Determinants of Financial Sustainability of Microfinance Institutions in Bangladesh

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Abstract

Microfinance is a type of banking service that is provided to unemployed or low-income individuals or groups who have no alternative source to gain financial support. Ultimately, the goal of microfinance is to give low income peoples an opportunity to become self-sufficient for their entrepreneurship development. This study investigates the performances of financial self-sustainability of microfinance institutions and compared their positions in Bangladesh. The multiple regression technique is used to measured financial self-sustainability to justify with yield on gross loan portfolio, cost per borrower and also average loan balance per borrower. The multiple regression output revealed that most of the microfinance institutions are financially self-sustainable to operate their operations in this region. However, this study is recommended for policy considerations of the successful and effective microfinance operation productivity and reduces of borrowing funds from the donars, reducing operation cost, generate financial revenue finally to increase of their total assets in Bangladesh.

Keywords: microfinance, microfinance institutions (MFIs), financial self-sustainability, Bangladesh

1. Introduction

Microfinance services have become a proven tool against poverty in mostly developing countries of the world including Bangladesh, India, Indonesia and South African sub-continents (Younus & Abed). Khandker (2003) in his study, found that access to microfinance contributes to poverty reduction, particularly for women participants, and to overall poverty reduction at the village level of all states. It has also noted that microfinance programs do substantially better than control households in Bangladesh (Morduch, 1998). Microfinance institutions (MFIs) target the poor through innovative approaches which include group lending, progressive lending, regular repayment schedules, and collateral substitutes (Thapa, 2007). While achieving on this poverty reduction goal, MFIs should also be financially sustainable. Scholars identified that an efficient MFI management should promote these two objectives weather financial self-sufficiency when they are able to cover all administrative costs, loan losses, and financing costs from operating income and operational self-sufficiency within the organization (Thapa, 2007).

Moreover, study examined the cost efficiency of 39 microfinance institutions across Africa, Asia and Latin America using non-parametric data envelopment analysis. The research showed that non-governmental microfinance institutions particularly under the production approach is most efficient and this result is consistent with their fulfillment of dual objectives such as alleviating poverty and financial sustainability (Haq, Skully, & Pathan, 2009). However, studies investigated of efficiency and sustainability on MFIs in Asia and attention was given to this region because MFIs are the largest asset size in Asia and large population densities and lower wages (MixMarket, 2004).

In such issues, Bangladesh MFIs have also negative returns on assets and equity, despite having one of the lowest expense structures in the world (Thapa, 2007). In addition, several other studies examined the level of financial sustainability and outreach as a case study in certain MFIs from Bangladesh. However, no study has covered all MFIs in Bangladesh. Based on the existing gap in previous researches, this study will make an attempt to fill that gap by measuring financial self-sufficiency and determine the determinants of operational and financial sustainability on the sustainability of microfinance institutions (MFIs) in Bangladesh.

1.1 History and Development of MFIs in Bangladesh

Historically, there were many significant reasons for introducing microfinance in the first place. There are Robinson about 90 percent of the people in developing countries have no access to institutional financial services (Robinson, 2001). For that reason poor become poor day by day though they are ready to do hard word for their better life (Thurman, 2007). Lacking access to institutional sources of finance, most poor and low income households continue to rely on informal sources of microfinance (ADB, 2000). However, these sources limit their ability to actively participate and to get benefit from the development process. As a result, microfinance offers financial services to those who are not served by the traditional financial sector. At present in the developing countries, microfinance is one of the most important tools to help and solve this problem of the poor (Guntz, 2011).

Over the past decades, microfinance has rapidly evolved and expanded from the relatively narrow field of micro enterprise credit to the more comprehensive concept of microfinance which includes a range of financial services, savings, money transfers and insurance for the poor to the enormous challenge of building inclusive financial systems (Zetek, 2009). The formal institutions in the public sector had been the main providers of financial services to the poor mainly small and marginal farmers until 1970 at subsidized interest rates (Rutherford, 2002; Thapa, 2007) but it came into the foray when the revolutionary progress was initiated in 1976 by Muhammad Yunus the founder of Grameen Bank of Bangladesh.

