
Does Economic Efficiency matters? Evidence from Microfinance Sector of Pakistan

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Abstract

According to the World Bank, the microfinance sector all over the globe, especially in developing countries has increased significantly and received tremendous attention for the last ten years. However, on the other hand, the amount of poor people is not decreasing. To understand this phenomenon, this study focuses to explore the economic efficiency of microfinance providers and to investigate the various factors or determinants that have an impact on the economic efficiency of microfinance providers. Economic efficiency gets its ground on the concept of the resources' scarcity. Economic efficiency means creating maximum outputs from minimum inputs and avoiding waste on the resources. Data Envelopment Analysis (DEA) approach was used to calculate the economic efficiency level, with the inputs are the staff size and the operational expenses. As for the outputs, they are the borrower numbers, gross loan portfolio, and operational self-sufficiency ratio. Regression analysis was used to examine the impacts of different factors on the microfinance providers' economic efficiency. The result shows that the factors which affect the economic efficiency of microfinance providers are the empowerment, organizational structure, aggressive marketing programs, optimum balance of available financial resources, profit-oriented programs, growth outreach, commercialization, competition, cultural dimensions, Interest rates, growth addiction, stability or short term profitability focus, loan repayment focus, minimum follow-up programs, minimum awareness, loan misuse, fear of defaults, and lack of technical support. These factors have to be considered for future studies.

Key words: Efficiency, Microfinance Providers, Economic Efficiency, Microfinance

JEL Classification: D23, G21, G23

INTRODUCTION

Information inequality and the frail infrastructure of the institution caused a high cost and high default rate for the formal banks in rural areas. This happens because the cost for the potential borrowers' screening, credit contracts enforcing, and borrowers' behavior monitoring is high. This resulted in a big part of the society has no access to credit. This unavailability of access to

credit conditions is filled by money lenders by providing loans to the people. Unfortunately this type of credit charges a very high interest rate. In this condition, the poor people are left only with two options, that is to keep the original condition and stay away from credits, or get the very high-interest credits.

In the developing countries where the main sectors need funding to finance their growth, the governments stated that one of the acceptable schemes to be applied for the rural societies is microcredit. Microcredit is a powerful tool for decreasing poverty and increasing economic growth. It can be applied through creating decent settlements and agriculture, promoting education, developing skills, establishing small businesses, and enforcing healthy living. From this point, the transformation for the people with limited access or having trouble in obtaining the facilities of the formal banks which is the microfinance.

Microfinance can be defined as a world in which as many poor and near-poor households as possible have permanent access to an appropriate range of high-quality financial services, including not just credit but also savings, insurance, and fund transfer (Oxford Dictionary).

The microfinance concept has been used in the less fortunate societies for a long time in various forms to the concept of microfinance has been practiced in different shapes and ways among the poor societies for decades to fulfill the credit demands. Microfinance aimed mainly at growing the depth and breadth of the outreach by providing small credits and to gain access to a maximum number of poor people (Saad, Taib, & Bhuiyan, 2018). The microfinance institutions (MFIs) contribute to opening the potency of productivity of the poor people, and to contribute to drawing the poor people out of the poverty circle sustainably. Considering the lending strategy of the MFIs can lead to the growth of productive efficiency and the MFIs borrower's welfare (Karaivanov, Xing, & Xue, 2020).

In the financial year of 2018, a total of 139.90 million borrowers gained benefits from the MFIs (Microfinance Barometer, 2019). Out of these numbers, 80% were women borrowers and 65% of the borrowers were from rural areas. In South Asia, 22.7% of children below five years old are facing intra-household inequality in poverty and nutrition. In Pakistan, more than a third of children under five years old are facing similar intra-household inequality. (Planet Finance Japan, 2017) mentioned that 80% of the world's population does not have access to credits. (Medici, 2017) mentioned that 60% of the world's microfinance creditors are situated in South Asia. Therefore, this undertaking study intends to examine the economic efficiency of the microfinance sector in Pakistan

