

## **EFFICIENCY MEASUREMENT METHODS FOR MICROFINANCE INSTITUTIONS: APPLICATIONS IN TURKEY**

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### **—Abstract —**

*Microfinance is a type of financial service that is provided to unemployed or low-income individuals who are not qualified for a standard bank loans. Microfinance institutions provide account services to small-balance accounts that would not normally be accepted by traditional banks. Rapidly increasing number of MF institutions attracted the attention of both academics and executives mostly on their efficiency. In literature, to measure the efficiency of these institutions, total investment spending, total salaries, and credit portfolio are commonly used financial items. In this study, it is examined efficiency measurement methods and a model suggestion offered to measure the efficiency of microfinance services.*

**Keywords:** *Microfinance, Efficiency, Measurement*

**JEL Classification:** M21, N20

### **1. INTRODUCTION**

Microfinance has developed as the provision of financial services to micro-entrepreneurs and small businesses that lack access to banking and related services due to the high transaction costs (Maneiah, 2012) and it is generally used in order to provide micro and small scaled entrepreneurs and companies which generally have difficulties during reaching at financial and banking services due to cost and financial resource limitations (Turner, 2011). Microfinance is a business idea, and is a project for providing chance to poor entrepreneurs needing for small initial capital in order to have an income-generating activity. Microfinance and micro credit concepts are used interchangeably because the most part of finance

services consist of credit activities and the microfinance services have started to be provided through micro credits in 1970s (Gökyay, 2011). Besides them, the services such as saving, insurance and money transfer to people falling outside of traditional credit, deposit, insurance and existing fiscal system are considered as some of microfinance services (kalkinma.com.tr, 2007).

The microfinance companies generally serve to people having small-scaled accounts because they cannot make profit from traditional banking opportunities. Those institutions also provide the chance to perform small-scaled transactions and those transaction amounts are generally not accepted by traditional institutions. In order to minimize the poorness in market environment, the microfinance concept has been designed as an alternative to donor aids, debt delays, and some other initiatives. As poorness is generally accompanied by the “unbanked majority”, who cannot access the banking services, the concept of microfinance has been released in order to offer investment opportunities to micro-scaled entrepreneurs, to improve income level, and to organize the unorganized income flows (Carter, 2013). Hartarska et al. (2013) describe the microfinance as the financial service supplied for poor people and micro-scaled companies. Their aim is to increase the outreach and to keep MFIs as sustainable.

In the literature can MFIs are classified as follows according to legal structure of countries and MFIs’ history: Banks, Non-bank financial institutions (NBFIs), Non-governmental organizations (NGOs) or Cooperatives (credit unions or co-ops). Most of studies in literature focus on performance evaluation of traditional banking system; private banks and savings banks. As they stated in their study, Sanfeliu et al. (2011) described those institutions as responsible for the credit limitations on poor classes who cannot provide credit guarantees because of their lower economic wealth levels. The credits are provided to those ideas in return for only their promises and projects having profit potential. Some of the important advantages of MFIs are (Shodganga, 2013);

- MFIs provide more economic freedom to poor women;
- The credits provided by MFIs are significantly small-scaled ones;
- MFIs focus on poor people living in rural and urban regions;
- The MFI loans are based on circulation of same money in small-scaled credit form and the group loans decrease the transaction costs

The progress of Microfinance sector has required the establishment of some performance measurement criteria, then many of them become standardized (Sanfeliu et al., 2011). But the efficiency of those criteria is still a question in some of countries such as Turkey. We have investigated the efficiency evaluation methods and we offered a model in order to obtain the required data and to evaluate the efficiency of MFIs.

## **2. MICROFINANCE AND MICROFINANCE INSTITUTIONS**

### **2.1. The microfinance implementations in the world**

The establishment idea of MFIs is based on the philosophy of Muhammad Yunus from Bangladesh who initiated an organization in order to establish self-help groups namely Bangladesh Grameen Bank (BGB) in 1976, and make them put the "survival theory" into action. The solution offer of Yunus which he revealed as a result of his interviews with poor people in Jobra village near Chittagong University in 1974 constitutes the basement of Grameen-type credit model. The first implementations of microfinance have been seen in Bangladesh, Brazil and Bolivia, and then they have expanded over almost 60 countries in Southern Asia, Eastern Asia, Africa, Eastern Europe and Southern America especially after 1980s (Yunus, 2003).

In Africa, one of the most important initiatives was established in Mozambique. The government of Mozambique had set itself the main objective of attracting 100.000 microfinance clients` attention by the end of the year 2005. In order to achieve success, the government aimed at increasing awareness of microfinance conditions by contributing to accommodate lack of information about who will access and receive and how much it costs to them. Additionally, Government of Mozambique supported NGOs and private sector institutions in the country by examining microfinance and micro credit system as a remarkable element of the financial industry and as business concern rather than a charity activity. The realization of the process of microfinance was started in 1997 by former Prime Minister Pascoal Mocumbi aiming to serve 100.000 clients within 8 years of period. By the end of 2005 the number of beneficiaries has reached to the total number of 103.471 (De Vletter, 2006).