The founder, economic professor started out by loaning 28 USD for working capital to a group of petty traders crafts people mostly women in his village, Chittagong Bangladesh (Zetek, 2009). By practicing a physical collateral-free lending scheme, its operation worked based on peer monitoring and peer pressure to enforce loan contracts where each member of the group is subjected to joint liability. This provides members social development inputs to make the poor both individually and socially accountable for their actions which include those toward loan repayment and other financial transactions and children's welfare (S. R. Khandker, 1996).

Bangladesh is the motherland of microcredit because they took the first initiative to provide access to credit for the poor in the world. This microcredit program are two different types approach in Bangladesh, one is interest based i.e. conventional microcredit program and the other is Islamic Shariya based i.e. interest free microcredit program. The critical idea began when Bangladeshi economist Professor Dr. Mohammad Yunus first demonstrated it as an action project in Jobra village in the district of Chittagong, Bangladesh, with the help of some Bangladeshi commercial banks. Professor Yunus conducted his idea as an innovative experiment emphasizing group delivery of credit and exploring what constituted a manageable group size for effective financial intermediation. The central bank of Bangladesh later facilitated Yunus' work by arranging for funding from the International Fund for Agricultural Development (IFAD) (Faridi, 2004).

Furthermore, from his experiment, group collateral was put up as physical collateral. The group guarantees to repay individual loans becoming the hallmark of micro lending. Using the mechanism, poor people with no physical collateral were able to form groups to gain access to institutional credit. The mechanism also allowed credit to reach the poor, especially poor women. The central premise of this targeted credit approach is that lack of access to credit is the greatest constraint on the economic advancement of the rural poor (Faridi, 2004; Hossain, 1988; Kabir, Hassan, & Tufte, 2001; Kowalik, 2010). After a couple of years of experimentation with a variety of group-based mechanisms, the group based credit mechanism has shaped into a bank by the special ordinance of Bangladesh Bank. The Bank was established in 1983 with the name of Grameen Bank where government holding is about 90 percent of the shares in paid-up capital to work exclusively with the poor (Dossey, 2007; Dowla, 2006; Pitt & Khandker, 1998; Yunus, 1999).

The success of Grameen microcredit programs has led to the replication of the model in many countries throughout Afro-Asia and Latin America. Until 2009, there are 65 countries in the world are following Grameen's microcredit model like FINCA in Latin America, Amanah Ikhtiar Malaysia (AIM) and other microcredit organizations of the world (Basher, 2010; Seibel & Torres, 1999). On the other hand, Bangladesh Rural Advancement Committee (BRAC) has also done well in the credit market because of modification of the group based Grameen Bank model. While Grameen Bank thinks that the most immediate need of the poor is credit to create and expand self-employment opportunities by using their own previous experience, the Bangladesh Rural Advancement committee (BRAC) believes that the poor need skills development as well as other organizational inputs (Faridi, 2004; Mair & Marti, 2009; Zaman, 2000).

BRAC was established in 1972 as a charitable organization to help resettle households displaced during the 1971 Independence War. BRAC's relief experience helped it understand the causes of rural poverty and develop a framework for poverty alleviation. BRAC's approach has been to combine lending with the delivery of

organizational inputs, such as skills promotion and consciousness-raising (Faridi, 2004). From different perspectives, BRAC and Grameen Bank have learned from one another. BRAC has learned that credit must be provided along with skills development training and Grameen Bank has realized that credit alone is not enough, that the poor need social development and organizational inputs to become more disciplined and productive. BRAC continues to provide skills training and other inputs before disbursing credit, while Grameen Bank continues to disburse credit before providing social development and organizational inputs (Faridi, 2004).

