FINANCIAL PERFORMANCE OF MFIs IN BANGLADESH – A MULTIPLE REGRESSION ANALYSIS

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Abstract

Microfinance Institutions (MFIs) are those institutions which are providing microfinance services such as savings, credit, insurance and remittance services to poor. The study aims at analyzing the financial performance of MFIs in Bangladesh by employing multiple regression analysis. The data have been collected from Microfinance Information Exchange (MIX) 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 variables, namely, debt to equity ratio, gross loan portfolio to total assets, number of active borrowers, return on assets, operational self-sufficiency, financial revenue/assets, profit margin, operating expense/assets, operating expense/loan portfolio, average salary/GNI per capita,loans per staff member, personnel allocation ratio, PAR > 90 days and risk coveragehave been found to be the **key drivers** of the overall performance of MFIs in Bangladesh

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. Bangladesh has been the pioneer in the field of microfinance movement anda significant contribution to the development of the country has beenmade by several MFIs in Bangladesh. MFIs are commonly known as "Bank for the poor". MFIs play a significant role in financial sector development, and thereby, overall development.

Multiple regression analysis has also been applied to assess the impact of selected parameters on the overall performance score of MFIs in Bangladesh.

1.2 STATEMENT OF THE PROBLEM

Bangladesh is one of the developing economies in the world and poverty is a common problem in this country. 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. Bangladesh has been the birth place of microfinance and also pioneer in the world for applying microfinance. Bangladesh boasts a large number of well-known MFIs including Grameen Bank, BRAC and Association of Social Advancement (ASA). 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. Financial performance becomes a watchword in

the governance of MFIs. The present study is an attempt to assess the financial performance of Microfinance Institutions operating in Bangladesh 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 Bangladesh.

1.3 OBJECTIVES OF THE STUDY

The study focuses on the objective:

1. To analyse the financial performance of MFIs in Bangladesh

2. To identify the effect of selected parameters on the overall performance score of MFIs in Bangladesh.

1.4 SCOPE OF THE STUDY

The study is pertaining to microfinance institutions in Bangladesh. 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 37 MFIs in Bangladesh 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 25 MFIs from Bangladesh 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 Bangladeshi 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.

Pushparaj Sharma (2004)[1], in his study on "A comparative study of Microfinance in Nepal and Bangladesh" has aimed at comparing the microfinance institution based on Grameen Bank model practices in Nepal and Bangladesh. The researcher has compared top four MFIs in Bangladesh, namely, Grameen bank, BRAC, ASA and Proshika with top four MFIs in Nepal, namely, SB Bank, Nirdan, Cwnimek and Deprosc. He has conducted the study during 2004. The key indicators taken for analysis have been recovery rate, profit, salary, interest rate, deposit rate, loan loss provision, and donor client relationship. He has found that overall productivity of Nepalese MFIs has been poor due to lack of wide vision, foresighted leadership; corporate governance and institutional development of MFIs were the main challenges for Nepalese MFIs as compared to Bangladesh. The study has revealed that few privately run MFIs have been performing better in comparison to government initiated MFIs. He has included recommendations viz., credit plus approach and coordination network among MFIs for the improvement of microfinance institutions in Nepal.

Abdul Qayyum and Ahmad M (2006)[2], in their study on "Efficiency and sustainability of microfinance institution in South Asian" has aimed to identify the most efficient/best practice MFIs in south Asian region. The study has evaluated the efficiency of 85 MFI from south Asia shared as follows: 15 Pakistanis, 25 Indians, and 45 Bangladeshi MFIs. Data envelope analysis has been used to analyse the efficiency of microfinance institution in these selected South Asian countries. The authors have applied both input oriented and output oriented method by assuming constant return to scale and variable return to scale technology of DEA for efficiency score comparison. The performance indicators taken for the study are outreach, institutional characteristics, financing structure, overall financial performance, efficiency and productivity and risk and liquidity. They have calculated correlation coefficient between the different efficiency measures and variables. The variables taken for analysis include debt equity ratio, overall performance of MFI and return on assets. The regression analysis has been applied to the above variables. They found from the DEA analysis using single country data that 8 MFIs from Pakistan, 6 MFIs from Bangladesh and 5 MFIs from India are at efficient frontier under variable return to scale. They have also found that 10 MFIs from Pakistan, 9 from Bangladesh and 9 MFIs from India are not sustainable. They also found from sustainability indicator that Indian MFIs are better than Bangladeshi MFIs. The study has revealed that the majority of inefficiency of MFIs in Pakistan, India, and Bangladesh

is mainly of technical nature and to improve their efficiencies, these MFIs have been invited to heighten the managerial expertise and to improve the technology.