Evolution of Microfinance Industry

The microfinance provision started informally in the 15th century in Nigeria. In the 16th century, microfinance expanded to many countries in Europe. The first credit fund began in 1720 in Ireland to assist the poor society. These MFIs began to accept deposits and charge interests on the loans delivered to poor people in 1823 (Seibel, 2003). In 1847, a saving and credit cooperative for rural and urban areas called Raiffeisen and Schulze-Delitzsch was established in Germany. These cooperatives aimed to assist and to help the poor and then were formalized under the

German Cooperative Act 1889 (Seibel, 2005). Until 1910, the number of people who became the clients of these cooperatives grew to 1.40 million (J Morduch, 2000).

MFIs in Asia can be tracked as old as 2200 years, like Paluwagan, Artisan (Indonesia), Chit funds (India), and Hui (China) (Efendic & Hadziahmetovic, 2017). Different financial intermediaries were informally found in the Asian sub-continent from the 13th to 18th centuries. These financial intermediaries were then replaced by the Raiffeisen model in 1892. In various Asian countries, the government bodies along with international donors began giving subsidized loans to farmers in 1950 (Rogaly, 1996).

Professor Muhammad Younas, a Bangladeshi Economist gave a small amount of money (dollars) to a basket maker in 1974. This act was conducted to make the basket maker run his own small shop which would make him leave the circle of poverty. From here, action on microfinance officially began. The year 1980 was the most significant year for MFIs because in this year many MFIs emerged including a successful example, Grammen Bank. Professor Muhammad Younas was later on granted with the Noble Prize in 2007. Therefore it is said that besides fighting against poverty, microfinance also improves the financial system of the institutional capacity by lending money to less fortunate households cost-effectively (Jonathan Morduch & Graduate, 2002).

Microfinance in Pakistan

In Pakistan, there are two dominant institutional models of the microfinance industry; (1) the formal sector, such as Microfinance Banks (MFBs) with a commercial orientation, and (2) the informal sector, or non-governmental organizations (NGOs), such as Microfinance Institutions (MFIs) and Rural Support Programs (RSPs). Compared to neighboring countries like India or Bangladesh, Pakistan is somewhat new in the microfinance industry. Despite this, Pakistan managed to be referred to as the leader of the South Asia area by having a well-set and current version of MFIs. The Global Microscope Report (2012) stated that: Pakistan is “one of the small amounts of countries in the world that owns legal and regulatory framework for microfinance banks separately and is in general considered to own one of the most enabling environment for microfinance regionally and globally”. According to the Consultative Group to Assist the Poor (CGAP) (2011), the microfinance sector Pakistan’s is a “Laboratory for innovation”.

A study to identify challenges in Pakistan’s MFIs was conducted by (Muhammad, 2010) which resulted in improper regulation, increasing level of competition, innovation and variation of products, benefits, stability, small management capacity, etc. On the opposite, the identification for the opportunities during this study is a poverty growth, stimulating economy increase, women empowerment, volume growth, accessibility and economies of scope, etc.

In 1953, the government of Pakistan established the five plan of Village Aid Package which marked the informal microfinance funding movement. This act was extended until 1962. In 1961, small subsidized loans and funds were provided by the Agricultural Development Bank (now Zarai Taraqati Bank) for the farmers (Dr. Muhammad Farooq, Zahoor Khan, 2014). The formal

establishment of microfinance institutions in Pakistan started in the 1980s, with the founding of the first microfinance institutions; they are Agha Khan Rural Support Program (AKRSP) by Agha Khan Foundation, and Orangi Pilot Project (OPP). These institutions were established in Karachi to provide microcredit to the poor society of Pakistan (Javid & Abrar, 2015). More institutions were established with the objective of poverty elimination, like the Kashf Foundation in 1996. After that, a controlling body for MFIs called Pakistan Microfinance Network (PMN) was established in 1998.

