Determinants of the Outreach Performance of Microfinance Institutions in Ethiopia

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Abstract

Microfinance is the provision of financial services to the financially excluded poor people as a means to support in poverty mitigation programs among the communities. The principal objective of microfinance institutions is the reach to the poor people by providing financial services in a sustainable base. The present research examines the factors that affect outreach performance of MFIs in Ethiopia. The results indicate that return on assets and cost per borrowers affect both the depth and breadth of outreach, whereas, financial self-sufficient, operating expense to loan portfolio and size of the MFIs impact the depth of outreach and gross loan portfolio impact the breadth of outreach only. Furthermore, portfolio at risk greater than 30 days has no significant impact on the outreach performance of MFIs.

Keywords: *Microfinance, Institutions, Outreach, Performance, Depth, Breadth, Ethiopia.*

Introduction

Financial inclusion play fundamental role in both developed and developing economies. Access to financial services is a crucial matter for developing countries, it is also a major issue for advanced economies (Coffinet & Jadeau, 2017). However, still, an estimated 2.7 billion people worldwide have no access to formal financial services (Demirguc-Kunt & Klapper, 2012). Traditional banks do not provide financial services to the poor clients. The logical reasons for not providing financial service to the poor clients are problem of adverse selection and information asymmetry which is substantially more severe in the case of these customers (Dokulilova, Janda, & Zetek, 2009). MFIs provide financial services to poor customers who have no access to the traditional financial sector. Though microfinance operations have seen considerable growth in recent years (Demirguc-Kunt & Klapper, 2012), the potential market of such activity is still below the actual needs to finance small projects and people under financial necessity. Consequently, the initial objective of these financial institutions which is the outreach is not well achieved (Honohan, 2004). MFIs mainly initiated with a mission of poverty reduction. Yet, in recent decades, there is a shift in focus from the social objective to the economic objective sustainable and market based financial services. In the 1990s, the importance of financial sustainability of MFIs originated an imperative debate between the *financial systems* approach and the *poverty lending* approach (Robinson, 2001). The later emphasizes lending to the

poorest of the poor, while the financial systems approach focuses on lending to the creditworthy among the economically active poor people with the ability to use small loans and the willingness to repay them and on voluntary savings mobilization (Robinson, 2001).

Microfinance is the delivery of financial services by institutions, such as savings, loans and financial insurance for low-income clients, including those who are self-employed like farmers (Ledgerwood, 1999). MFIs were mainly initiated with a mission of poverty reduction. As the term outreach describes the achievement of significant scale, including a large number of underserved clients. Schreiner (2002) divides outreach in to two parts, the breadth and depth of outreach. Depth represents the poverty level of the beneficiaries involved, whereas breadth concerns the number of clients reached (Mario & Gianfranco, 2006). Hartarska (2004) opines that the low or high depth of outreach indicates that MFIs have been granting credit to the poorer and richer people. Therefore, analyzing outreach is necessary in order to address the resources, which are by characterization scarce, towards financing productive micro-activities that are capable to reach more disadvantaged society. This study aims to analyze and provide an in-depth analysis of the determinants of depth and breadth of outreach of microfinance institutions in Ethiopia. For the analysis data for 20 MFIs over the period 2009–2016 in Ethiopia has been used in the current study.

Literature Review

Microfinance is not only providing a range of credit products, but also savings, money transfers, and insurance (Mukherjee, 1998). Asian Development Bank has defined microfinance as the channel of provision of wide-ranging financial services such as deposits, loans, payment services, money transfers, and insurance to poor and low-income households and the micro-enterprises owned by them (Mwenda & Muuka, 2004). Financial intermediary development reduces income inequality by disproportionately boosting the income of the poor and therefore reducing poverty (Demirguc-Kunt et al., 2004). Clarke, Xu, & Zou (2003) also found that the level of inequality decrease as finance develops, and since the more concentrated the income is, higher will be the poverty, thus finance helps reduce poverty. Although many researchers found that financial development boosts overall economic growth, but the problem lies with credit markets as they often work inefficiently in poor and rural regions. Some researchers reveal a specific impact of microfinance on poverty. (Morduch & Haley, 2002) noted that microfinance has been found to reduce poverty by alleviating credit constraints, thus reducing child labor and increasing education, and by insuring against shocks. Additionally the research noted that with a few exceptions, it is arguable that direct access of poor people to financial services can strongly affect the attainability of the millennium development goals. In most of the studies, outreach is has often been used to in assessing the MFIs performance by using data of customers (Yaron, 1994; Conning, 1999; Cull, R. et al., 2007; Mersland, & StrØm, 2007; & Thrikawala et al., 2013) the term Outreach describes the achievement of significant scale, including a large number of underserved clients. Schreiner (2002) divides outreach in to two parts, the breadth and depth of outreach. Depth represents the poverty level of the beneficiaries involved, whereas