Blaine Stephens and Hind Tazi (2006)[4] have conducted a study on "Performance and transparency - A survey of microfinance in south Asia". This paper has highlighted the performance of the MFI sector both within the region and on the global state, based on international reporting standards. The study has drawn the experiences of local and global transparency initiates to paint a picture of the state of transparency in South Asia, the challenges that it faces, and the initiatives underway to overcome these obstacles. They have collected the data from mix market website reported during 2005. The indicators namely, outreach, financing structure, financial performance, efficiency and productivity and portfolio quality. The study has found that lack of transparency has hindered investment potential and worse – lead to higher sector risk through continued commercial lending to unprofitable institutions. The study has found that South Asian microfinance stands alone in scale of credit delivery, sewing one in two borrowers globally.

BayehAsnakewKnide (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.

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 BANGLADESH - 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 Bangladesh.

Table 3.1 Numerical Scoring - Descriptive Statistics of MFIs inBangladesh

Indicators	N	Minimum	Maximum	Mean	S.D
Assets	125	718080	1713365603	126653072.80	310207211.18
Capital/asset ratio (%)	125	-1.09	67.80	17.70	13.13
Debt to equity ratio (%)	125	-93.05	41.12	6.21	11.62
GLP to total assets (%)	125	42.50	97.65	79.13	10.90
Number of active borrowers	125	6277	6610000	835964	1833299.18
Average loan balance per borrower	125	43	254	115.06	37.31
Average loan balance per borrower/GNI per capita (%)	125	0.00	32.26	19.26	5.37
Average outstanding balance	125	43	216	110.36	34.25
Return on assets (%)	125	-25.95	12.90	1.60	4.92
Return on equity (%)	125	-1106.31	71.53	-14.04	138.20
Operational self-sufficiency (%)	125	7.83	667.22	116.80	56.85
Financial revenue/ assets (%)	125	0.00	56.17	19.50	5.38
Profit margin (%)	125	-146.08	50.19	5.65	29.10
Yield on gross portfolio (N) (%)	125	0.16	72.67	23.27	6.44
Total expense/assets (%)	125	3.40	59.03	17.95	6.11
Financial expense/assets (%)	125	0.43	22.45	4.30	2.38
Provision for loan impairment/assets(%)	125	-1.36	10.45	1.62	1.54
Operating expense/assets (%)	125	-1.73	53.98	12.37	5.49
Operating expense/loan portfolio (%)	125	-5.08	199.52	17.20	18.24
Average salary/ GNI per capita	125	0.00	7.21	2.82	1.04
Cost per borrower	125	4.50	71.00	16.67	7.73
Loans per staff member	125	64	339	150	48.67
Personnel allocation ratio (%)	125	0.00	88.97	53.87	19.87
Portfolio at risk > 90 days (%)	125	0.00	92.55	5.80	9.08
Risk coverage (%)	125	0.00	855.09	95.01	96.75
NELA as a per cent of total assets (%)	125	0.00	42.74	15.32	10.05

