

Emerging Economy and Performance Assessment of MFIs

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Abstract: Role of MFIs is eternal in elevation of poverty but it needs to be efficiently run the operations. If MFIs are inefficient it increases the cost of providing service that leads to harshen the ultimate objective of MFIs. The objective of this study is to examine the efficiency assessment of MFIs and make comparative analysis on the basis of their legal status i.e. (I) Islamic vs Conventional, (ii) Non-Profit and Profit oriented MFIs and (iii) Banks, NBFIs and NGOs. The study employed the data of 31 MFIs with six year study period from 2007-2012. To examine the efficiency score the study employed DEA a non-parametric technique. The study concludes that Conventional MFIs are more efficient as compared to Islamic MFIs. The study also found that Non-Profit MFIs are more efficient because of their no interest and lower service charges as compare to profit or interest oriented institutions. Moreover the study concludes that NBFIs are the most efficient MFIs with 84% efficient in converting their inputs into outputs. Furthermore, it found that as the cost per borrower and timing repay loan increases efficiency of MFIs decreases. Outreach also indicated positive and significant contribution towards efficiency.

Key words: Micro Finance Institutions • Outreach • Data Envelopment Analysis and Pakistan

INTRODUCTION

Microfinance Institutions are defined as delivering economic services to low-income and poor families who do not have access to proper financial organizations [1-14]. These services not only means financial services i.e. loans, insurance and funds transfer, but also provides social services i.e. training and consultancy etc. There are mainly two types of contending approaches in micro-financing, First is “Welfairist” whose main focus is on poverty alleviation and empowering poor and second is “Institutional” perspective having financial interests [15-27]. Microfinance started in Pakistan with the development of Aga Khan Rural Support Programme by [27-33]. The AKRSP launched its operations in 1982 and with the establishment of the Orangi Pilot Project in the same year. These both were general support institutions which provided wide range of social and financial services [1]. The microfinance sector of Pakistan is mainly constituted of NGOs, NBFIs and Banks. We can categorize MFI operating in Pakistan as, “conventional MFIs” and “Islamic MFIs” following having primary

focus on social welfare. Both played significant role in providing loans to the poor segments of the society. Islamic MFIs with its unique features i.e. Sharia’h Complaint Principles is growing rapidly and there are more than 10 institutions [16].

There are several characteristics that distinguish Islamic microfinance from conventional Microfinance [2] that may affect their performance. Most widely known feature of Islamic Microfinance is the strict prohibition of paying or receiving any fixed interest (riba). These MFIs can earn profit only in trading, leasing and direct financing on the basis of profit and loss sharing. Islamic MFIs can take deposits on the basis of profit and loss sharing while Conventional MFIs accept deposits on a fixed interest rate. Proceeds from operations are distributed among depositors and equity holders of both MFIs. Moreover, Islamic MFIs can only finance goods to the customers but NOT cash, on the other side Conventional MFIs can finance both goofs and cash as well.

Not to finance cash is a limitation of Islamic MFIs that may lead to make them inefficient. This study is

contributed by examining the efficiency of both Conventional and Islamic MFIs. Microfinance increasingly caught the interest of both political and financial actors, so there is sparking demand for evaluations of microfinance institutions (MFI) efficiency of an emerging economy.

This paper attempts to estimate the comparative efficiency analysis of Islamic and conventional MFIs. Few researches have been done in Pakistan on efficiency of Pakistan's MFIs [1] by using DEA, [27] also employed DEA to compare efficiency of Pakistan, India and Bangladesh MFIs. [14] Compared Islamic and conventional MFIs of Pakistan by employing DEA, for corporate social responsibility disclosure while [30] examined Islamic and conventional agri-financing in Pakistan. There is no study that has been conducted to investigate the efficiency of Islamic MFIs compared to the efficiency of conventional microfinance institutions of Pakistan.

Literature Review: Numerous studies compared the performance of conventional and Islamic MFIs. [2] employing a sample of three Islamic MFIs operating in Bangladesh has found that Islamic MFIs have performed better than well-established conventional microfinance institutions. High interest rates (up to 30%) charged by conventional MFIs to poor receivers in order to make financial gains for these institutions [29]. It has also been found that conventional MFI mainly focus women as their client, while advocates of Islamic microfinance argue that Islamic MFIs should be extended to the whole family as well [2]. In another comparative study of Islamic and Conventional institutions in terms of technical efficiency, found no significant differences in efficiency of the two groups (Islamic and conventional MFIs) and results showed that the use of Sharia'h compliant products does not affect the efficiency of MFIs in the MENA region [3]. There was found a problem of financial sustain ability and efficiency in islamic MFIs of Pakistan according to [24] and [8]. In these studies they highlighted limitation of Islamic MFIs with proper suggestions i.e. "No cash financing" can be overcome by integration of Islamic MFIs with NPOs, NGOs, Awqaf, Takaful, Zakah and also by providing professional training to employees as well as capacity building. [27] explored the efficiency of 85 MFIs of South Asia. Their analysis showed that the inefficiencies in the MFIs of Pakistan, India and Bangladesh are mainly of technical nature which could be improved by enhancing their managerial expertise, by improving technology and by imparting training, [1].