breadth concerns the number of clients reached (Mario & Gianfranco, 2006). Hartarska (2004) suggested the use of average loan size to facilitate in determining the value of outreach variable. Many researchers often use average loan size as proxy of outreach (Yaron, 1994), besides, the financial sustainability of microfinance institutions contains primarily in finding a balance between the profit gained from the projects and the costs incurred to carry them out. Microfinance sustainability is understood primarily as the ability of MFIs to repeat loans over time, (Mario & Gianfranco, 2006). Operational self-sustainability and financial self-sustainability are two levels financial sustainability (Foster et al., 2003), additionally, they stated that operational self-sustainability is achieved when the organization earns sufficient income from its own earned revenue sources to cover all administrative or operational expenses but relies on wholly or partially subsidized capital base while, financial self-sustainability is achieved when the organization not only earns sufficient income to cover all its operational expenses but also covers the cost of inflation, its loan losses and the market cost of funds. Return on assets and return on equity is used to measure sustainability. The return on assets ratio indicates how well a MFI is using the institution's total assets to generate returns. The Studies which used return on assets as an indicator to measure sustainability are Olivares-Polanco (2004) and Cull et al., (2007). One of the important issue raised in the literature on microfinance is addressing the sustainability of microfinance programmes provided microfinance services is an expensive venture due to elevated transaction and information costs. Currently, a large number of microfinance programmes still depend on subsidies to meet the high costs. In the 1990s, the significance of financial sustainability of MFIs originated an imperative debate between the *financial systems* approach and the *poverty lending* approach (Robinson, 2001) the financial systems approach as defined in Otero and Rhyne (1994) applies market driven principles used by formal financial institutions to the provision of financial services to the poor. The poverty lending approach emphasizes lending to the poorest of the poor, while the financial systems approach focuses on lending to the creditworthy among the economically active poor people with the ability to use small loans and the willingness to repay them and on voluntary savings mobilization (Robinson, 2001). Though, the main goal of both the approaches to microfinance is similar. But, the debate is on how to deliver financial services to the poor.

Both camps provide evidence to support their views. Recently, both camps seem to have moved towards the centre, under certain conditions, sustainability and outreach may be compatible (Morduch, 2005). However the academic literature surprisingly noted few rigorous testing of this issue, one of them is the research conducted by Cull et al., (2007) suggested that MFIs should focus on providing loans to individuals perform to improve their profitability. The study indicated further that individual-based MFIs, particularly if they grow larger, focus more and more on richer clients, a phenomenon termed as "mission drift". This mission drift does not occur as powerfully for the group-based MFIs. As a result, Cull et al., (2007) suggested a trade-off between efficiency and outreach. In relation to the determinants of outreach of MFIs, there are mixed research findings concerning the determinants of social outreach of microfinance institutions some of the research finding were as follows; Abdulai & Tewari (2017) suggested that portfolio at risk, borrowers

per staff member, gross loan portfolio, interest rate, and operating expenses to assets ratio as the most important institutional determinants of MFIs outreach in Sub-Saharan Africa. Adhikary & Papachristou (2014) conducted research on across South Asian countries and revealed that outreach & microfinance institutions financial performance are positively related. Also, Louis & Baesens (2013) and Kipesha & Zhang (2013) revealed the positive correlation of outreach with financial performance. Likewise, using annual data that spans from 1996 to 2010, Louiset al. (2013) studied the impact of increased focus on profitability on 456 MFIs from 70 countries. The study revealed that MFIs that aim for profit are able to expand the outreach performance by increasing the number of clients, on the other side, Cull (2011) argued that microfinance institutions which are profit focused face decline in their client outreach, close monitoring & onsite supervision and increased average loan size that ultimately results in decreasing outreach. Similarly, MFIs that aim for profit have lower depth of outreach noted by the reduction in the percent of women clients in the loan portfolio (Louiset al., 2013). Microfinance institutions with smaller average loan balance normally reach a large number of poor clients resulting in a better depth of outreach. Likewise, Kar (2013) argued that reaching relatively less poor clients results in a mission drift, thus, MFIs which have large average loan balance per borrower generally reach lesser poor clients and face a mission drift. However, Mersland & StrØm (2010) noted that when MFIs can be more cost effective with reduction in size of loan. Also Crowther, 2015 found that there is a significant correlation between the number of previous loans and the size of subsequent loans.