Source: Computed

Table 3.2 Numerical Scoring – Percentile Value and Z score of MFIs in Bangladesh

Percentiles	Percentiles								
	10	20	30	40	50	60	70	80	90
Zscore: Assets	-0.388	-0.378	-0.371	-0.361	-0.351	-0.328	-0.279	-0.212	1.537
Zscore: Capital/asset ratio	-0.913	-0.732	-0.631	-0.454	-0.223	-0.026	0.215	0.463	1.475
Zscore: Debt equity ratio	-0.430	-0.292	-0.224	-0.161	-0.068	0.059	0.263	0.412	0.831
Zscore: GLP to total asset	-1.426	-0.708	-0.284	-0.080	0.173	0.399	0.609	0.812	1.134
Zscore: Number of active borrowers	-0.427	-0.417	-0.412	-0.403	-0.394	-0.345	-0.309	-0.223	2.088
Zscore: Average loan balance per borrower	-0.370	-0.363	-0.356	-0.349	-0.338	-0.320	-0.271	-0.233	1.023
Zscore: Average loan balance per borrower/GNI per capita	-1.176	-0.682	-0.511	-0.318	-0.145	0.110	0.455	0.811	1.196
Zscore: Average outstanding balance	-1.149	-0.799	-0.624	-0.437	-0.127	0.159	0.459	0.795	1.081
Zscore: Return on assets	-0.783	-0.415	-0.267	-0.097	0.014	0.182	0.400	0.574	0.921
Zscore: Return on equity	-0.096	0.071	0.118	0.151	0.180	0.210	0.250	0.280	0.377
Zscore: Operational self sufficiency	-0.470	-0.326	-0.273	-0.183	-0.120	-0.050	0.061	0.227	0.525
Zscore: Financial revenue/assets	-0.790	-0.514	-0.263	-0.129	0.029	0.093	0.217	0.392	0.782
Zscore: Profit margin	-0.573	-0.256	-0.150	0.012	0.118	0.227	0.385	0.578	0.818
Zscore: Yield on gross portfolio (nominal)	-0.587	-0.392	-0.266	-0.181	-0.031	0.033	0.128	0.336	0.640
Zscore: Total expense/assets	-0.793	-0.631	-0.372	-0.255	-0.149	0.046	0.182	0.382	0.670
Zscore: Financial expense/assets	-0.867	-0.552	-0.397	-0.227	-0.133	-0.054	0.079	0.405	1.090
Zscore: Provision for loan impairment/assets	-0.844	-0.686	-0.546	-0.416	-0.232	-0.122	0.210	0.459	1.160
Zscore: Operating expense/ assets	-0.799	-0.494	-0.330	-0.207	-0.081	0.015	0.182	0.292	0.570
Zscore: Operating expense/ loan portfolio	-0.330	-0.261	-0.202	-0.164	-0.140	-0.105	-0.043	0.012	0.110
Zscore: Average salary/ GNI per capita	-1.115	-0.532	-0.365	-0.160	-0.019	0.154	0.290	0.669	1.180
Zscore: Cost per borrower	-0.785	-0.587	-0.371	-0.242	-0.216	-0.087	0.160	0.405	0.740
Zscore: Loans per staff member	-1.068	-0.690	-0.546	-0.361	-0.135	-0.020	0.214	0.457	1.260
Zscore: Personnel allocation ratio	-1.233	-0.356	-0.133	0.022	0.083	0.185	0.384	0.684	1.170
Zscore: Portfolio at risk>90 days	-0.639	-0.483	-0.374	-0.275	-0.193	-0.105	0.085	0.276	0.650
Zscore: Risk coverage	-0.982	-0.820	-0.434	-0.211	-0.060	0.089	0.190	0.393	0.790
Zscore: NELA as a per cent of total assets	-1.194	-0.748	-0.468	-0.305	-0.201	0.026	0.288	0.560	1.480