The Government of Bangladesh has also introduced a group-based credit programs based on the Comilla model of two-tier cooperatives (Faridi, 2004). The Comilla model for rural development was designed and implemented by Akhter Hamid Khan in 1960 at the Bangladesh Academy for Rural Development (BARD) in Comilla, Bangladesh. The idea involves organizing farmers into cooperative societies in order to distribute modern inputs, such as high-yielding crop varieties, fertilizer, pesticides, irrigation, and subsidized credit. The organizational approach, which established primary farmers into cooperative societies that were federated into central cooperative societies at the thana (a thana is the administrative centre for a number of villages) level, was found to be effective in reaching farmers (Ahmed et al., 2000; Faridi, 2004). After independence, the government adopted the Comilla cooperative model throughout the country as part of the Integrated Rural Development Programme (IRDP). After that, the Bangladesh Rural Development Board (BRDB) was established in 1982 to replace the IRDP. In 1988, BRDB was renamed the Rural Development Project-12 (RD-12). RD-12 was based on the credit delivery model of Grameen Bank. Along with the small group delivery approach of Grameen Bank, RD-12 adopted BRAC's skill development approach for promoting productivity of the poor (Faridi, 2004).

Table1. Major national and international MFIs in Bangladesh

Name of MFIs	Date of Birth	Status	Scale
Grameen Bank	1976	NGO / Bank	National
Bangladesh Rural Advancement Committee (BRAC)	1972	NGO	National
Association for Social Advancement (ASA)	1978	NGO	National
TMSS	1980	NGO	National
BURO Bangladesh	1990	NGO	National
Palli Karma Shahayak Foundation (PKSF),	1990	NGO	National
Rural Development Project- RD-12	1988	Governmental	National
Rural Development Scheme(RDS)	1995	NGO	National
CARE, Bangladesh	1949	NGO	International
Gono Shasthaya Kendra	1972	Governmental	National
Proshika Manabik Unnayan Kendra	1976	NGO	National
Save the Children	2000	NGO	International

Sources: (B.B.S, 2008, 2010).

1.2 Literature Review

A study showed (Acclassato, 2008) that interest rate ceilings do not really protect small business and it causes damage to microfinance institutions. The findings also mentioned to be sustainable and thereby reach a larger number of clients, microfinance institutions need to price loans in a realistic way. The reseacher recommended that, one way to protect borrowers is to stimulate competition among MFIs by promoting transparency on interest rates (Acclassato, 2008). However, other scholar study showed that the result of the prudential regulations shows that despite the non respect of some "prudential ratios" by MFIs, their financial and organizational performance has not been adversely affected (Agbodjan, 2002). Moreover, in view of the very strong correlation between the sustainability and the profitability of these institutions, the strategy recommended would rather consist in removing the framing of the lending rates, in order to make these neighbourhood credit institutions more profitable (Agbodjan, 2002).

The success of microfinance institutions (MFIs) depends on the country-level context, in particular macroeconomic and macro-institutional features (Ahlin et al., 2011) They expected that a better understanding of these linkages can make MFI evaluation more accurate and can further help to locate microfinance in the broader picture of economic development. Evidence arised from their examination, for complementarity between MFI performance and the broader economy, also suggestive of substitutability or rivalry (Ahlin, Lin, & Maio, 2011). Morever, Al Atoom, R. O. and A. E. Abu Zerr in 2012 focused on investigating Jordanian Microfinance

Institutions' (MFIs) financial sustainability factors by investigating the interrelationship impacts of Macroeconomic and Microeconomic financial factors that define financial sustainability of MFIs. The research showed that Jordan's MFIs had more financial sustainability than Arabs and some Asian countries. (Al Atoom & Abu Zerr, 2012).

A study in 2009 by Anduanbessa, T. found that the deposit mobilized from clients, the number of active borrowers, and the gross loan portfolio load high on one component, established the outreach performance dimension of the MFIs in the country. On the other hand, profit margin, OSS, return on asset and gross loan portfolio-to-total asset ratio load high on the other component, established the financial sustainability dimension. The number / types of financial services rendered, the number of staff per branch and their capital are found to determine the outreach performance of the MFIs in the country. (Anduanbessa, 2009). Furthermore, Kinde, B. A. in 2012 identify factors affecting financial sustainability of MFIs in Ethiopia. The study showed that microfinance breadth of outreach, depth of outreach, dependency ratio and cost per borrower affected the financial sustainability of microfinance institutions in Ethiopia (Kinde, 2012).