Practitioners often employ an accounting based ratio analysis for measuring efficiency of MFIs and banks. However, evaluating MFIs using an accounting based ratios faces several severe disadvantages. Like ratios provide information of efficiency in a single dimension [9, 10, 28], ratio analysis does not identify a best practice and hence provides no benchmark to compare MFIs [5,13] as they uses a single input only, hence does not inform about the trade-offs between inputs and the optimal input mix. Recently several studies have used non-parametric test DEA and examined MFIs efficiency of different regions and countries by using various efficiency measures. Efficiency is defined as a measures to indicate how well organizations used their resources to make goods and services and the rate at which the input resources are used to produce or deliver the outputs [11].

[31] investigated the efficiency of MFIs for the year of 2008 to 20011 for five countries of ASEAN, they used operating expense, total asset as inputs and Gross loan portfolio and number of active borrowers as outputs. Results found that the TE of few countries has been inefficient in controlling their costs. In contrast, in Laos, pure technical efficiency was found to be higher. [18] analysed the performance of MFIs for tree years 2009 to 2011 and employed total asset, personnel and operating cost as inputs and gross loan portfolio, financial revenues, loans outstanding, fee income and interest income are considered as outputs to measure the TE in MFIs of Tanzania and East Africa. They found most of inefficiencies in MFIs were a result of inappropriate allocation of inputs. MFIs in the area can improve their efficiency by better allocation of input resources used and by reducing the amount of waste. Banks, NBFIs and MFIs of East Africa were found to be more efficient compared to NGOs and Cooperatives. It's because of their better allocation of input resources used and their efficiency in reduction of the amount of waste according to [17]. Furthermore, in another study conducted by [4] employed DEA with inputs variables number of employees, total assets, operating expense and outputs financial revenues, benefits to poor. They also found that efficiency of MENA region MFIs has decreased and NGOs were more efficient than NBFi.

A parametric approach named Stochastic Frontier Analysis was also employed to examine the performance of MFIs by [32]. A combination of multi-inputs and outputs were used for Ethiopian MFIs. The study used two inputs i.e. operating expense and number of employees, while gross loan portfolio was considered as

output. They found main sources of inefficiency for Ethiopian MFIs were due to weak management practices, sustain ability and goal orientation of the institutions. The study indicated that assets, operational sustain ability, women borrowers (depth of outreach) and trend were found to be the significant contributor towards efficiency. Another study conducted by [22], explored efficiency of 40 Indian microfinance institutions by employing a stochastic frontier model (SFA). They found very low efficiency level of Indian microfinance institutions. They also found that regulated microfinance institutions were less efficient and age of microfinance institution were found to have a positive effect on efficiency which means older MFIs were more efficient.

Number of studies employed DEA to examine technical efficiency scores and then applied Tobit regression to measure the contribution towards efficiency of decision making units like [20, 23, 19, 4, 21, 6, 26]. In his study [19] at first stage study used a DEA (data envelopment analysis) to measure the social efficiency (welfarist perspective) and the financial efficiency (institutionalist perspective) on the other hand. After analysis author concluded that financial efficiency is growing at the expense of social efficiency and sustain ability prevails. Another study conducted by [21] has employed DEA, hadfoundthat financial self-sufficiency, size, group and subsidy of business were found to positively affect ar-rahnu (Islamic Microfinance institution) efficiency.

[6] investigated that if multiple loans from MFIs can help the rural poor women in Upper East Region of Ghana by employing SFA. At second stage Tobit regression was used for estimation the efficiency driver (age, initial saving, days of processing, access to MFI, male involvement, permission needed to borrow and education etc.) They found very low level of technical efficiency that is 40 percent only, which shows that output of the enterprises could be more than doubled without employing additional input. Furthermore enterprises that are beneficiaries of MFIs loans increases efficiency by 11 percent and enterprises with male influence were less efficient than those which were independently managed by the women. Also the enterprises that are owned by women who managed more than one business have relatively lower efficiency levels.

Data & Methodology: This study attempts to measure and compare the efficiency of conventional and Islamic MFIs of Pakistan over the period of 2007-2012 for 31 MFIs resulting in panel of 131 observations. Data of Pakistan's

Islamic and conventional MFIs for this study is taken from Mix Market Database, out of which, MFIs that are providing Islamic financial services are 10 and rest of 21 are conventional. Selected MFIs are of three types, Banks, NGOs and NBFIs. To measure Technical efficiency, DEA model have been used in first stage withthree inputs i.e. operating cost, total Assets and personnel and two outputs i.e. gross loan portfolio and number of borrowers. At second stage Tobit regression have been employed to see the effect of explanatory variables i.e. number of customers, total assets, operating cost per customer, age of MFI, portfolio at risk, ROA, MFI type (MFIs, MFI-Bank, NGOs and NBFIs) on dependent variable of Technical Efficiency.