Source: Computed

Table 3.3 Overall Performance Score of MFIs in Bangladesh

Sl No.	MFI	Year					TOTAL	Rank
		2007	2008	2009	2010	2011		
1	ASA	195	169	171	183	182	900	1
2	BASTOB	145	117	118	121	129	630	18
3	BEES	115	97	84	99	114	509	25
4	BRAC	148	155	165	158	151	777	5
5	BURO Bangladesh	137	142	142	127	161	709	12
6	CDIP	152	155	171	164	167	809	2
7	COAST Trust	117	102	108	123	104	554	23
8	CSS	129	145	166	178	158	776	6
9	CTS	124	147	141	108	145	665	15
10	DSK	89	84	143	154	151	621	19
11	Grameen Bank	131	161	135	126	126	679	14
12	HEED	150	147	130	158	150	735	9
13	IDF	163	127	162	142	160	754	8
14	JCF	124	151	174	163	162	774	7
15	PMUK	97	105	106	99	109	516	24
16	RDRS	143	153	161	165	172	794	3
17	RIC	71	99	117	148	150	585	22
18	RRF	116	117	114	161	150	658	16
19	Sajida	118	127	165	151	159	720	11
20	Shakti	164	132	162	186	143	787	4
21	SKS Bangladesh	115	118	106	130	132	601	21
22	SSS	100	114	136	149	151	650	17

23	TMSS	130	134	146	126	171	707	13
24	UDDIPAN	117	116	126	122	139	620	20
25	Wave	136	133	144	147	175	735	10
		30th Percentile					634	
		70th Percentile					750	

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 10^{th} percentile value, then a rating of 1 is assigned. If Z-score value falls between 10^{th} and 20^{th} percentile value, then a rating of 2 is assigned so on. If the Z-score value of any variable falls above the 90^{th} 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 totalled for all the seven categories of parameters, institution wise and year wise.

The table 3.3 has revealed the overall performance of MFIs in Bangladesh during the study period along with the comprehensive score. The total of overall performance score for each MFI has been calculated to rank the MFIs. Higher the score, higher is the level of financial performance of MFIs during the study period. The scores for the MFIs falling below the 30^{th} percentile value have been considered as poor performing MFIs and the MFIs which have scored above 70^{th} percentile values have been considered as good performing MFIs. The scores of the MFIs falling between 30^{th} and 70^{th} percentile values have been classified as moderate performing MFIs. Thus it could be seen that ASA has obtained the maximum score of 900, followed by CDIP with 809 and RDRS with 794. The least score of 554, 516 and 509 has been obtained by coast trust, PMUK and BEES in Bangladesh respectively. It has observed that 8 MFIs i.e., 32 per cent of the selected MFIs in Bangladesh have been found to fall under the category 'poor', along with the same percentage for the category 'good' and 9 MFIs i.e., 36 percent of MFIs in Bangladesh have been found to fall under the moderate performer category.

4.1 Performance Indicators of MFIs in Bangladesh - 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 Bangladesh. 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.

4.1.1 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 4.1.1. Multiple Regression Analysis - Financing structure

	Regression Coefficients(B)	Std. Error	t	Sig.
(Constant)	112.321	6.101		
Zscore: Capital/asset ratio	-6.284	3.535	-1.778	Ns
Zscore: Debt to equity ratio	9.449	3.537	2.672	**
Zscore: Gross loan portfolio to total assets	2.949	.701	4.209	**

R	R Square	F	Sig.
.439	.193	9.642	**

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

The multiple correlation coefficient value 0.439 indicates a moderate degree of correlation of independent variables with overall performance score. The R^2 signifies that 19.3 per cent of variation in the overall performance score has been explained by the independent variable. The regression coefficient value shows that capital asset ratio has negatively influenced the overall performance score and all other variables have positively influenced overall performance score. The 'F' ratio 9.642 reveals that equation is statistically significant at 1 per cent level. The t value shows that variables, namely, debt to equal ratio and gross loan portfolio to total assets have significantly influenced the overall performance score at 1 per cent level. The capital/asset ratio has not significantly influenced the overall performance score. The model is proved to be statistically significant. Hence, null hypothesis is rejected.

Out of the variables which influence overall performance score positively, debt to equity ratio has influenced the overall performance score to the maximum level, as revealed by regression value 9.449, followed by gross loan portfolio to total assets by 2.949.

