarvodaya	150	138	147	143	123	701	24
32	SCNL	113	110	133	116	129	601	37
33	SEWA Bank	111	107	107	115	111	551	42
34	SHARE	131	181	177	132	109	730	17
35	SKDRDP	142	146	180	159	157	784	7
36	SKS	148	153	155	134	121	711	22
37	SMILE	147	170	153	174	154	798	3
38	SMSS	133	144	125	131	112	645	31
39	Sonata	115	159	106	147	145	672	27
40	Spandana	166	187	186	123	116	778	9
41	SU	172	160	161	139	111	743	14
42	Swadhaar	74	73	78	85	99	409	46
43	SWAWS	143	159	170	109	106	687	25
44	Trident Microfinance	128	126	162	110	113	639	34
45	Ujjivan	95	111	135	135	113	589	39
46	VFS	155	152	143	158	136	744	13
		30th Percentile					641	
		70th Percentile					742	

Source: Computed

The Percentile values have been given in the table 3.2. Ratings for each variable have been assigned; for example, if the Z-score value of an institution on a year falls below the 10th percentile value, then a rating of 1 is assigned. If Z-score value falls between 10th and 20th percentile value, then a rating of 2 is assigned and so on. If the Z-score value of any variable falls above the 90th percentile value, then a rating of 10 is assigned. These ratings have been reversed for those variables where higher values would indicate lessor performance. The ratings thus assigned to each MFI for all the variables have been totaled for all the seven categories of parameters, institution wise and year wise. The scores arrived at for each MFI, are stated in the table 3.3

The table reveals the comprehensive score of each MFI in India, which is used to assess the overall performance and to rank them further. Higher the score, higher is the level of financial performance of MFIs during the study period. The scores for the MFIs falling below the 30th percentile value have been considered as 'poor performing MFIs' and the MFIs which have scored above 70th percentile values have been considered as 'good performing MFIs'. The scores of the MFIs falling between 30th and 70th percentile values have been classified as 'moderate performing MFIs'. Thus, it could be seen that Bandhan has obtained the maximum score of 928, followed by Sarala with 881 and Smile with 798 as their comprehensive score. The least score of 544, 511 and 409 have been obtained by NCS, HiH and Swadhaar respectively. It is observed that 14 MFIs, i.e., 30.4 per cent of the selected MFIs in India are found to fall under the category 'poor', along with the same percentage for the category 'good' and 18 MFIs, i.e., 39.2 per cent in India are found to fall under the category 'moderate'.

4.1 Performance Indicators of MFIs in India - Multiple Regression Analysis

Multiple regression analysis has been employed to identify the effect of selected parameters on the comprehensive or overall performance score of MFIs in India. The dependent variable taken for the analysis is overall performance score. The variables, for which Z-score has been calculated, represent the independent variables. For the purpose of analysis, null hypotheses has been framed and tested. The tables 4.1 to 4.6 reveal the result of Multiple Regression analysis conducted for the parameters selected, namely, financing structure, outreach indicators, overall financial performance indicators, revenue and expenses, efficiency and risk and liquidity.

4.1 Financing Structure

H_0: "The financing structure variables, namely, capital asset ratio, debt to equity ratio and gross loan portfolio to total assets do not have a significant influence on the overall performance score"

Table 4.1 Multiple Regression Analysis - Financing structure

Variables	Regression Coefficients (B)	Std. Error	t	Sig.
(Constant)	112.392	4.431		
Zscore: Capital/asset ratio	3.885	3.400	1.143	Ns
Zscore: Debt to equity ratio	-0.387	3.385	-0.114	Ns
Zscore: Gross loan portfolio to total assets	2.728	.523	5.213	**

R	R Square	F	Sig.
.391	.153	13.567	**

Source: computed *** significant at 1 per cent* *Ns – Not significant*

The coefficient of multiple correlation with its value 0.391 indicates a positive moderate degree of correlation of independent variable with the overall performance score. The R^2 signifies that 15.3 per cent of variation in the overall performance score has been explained by the independent variables. The regression coefficient value shows that the debt to equity ratio has negatively influenced the overall performance score and all other variables have positively influenced the overall performance score. The 'F' ratio with its value 13.567 reveals that the estimated equation is statistically significant. The t value shows that the variable gross loan portfolio to total assets with the regression coefficient value of 2.728 has significantly influenced the overall performance score at 1 per cent level. The capital asset ratio and debt to equity ratio have not significantly influenced the overall performance score. Since the model is proved to be statistically significant the null hypothesis is rejected.

