

Does lending to women affect the revenue generation of microfinance institutions (MFIs)?

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ABSTRACT

This paper endeavors to investigate how lending to women (depth of outreach) affects the revenue generation of MFIs. This study used Cobb-Douglas' production model and cross sectional data of 192 MFIs in Bangladesh in the year 2012. The results suggest that lending to women is particularly costly; total revenue/total asset is negatively affected when loans are disbursed to more women. Employee and capital asset ratio is statistically significant in this study. Our results are also likely to support the view that 'trade-off' exists in the Bangladesh microfinance sector. Since, the original aim of microfinance is to cater to the poor community, profit maximization or financial gain by MFIs should be kept to a minimum level.

Keywords: MFIs, Women, Revenue, Trade-off, Bangladesh

JEL Classification: G21, O16, E43

1. Introduction

Poor communities are excluded from formal financial services because they do not possess the required collateral and it is costly to lend to them (Littlefield and Rosenberg, 2004; Hermes, et al., 2011). Generally, microfinance loans are short term (one to three years) and average loans are small (US\$120 in Bangladesh) (MRA-2014). According to Hartarska et al. (2013) and Ghosh (2013), management of such kinds of loan is cost inefficient. Due to this, formal financial institutions have excluded them, since their ultimate goal is to maximize profit or maximize shareholders' wealth.

Women are largely discriminated against socially, economically and politically in developing countries, particularly in Bangladesh. Although MFIs originally evolved to target women, it could be less efficient when too much focus is given to women as argued by Hermes, et al. (2011). Similarly, recent studies have shown that there are trade-offs between MFIs' financial efficiency and outreach (Hermes, et al., 2011; Cull et al., 2007). Moreover, the view that MFIs allegedly target wealthy borrowers instead of outreaching to the hardcore poor partially contributes to 'mission drift' (Armendáriz, Szafarz, 2011; Augsburg, Fouillet, 2013; Soltane Bassem, 2012). In line with the trade-off view, evidence has also shown that the poorest of the poor are rarely the beneficiaries of microfinance programs (Correa and Correa, 2009). Moreover, Conning (1999), Correa and Correa (2009) have highlighted that a high interest rate must be charged in return for collateral free loans to the poorer members of the community.

Despite the earlier argument, D'Espallier et al. (2011) presented empirical evidence to support the view that women borrowers are the ones most likely to develop businesses and have higher repayment rates compared to their counterparts. Repayment is collected because women are considered to be less movable and more trustworthy (Aggarwal et al., 2014). Similarly, Miyashita (2000) claimed that microfinance is a pro-poor, non-profit and cost efficient poverty eradication tool. However, in the context of developing countries, women are mainly dependent on their counterparts for economic activities. In addition women's participation rate in the labor force was less than half of men's in 2011-12 (BBS, 2013).

Although, there is little understanding of the theoretical studies that have explained why it is costly to lend to the poor, particularly women, empirical findings are limited and mixed in relation to establishing this fact. Thus, this study will address the issue of how lending to women affects the financial performance of MFIs in Bangladesh. This study is expected to contribute to the existing literature by empirically revealing the facts. Furthermore, the study will also take into account reconfirmation of whether there exists 'trade-off' (financial efficiency is attained by reducing costs through less outreach and fewer women) in the Bangladesh microfinance sector.

The structure of this study is as follows. Section two gives insight into previous literature related to the study, the methodology is discussed in section three. Findings are discussed in section four and section five concludes.

2. Literature Review

After the failure of the trickle down approach to address poverty in the previous century, several financial innovations have emerged of which microfinance is one of the most influential and highly replicated development tools, particularly in developing countries (Ahmed, 2002). With its huge potential for alleviating poverty, this model has been used in most of the African, Asian and as well as Latin American countries (Cheamuangphan et al., 2012). Women are targeted as the main clients because they are the most vulnerable and neglected members of the community in patriarchal societies, and the social impact is also higher than with men. Additional studies have also found that women are the ones most likely to be concerned about family prosperity and unity. Access to financial resources for women could have a greater impact on the family compared with giving the access to men (Cheston and Kuhn, 2002).

In Thailand, the Village and Urban Community Fund (Village Fund) is a good example for the study of microfinance. Fongthong and Suriya (2014) use data from Thailand's Socioeconomic Survey at the household level in 2009 and reveal that the Village Fund targets near-poor and moderate-income households, not the poor. Although the Village Fund cannot be said to be pro-

poor, the program has its merits in lending to women and less-educated heads of households. Therefore, it means that this microfinance program successfully prevents women to fall into poverty.

