Determinants of Profitability in Microfinance Institutions: A Case Study of Pakistan, India and Bangladesh

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Abstract: While the importance of microfinance institutions (MFIs) for poverty alleviation and economic growth has always been acknowledged by the policymakers and researcher, the real challenge is how to make these banks self-sustainable. This study aims to shed light on the robust determinants of MFIs profitability in the South Asian countries including India, Bangladesh and Pakistan. Our empirical analysis relies upon the data set of 40 MFIs over the sample 2011 to 2020. For the econometric investigation, the study uses pooled OLS, random effects and fixed effects models. Our results confirm the relevance of cost management, bank size, and business mixed indicator, debt to equity ratio and management efficiencies of MFIs in determining their profitability. The results recommended that MFIs in Pakistan, India and Bangladesh should focus on the cost management, management efficiencies, Debt to Equity and Business Mix Indicator for the positive return for the MFIs

Keywords: Microfinance Institutions, Profitability, Resource Dependence Theory, Poverty

1.Introduction

A large population of the poor people are ignored by the conventional banking system because of the non-availability of collateral and many other requirements. Now it is a big challenge for the developing country to overcome the poverty. Unfortunately, the fruits of the macro economic development is always enjoyed by the rich people and millions of the poor people remain in poverty. Now it is the microfinance institutions that provides loans and other financing services to the poor and unemployed of the society without any hard and fast rules. It has been described by (Yunus & Abed, 2004) that microfinance is a good tool for reducing the poverty in Africa and Asian countries. The provision of wide range of micro financial services (Micro credit, insurance, savings and remittances) is known as microfinance, for the sake to meet the financial requirements to the poor and low-income people beyond the social and economic barrier (Roodman et al., 2006) as well as promoting self-employment and entrepreneurship among poor people (Bateman, 2011). Microfinance has been established to reduce poverty and giving more access to the poor and needy people and it's the primary aim of micro finance institution (Mersland & Strøm, 2010) Through microfinance, the people can get easily involved in

productive activities, which increase the income of household.

According to (Seibel, 2013) that microfinance is not a new phenomenon, as majority have argued. For the purpose to reduce poverty, similar credit programs had initiated in Europe. As per (Seibel, 2013) stated that in 1720s 'Irish Loan Funds' has introduced to reduce poverty among poor people. And the good thing of this programs is interest free loans, were supported by donations. Associate pressure was used to implement reimbursements, for example, microfinance today. Afterward, these credit plans were changed by budgetary middle people, where they acknowledge stores and charge interest on loans. The microfinance got the high value when the government legalized the operations of microfinance institutions with special Law in 1983. And it started decline when the government put a cap on their interest rates. Whereas in 1950s these sought of programs has completely disappear. As per various researcher that the microfinance has been again started in Germany in 18th century with aim to reduce poverty among poor people. In the developing countries Microfinance institutions is providing financing facilities to millions of people and it has taken the attention of the stakeholders to measure its financial performance (Beg, 2016). The financial services that are provided by the MFIs to the poor people help them in reducing the poverty and in this way they play role in the economic development of the country.

Microfinance in South Asian Association of Regional Cooperation (SAARC, hereafter) is governed by a framework established by the microfinance Act (2006) and microfinance business regulations (Almas & Mukhtar, 2015). In the SAARC countries, the absence of a functioning banking and financial sector has resulted in an increase in demand for microfinance. Due to profit-driven financial institutions' conservative commercial business practices and the structure and character of SAARC's countries banking and finance industry, there has been a significant obstacle to banking and finance quality improvement (Rai et al., 2010). Financial performance is critical because it influences a corporation's ability to compete in the marketplace and the financial interests of the company's management. The financial success of a microfinance institution can be described as its ability to achieve microfinance objectives without the assistance of donors (Buseretse et al., 2014). Profitability is critical for every microfinance organization in order to maintain stability and stimulate expansion. As a result, microfinance organizations should aspire towards excellence across a range of dimensions, including social and economic(Ayele, 2019). The purpose of the study is to analyze the profitability determinants of the Microfinance Institutions in Pakistan, India and Bangladesh from the period 2011-2020. The results are based on panel data which represents Pakistan, India and Bangladesh. The next section will be literature review followed by Research methodology, data collection and analysis while the last section will be summary, conclusion and recommendations.

2. Review of Literature
2.1 Resource Dependence Theory

The RDT was created in 1978 at Stanford University by American business theorist Jeffrey Pfeffer and American organizational theorist Gerald R. Salancik (Pfeffer & Salancik, 1978). The RDT idea was initially published in their book "The External Control of Organization, A Resource Dependence Perspective" (1978). The goal of the RD is to provide a roadmap for designing and managing externally restricted organization (Pfeffer & Salancik, 1978, p. xi). The theory suggest that profitability of the firm depends on the internal and external resources. The efficient utilization of these resources leads to profitability of the MFIs. In this research paper the resources like cost management, management inefficiencies, business mix indicator and debt to equity have been used to assess the profitability in Pakistan, India and Bangladesh.