On the other hand, Campbell, N. D. and T. M. Rogers in 2012 examined the determinants of return on equity for microfinance institutions (MFI), which is an important source of funds for entrepreneurs in developing countries. Recent research indicates that MFIs need to become financially sustainable without relying on external funding, therefore MFIs have begun to look to the capital markets as a source of funds. Findings of this study indicate that investors in MFIs can look at measures similar to those used by traditional financial institutions, like commercial banks, such as operating expense and portfolio yield measures to measure possible performance of a MFI. In the same way, Chijoriga, M. M. in 2000 evaluated the performance and financial sustainability of Tanzanian micro-finance institutions in terms of the overall institutional and organizational strength, client outreach, and operational and financial performance. Findings showed that, few MFIs have clear purpose, or a strong institutional structure, lack participatory ownership and many are donor dependent. Moreover, borrowers outreach is growing, with branches opening in almost all regions of the nation. Nevertheless, landing activities still centered around city areas. Operational performance demonstrates less loan repayment rates. Capital structure discovers a high dependence on donor or government subsidiary (Chijoriga, 2000).

Godquin, M. in 2004 produced a comprehensive analysis of the performance of microfinance institutions (MFIs) in terms of repayment. The researcher focused the analysis on the impact of group lending, nonfinancial services and dynamic incentives on repayment performance. This study tested for endogeneity of loan size and used instrumental variables to correct it. Moreover, they used a comparative analysis of the determinants of the repayment performance and loan size in order to make policy recommendations on the allocation of loans by MFIs (Godquin, 2004). However, Hollis, A. and A. Sweetman in 1998 compared six microcredit organizations of 19th-century Europe to identify what institutional designs were conducive to success and sustainability. They asserted that organizations that depended on charitable funding were more fragile and tended to lose their focus more quickly than those that obtained funds from depositors. An ability to adjust interest rates also appears important in sustainability. Moreover, examining historical microcredit is particularly useful since it offers an opportunity to explore the characteristics of organizations which were sustained over many decades, a perspective which is rare in modern microcredit banks and programs, most of which are less than 15 years old (Hollis & Sweetman, 1998).

2. Methodology

The study used descriptive, econometrics statistical, and financial ratio analysis techniques on the secondary data of existing selected MFIs in Bangladesh. The secondary data of all selected MFIs in Bangladesh was extracted from the prominent microfinance online database, Mix Market (MIX, 2013) from the year of 2005 to 2011. There are five MFIs that have been selected from the Bangladesh. The selection of MFIs has been done based on the highest number of active borrowers in the Bangladesh.

Table 2. The distribution of top MFIs in BD by the number of borrowers

Name of top MFIs Bangladesh	Number of Borrowers
Grameen Bank	6710000
BRAC	4193218
ASA	4181690
BURO Bangladesh	850792
TMSS	574981

Sources: (Mixmarket, 2013).

Performance indicators used in this study will be based on a study by (Bhuiyan, Siwar, Ismail, & Talib, 2011) such as financing structure, overall financially sustainable. Return on Equity (ROE) indicates the profitability of the institution. For many investors ROE is of paramount importance since it measures the return on their investment in the institution. However, given that a large number of MFIs are non-profit organizations, the ROE indicator is most often used as a proxy for commercial viability. Return on Assets is an overall measure of profitability that reflects both the profit margin and the efficiency of the institution. Simply put, it measures how well the institution uses all its assets. Operational Self-Sufficiency measures how well an MFI covers its costs through operating revenues. Financial Self-Sufficiency measures how well an MFI can cover its costs, taking into account a number of adjustments to operating revenues and expenses.