Objective of the study

The main objective of this research is to investigate the determinants of outreach performance of microfinance institutions in Ethiopia.

Hypotheses of the study

The following research hypotheses (HP) were developed:

Ho1: - There is no significant impact of Return on assets on average loan balance.

Ho2: - There is no significant impact of financial self-sufficient on average loan balance.

Ho3:-There is no significant impact of portfolio at risk >30 days on average loan balance.

Ho4:-There is no significant impact of cost per borrowers on average loan balance.

Ho5:-There is no significant impact of operating expense to loan portfolio on average loan balance.

Ho6:-There is no significant impact of assets (size of MFI) on average loan balance.

Ho7: - There is no significant impact of Return on assets on Number of active borrowers

Ho8: - There is no significant impact of financial self-sufficient on number of active borrowers.

Ho9:-There is no significant impact of portfolio at risk >30 days on Number of active borrowers.

Ho10:-There is no significant impact of cost per borrowers on Number of active borrowers.

Ho11:-There is no significant impact of gross loan portfolio on Number of active borrowers.

The Data

The study used secondary data which are obtained from all those MFIs in Ethiopia which are reporting their performance report to Association of Ethiopian Microfinance Institutions (AEMFI). AEMFI is a non-for profit, non-governmental association of the Ethiopian microfinance institutions, its original goal is to serve as a platform for knowledge and information sharing, and lobby for political support for the development of an enabling environment for the business of microfinance in Ethiopia. The study comprises 20 MFIs operating in Ethiopia whose performance report was produced under AEMFI for the period 2009-2016 which consists of 155 observations.

Methodology

The variables of the study shown in the following Table 1, the list of dependent as well as independent variables. The study used breadth and depth of outreach measures of outreach performance as dependent variable. Depth of outreach was assessed by average loan balance per borrower, while, the number of active borrowers was used as a measure of the breadth of outreach. Besides, return on assets, financial self-sufficient, portfolio at risk greater than 30 days, cost per borrowers, operating expense to loan portfolio, gross loan portfolio and size of MFI are the independent variables used in the study.

TABLE 1: The dependent and independent variables

	Variables	**Measurement**
Dependent variables	Depth of outreach	AVLB = gross loan portfolio / number of active borrowers
	Breadth of outreach	NAB = total number of active borrowers
Independent variables	Return on asset	ROA = Adjusted net operating income, net tax / adjusted average total asset
	Portfolio at risk greater than 30 days	PAR = outstanding balance, loans overdue 30 days / Adjusted gross loan portfolio
	Operating expense Loan portfolio	OPE/LP = adjusted operating expense / Adjusted average outstanding portfolio
	size of MFI	SIZE = total assets of MFI
	Cost per borrower	CPB = adjusted operating Expense/Adjusted average number of active borrowers
	Gross loan portfolio	GLP = Adjusted gross loan portfolio
	Financial self-sufficient	FSS = adjusted Financial Revenue/Adjusted (financial expense + net loan loss Provision expense + operating Expense)

Model

The main aim of this research is to find out the factors affecting outreach performance of MFIs in Ethiopia. The following models have been specified for this study.

Model 1: Hypothesized Determinants of depth of Outreach

$$AVLB_{i,t}=\alpha i+\beta_1 ROA_{i,t} + \beta_2 FSS_{i,t} + \beta_3 PAR_{i,t} + \beta_4 CPB_{i,t} + \beta_5 OPE/LP_{i,t} + \beta_6 ASSET_{i,t} + \delta_i + \Upsilon_i + e_{i,t} \quad (1)$$

Model 2: Hypothesized Determinants of Breath of Outreach

$$NAB_{i,t}=\alpha i+\beta_1 ROA_{i,t} + \beta_2 FSS_{i,t} + \beta_3 PAR_{i,t} + \beta_4 CPB_{i,t} + \beta_5 GLP_{i,t} + \delta_i + \Upsilon_i + e_{i,t} \quad (2)$$

Where *I* refers to MFIs; *t* stands for year, *AVLB* denotes the average loan balance per borrower in the equation (1) and *NAB* depicts the number of active borrowers in equation (2). Moreover, *ROA* denotes the return on assets, portfolio at risk > 30 days has been represented by *PAR*, *OPE/LP* stands for the operating expense to loan portfolio, FSS denotes financial self-sufficient, CPB refers to cost per borrowers, GLP refers gross loan portfolio *and TA* refers total asset measure size of MFIs and *e* refers the error term in both equations (1) and (2).