4.1.2 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 4.1..2 Multiple Regression Analysis - Outreach Indicators

	Regression Coefficients(B)	Std. Error	t	Sig.
(Constant)	120.146	6.255		
Zscore: Number of active borrowers	3.343	.758	4.409	**
Zscore: Average loan balance per borrower	.761	2.986	.255	Ns
Zscore: Average loan balance per borrower/GNI per capita	2.489	1.318	1.888	Ns
Zscore: Average outstanding balance	-3.329	3.024	-1.101	Ns

R	R Square	F	Sig.
.627	.393	19.444	**

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

The multiple correlation coefficient value 0.423 indicates a moderate degree of correlation of independent variables with overall performance score. The R^2 signifies that 37.8 per cent of variation in the overall performance score has been explained by the independent variable. The regression coefficient value shows that the average outstanding balance has negatively influenced the overall performance score and variables, namely, the number of active borrowers, average loan balance per borrower and average loan balance per borrower/GNI per capita have positively influenced the overall performance score. The 'F' ratio value 6.556 reveals that estimated equation is statistically significant at 1 per cent level. The t value shows that the number of active borrowers with its regression coefficient value 3.343 has significantly influenced the overall performance score at 1 per cent level. The average loan balance per borrower, average loan balance per borrower/GNI per capita and average outstanding balance have not significantly influenced the overall performance score.The model is proved to be significant; hence, the null hypothesis is rejected.

4.1.3 Overall Financial Performance

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

Table 4.1.3 Multiple Regression Analysis - Overall Financial Performance

	Regression Coefficients(B)	Std. Error	t	Sig.
(Constant)	97.906	2.415		
Zscore: Return on assets	3.566	1.735	2.055	*
Zscore: Return on equity	-1.770	.794	-2.227	*
Zscore: Operational self sufficiency	5.502	1.642	3.351	**

R	R Square	F	Sig.
.875	.766	132.143	**

Source: computed ** significant at 1 per cent * significant at 5 per cent

The coefficient of multiple correlation value 0.875 indicates high degree of correlation of independent variable with overall performance score. R^2 signifies that 76.6 per cent of variation in overall performance score has been explained by the overall financial performance. The regression coefficient value shows that ROE has negatively influenced the overall performance score and all other variable have

positively influenced overall performance score. The 'F' ratio with its value 132.143 reveals that an estimated equation is statistically significant at 1 per cent level. The t value shows that variables namely, ROA and ROE have significantly influenced the overall performance score at 1per cent level and OSS have influenced at 5 per cent level. The model is proved to be significant. Hence, the null hypothesis is rejected.

Among the variables, ROE has negative influence on overall performance score as its regression coefficient value is -1.770 which means that ROE increases by 100 per cent, the overall performance score will reduced by 177 per cent. Out of other variables which influence overall performance score positively the OSS has influenced over performance score to maximum level, as revealed by regression coefficient value of 5.502, followed by ROA of value 3.566.

4.1.4Revenue 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 4.1.4Multiple Regression Analysis - Revenue and Expense

	Regression Coefficients (B)	Std. Error	t	Sig.
(Constant)	78.082	5.795		
Zscore: Financial revenue/ assets	1.334	.640	2.086	*
Zscore: Profit margin	5.132	.788	6.512	**
Zscore: Yield on gross portfolio (nominal)	.500	.466	1.073	Ns
Zscore: Total expense/assets	-.804	1.136	-.708	Ns
Zscore: Financial expense/assets	.972	.570	1.707	Ns
Zscore: Provision for loan impairment/assets	.786	.518	1.518	Ns
Zscore: Operating expense/assets	2.985	.848	3.522	**

R	R Square	F	Sig.
.885	.784	60.592	**

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

The coefficient of multiple correlation value 0.885 indicates high degree of correlation of independent variable with overall performance score. R^2 signifies that 78.4 per cent of variation in overall performance score has been explained by the Revenue and Expenses. The regression coefficient value shows that total expense/assets has negatively influenced the overall performance score and all other variable have positively influenced the overall performance score. The 'F' ratio with its value 60.592 reveals that an estimated equation is statistically significant at 1per cent level. The t value shows that

variables namely, profit margin, and operating expense/asset has significantly influenced overall performance score at 1 per cent level and financial revenue/asset have influenced at 5 per cent level. The yield on gross portfolio (nominal), total expense/asset, financial expense/asset and provision for loan impairment/assets have not significantly influenced overall performance score. The model is proved to be statistically significant. Hence, the null hypothesis is rejected.