Table 3. The distributions of the overall financial performance measurement indicators and ratios

Overall Financial Performance (Sustainability)	
Return on Assets	$\dfrac{\textit{(Net Operating Income - Taxes)}}{\textit{Average Total Assets}}$
Return on Equity	$\dfrac{\textit{(Net Operating Income - Taxes)}}{\textit{Average Total Equity}}$
Operational Self-Sufficiency	$\dfrac{\textit{Financial Revenue}}{\textit{(Financial Expense + Net Impairment+Operating Expense)}}$

Sources: Adopted from (CGAP, 2003).

Moreover, multiple regression models have been used to measure of determinants of financial self-sufficiency of microfinance institutions (MFIs) in Bangladesh. To measure the predictor variables of financial self-sufficiency, nine measures are used as independent variables which were extracted from Woldeyes in 2012 (Woldeyes, 2012).

Regression Model for Financial Self-Sufficiency of MFIs

$$FSS_{it} = \alpha_i + \beta_1 YIELD_{it} + \beta_2 LnSIZE_{it} + \beta_3 PPR_{it} + \beta_4 DER_{it} + \beta_5 CPB_{it} + \beta_6 LnALBPB_{it} + \beta_7 LnAGE_{it} + \beta_8 LnNAB_{it} \, \beta_9 OER_{it} + \varepsilon_{it}$$

Where: FSS_{it} is the Financial self-sufficiency ratio of microfinance i at time t (which is the dependent variable); α_i is a constant term; β measures the partial effect of independent or explanatory variables in period t for the unit i (MFI); X it are the explanatory variables as described in the above table; and ε it is the error term. The variables, both dependent and independent, are for cross-section unit i at time t, where i = MFI (1 to n), and t = 1to 9.

3. Findings and Discussion

3.1 Financial Structure of MFIS

3.1.1 MFIs Financing Structure over the Period of 2005–2011

In terms of Capital to Asset ratio, ASA has the highest at 0.55 while GB has the lowest score at 0.09, accordingly. On the other hand, BRAC has a score of 0.26, BURO BD has a score of 0.22, and TMSS is 0.19, respectively. In the case of debt to equity ratio, GB is the highest position at 11.11 and on the other hand A is the lowest position at 0.82 accordingly. Moreover, BURO BD has score of 4.54, TMSS has score of 4.1, and BRAC is 2.98, respectively.

Table 4. Comparison of MFIs financing structure over the period of 2005–2011

Financing Structure (average value from 2005 to 2011)					
	ASA	GB	BRAC	BURO BD	TMSS
Capital/ Asset ratio	0.55	0.09	0.26	0.22	0.19
Debt to Equity	0.82	11.11	2.98	4.54	4.1
Deposit to Loans	0.37	1.2	0.43	0.24	0.37
Deposits to Total Assets	0.31	0.69	0.38	0.34	0.3
Gross Loan Portfolio to Assets	0.83	0.58	0.9	0.84	0.82

Source: MIX Market Database (2013).

In terms of debt to equity ratio GB is at the highest position at 11.11 and on the other hand ASA is at the lowest

position at 0.82 accordingly. Moreover, BURO BD has a score of 4.54, TMSS has a score of 4.1, and BRAC is 2.98 respectively. In the same way, the case of debt to Deposit to Loans, GB is at the highest at 1.2 and on the other hand BURO BD is at the lowest position at 0.24, accordingly. Moreover, BRAC has a score of 0.43, TMSS and ASA have a score of 0.37, respectively.

In the case of Deposits to Total Assets, GB is at the highest position at 0.69 and on the other hand, TMSS is at the lowest position at 0.3, accordingly. Moreover, BRAC has a score of 0.38 BURO BD and ASA has a score of 0.34 and 0.31, respectively. However, in terms of debt to equity ratio, BRAC is at the highest position at 0.9 and on the other hand, GB is at the lowest position at 0.58, accordingly. Moreover, BURO BD has score of 0.84, TMSS has score of 0.82, and ASA is 0.83, respectively.

3.2 Financial Performance of MFIs

3.2.1 Financial Performance of ASA over the Period of 2005–2011

Table 5 shows the distribution of Financial Performance of ASA over the period of 2005–2011. It is found that the average value for return on assets is 0.10864 and average value for return on equity is 0.2, accordingly. In the meantime, average value for operational self-sufficiency value stands at 1.92739 respectively.