4.2 Outreach Indicators

H_0: "The outreach indicators, namely, number of active borrowers, average loan balance per borrower, average loan balance per borrower/GNI per capita and average outstanding balance do not have a significant influence on the overall performance score"

Table- 4.2 Multiple Regression Analysis - Outreach Indicators

	Regression Coefficients (B)	Std. Error	t	Sig.
(Constant)	91.014	4.417		
Zscore: Number of active borrowers	4.900	.506	9.676	**
Zscore: Average loan balance per borrower	5.647	1.155	4.888	**

Zscore: Average loan balance per borrower/GNI per capita	-2.023	.841	-2.406	*
Zscore: Average outstanding balance	-2.995	.940	-.032	Ns

R	R Square	F	Sig.
.615	.378	34.208	**

Source: computed *** significant at 1 per cent* *Ns – Not significant*

The coefficient of multiple correlations with its value 0.615 indicates a positive moderate degree of correlation of independent variables with overall performance score. The coefficient of multiple determinations (R^2) signifies that 37.8 per cent of variation in the overall performance score has been explained by the independent variables. The regression coefficient value shows that the average loan balance per borrower/GNI per capita and average outstanding balance have negatively influenced the overall performance score and all other variables have been positively influenced by the overall performance score. The 'F' ratio with its value 34.208 reveals that the equation is statistically significant at 1 per cent level. The t value shows that the variables, namely, numbers of active borrowers and average loan balance per borrower have significantly influenced at 1 per cent level; average loan balance per borrower/GNI per capita has significantly influenced the overall performance score at 5 per cent level. The average outstanding balance has not significantly influenced the overall performance score. Since the model is proved to be statistically significant, the null hypothesis is rejected.

Among the variables, average loan balance per borrower/GNI per capita has a negative influence on the overall performance score as its regression coefficient value is -2.023, which means that as average loan balance per borrower/GNI per capita increases by 100 per cent the overall performance score reduces by 202.3 per cent. Out of the other variables which influence the overall performance score positively, the average loan balance per borrower has influenced the overall performance score to the maximum level as revealed by the regression coefficient value of 5.647 and followed by the number of active borrowers by 4.90.

4.3 Overall Financial Performance Indicators

H_0: "The overall financial performance indicators, namely, ROA, ROE and OSS do not have a significant influence on the overall performance score"

Table 4.3 Multiple Regression Analysis - Overall Financial Performance Indicators

	Regression Coefficients (B)	Std. Error	t	Sig.
(Constant)	97.149	2.022		
Zscore: Return on assets	-2.352	1.052	-2.236	*
Zscore: Return on equity	2.439	.580	4.203	**
Zscore: Operational self-sufficiency	7.321	.882	8.304	**

R	R Square	F	Sig.
.837	.700	176.153	**

Source: computed *** significant at 1 per cent* * *significant at 5 per cent* *Ns – Not significant*

The multiple correlation coefficient value 0.837 indicates a high degree of correlation of independent variables with the overall performance score. The R^2 signifies that 70 per cent of variation in the overall performance score has been explained by the independent variables. The regression coefficient value shows that ROA has negatively influenced the overall

performance score and all other variables have positively influenced the overall performance score. The 'F' ratio value 176.153 reveals that the estimated equation is statistically significant at 1 per cent level. The t value shows that the variables, namely, ROE and OSS have significantly influenced the overall performance score at 1 per cent level and ROA has significantly influenced the overall performance score at 5 per cent. The model is proved to be statistically significant. Hence, the null hypothesis is rejected.

Among the variables, ROA has negative influence on the overall performance score as its regression coefficient value is -2.352 which means that ROA increases by 100 per cent, the overall performance score reduces by 235.2 per cent. Out of other variables which influence the overall performance positively, the OSS has influenced to the maximum level as revealed by regression coefficient value of 7.321, followed by ROE of value 2.439.

4.4 Revenue and Expenses

H_0: "The revenue and expenses variables, namely, financial revenue/assets, profit margin, yield on gross portfolio (nominal), total expense/assets, financial expense/assets, provision for loan impairment/assets and operating expense/assets do not have a significant influence on the overall performance score"

Table 4.4 Multiple Regression Analysis - Revenue and Expenses

	Regression Coefficients (B)	**Std. Error**	**t**	**Sig.**
(Constant)	70.181	5.382		
Zscore: Financial revenue/assets	4.935	.680	7.257	**
Zscore: Profit margin	4.303	.422	10.200	**
Zscore: Yield on gross portfolio (nominal)	-2.275	.506	-4.498	**
Zscore: Total expense/assets	1.903	.738	2.578	*
Zscore: Financial expense/assets	-.156	.419	-.373	Ns
Zscore: Provision for loan impairment/assets	1.014	.295	3.442	**
Zscore: Operating expense/ assets	2.585	.656	3.938	**