Another microfinance initiative has been made in Sudan. Government of Sudan has been recovering the impacts of embroiled civil war from more than 20 years. As a solution for individual and corporate development in business sector which was damaged by civil war, Government of Sudan provisioned microeconomic initiatives for SMEs which require a specific amount of money. Recently the pioneer providers of financial and technical support to micro credit organizations in Sudan are SS MDF, USAID, GEMSS, UNCDF and UNDP (Atil, 2009). In addition to that according to Hassan`s report (2010), using Islamic approach as a tool of microfinance, enable increase of citizens` income level, achieving financial and social equity (Yumna and Clarke, 2011; Hassan, 2010).

## **2.2. The microfinance institutions in the Turkey**

By providing financial service to poor people in 2000s in 111 countries over world, various non-governmental organizations, investment companies, finance companies , specialized microfinance banks, commercial banks, credit unions, agricultural credit cooperatives, leasing companies and insurance companies have been performing their activities in order to provide better conditions to poor people than their actual conditions (Akgül, 2006). Throughout the progress of fighting against poverty, Yunus`s theory of survival (1974) which constitutes the fundamentals of micro credit and microfinance services, enables great numbers of impoverished people particularly focuses on women entrepreneurs to set up small enterprises, increase their savings and let them meet their basic needs such as shelter, food and education (CFGS Policy Brief, 2002).

The implementation of microcredits, as in other part of the world, couldn`t take place in Turkey until recently. But, although it doesn`t match up with implementations in world, the first implementations, which can be evaluated as microfinancing, dates back Ottoman Empire times. The merchants having cash needs have applied to money foundations and obtain financial aid by lending their houses on security. They have been residing their own houses by paying rentals, then they have possessed their houses after they have completely paid their debts back (Dündar, 2007). The microfinance service supply in Turkey is really insufficient from the aspects of people obtaining services and the scale of services provided. In current status, the public banks such as Halk Bank and Ziraat Bank are the primary microfinance service resources (UNDP, 2006; Karatas and Helvacioğlu, 2008). The non-bank financial organizations are insufficient for

now. In global level, the utilization of microcredits is in the way of providing a broad range of financial services to people cannot integrate with traditional financial system. On the other hand, Turkish politicians and planners state that the knowledge on micro finance is very limited and what microfinance institutions can materialize by providing service to poor and unbanked people (Karatas and Helvacioğlu, 2008).

It is seen that microfinance industry is important for Turkey. According to WorldBank categorization criteria, Turkey, a developing country, has upper-middle income level. With amount of 1.1 trillion USD in 2012, Turkey has the 17<sup>st</sup> largest GDP in the world. Moreover, its economy has more potential than its neighbors, and Turkey is one of the most developing OECD countries. On the other hand, the poorness and unemployment are still the most important problem of Turkey being in sustainable development progress. According to Gini index, Turkey has the 59<sup>th</sup> most unfair economic distribution in the world. And also the poorness profile of Turkey doesn't seem very satisfactory (Kapisız, 2013). The main categories of microfinance industry in Turkey are; public, private, and non-profit organizations. The Turkish government has established a very small-scaled microfinance program through the Social Assistance and Solidarity Fund (SASF), which has been established in 1986. Micro-scaled companies can obtain loans up to 15.000 TL (7,500 USD) from this fund with 5 to 8 year of due date and without any interest (Carter 2013). In year 1990, the Small and Medium Enterprises Development Organization of Turkey (KOSGEB) was established in order to develop the SME competitiveness in Turkey. SMEs had the chance to obtain grants and low-interest loans from those organizations, but those institutions do not generally focus on poor people (Kapisız, 2013). An important problem has been created in Turkey by low participation of NGOs. NGOs have not enough place in market in terms of number, but the most efficient microfinance programs are conducted by those organizations (Karatas and Helvacioğlu, 2008).

There are two main problems suppressing the development of Turkish microfinance sector. First of two is the information and awareness deficiency in this manner. The second one is very important for Turkish microfinance industry's development. For improving the microfinance environment and attracting the investments, it is required to create awareness on capacity requirements and the sector (Güvenek Araslı, 2010). Almost all microfinance loans via formal operators are received by the state-owned banks, still some

people choose to provide credits informally through their families and friends, generally in foreign currencies in Turkey. Additionally, people access their credits by applying for local pawnbrokers and money lenders; however this source of credit represents a temporary solution and considered as incoherent (Burritt, 2003).

### **3. MEASURING EFFICIENCY OF MICROFINANCE INSTITUTIONS**

The total number of MFIs around the world is in increase trend and this trend draws the attention of academicians and practitioners. In the book of Balkenhol (2011), it is mentioned that Flückler and Vassliev was conducted DEA analysis by using profit-damage data of 40 microfinance institutions acting in Peru in year 2003. The importance of this study comes from that it includes only the microfinance companies by excluding the banks and finance companies. The number of personnel, balance assets and company expenditures were chosen as inputs, while credits and net company expenditures were chosen as outputs (p.89). Hamed has investigated the social and financial performances of MFIs through their data obtained via questionnaire. The sample of this study consists of 45 MFIs from Africa, Europe, Latin America and MENA. The chosen financial performance indicators are; Active profitability, Reserves per unpaid credit portfolio, the risky portfolios with 90 days overdue, the rate of non-performing credit (p.129-130). On the other hand, Luzzi and Weber (2006) have tried to determine the performance of MFIs through factor analysis. They determined the criteria as the percentage of women credit customers, the number of active customers organizing in groups, guarantee credit size (average credit / GNP per capita), and total incomes / total expenditures. Besides factor analysis, the SUR model was used for year 2003 (p.169).