Table 5. Distribution of financial performance of ASA over the period of 2005–2011

| Indicators | ASA | | | | | | | Average |
	2005	2006	2007	2008	2009	2010	2011	
Return on Assets	0.1502	0.1454	0.1085	0.0585	0.0778	0.0978	0.1223	0.10864
Return on Equity	0.2913	0.2634	0.1887	0.1047	0.1449	0.1823	0.2247	0.2
Operational Self-Sufficiency	2.5488	2.3786	1.8717	1.3521	1.5821	1.8284	1.93	1.92739

Source: MIX Market database, 2013.

3.2.2 Financial Performance of Grameen Bank (GB) over the Period of 2005–2011

Table 6 shows the distribution of Financial Performance of GB over the period of 2005–2011. It is found that the average value for return on assets is 0.01143 and average value for return on equity is 0.10847, accordingly. In the meantime, average value for operational self-sufficiency value stands at 1.0759 respectively.

Table 6. The distribution of financial performance of GB over the period of 2005–2011

| Indicators | GB | | | | | | | Average |
	2005	2006	2007	2008	2009	2010	2011	
Return on Assets	0.0241	0.0246	0.0011	0.0166	0.0043	0.0052	0.0041	0.01143
Return on Equity	0.184	0.2237	0.0107	0.1478	0.0445	0.0804	0.0682	0.10847
Operational Self-Sufficiency	1.1609	1.1597	1.0065	1.1147	1.0269	1.0362	1.0264	1.0759

Source: MIX Market database, 2013.

3.2.3 Financial Performance of BRAC over the Period of 2005–2011

Table 7 shows the distribution of Financial Performance of BRAC over the period of 2005 – 2011. It is found that the average value for return on assets is 0.03869 and average value for return on equity is 0.146, accordingly. In the meantime, average value for operational self-sufficiency value stands at 1.19224 respectively.

Table 7. The distribution of financial performance of BRAC over the period of 2005–2011

| Indicators | BRAC | | | | | | | Average |
	2005	2006	2007	2008	2009	2010	2011	
Return on Assets	0.0568	0.0697	0.0146	0.0233	0.0367	0.0392	0.0305	0.03869
Return on Equity	0.187	0.235	0.0607	0.112	0.1632	0.1527	0.1114	0.146
Operational Self-Sufficiency	1.3062	1.3688	1.0665	1.1065	1.1642	1.1876	1.1459	1.19224

Source: MIX Market database, 2013.

3.2.4 Financial Performance of BURO Bangladesh over the Period of 2005–2011

Table 8 shows the distribution of Financial Performance of GB over the period of 2005–2011. It is found that the average value for return on assets is 0.03314 and average value for return on equity is 0.11229, accordingly. In the meantime, average value for operational self-sufficiency value stands at 1.17539 respectively.

Table 8. The distribution of financial performance of BURO Bangladesh over the period of 2005–2011

Indicators	BURO Bangladesh							Average
	2005	2006	2007	2008	2009	2010	2011	
Return on Assets	0.0989	0.0623	0.0285	0.0159	0.0137	-0.0054	0.0181	0.03314
Return on Equity	0.2491	0.1759	0.0911	0.0688	0.0887	-0.0433	0.1557	0.11229
Operational Self-Sufficiency	1.5813	1.3134	1.1288	1.0679	1.0632	0.9821	1.091	1.17539

Source: MIX Market database, 2013.

3.2.5 Financial Performance of TMSS over the Period of 2005–2011

Table 9 shows the distribution of Financial Performance of GB over the period of 2005–2011. It is found that the average value for return on assets is 0.03314 and average value for return on equity is 0.11229, accordingly. In the meantime, average value for operational self-sufficiency value stands at 1.17539 respectively.