The financial performance of the Microfinance institutes are influenced by different factors/determinants. In the light of literature the determinants are discussed as follow.(Shkodra, 2019) Studied the financial performance in Kosovo by studying six different determinants of the profitability. The data were collected from 2006 to 2016 from the annual reports of the selected MFIs. For the measurement of the financial performance ROA, ROE and

OSS were used as proxies. From the analysis it is concluded that interest rate on loan has strong impact on the profitability and the age is also have some influence on the financial performance of the MFIs in Kosovo. In the same context another study was conducted in Bangladesh to find out the determinants of the profitability by (Akhter, 2018). The study was based on primary data and the purpose was to find the internal determinants of the profitability in the MFIs of Bangla desh. From the analysis it has been concluded that IT and innovation has insignificant relationship while motivation of employees, management system and loan lending system has significant and positive relationship with the profitability.

Microfinance not only operates in the conventional system but it operates in the Islamic economic system as well. The determinants of the profitability were analyzed by (Nurulhuda Ibrahim et al., 2016) in the Islamic microfinance in Malaysia. Data were collected through annual reports from 2006-2012. From the analysis of the data it is concluded that Capital ratio, Management Efficiency and GNI per capita have significant and positive relationship with profitability but on the other hand, Fuel prices has negative relationship with ROA.

The determinates of the profitability of the MFIs are not only studied at the micro level but it has been studied at the macro level as well. (Caro, 2017) studied the impact of the macro factors on the performance of the MFIs. The data were collected from the website of the MIX from 2003-2013. The analysis showed no significant relationship of the macro determinants with profitability of the MFIs. The same kind of study were conducted by (Doçi, 2017) in Albania and the results were almost the same. (Imai et al., 2011) added the macro factors with macro institutional factors across the country. The results concluded that GDP and share of the domestic credit to the GPA has significant and positive impact on the profitability of MFIs. (Vanroose, 2008) also studied the same phenomena in almost 115 countries. The conclusion is that country having industries and low population are profitable MFIs and inflation has no significant role in this study.(Hermanto & Astuti, 2013) also contributed in the same sense.

The micro and macro determinants were also analyzed at the same time by different authors like (Nil Gunsel, 2012) studied the determinants in Cyprus. The data set were taken from 1984 to 2008. From the analysis of the data it is concluded that high inflation rate, low bank size, low income of the bank, capital adequacy and lower growth rate are the main determinants that have effect on the profitability of MFIs. In Pakistani context the same case were investigated by (Akram, 2018) in which he studied 20 banks and the data were collected from 2003-2016. The study suggested that Business Mix Indicator, Capital adequacy, Bank size and the credit risk have positive and significant relationship with the profitability of Banks.

On micro level different studies took place at different time like (Ngumo et al., 2020) studied the micro and bank specific variables in Kenya Microfinance Banks. The data were collected from 7 MFIs from 2011 to 2015. The data were collected from the secondary sources like annual reports of the MFIs. The analysis suggested that financial performance of the MFIs are positively associated with Capital adequacy, Bank Size and operational efficiency. While it has negative association with credit risk and Liquidity Ratio. In this context another study conducted by (Adhikary & Papachristou, 2017) in south Asian region. The sample size were 114 MFIs and data were collected from 2003-2011. In the study bank specific, country specific and industry specific determinants were studied. From the analysis it was found that cost efficiency is the main determinant of the financial performance, while on the other hand, credit risk reduces the profitability of the MFIs.

The most recent study in this regard was conducted by (Abdi & Bacha, 2021) in which they investigated the determinants of profitability of the MFIs in Ethiopia. For that purpose the data were collected from 2010-2018 from 12 MFIs. The results concluded that financial self-sufficiency ratio to total assets and operational self-sufficiency has positive relationship with profitability while on the other side, debt to equity ratio, expense ratio and liquidity ratio has negative association with profitability of the MFIs.

3. Methodology

In order to analyze the determinants that effects on the profitability of MFIs in Pakistan, India and Bangladesh panel data is used from 2011-2020. The data was balanced having 40 MFIs and 400 observations. Secondary

data have been used which were obtained from the annual reports of the MFIs. A deductive research approach as well as the positivism strategy of research is adopted in this research work. A panel Regression was used as a model in which three other models were tested. The Fixed Effect Model, the Pooled OLS Model and Random Effect Model. The results will be analyzed and interpreted on the basis of these Models.

3.1 Variables of the Study
3.1.1 Dependent Variable
In this research work the financial performance is the dependent variable. Financial performance is measured by using the Return on Assets (ROA) & Return on Equity (ROE). ROA & ROE are the best measure to calculate the financial performance ((Shkodra, 2019).(Abdi & Bacha, 2021) (Nurulhuda Ibrahim et al., 2016).