Since MFIs are faced with a dual mission, there has been strong debate between welfarists and institutionalists regarding which mission to emphasize. Welfarists argue that credit services should be given to the hardcore poor, including more women, while the latter argue that financial sustainability is important for the viability and future growth of the MFIs. As such, there is a conflict, at least a minimal conflict, between the two groups given the trade-off between these dual objectives (Hermes et al., 2013). Cull et al., (2007) found empirically that profitable MFIs have fewer poor and female borrowers in their operation.

Theoretically, the reason behind high this interest charge magnified that the majority of microfinance loans are collateral free and repayment is managed through intensive monitoring, which is labor concentrated. Furthermore, social sanctions, delegation and high monitoring costs soar dramatically when the social mission is achieved through extensive lending to the poor and the poorest of the society. On the other hand, financial sustainability simply means covering the total cost (Guntz, 2011). This can be achieved through high interest charges (total revenue), since the cost of operations is high. Thus, this study is prompted by the need to empirically establish how servicing women clients affects the revenue generation of MFIs in Bangladesh.

3. Estimation Strategy

To ensure the validity of this study, the selection of dependent and independent variables was given special attention. The Cobb-Douglas (1928) production function is used to determine the inputs and outputs of this study. Total revenue over total assets (RoA), which represents MFIs' interest income generated from available assets, is treated as the dependent variable or output. Apart from employee (Emp) and capital asset ratio (CoA), average savings (AvgSav) and active women borrowers/ active borrowers (WoAB) were added to the production function. Since AvgSav is channeled as loan disbursement and generates revenue, we considered it to be one of the inputs in production. Jagtiani and Khanthavit (1996) also treated deposits as input in total cost estimation of the banking industry. Likewise, women are the main clients of MFIs, which constitutes around 80% to 90% of the total clients in Bangladesh as revenue is generated from lending to these borrowers. Table 1 describes the variables and their measurements.

Table 1: Descriptive Statistics

Variable	Description	Mean	SD
RoA	Revenue/Total Assets	1.18	0.98
WoAB	Total Women borrower/ Total Active Borrower	1.38	2.83
Emp	Total employee	68.23	80.90
CoA	Total Capital/Total Assets	0.28	0.29
AvgSav	Total savings /Total Saver	2710.94	1400.56

Similarly with Cobb-Douglas' (1928) input output models,

$$Output \left(\frac{Revenue}{Total Assets} \right) = f \left(Employee, \frac{Capital}{Assets}, \frac{Women borrowers}{Active borrowers}, average savings \right)$$

Mathematically the trans-log production function is similar to Jagtiani and Khanthavit's (1996) (they used it for total cost estimation) and is as follows,

$$\text{LnRoA}_i = \partial_0 + \partial_1 \text{LnEmp}_i + \partial_2 \text{LnWoAB}_i + \partial_3 \text{LnCoA}_i + \partial_4 \text{LnAvSav}_i + \varepsilon_i$$

LnRoA_i , represents the logarithm of i^{th} MFIs RoA while ε_i is the stochastic error term. The data was collected from the microcredit regulatory authority (MRA) database (www.mra.gov.bd). A total of 192 MFIs were chosen based on the availability of the data.

4. Empirical Findings

Table 2 reports the pairwise correlation among explanatory variables, and the low level of correlation coefficients refutes the possibility of a multicollinearity problem. Furthermore, from Figure 1, the respectable linearity between the dependent and independent variables indicates the suitability of choosing linear multiple regression.