Table 9. The distribution of financial performance of TMSS over the period of 2005–2011

Indicators	TMSS							Average
	2005	2006	2007	2008	2009	2010	2011	
Return on Assets	0.0263	0.0322	-0.0021	0.0089	0.0222	0.0102	0.0529	0.02151
Return on Equity	0.1257	0.1625	-0.0107	0.0434	0.1122	0.0542	0.2843	0.11023
Operational Self-Sufficiency	1.1574	1.1951	0.9898	1.0466	1.1338	1.0544	1.3345	1.13023

Source: MIX Market database, 2013.

3.2.6 MFIs Financial Performance over the Period of 2005–2011

Table 10. Comparison of MFIs financial performance over the period of 2005–2011

Overall financial performance (average score from 2005 to 2011)					
	ASA	GB	BRAC	BURO BD	TMSS
Return on Assets	0.10864	0.01143	0.08449	0.03314	0.02151
Return on Equity	0.2	0.10847	0.18104	0.11229	0.11023
Operational Self-Sufficiency	1.92739	1.0759	1.60561	1.17539	1.13023

Source: MIX Market Database (2013).

Based on the findings and analysis, it was found that the average values for return on asset (ROA) of ASA, GB BRAC, BURO Bangladesh and TMSS is 0.10864, 0.01143, 0.08449, 0.03314, and 0.02151, respectively. The study showed that ASA has the highest return on assets whereas GB has the lowest return, respectively. Further, average values for return on equity (ROE) of ASA, GB BRAC, BURO Bangladesh and TMSS is 0.2000, 0.10847, 0.18104, 0.11229, and 0.11023 respectively. This means that ASA, GB BRAC, BURO Bangladesh, and TMSS can be considered to be financially sustainable as they have positive values of both ROA and ROE. This means that all the MFIs are financially sustainable.

In the meantime, ASA has also the highest operational self-sufficiency (OSS) at 1.92739, meaning that it is the most efficient in covering its costs through operating revenue. BRAC has the lowest OSS at 1.0759 with GB coming out second lowest at 1.60561, BURO BD at 1.17539, and TMSS is at 1.13023 respectively.

3.2.7 Regression Result of FSS

The study found that the estimated result of multiple regression analysis is also at a quite satisfactory level where the adjusted R^2 is 0.71 and observed R^2 value is 0.60, respectively. The value of the adjusted R^2 revealed that

there are good relationships between the dependent and independent variables where all independent variables can explain about 60% of the financial self-sufficiency. On the other hand, the ANOVA table also reflects the goodness of model and F- test estimates that the regression is quite meaningful in the sense that the dependent variable is related to each specific explanatory variable.

Table 11. The Distribution of regression result of FSS of MFIs in Bangladesh

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.373**	3.092		2.384	.025
YIELD	.535	2.369	.042	.226	.823
LN_SIZE	-.070***	.023	-.524	-3.085	.005
PPR	.369	5.331	.019	.069	.945
DER	-.027	.023	-.250	-1.180	.249
CPB	.056	.061	.467	.918	.367
LN_ALBPB	-.771	.667	-.491	-1.156	.259
LN_Ages	-.325**	.163	-.294	-1.996	.057
LN_NAB	.062	.075	.178	.834	.412
OER	-12.283**	5.142	-.851	-2.389	.025

R- Squared 0.71, Adjusted R- Squared 0.60

F-statistic 6.757

Prob. (F-stat.) .000

Note. *** Significant at 1%; ** Significant at 5%.

Source: MIX Market database, 2013.

The linear relation of the model is highly significant where the p value for the F is less than 0.001% level. Furthermore, the estimated coefficient also denoted from the model that most of the variables are significantly related at the 0.01 and 0.05 levels, which is significantly different than zero.

Moreover, the regression result also reveals that Size of MFIs (SIZE), Cost per Borrower (CPB), Personnel Productivity Ratio (PPR) and Yield on Gross loan Portfolio (YIELD) positively explain the financial self-sufficiency of MFIs in Bangladesh. On the other hand, variables of average Loan Balance per Borrowers (ALBPB), Age of MFIs (AGE), Debt to Equity Ratio (DER), Operating Expense Ratio (OER), and Number of active borrowers (NAB) have a negative effect on the financial self-sufficiency of FSS of MFIs in Bangladesh.