Among the variables which influence the overall performance score positively, the profit margin has influenced to the maximum, as revealed by regression coefficient value of 5.132, followed by operating expense/assets with value of 2.985 and financial revenue/assets of value 1.334.

4.1.5 Efficiency

H_0: "The efficiency indicators, namely, operating expenses/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 4.1.5 Multiple Regression Analysis – Efficiency

	Regression Coefficients(B)	Std. Error	t	Sig.
(Constant)	83.953	5.913		
Zscore: Operating expense/ loan portfolio	4.668	.590	7.917	**
Zscore: Average salary/ GNI per capita	1.321	.638	2.070	*
Zscore: Cost per borrower	.102	.675	.151	Ns
Zscore: Loans per staff member	2.336	.770	3.032	**
Zscore: Personnel allocation ratio	1.390	.589	2.360	*

R	R Square	F	Sig.
.752	.565	30.968	**

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

The coefficient of multiple correlations with its value 0.752 indicates high degree of correlation of efficiency variables with an overall performance score.The R^2 signifies that 56.5per cent of variation in the overall performance score has been explained by the efficiency variables.The regression coefficient value shows that all variables have positively influenced the overall performance score.The 'F' ratio value 30.968 reveals that the estimated equation is statistically significant at 1per cent level.The t value shows that variables, namely operating expense/loan portfolio and loans per staff member have significantly influenced the overall performance score at 1per cent level and Average salary/GNI per capita and personnel allocation ratio have significantly influenced at 5per cent level. The cost per borrower 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, which influence the overall performance score positively, the operating expense/loan portfolio has influenced the overall performance score to maximum level as revealed by

regression coefficient value of 4.668, followed by the loans per staff member with value of 2.336 and personnel allocation ratio of 1.390.

4.1.6. 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 4.1.6 Multiple Regression Analysis - Risk and Liquidity

	Regression Coefficients(B)	Std. Error	t	Sig.
(Constant)	109.133	7.111		
Zscore: PAR> 90 days	1.371	.698	1.963	*
Zscore: Risk coverage	3.459	.671	5.153	**
Zscore: NELA as a per cent to total assets	.478	.710	.673	Ns

R	R Square	F	Sig.
.456	.208	10.568	**

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

The multiple correlation coefficient value 0.456 indicates moderate degree of correlation of risk and liquidity variables with overall performance score.R^2 signifies that 20.8 per cent of variation in overall performance score has been explained by the risk and liquidity variable.The regression coefficient value shows that all variables have positively influenced overall performance score.The 'F' ratio with its value 10.568 reveals that estimated equation is statistically significant at 1per cent level. The t value shows that, risk coverage has significantly influenced the overall performance score at 1per cent level and PAR > 90 days at 5per cent level. The NELA as per cent of total assets have not significantly influenced the overall performance score.The model is proved to be significant. Hence, the null hypothesis is rejected.

Among the variables,which influenced the overall performance score, the risk coverage has influencedto the maximum level, as revealed of 3.459, followed by PAR> 90 days of value1.371.

CONCLUSION

To conclude, it is found that the variables, namely, debt to equity ratio, gross loan portfolio to total assets, number of active borrowers, return on assets, operational self-sufficiency, financial revenue/assets, profit margin, operating expense/assets, operating expense/loan portfolio, average salary/GNI per capita,loans per staff member, personnel allocation ratio, PAR > 90 days and risk coveragehave been found to be the **key drivers** of the overall performance of MFIs in Bangladesh, while the variables return on equityhas 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. There exists a great opportunity for the microfinance sector to provide

credit to the low income population, thereby, reducing poverty and thus in the development of country as a whole. MFIs in Bangladesh include a broad range of diverse institutions that offer financial services to low–income clients in the form of Non-Government Organizations, Non-Bank Financial Institutions, Credit Union and Banks. Overall, MFIs in Bangladesh are dynamic and growing and, therefore, the journey of MFIs has been encouraging in both the countries. 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.

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