Results and Discussion

Descriptive statistics

The summary of the key descriptive statistics for the dependent and independent variables are summarized in Table 2, which presents descriptive statistics of 20 manufacturing firms for a period of five years from 2009 to 2016.

Table 2: Descriptive statistics of sample Ethiopian MFIs

Variable	Obs	Mean	Std. Dev.	Min	Max
AVLB	155	2503.561	1597.83	553	8202
NAB	155	127220.5	216675.7	409	955218
GLP	155	4.06e+08	8.48e+08	367347	5.30e+09
ROA	155	.0323226	.130074	-.41	1.2
FSS	155	.9136129	.3232664	.04	1.76
PAR	155	.0748387	.09922	0	.82
CPB	155	286.9503	247.8328	36	1418
OPE/LP	155	.1300645	.1078449	.02	.78
ASSET	155	5.45e+08	1.20e+09	629545	8.46e+09

Based on Table 2, the average social outreach of the MFIs as indicated by average loan balance is 2503. The minimum value for AVLB is reported 553 with maximum value of 8202, whereby the standard deviation of

AVLB is indicated as 1597, which means that AVLB value deviate from mean of both sides by 1597. For breadth of outreach of MFIs, noted that NAB has reported the mean value of 127220.5. The minimum value for NAB is reported 409 with maximum value of 955218, whereby the standard deviation of NAB is indicated as 216675.7. The average profitability of the MFIs measured by ROA is reported as .0323226, while the mean FSS of the MFIs is .9136129.

Pearson's Correlation Analysis

Pearson's Correlation Analysis was conducted to determine the relationship between the independent variables in both models (Equation 1 and 2); it allows detection of any problem of multicollinearity. The problem may arise if the correlation value exceeds a certain limit that is 0.80 (Kennedy 2008). As per the results of correlation analysis test shown in Table 3a & 3b, it shows a low degree of correlation between independent variables.

Table 3a: Pairwise correlation between independent variables of Equation 1

	ROA	FSS	PAR	CPB	OPE/LP	ASSET
ROA	1.0000					
FSS	0.2028	1.0000				
PAR	-0.4051	-0.2184	1.0000			
CPB	0.3671	-0.2026	0.0593	1.0000		
OPE/LP	0.1929	-0.4341	0.1704	0.6502	1.0000	
ASSET	-0.1772	0.4479	-0.2765	-0.4528	-0.8019	1.0000

Table 3a: Pairwise correlation between independent variables of Equation 2

	ROA	**FSS**	**PAR**	**CPB**	**GLP**
ROA	1.0000				
FSS	0.2028	1.0000			
PAR	-0.4051	-0.2184	1.0000		
CPB	0.3671	-0.2026	0.0593	1.0000	
GLP	-0.1249	0.4579	-0.2970	-0.4510	1.0000

Determinants of outreach of MFIs in Ethiopia – Panel Data Fixed effect model

After selecting fixed effect model with the help of Hausman test results, the results of fixed effect regression model presented following table 4 and 5. The set of independent variables in equation 1 and 2 are regressed on average loan balance and number of active borrowers. All the variables are exposed to natural logarithm for improvement of the goodness of fit of model and avoid simultaneity bias (Nasrin et al., 2018).

Table 4: Determinants of breadth of outreach – Panel data fixed effect model

		Dependent variables
		Number of active borrowers
Independent variables	ROA	-.0616595 (0.077)***
	FSS	.0053768 (0.941)
	PAR>30 days	.004991 (0.885)
	CPB	-.1998959 (0.000)*
	Gross loan portfolio	.4620802 (0.000)*
	Constant	3.007554 (0.002)**
	R2	0.96
	Wald (F) sign.	17.96 (0.0000)
	Hausman	41.43 (0.0000)
	N	104

Notes; *, ** and *** denote significances at the 1, 5 and 10% levels, respectively.