Table 12. The distribution of hypothesis status of FSS of MFIs in Bangladesh

Hypothesis	B	Sig.	Status
H1a: There is a significant positive relationship on the yield on gross loan portfolio of microfinance institutions and financial self-sufficiency.	0.535	.823	Accepted
H2a: There is a positive significant relationship between Size of microfinance institutions and financial self-sufficiency.	-.070	.005	Rejected
H3a: There is a positive significant relationship between personnel productivity ratio with financial self-sufficiency.	0.369	.945	Accepted
H4a: There is a negative significant relationship between debt to equity ratio of microfinance institutions and financial self-sufficiency.	-0.027	.249	Accepted
H5a: Cost per borrower is negatively related to financial self-sufficiency.	0.056	.367	Rejected
H6a: There is a significant positive relationship between average loan balances per borrower to financial self-sufficiency.	-0.771	.259	Rejected
H7a: Age of a microfinance institution is significantly and positively related to financial self-sufficiency.	-.325	.057	Rejected
H8a: There is significant positive relationship between number of active borrowers and financial self-sufficiency.	0.062	.412	Accepted
H9a: There is a negative significant relationship between operating expense ratio to financial self-sufficiency.	-12.283	.025	Accepted

Finally, the study found that the estimated result of multiple regression analysis is also at a quite satisfactory level where the adjusted R² is 0.71 and observed R² value is 0.60, respectively. The value of adjusted R² revealed that there are good relationships with dependent and independent variables where all independent variables can explain about 60% of the financial self-sufficiency. Moreover, the study recommends for policy considerations of the successful and effective operation of microfinance programs through simplify of distribution of loan, improve yield on gross loan portfolio, personnel productivity and reduces of borrowing fund from the donors, reducing operating cost, utilize resources to generate financial revenue and focus on the increase of value of their total assets in Bangladesh.

4. Conclusion and Recommendations

As this study investigates the performance and determine the determinants of financial self-sustainability of Microfinance Institutions (MFIs) and compared their positions in Bangladesh. Overall findings of the study found that the average values for return on asset (ROA) of ASA, GB BRAC, BURO Bangladesh, and TMSS is 0.10864, 0.01143, 0.08449, 0.03314, and 0.02151, respectively. The study showed that ASA has the highest return on assets whereas GB has the lowest return, respectively. Further, average values for return on equity (ROE) of ASA, GB BRAC, BURO Bangladesh, and TMSS are 0.2000, 0.10847, 0.18104, 0.11229, and 0.11023, respectively. This means that ASA, GB BRAC, BURO Bangladesh, and TMSS can be considered to be financially sustainable as they have positive values of both ROA and ROE. This means that all the MFIs are financially sustainable.

The study also found that the estimated result of multiple regression analysis is also at a quite satisfactory level where the adjusted R² is 0.71 and observed R² value is 0.60, respectively. The value of adjusted R² revealed that there are good relationships with dependent and independent variables where all independent variables can explain about 60% of the financial self-sufficiency. Moreover, the study recommends for policy considerations of the successful and effective operation of microfinance programs through simplify of distribution of loan, improve yield on gross loan portfolio, personnel productivity and reduces of borrowing fund from the donors, reducing operating cost, utilize resources to generate financial revenue and focus on the increase of value of their total assets in Bangladesh

Finally, the regression result also reveals that Size of MFIs (SIZE), Cost per Borrower (CPB), Personnel Productivity Ratio (PPR) and Yield on Gross loan Portfolio (YIELD) positively explain the financial self-sufficiency of MFIs in Bangladesh. On the other hand, variables of average Loan Balance per Borrowers (ALBPB), Age of MFIs (AGE), Debt to Equity Ratio (DER), Operating Expense Ratio (OER), and Number of active borrowers (NAB) have a negative effect on the financial self-sufficiency of FSS of MFIs in Bangladesh

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