Data Envelopment Analysis: Although concepts of DEAcame from the work done by [11] but Data Envelopment Analysis was first introduced by [11]. DEA is a non-parametric technique that is used for estimating Efficiency of DMUs by comparing aggregate input/output ratios of all decision making units through linear programming. Non-parametric technique does not assume any specific shape of Frontier curve, on the other hand it do not estimate any relationship or equation between input and output. There are basically two types of DEA assumptions, one based on the CRS assumption (Constant Return to Scale) and second alternative is based on VRS (Variable Return to Scale). The study employed DEA with VRS assumption because CRS assumption is only feasible when there is no financial constraints, no taxes, no government constraints and the MFIs can utilize then full funds available.

For input output specification there are basically three approaches used to define relationship between the input and outputs while considering financial institutions as decision making units. These approaches are, i) intermediation approach, ii) production approach and iii) the assets approach. We have used output oriented model of DEA with VRTS to measure comparative TE under production approach. For this reason we have taken three inputs in our model: Total assets as the proxy of size of MFIs, number of employee as the proxy of labour and operating expenses to measure costs and two outputs i.e., number of borrowers and gross loan portfolio measuring depth and breadth of outreach The number of active borrowers reflects the ability of the MFI to use its resources to serve the maximum of customers. Our choice of input and output measures are based on similar research using DEA model like others [23, 26, 15, 2, 7].

Table 1:

	Variable	Description
Inputs	Total Assets	Value of Total or all assets
	Personnel	Total number of staff members employed by the MFI which includes permanent or contract employees
	Administrative Expense	All expenses which are related to operations, which includes personnel expense, operating expense and amortization and depreciation.
Outputs	Number of Active Borrowers	All active borrowers both female and male
	Gross Loan Portfolio	MFI's principal balance outstanding or outstanding loans including current, delinquent and restructured loans.

RESULT AND DISCUSSION

Results of Figure 1.1, indicated that Conventional MFIs are 78% efficient and Islamic MFIs are just 61% efficient. Due to limitation of not providing cash to customers Islamic MFIs are 39% inefficient. Islamic MFIs can increase their loan portfolio by utilizing the same inputs.

Figure 1.2, compared the efficiency scores of profit and non-profit base MFIs. The study found that non-profit institutions are 13% more efficient as compared to profit oriented institutions. Due to charging high interest rates profit oriented institutions are 36% inefficient. Profit making institutions can increase their gross loan portfolio by 36% while employing the same inputs. On the other hand, non-profit institutions with 77% efficiency win the confidence of customers by charging no interest and low service charges due to which its clients were able to pay the loans on time, [2].

Figure 1.3, pointed out efficiency of MFIs on the basis of current legal status between Banks, NBFIs and NGOs. The study indicated that NBFIs are most efficient with 84% efficiency scores followed by NGOs and Banks. The results are consistent with [23] which concluded that MFIs with non-banking MFI status are most efficient than other.

Figure 1.4, investigated individual MFI average technical efficiency score. The study concluded that five Conventional MFIs i.e. Asa Pakistan, Kashf foundation, Orangi, Orix leasing and SRSO and one Islamic i.e. Farz foundation scored more than 90%. Moreover, four MFIs i.e. Rozgar, Apna Micro Finance Bank, POMFB and PRSP are considered least efficient with more than 60% potential to increase their outputs with same level of inputs.

Tobit Regression Model: At second stage to investigate the contribution of characteristic variables the study employed Tobit analysis with censored dependent variable i.e. technical efficiency scores bounded with zero and one. In this model three continuous and five categorical variables are included. Continuous variables are (I) Size i.e. calculated by taking the log of total assets,