R	**R Square**	**F**	**Sig.**
.873	.762	101.765	**

Source: computed *** significant at 1 per cent* * significant at 5 per cent* *Ns – Not significant*

The coefficient of multiple correlation (0.873) indicates a positive high degree of correlation of independent variables with the overall performance score. The coefficient of multiple determinations (R^2) signifies 76.2 per cent of variation in the overall performance score has been explained by the independent variable. The regression coefficient value shows that the yield on gross portfolio (nominal) and financial expense/assets has negatively influenced the overall performance score and positively influenced by other variables. The 'F' ratio (101.765) reveals that the estimated equation is statistically significant at 1 per cent level. The t value shows that the variables, namely, financial revenue/assets, profit margin, yield on gross portfolio (nominal), provision for loan impairment/assets and operating expense/assets have significantly influenced the overall performance score at 1 per cent and the total expense/asset at 5 per cent level. The financial expense/assets has not significantly influenced the overall performance score. The model is proved to be statistically significant. Hence, the null hypothesis is rejected.

Among the variables, the yield on gross portfolio (nominal) has a negative influence on the overall performance score as revealed by its regression coefficient value of -2.275 which means that, as the yield on gross portfolio (nominal) increases by

100 per cent, the overall performance score reduces by 227.5 per cent. Out of other variables which influence the overall performance score positively, the financial revenue/assets has influenced to the maximum level as revealed by the regression coefficient value of 4.935, followed by profit margin of 4.303, operating expense by assets of 2.585, total expense/assets of 1.903 and provision for loan impairment/assets of 1.014.

4.5 Efficiency

H_0: "The efficiency indicators, namely, operating expense/loan portfolio, average salary/GNI per capita, cost per borrower, loans per staff member and personnel allocation ratio do not have a significant influence on the overall performance score"

Table - 4.5 Multiple Regression Analysis - Efficiency

	RegressionCoefficients (B)	**Std. Error**	**t**	**Sig.**
(Constant)	87.566	4.275		
Zscore: Operating expense/ loan portfolio (per cent)	-.142	.741	-.192	Ns
Zscore: Average salary/ GNI per capita	1.207	.550	2.195	*
Zscore: Cost per borrower	4.181	.854	4.895	**
Zscore: Loans per staff member	2.263	.527	4.293	**
Zscore: Personnel allocation ratio (per cent)	1.616	.404	4.002	**

R	**R Square**	**F**	**Sig.**
.730	.533	51.162	**

*Source: computed ** significant at 1 per cent * significant at 5 per cent Ns – Not significant*

The multiple correlation coefficient value 0.730 indicates a high degree of correlation of independent variables with the overall performance score. The R^2 signifies that 53.3 per cent of variation in the overall performance score has been explained by the independent variable. The regression coefficient value shows that the operating expense/loan portfolio has negatively influenced the overall performance score and all other variables have positively influenced the overall performance score. The 'F' ratio 51.162 reveals that the equation is statistically significant at 1 per cent level. The t value shows that the variables, namely, average salary/GNI per capita, cost per borrower, loans per staff member and personnel allocation ratio have significantly influenced the overall performance score at 1 per cent level. The operating expense/loan portfolio has not significantly influenced the overall performance score. The model is proved to be statistically significant. Hence, the null hypothesis is rejected.

Out of the variables which influence the overall performance score positively, the cost per borrower has influenced the overall performance score to the maximum level as revealed by the regression coefficient value of 4.181, followed by loan per staff member of 2.263, personnel allocation ratio with value of 1.616 and average salary/GNI per capita with value of 1.207.

4.6 Risk and Liquidity

H_0: "The risk and liquidity indicators, namely, PAR > 90 days, risk coverage and non-earnings liquid assets as a per cent to total assets do not have a significant influence on the overall performance score"

Table 4.6 Multiple Regression Analysis - Risk and Liquidity

	Regression Coefficients (B)	**Std. Error**	**t**	**Sig.**
(Constant)	117.435	5.040		
Zscore: PAR>90 days	2.375	.636	3.734	**

Zscore: Risk coverage	1.990	.572	3.479	**
Zscore: NELA as a per cent to total assets	-.551	.529	-1.043	Ns

R	R Square	F	Sig.
.374	.140	12.272	**

*Source: computed ** significant at 1 per cent Ns – Not significant*

The multiple correlation coefficient value 0.374 indicates a moderate degree of correlation of independent variables with the overall performance score. The R^2 signifies that 14 per cent of variation in the overall performance score has been explained by the independent variable. The regression coefficient value shows that the non-earning liquid asset as per cent of total asset has negatively influenced the overall performance score and all other variables have positively influenced the overall performance score. The 'F' ratio value 12.272 reveals that the estimated equation is statistically significant at 1 per cent level. The t value shows that the variables, namely, PAR > 90 days and Risk coverage have significantly influenced the overall performance score at 1 per cent level. The Non-earning liquid assets as a per cent of total asset have not significantly influenced the overall performance score. The model is proved to be statistically significant. Hence, the null hypothesis is rejected.