3.1.2 Independent Variables
The list of the independent variables are given as follow.

3.1.2.1 Cost Management (CM)
It is the management of the operating cost that is beard by the Microfinance Institutions. It is equal to the log of the total operating expenses (Adhikary & Papachristou, 2014 & Akram, 2018).

3.1.2.2 Size of MFI
Size of the MFI is also an important determinant.it is equal to the log of the total assets of MFI (Shkodra, 2019) (Abdi & Bacha, 2021) (Ngumo et al., 2020).

3.1.2.3 Business Mix Indicator (BMI)
It is the other income that is generated by the MFIs. It is obtained by dividing the total assets on other operative income. It is a micro determinant of profitability of the MFI (Akram, 2018) & Petria et al (2013).

3.1.2.4 Debt to Equity Ratio (D/E)
It is the mix of internal and external financing of the MFI. It has also impact on the profitability of the MFIs. It is calculated as Debt/ Equity (Abdi & Bacha, 2021).

3.1.2.5 Management Efficiency (ME)
Management efficiency can be measured by dividing the Net Income of the MFI on the operating expenses (Nurulhuda Ibrahim et al., 2016) (Ahlin et al., 2011)(Adhikary & Papachristou, 2014).

3.2 Hypothesis of the Study
The following hypothesis will be tested in the research work
H1: Cost Management has positive impact on financial performance of MFI
H2: Size of MFI has positive impact on financial performance of MFI
H3: Business Mix Indicator has positive impact on financial performance of MFI
H4: Debt to Equity has negative impact on financial performance of MFI
H5: Management Efficiency has positive impact on financial performance of MFI
Measurement of Variables and Expected Signs

Variable	Formula/ proxy	Expected Sign
Cost Management	Log (Operating Expenses)	Negative
Size of MFI	Log(Total Assets)	Positive
Business Mix Indicator	Non-Interest income/Total	Positive

	Assets	
Debt/Equity Ratio	Debt/ equity	Negative/ Positive
Management Efficiency	Total Operating Cost/ Net Income	Positive

Model of the Study

$$\pi it = \alpha + \beta_1 CM_{it} + +\beta_2 FS_{it} + +\beta_3 BMI_{it} + \beta_4 CS_{it} + \beta_5 ME_{ict} + \mu it + \varepsilon_{it}$$

Where

πit	The profitability of the MFI i in t term
$\beta_1 CM_{it}$	Coefficient of Cost Management for MFI i in t time period
$\beta_2 FS_{it}$	Coefficient of Size of MFI for MFI i in t time period
$\beta_3 BMI_{it}$	Coefficient of Business Mix Indicator for MFI i in t time period
$\beta_4 CS_{it}$	Coefficient of Debt to Equity for MFI i in t time period
$\beta_5 ME_{it}$	Coefficient of Management Efficiency for MFI i in t time period
µit	Between Entity Error Term
ε_{it}	Within Entity Error Term

4. Results and Discussion

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	362	0.019	0.048	-0.245	0.277
ROE	360	0.091	0.312	-3.416	1.518
COST_MGT	357	0.098	0.012	0.062	0.122
BANK_SIZE	362	7.917	0.962	4.503	9.779
BMI	351	0.025	0.050	-0.002	0.553
DE	353	5.409	5.896	-2.616	67.248
ME	400	9726452.4	35270755	-2.300e+08	4.300e+08

Table 2: Matrix of correlations

Variables	ROA	ROE	COST_MGT	FIRM_SIZE	BMI	DE	ME
ROA	1.000						
ROE	0.541	1.000					
COST_MGT	-0.028	0.009	1.000				
BANK_SIZE	0.077	0.066	0.817	1.000			
BMI	-0.100	-0.123	-0.088	-0.233	1.000		
DE	-0.075	0.120	0.277	0.269	-0.033	1.000	
ME	0.293	0.264	0.299	0.334	-0.096	-0.064	1.000

Table 3: Factors determining Profitability of MFIs in South Asian Countries

Dependent Variable: ROE	(1) Pooled OLS	(2) RE	(3) FE
COST_MGT	-4.375**	-6.407**	-15.993***
	(2.203)	(2.978)	(5.064)
BANK_SIZE	0.009	0.030	0.138**

	(0.025)	(0.037)	(0.058)
BMI	-0.602	-0.719**	-1.052**
	(0.585)	(0.347)	(0.410)
DE	0.009*	0.009***	0.008**
	(0.006)	(0.003)	(0.003)
ME	0.001	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Constant	0.388	0.425**	0.514*
	(0.261)	(0.180)	(0.266)
Observations	347	347	347
R-squared	0.113		0.158
Number of MFIs		40	40

