

Evaluating Financial and Social Efficiency of Microfinance Institutions in Afghanistan: A Two Stage Data Envelopment Analysis

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Introduction

Although Afghanistan witnessed exponential growth in its economy since 2002, it remains one of the world's poorest countries. It was ranked 169 out of 187 countries in the Human Development Index in 2013, and it is estimated that 36 percent of its population lives below the national poverty line. The country's financial sector is largely underserved, with only 9 percent of adults holding an account at a formal financial institution and 7 percent having a loan. On the other hand, microfinance is found to be a promising means of poverty alleviation and economic development as such. In this paper, we have attempted to evaluate the financial and social performance of MFIs in Afghanistan using a two stage Data Envelopment Approach (DEA).

In the existing literature DEA is applied under both production and intermediation approach assuming either CRS or VRS assumptions. Bassem (2008) by analyzing the performance of MFIs in the Mediterranean zone applying DEA found that a few Non-Bank Financial Institutions (NBFIs) should reduce the size of their operation but some NGOs are required to increase the extent of their operations to operate more efficiently. Haq et al., (2010) evaluated the cost efficiency microfinance institutions across Africa, Asia and the Latin America

using DEA. They found that NGOs are the most efficient MFIs specifically under production approach. Kipesha (2012) examined the performance of MFIs in five East African countries by employing DEA. Input oriented production approach under both assumptions of CRS and VRS have been used. The result of the study implies that main source of efficiency is TE and it further implies that banks are more efficient than nonbank MFIs. Jayamaha (2012) analyzed the efficiency of small financial institutions (SFIs) in Sri Lanka using DEA. The study reveals that there is difference in efficiency scores by geographical locations and the size and the efficiency are positively correlated.

Singh et. al. (2013) studied the efficiency of MFIs in India by undertaking a two stage DEA approach using both intermediation and production approach. The study concluded that two MFIs are efficient under CRS and three MFIs under VRS and there is a regional variation in efficiency score too. Ahmad et.al (2014) evaluated the efficiency of MFIs in south Asia including 14 MFIs from Afghanistan. The study implies that Non-Bank Financial Institutions (NBFI) and credit union of large size should cut down the size of their activity in order to improve efficiency. NGO should increase the size of operation whereas rural bank should increase accessibility and loan size for the clients in pursuit of attainment of dual objectives.

Objective

The above reviewed literatures suffer at least from one major methodological flaw that is the performance evaluation of MFIs based on a single model. However, in Afghanistan MFIs are mostly funded by the donors, hence, the social outreach efficiency of MFIs operating in Afghanistan may interest them more than the financial sustainability. This study has attempted to fill this methodological gap by measuring the performance of MFIs from both social and financial perspectives separately. The study attempt to measure the level of overall technical inefficiency of MFIs operating in Afghanistan and identify the major source of technical inefficiency of these institutions

Methodology

This paper attempts to evaluate the financial and social performance of MFIs in Afghanistan using a two stage Data Envelopment approach (DEA). In the first stage, the overall technical efficiency (OTE) of MFIs is calculated using input oriented CCR model. Moreover, for our study to provide robust and reliable policy implications, the second stage DEA is also undertaken where the efficiency scores obtained in the first stage is regressed to some socio-economic variables which are beyond control of management but may affect the efficiency of MFIs.

For the second stage the following regression model using OLS techniques is applied:

$$TE_{it}^{super} = \beta_0 + \beta_1 AGE_{it} + \beta_2 ROA_{it} + \beta_3 EQAST_{it} + \beta_4 OSS_{it} + \beta_5 RISK_{it} + u_{it}$$

Where i represents MFIs and $t = 2006, \dots, 2010$

The source of the data for the present study is Mix Market (www.mixmarket.org). The inputs and output variables are selected as follows: For computing the financial efficiency, two variables namely total asset and operating expenses as inputs and Gross Loan Portfolio (GLP) and financial revenue have been selected as outputs. The rationale behind choosing above as the appropriate input and output variable is that Total asset indicates the capital and resources MFIs possess for smooth functioning of their operation and operating expenses account for the expenses MFIs incur during operation. For measuring the social efficiency of MFIs, inputs are the same as financial case but some other proxies have been specified to account for the social output. In microfinance, social efficiency refers to depth and breadth of outreach. Breadth of outreach indicates the number of people to whom credit extended, while the Depth of outreach captures whether microfinance services has been extended to the ultra-poor and most deserving customers (Quayes, 2012).

Therefore, we have specified Number of female borrowers as indicator of depth of outreach and a variable known as poverty index (PI) as a proxy for both depth as well as breath of outreach. Both of these variables capture the social objective of microfinance institutions.

Results and discussion

The result of first stage DEA using input oriented DEA CCR model shows that the average financial efficiency score over the period (2006-10) is ranging between 0.579 and 0.995 while that of social efficiency is ranging between 0.043 and 0.978. In other words, the financial inefficiency level is ranging between 42.1 % and 0.5 % while social efficiency is fluctuating between 95.7 % and 2.2 %. It implies that a huge amount of resources are wasted in microfinance sector in the country.

The empirical findings of the study further reveals that the source of inefficiency in most MFIs are attributed to inappropriate allocation of operating expenses, Gross loan portfolio and insufficient coverage of female borrowers. Only two of the twelve MFIs have succeeded in achieving dual objectives. Furthermore, the OLS regression result in the second stage DEA indicates that equity asset ratio (EQAST) is the only socio-economic factor which inversely influences both social and financial efficiency of MFIs in Afghanistan. But in case of financial efficiency of MFIs two more factors namely OSS and RISK are positively affecting the efficiency of MFIs as well as the inverse effect of EQAST.

Conclusion and Recommendation

This study attempts to evaluate the financial and social performance of Microfinance institutions operating in Afghanistan using a two stage DEA approach for a panel data of 12 MFIs and four years period (2006-07/2009-10). In the first stage, the overall technical efficiency of MFI is calculated using CCR input oriented DEA model. Moreover,

further attempt has been made to find the slacks associated with each input and output which captures the sources of inefficiency in MFIs. Meanwhile, a matrix called socio-financial efficiency matrix has been constructed to find the direction of efficiency improvements of MFIs in pursuit of the double bottom line objective. In the second stage, first super efficiency scores have been calculated to do away with the truncation of technical efficiency scores in the first stage then the derived super efficiency scores regressed to some socio-economic variables to highlight the factors influencing the technical efficiency score in the first stage.

This study suggests that the MFIs have to decrease the operating cost, and increase the Gross loan Portfolio in order to achieve the double bottom line objectives of social outreach and financial sustainability. Meanwhile, they are recommended to reach out to more female borrowers. The study further suggests that, OXUS-AFG and FINCA-AFG which are currently operating in Afghanistan are inappropriate channels of donors fund for poverty alleviation purposes as they have been successful in attaining neither of the dual objectives of Microfinance. Furthermore, based on the prescription of this study, the new and existing Microfinance institutions are recommended to keep the Equity Asset Ratio (EQAST) at its lowest possible level to increase their efficiency. But for them to be only financially efficient they are suggested to make two more adjustments i.e. enhance their Operating Self Sufficiency (OSS) and Portfolio at Risk (RISK).

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