The Pakistani government, with the support of the Asian Development Bank (ADB) which provided a loan of USD 150 million, established the first microfinance bank, Khushali bank, in 2000. The first initiative by the government on microfinance authoritative order (ordinance) was issued in 2001 with a different prudential regulation for microfinance activities. There were three shape models, 1- Microfinance banks (MFB), 2- Microfinance institutions (MFIs) and 3- Rural support program (SRSP). In 2006, PMN with the assistance of ADB developed Pakistan Poverty Alleviation funds (PPAF) which were the first and largest microfinance network in terms of the gross loan portfolio. The main objective of the PPAF was to provide financial loans to MFIs and NGOs. Pakistan shows great achievements in the microfinance sector by delivering public and private initiatives, and make the accessibility to the credit for the poor people easy thus eliminate and minimize poverty and vulnerability (Javid & Abrar, 2015).

(Ashfaq & Saeed 2017) found that the outcome of the loans provided to the society which aimed at eliminating poverty and empowering women is still in question. This condition made researchers and policymakers to examine the efficiency of the MFIs and its determinants (Festic, Repina, & Kavle, 2009) and (Berger & Humphrey, 1997). While microfinance is the most reliable and possible tool for the poor people to access and receive the fundings to start their small businesses thus produce income, it is still questionable whether microfinance affects the poverty reduction process and women empowerment in Pakistan.

LITERATURE REVIEW

A study by (Ahlin and Jiang, 2008) mentioned that if MFIs are strong tools to fight against poverty if MFIs stay true to enabling the borrowers for long-run development. This study said that if the low-income borrowers keep being the MFI's clients then they can be benefitted from the loans and develop successfully. Empowering the less-fortunate society who have low income or under the poor condition by giving them access to develop their small businesses thus able to create income from them will make the society step out of the poverty circle, minimize their unexpected events, and vulnerability towards poverty. (Davis et al., 2004) said that this is the biggest reason for the enhancement of financial service. (Hartarska, Caudill, & Gropper, 2011); (Kyereboah-Coleman and Osei, 2008); (Karlan and Goldberg, 2007); (Lafourcade et al., 2005); (Schreiner, 2000); (Ladgerwood, 1999); (Hulme and Mosely, 1996) described microfinance as

supplier or provider of microcredits, or small size of financial service to the people who are in a poor condition or with low-income without access to the formal banking system.

Many scientists have studied MFIs' efficiency measurements using various measurement instruments. There are five techniques which are the most popularly used by many scientists. Those tools are the Stochastic Frontier Approach (SFA), Data Envelopment Analysis (DEA), DHA, etc. The identification of (Gong, Liu, & Zhu, 2019). For efficiency measurement, this study used a non-parametric approach DEA analysis, and for comparing the relationships used regression. The finding is that with a higher level of socio-economic and environmental-economic integrations, the combination of the supply chain improves efficiency. A higher efficiency level achieved by levels of integrated financial flow and lower level of integrated physical flow.

The financial transparency comparison between for-profit and non-profit public goods providers in the microfinance sector was studied by (Goodell, Goyal, & Hasan, 2019) who explored whether the status of firms' financial transparency is related to the public goods' supply. The result stated that there is a positive relationship between financial transparency and the for-profit status of microfinance institutions. A study on Sri Lanka's microfinance institutions' bio-politics and micro-accountability was conducted by (Alawattage, Graham, & Wickramasinghe, 2019). Microfinance's accountability, bio-politics, and postmodern production were brought together to provide an analysis and critique of microfinance. The finding displays micro-accountability enables the extension of the financial industry into the un-lapped sector of the global population. With the changing of the combination of input and output, the operations of MFIs run at an optimal scale and obtain economies of scope. It is because the MFIs' performance's productivity or efficiency depends on the organization's type, such as NGOs, Non-banks, Credit unions, Corporations (Kar & Rahman, 2018). (Bibi, Balli, Matthews, & Tripe, 2018) studied the effect of gender and governance on microfinance efficiency of South Asian microfinance institutions. This study used the data of 101 MFIs from 2005 to 2012 from mixed markets related to India, Bangladesh, Nepal, Pakistan, and Sri Lanka. The non-parametric approach Data Envelopment Analysis was the measurement tool to calculate the efficiency and used regression to compare the relationships. The findings of the study said that the positive determinants of microfinance efficiency are female loan officers and corporate governance.