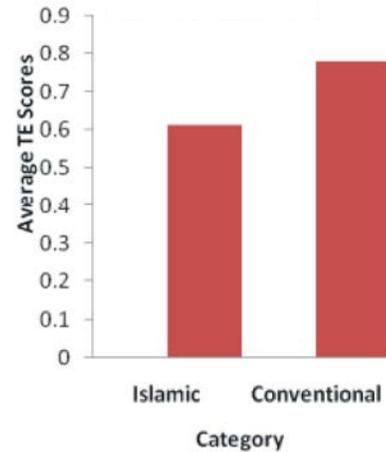


Fig. 1.1: Islamic and Conventional Scores

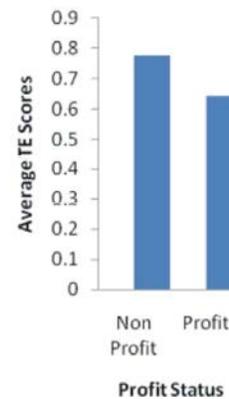


Fig. 1.2: Profit and Non-Profit TE Scores

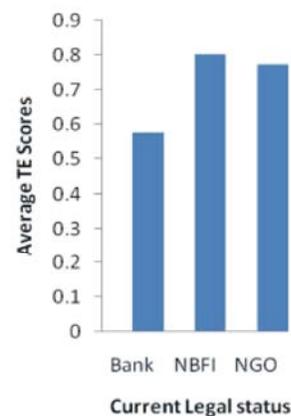


Fig. 1.3: Current Legal Status' TE Scores



Fig. 1.4: Individual MFI’s Technical Efficiency Scores

Table 2: The Tobit Regression Results of Technical Efficiency Score (TE)

Variables	Estimate	Standard Error	t-value	p-value
Intercept	1.942778	0.500377	3.88	0.0001
Size	-0.03425	0.021779	-1.57	0.1159
CPB	-0.10918	0.02629	-4.15	<.0001
PortfolioAtRisk30	-0.00606	0.00187	-3.24	0.0012
DOSS	0.063731	0.040567	1.57	0.1162
Doutreach	0.110311	0.042809	2.58	0.01
DLS_NGO	0.130357	0.089778	1.45	0.1465
DLS_NBFI	0.222423	0.111541	1.99	0.0461
DIslamic	0.111524	0.072973	1.53	0.1264

(ii) Cost Per Borrower i.e. calculated by taking the log of total cost per borrowers and (iii) PorfolioAtRisk30 i.e. calculated by taking the value of Portfolio at risk for 30 days. Five categorical variables measures the contribution of specific MFIs like (i) DIslamici.e. Dummy variable for Islamic MFIs (if MFI Islamic then=1, if conventional then=0), (ii) Doutreach i.e. Dummy variable for outreach (if outreach small then=1, if medium then=2, if large then=3), (iii) DOSS i.e. Dummy variable for operational self-sufficiency (if MFI OSS=1, if NOSS then=0), (iv) DLS_NBFI i.e Dummy Variable for NBFI (if MFI NBFI=1, others=0) and (v) DLS_NGO i.e. Dummy variable for NGO (if MFI NGO=1, others=0).

$$TE_{Scores} = \alpha + \beta_1 \log(Size)I + \beta_2 (LN_{CPE})I + \beta_3 (ProfolioATRisk30)I + \beta_4 (DOSS)I + \beta_5 (Doutreach)I + \beta_6 (DLS_{NBFI})i + \beta_7 (DLS_NGO)j + \beta_8 (DIslamic)i + \epsilon_i$$

Results of Tobit analysis indicates that cost per borrower and portfolio at risk are negatively significant contributes towards efficiency scores of MFIs. So as the cost of an institution increases its efficiency decreases. MFI with more portfolios at risk is less efficiency and the MFIs with fewer portfolios at risk found more efficient. Moreover the study found that outreach is positive and significantly contributed towards efficiency. The results

are consistent with [32] which suggested that lending to women is associated with lending to more poor borrowers. Results are contrary to the study of [23] and [32] they suggested to reduce the loan size, i.e. reaching out to the poor (women borrowers). The study also concludes that NBFIs are positive and significantly contributed towards efficiency, so the previous findings are justified that NBFIs are the most efficient institutions.

CONCLUSION

This study attempts to investigate the efficiency assessment of conventional and Islamic MFIs of an emerging economy i.e. Pakistan. The study used the data of six year period of 2007-2012 for 31 MFIs. A non-parametric technique Data Envelopment Analysis is employed to examine the technical efficiency of MFIs. To make the analysis interesting the study divides the results on the basis of their legal status i.e. (I) Islamic and Conventional MFIs, (ii) Profit and Non-Profits MFIs and (iii) banks, NBFIs and NGOs.

The result of the study concludes that Conventional MFIs are more efficient with 78% efficiency score as compare to Islamic MFIs with 61%. It also found that Non-profit MFIs are more efficient as compare to profit oriented institutions with 77% efficiency score. Moreover NBFIs registers the most efficient and Banks are the least

efficient MFIs. The study verify that even NBFIs are the most efficient MFIs but till there is 16% potential to increase the efficiency of NBFIs while employing the same inputs.

At second stage the study concludes that as the cost per borrower and time of delayed payments increases efficiency decreases. Moreover the study found that outreach is positive and significantly contributed towards efficiency. The results are consistent with [32] which suggested that lending to women is associated with lending to more poor borrowers. The study also concludes that NBFIs are positive and significantly contributed towards efficiency.

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