Table 5: Determinants of breadth of outreach – Panel data fixed effect model

		Dependent variables
		Average loan balance
Independent variables	ROA	.0777139 (0.003)**
	FSS	.1215972 (0.034)**
	PAR>30 days	-.0302982 (0.256)
	CPB	.573545 (0.000)*
	OPE/LP	-.5019835 (0.000)*
	ASSET	.205523 (0.000)*
	Constant	-.1689746 (0.800)
	R2	58.63%
	Wald (F) sign.	93.26 (0.0000)
	Hausman	17.05 (0.0091)
	N	104

*Notes; *, ** and *** denote significances at the 1, 5 and 10% levels, respectively.*

ROA has positive impact on the outreach of MFIs as measured by AVLB. The results indicate that the increase in AVLB is resulted by increase in value of ROA. The coefficient of ROA has come to be .0777 and is found to be significant at 5 percent level. This finding suggests that as MFIs incline to focus on increasing their profitability, this can be achieved by increasing the average loan balance per borrower or decreasing the depth of their outreach. The findings of this investigation are contrary to that of Kipesha &

Zhang (2013) for MFIs in East Africa. Moreover, ROA is found to have a negative significant correlation with the number of active borrowers with coefficient of -0.0616 and at a significance level of 10 percent. It suggests that when the numbers of active borrowers of MFIs increase, there will be a decrease in their profitability. Portfolio quality (par) has negative impact on AVLB and positive impact on number of active borrowers, but both are insignificant. This indicates that portfolio at risk does not affect the outreach of microfinance institutions. The result also supported by work done by Saad, Taib, & Bhuiyan, (2017) that there is a significant association between the size of MFI and AVLB. The coefficient for size of microfinance institutions is 0.20 which is statistically significant at 1 percent level. This result is in-line with Saad, Taib, & Bhuiyan, (2017); & Khan & Shaorong (2016) for microfinance institutions in South Asia. This result shows when microfinance institutions size rise, they have a tendency to increase loan size & focus less poor clients. This infers that large size microfinance institutions depart from their original mission of reaching the more number of poor societies. Moreover, regression results advocate that operating expense to loan portfolio has a negative impact on average loan balance (AVLB). The coefficient value of OPE/LP is -0.50 and is significant at 1 percent. It is implies that a reduction in the OPE/LP result a decrease in the AVLB of the firm and thus make it able to reach increasingly more of poor people. The author observe that financial self-sufficiency has positive significant impact on average loan balance, it implies that when financial self-sufficiency of MFIs enhanced it causes an increase in its average loan balance and positive impact on number of active borrowers although it is not statistically significant. The cost per borrower is positively related to the average loan balance and negative related to number of active borrowers. The coefficient value of CPB is .057, -0.199 with AVLB and NAB at 1 percent significant level respectively. It indicates that reduction in cost per borrower results in decreased average loan balance which indicates that MFIs are focusing on poor clients.The positive relation of average loan balance with the cost per borrower is supported by the work done by Mersland and Strom (2009), Paxton et al. (2000), Christen (2011). Gross loan portfolio positively influences outreach of MFIs measured by number of active borrowers. Results imply that increase in value of gross loan portfolio lead in the increase in number of active borrowers. The coefficient of gross loan portfolio is 0.46 which is significant at 1 percent level. This replicates again that as MFIs tend to give attention on increased gross loan portfolio this may be achieved with higher number of active borrowers.

Conclusion

This study examines the determinants of outreach of Microfinance institutions with empirical evidence from 20 Ethiopian Microfinance institutions. The objective of the study is to find out the factors affecting depth and breadth of outreach of microfinance institutions measured by average loan balance (AVLB) and number of active borrowers (NAB) of Ethiopian MFIs. This study identified the impact of return on asset, financial self-sufficient, operating expense to loan portfolio, cost per borrowers, gross loan portfolio, portfolio at risk greater than 30 days, and total assets on the outreach performance of the MFIs by using 20 MFIs for the time period the 2009 to 2016. The results of the study might be useful for the policy makers and

microfinance practitioners. The results suggested that depth outreach of MFI measured by AVLB is positively influenced by return on assets, financial self-sufficient, cost per borrowers, Size of MFIs (total assets) and negatively affected by operating expense to loan portfolio. Moreover, portfolio at risk greater than 30 days does not affect depth of outreach. Besides, results revealed that Microfinance institution's breadth outreach performance measured by number of active borrowers highlighted that the gross loan portfolio, cost per borrowers has significant impact on NAB, while return on assets has negative impact on NAB, the result also noted that portfolio at risk greater than 30 days don't have any influence on breadth of outreach.

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