The study of Masood (2010) uses a methodology simultaneously estimating the stochastic frontier parameters and the inefficiency model. The findings of this study determine the Indian microfinance institutions' low efficiency levels such as:

- Indian MFIs materialize only 34% of their potential;
- By utilizing same inputs and technology, the microfinance institutions are able to raise their efficiency 66%;

- The mean efficiency level of MFIs which have been investigated has increased between 2005 and 2008;
- The age is an important determiner of MFI efficiency, while the size isn't;
- No tradeoff relationship has been found between efficiency and outreach;
- MFI efficiency levels vary depending on regions;
- The efficiencies of microfinance institutions in southern regions are higher than others;
- A negative tradeoff has been found to be between regulation and efficiency (unregulated ones are more efficient).

The Tobit regression model is used in order to determine the MFIs' individual technical efficiency measures' major determinants (Singh, 2013).

Chart 1: Technical Efficiency Measurements

$Y=f(TA, AGE, DER, NAB, ROA, Location, OSS, BPS)$   
 $Y$ = MFI's individual technical efficiency measures, i.e., TE, PTE and SE  
 TA=Total assets (amount in USD)  
 AGE=The age of the MFI which presents total years in operation  
 DER=Debt/equity ratio  
 NAB=Total number of active borrowers  
 ROA=Return on asset (in percentage)  
 Location=location dummy=1, if MFI is located in South India, otherwise=0  
 OSS=Operational self-sufficiency (in percentage)  
 BPS=Borrowers per staff

Source: Singh, 2013.

MicroRate (2013) has suggested a tier system for defining the MFI-peer groups by institutional maturity in order to establish a basement for industry analysis and informed dialogue. In order to maximize the utility and adoption, the tier system absolutely keeps to the following parameters;

|                | Tier 1                                                             | Tier 2                                                                                       | Tier 3                                                          |
|----------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Description    | Mature, financially sustainable, highly transparent and large MFIs | Small or medium sized, slightly less mature MFIs that are, or are approaching, profitability | Start-up MFIs or small NGOs that are immature and unsustainable |
| Sustainability | 1. Positive RoA for at                                             | 1. Positive RoA for at least 1                                                               | The rest                                                        |

|                          |                                                                                   |                                                                                                  |              |
|--------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|
|                          | least 2 of the last 3 years AND<br>2. No RoA <- 5% in the last 3 years            | of the last 3 years and other years >-5% OR<br>2. Positive trend in RoA in last 2 years and >-5% |              |
| Size                     | >\$50 million                                                                     | \$5 - \$50 million                                                                               | <\$5 million |
| Transparency             | 1.Regulated financial institution or<br>2.Rated at least once in the last 2 years | Audited financial statements for at least last 3 years                                           | The rest     |
| Source: MicroRate, 2013. |                                                                                   |                                                                                                  |              |

#### 4. CONCLUSIONS

Individuals, micro-entrepreneurs and small businesses who do not have enough funds and lack access to banking and related services due to the high transaction costs, need to have micro financing support (Singh, 2012). In Turkey, micro financing and microfinance institutions are in a very early stage. To create a healthy atmosphere for the development of these institutions, they must be under control for all time. Due to information deficiencies, government cannot manage the microfinance sector. Also the deficiency in information about the effects of microfinance causes the deficient interest of private sector in development of Turkish microfinance industry (Güvenek Araslı, 2010). Turkey doesn't have any unique and completely organized national policy with certain borders and prepared institutional infrastructure for struggling with poverty, despite that there is a politic awareness about struggling with poverty (Kencebay, 2007). In this research, previous studies on efficiency measurement methods have been examined to consider the best way to measure the efficiency of Turkish microfinance institutions. Turkey doesn't have any unique and completely organized national policy with certain borders and infrastructure for microfinance institutions, legal and governmental regulations. Because micro financing and microfinance institutions are in a very early stage, it is difficult to reach real financial numbers belongs to MFIs. In literature, to measure the efficiency of microfinance institutions, statistical techniques like stochastic frontier analysis, factor analysis, data envelopment analysis have been used. Collecting the data required from banks is easier to collect from non-banking institutions because of their structure. To collect the data from non-banking micro finance institutions,

legal regulations and periodical audits must be planned and made immediately by governments.

Some of the banks which are dealing with microfinance service may obtain financial data outside. Also data can be held such as Total asset, Age of MFI, Debt /Equity ratio, Number of workers, Amount of credit, Number of creditors. Similar to the DEA or Malmquist Index, some of non-parametric or semi-parametric methods that make enable to use both financial and non-financial data together can be used for this anaylse.

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