Table 2: Pairwise correlation among explanatory variable

	WoAB	Emp	COA	AvgSav
WOAB	1			
Emp	.05	1		
COA	-.08	-.05	1	
AvgSav	.02	.09	-.04	1

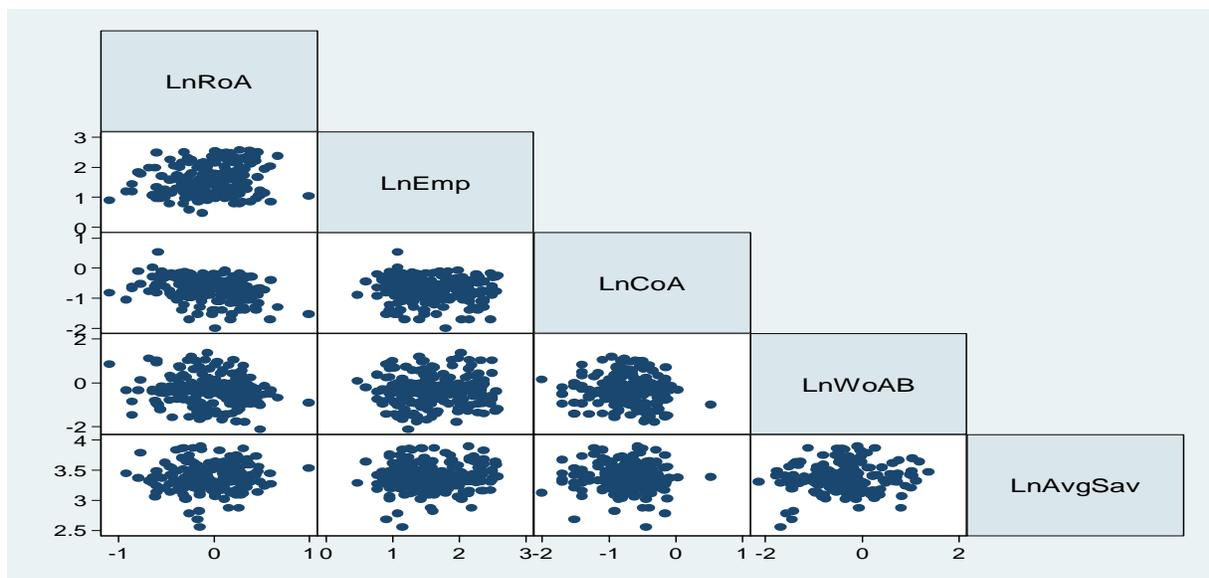


Figure 1: Linearity among variables

Table 3 reports the findings of estimation. This study found that a one percent change in employees is estimated to increase a MFI's revenue by 0.081%. However, capital asset ratio was significantly negatively related to RoA indicating that every one percent change in CoA is estimated to decrease 0.242% in RoA. In general, the capital asset ratio measures the financial health of an entity. Expectedly, microfinance capital is comprised of tier one capital including preferred stocks, retained earnings, donors' funds etc. Since a microfinance operation is basically labor intensive, adding a lot more capital will have detrimental effects on revenue generation (Connings, 1999).

The main finding of this study revealed that for every one percent increase in active women borrowers, the estimated RoA is decreased by 0.094%. This finding supports the existing literature that lending to the poor, particularly women, is either costly or less profitable due to the negative impact on RoA (Littlefield and Rosenberg, 2004; Hermes, et al., 2011). This outcome is a subjective phenomenon and depends on the context. In general and aggregate terms, RoA is positive for most of the cases, but lending more to women could lower RoA, which has been shown in this study. There are various reasons for this outcome, such as high monitoring and implementing costs coinciding with short term and small loans. RoA and usual returns may vary in absolute terms, depending on how much of the total assets have been allocated for loan purposes and other operational activities. However, our finding is in contrast with that of Miyashita (2000) that microfinance is cost effective in targeting women. High monitoring costs, credit defaults and women's dependency on their counterparts partially reflects that targeting the hardcore poor, basically women, needs to be compensated by low levels of earnings. However, women can be offered credits or other financial services accompanied by high interest charges (Coning, 1999; Correa and Correa, 2009).

Table 3: Estimation Results

Variable	LnRoA	95% Confidence Interval	
Emp	0.081* (0.044)	-0.005	0.167
CoA	-0.242*** (0.055)	-0.350	-0.133
WoAB	-0.094*** (0.034)	-0.161	-0.027
AvgSav	0.091 (0.095)	-0.097	0.279
Cons	-0.680*** (0.325)	-1.321	-0.038
R^2	0.151		

Note: values in parentheses are standard error. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Since this study used a natural logarithm for both the dependent and independent variables, it basically shows elasticity. Despite the steady expansion and growth of MFIs (Roberts, 2013), decreasing returns to scale exist because output (RoA) is increased/ decreased by less than a proportionate change in inputs in the Bangladesh microfinance sector. This means that for every one percent change in independent variables, the associated change in dependent variable is less than 1%. None of the inputs showed increasing or constant returns to scale. This might be due to

the fact that lack of specialized labor, low usage of communication and information technology in MFIs adversely affected the performance of economies of scale (Clark, 1988; Cheryl Frankiewicz, 2003).

Lastly, this study highlights the possibility that since RoA is negatively affected by extending loans to more women borrowers, a trade-off exists between targeting more women, which is the depth of outreach, and the financial sustainability (in terms of revenue generation) of the Bangladesh microfinance sector.

5. Conclusion

This paper has demonstrated with empirical findings that lending to women is costly. If MFIs target more women borrowers, it will reduce their RoA assuming other factors hold constant. Additionally, this finding also partially supports the view of a ‘trade-off’, that is, MFIs are targeting comparatively wealthy clients, fewer women and strategically well-off areas to attain so called financial sustainability. However, as the original promise of microfinance is to outreach to the poor, profit maximization or financial gain should be kept to a minimum level.

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