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Factors determining Profitability of MFIs in South Asian Countries

Dependent Variable:	(1)	(2)	(3)
ROA	Pooled OLS	RE	FE
COST_MGT	-1.156***	-1.435***	-1.628**
	(0.404)	(0.524)	(0.665)
BANK_SIZE	0.010	0.019***	0.023***
	(0.008)	(0.006)	(0.008)
BMI	-0.048	-0.041	-0.042
	(0.034)	(0.050)	(0.054)
DE	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
ME	0.001**	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Constant	0.052	0.013	-0.002
	(0.039)	(0.030)	(0.035)
Observations	347	347	347
R-squared	0.119		0.069
Number of MFIs		40	40

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

In this section, we report our main empirical results concerning the determinants of MFIs' profitability in the selected South Asian countries. Table 3 reports our results of pooled OLS, random effects (RE) and fixed effects (FE) models using ROE as our dependent variable. On the whole, these results support our hypothesized impacts of the selected covariates on the MFI's profitability for the selected South Asian countries. Coming to our first variable, cost management – proxied by operating cost of MFIs – the results reveal a negative impact of this variable on the profitability. As a matter of fact, operating costs tend to be higher in MFIs compared to conventional banks because of the small scale of operations in the former group. Furthermore, MFIs have to invest more resources in repayments of their loans since a vast majority of their clients are poor and hence lack

ability to pay the loans at time (Mersland & Strøm, 2010). In line with these findings, (Sufian & Habibullah, 2009) note that higher operating cost resulting from inefficient cost management tends to reduce banking sector profits in China. This also support (Athanasoglou et al., 2008) who rely upon GMM methodology and report a negative impact of operating costs on banks profitability for Greek banks covering the period 1985-2001.

Our second variable, bank size appears positive and significant in random effects and fixed effects specifications, illustrating a direct relationship between firm size and MFIs profitability. Several studies in the previous literature show that large banks enjoy economies of scale which enable them to enjoy more profit. For instance, (Tamanni & Haji Besar, 2019) use a global data of 25 MFIs and report a positive relationship between size and profitability. The authors also note that a large bank size will increase the outreach of that MFI. This will not only enhance bank's capacity to reach more poor people but also ensure its sustainability. (M. A. Rahman & Mazlan, 2014) also report positive effects of bank size on banks profitability for Bangladesh economy over the period 2005–2011. In contrast to these findings, (Pasiouras & Kosmidou, 2007) report diseconomies of scale for their sample of 15 EU banks over the sample 1995–2001.

Our next variable, business mix indicator (BMI) retains negative sign in FE and RE models. The coefficient of BMI variable is close to one showing a one-to-one negative influence of this variable on MFIs' profitability. In the financial literature, the inclusion of BMI is a new phenomenon. It is generally assumed that higher BMI would lead to more MFI profitability. Generally, it is assumed that more diversification of banks investment will lead to higher profitability (Uddin et al., 2021). However, the opposing view notes that more diversification will increase cost and therefore reduces profitability (Berger et al., 2010). The authors support these results for their sample of Chinese banks during 1996-2006. Furthermore, a higher non-interest income is also found to be associated with higher volatility of returns (Moudud-Ul-Huq et al., 2018). These results are in line with the findings of (H. U. Rahman et al., 2020) who report a negative association between BMI and profitability for Pakistan over the sample 2003 to 2017.

The fourth determinant of interest was the Capital structure for which Debt to Equity Ratio was used as a proxy. The results shows that Capital structure has negative and significant effect on the financial performance of the MFIs in South Asia. The results are similar with the results 0f s (Zingales, 1995; Wald, 1999; Boothetal, 2001; French, 2002). It is recommended for the MFIs to generate the additional funding in order to cover the cost of debt financing.Our last variable, Management Efficiency, also remains positive and significant at conventional level. Management Efficiency of the MFI enables them to invest in potentially profitable avenues which further contributes to the sustainability of the banks. Table 4 presents the robustness results of our model by using returns on assets (ROA) as dependent variable. On the whole these results confirm our previous findings except for BMI and DE variables where the results remain insignificant across all the specifications.

5. Conclusion

The purpose of the study was to find out the determinants of profitability in Microfinance Intuitions in Pakistan, India and Bangladesh. The cost management, size of the bank, Business Mix Indicator, Debt to Equity Ratio and Management efficiency were checked with Return on Assets and Return on Equity. Data were collected from the annual reports of the selected MFIs and multiple regression was used as a tool of analysis. It is concluded that cost management, Management efficiency, and size of MFI has positive and significant relationship with the profitability, while on the other hand BMI and Capital structure has negative but significant relationship with the Profitability. It is recommended for the MFIs to focus on cash management and generate more and more cash in order to cover up the expenses. The MFIs should also work on the other income sources as well to meet the objectives.

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