Out of the variables which influence the overall performance score positively, the PAR > 90 days has influenced overall performance score to maximum level, as revealed by regression coefficient value of 2.375, followed by Risk coverage with the regression of coefficient value of 1.990.

CONCLUSION

To conclude, it is found that the variables, namely, gross loan portfolio to total assets, number of active borrowers, average loan balance per borrower, return on equity, operational self-sufficiency, financial revenue/assets, profit margin, total expense/assets, provision for loan impairment/assets, operating expense/assets, average salary/GNI per capita, cost per borrower, loans per staff member, personnel allocation ratio, PAR > 90 days and risk coverage have been found to be the **key drivers** of the overall performance of MFIs in India, while the variables, namely, average loan balance per borrower/GNI per capita, return on asset and yield on gross portfolio(nominal) have been the cause for the decline in the overall performance during the study period.

Microfinance has been an important tool in poverty alleviation, empowerment of women and in bringing about financial inclusion. Although the microfinance sector has reported an impressive growth, sufficient regulatory and governance would help achieve the goal of poverty alleviation and financial inclusion and this could be achieved with combined cooperation of banks, donors' government, NGO and other players in the country. Thus, continuous efforts are required to diversify the sources of funding available for the MFIs in order to attract foreign Investment for well-established MFIs in order to serve the rural low income population, alleviate poverty and also, make them profitable.

REFERENCES

1. Michael Tucker and Gerard Miles, "Financial performance of Microfinance Institutions - A comparison of performance of Regional Commercial banks by geographic regions", Journal of Microfinance, Vol. 6, No.1, 2003.
2. Abdul Qayyum and Ahmad M, "Efficiency and sustainability of microfinance institution in South Asian", Pakistan Institute of Development Economics, 2006.
3. Sen Mitali, "Assessing social performance of MFIs in India", ICFAI Journal of Applied finance, Vol. 14, No: 86, 2008, pp. 77-86.
4. Pankaj.K.Agarwal and S.K.Sinha, "Financial performance of microfinance institutions of India: A cross sectional study", Delhi Business Review, Vol.11, No.2, July- Dec 2010.
5. Bayeh Asnakew Knide, "Financial sustainability of microfinance institutions in Ethiopia", European Journal of Business and Management, Vol.4, No. 15, 2012.

6. Zohra Bi, Ajita Poudel Junaid Saraf, "Performance and Sustainability of MFIs in India", Tenth AIMS, International Conference on Management, January 6 – 9, 2013.
7. Anand Rai and Kanwal Anil, "Financial performance of microfinance institutions: Bank vs. NBFC", International Journal of Management and Strategy (1JMS), Vol. 11, Issue II, Jan 2011.
8. Prakash Singh, "Performance analysis of Microfinance Institutions in India, what drives their valuation", Prajnan, Vol. XL, No.1, 2011, pp. 7 – 35.
9. Frances Sinha, "State of microfinance in India 2009", Prepared for Institute of Microfinance, as a part of project on state of microfinance in SAARC countries, 2009.
10. India Top 50 MFIs: A financial awareness initiative of CRISIL, CRISIL Ratings, October 2009.
11. Jivan Kumar Chowdhury, "Microfinance revolution and microfinance services in Indian perspective", Banking Finance, Vol. XXI, No.6, June 2008, pp. 5-8.
12. K.Muralidhara Rao, "MFIs in India: An overview", NABARD, 2011, pp.57-66.
13. K.S.Thakur, Peyush Kant Sharma and Ravi Jain, "A comprehensive study of microfinance in India with special reference to Gwalior", Journal of Accounting and Finance, Vol.25, No. 2, April – September 2011.
14. Microfinance in India: A crisis at the bottom of pyramid, Legatum Ventures, May 2011.
15. Microfinance industry in India, Lok Capital, March 2010.
16. Padmaja Manoharan, Rameshwari Ramachandran, Nirmala Devi, "Microfinance institutions in India – A study on financial performance", International Journal of Microfinance, Vol.1, No.1, 2011, pp.57-69.
17. Vithal Rajan, "Killing the MFI Golden goose," Economic and Political weekly , Vol. XLV, No: 49, Dec 4 2010 , pp. 79 -80.