(Khan, Mustafa, Khursheed, & Siddiqui, 2018) made a comparison of the operational efficiency, using operation ratio analysis and DEA. The results showed that the MFIs' efficiency is responsive towards the input and output variables selection, which were analyzed using DEA. The study also found that most of the MFIs are efficient operationally. (Efendic & Hadziahmetovic, 2017) compared the MFIs' social efficiency and financial efficiency. This study found that on the selected firms investigated, the financial efficiency is significantly higher

than social efficiency. The result also found that both socially and financially, small size MFIs perform better than the large size firms. The impact of borrowing from MFIs and banks on economic growth was studied by (Donou-Adonsou & Sylwester, 2017). They used data from 85 countries from 2002 to 2013 to study the impact. The result of the study mentioned that investments using bank loans were increasing, while the ones using loans from MFIs do not. It was also stated that loans from MFIs are not invested as physical capital only but managed total productive efficiency, where banks might be fund non-productive investments.

Some arguments regarding whether the trade-off between several borrowers per loan officer and MFI assets exist were examined by (Mitra, 2017). This study mentioned that no trade-off exists between several borrowers per loan officer and assets quality of MFIs. MFIs have gained the benefit from economies of scale without compromising assets quality. More study on the productivity of MFIs and their determinants which took place in South Asia was conducted by (Mia & Ben Soltane, 2016). They explored 50 South Asian MFIs' productivity (efficiency) by developing the Malmquist productivity Index MPI. A panel data from 2007-2014 were taken to investigate the overall relationship between MFI productivity (efficiency), competition, and innovation. Non-parametric DEA for analysis was used which resulted in the annual productivity grew because of changes in average technical efficiency. The determinants of productivity were financial, economic, and institutional factors.

(Wijesiri, 2016) studied the impact of the global financial crisis in 2008 on the various types of microfinance institution's ownership structure's performance. This study mentioned that the banks and non-bank financial institutions that before the crises performed better turned out to be the ones that are impacted more. The study also found that cooperatives and NGOs are the ones that are less affected by the global crises. The institutions' performance with shareholder's ownership was more affected than the ones with non-shareholding ownership. While (Widiarto & Emrouznejad, 2015) said that conventional MFIs have better performance than Islamic MFIs. Meanwhile, some academicians and policymakers found that for the last three decades there has been a growth in interest rates (Modrduch, 1999); (Brau & Woller, 2004) (Hermes & R. Lensink, 2007).

There is a possibility of misuse of the funds available with the MFIs due to lacking the availability of technical staff in MFIs (Martinez-Gonzalez, 2008). This study mentioned that there are different factors that create massive waste during the production process. This can happen because the attitude of the manager and staff can be influenced by some factors such as the lack of incentives, decision making gaps, and policy implementation, improper regulation, intervention by the donors of the fund, product designs that are not correct, and incorrect methodologies. There have been many studies conducted by many researchers which study the

trans-log function in the level of efficiency of institutions assessment, such as by (Hermes et al, 2009a), (Hermes et al, 2009b); (Saad and El-Moussawi, 2009);(Gropper, et al. 2006).

DISCUSSION

The ratio that displays how an institution converts its inputs into outputs efficiently is called efficiency. It is the institution's ability to create the maximum outputs from specified inputs or to create the specific outputs from minimum inputs. In microfinance, efficiency is the ratio of how a microfinance institution uses and allocates their inputs (such as assets, staff, subsidies) efficiently to create the maximum outputs (such as financial self-sufficiency, number of loans, and poverty outreach) (Balkenhol, 2007). (Oteng-Abayie, 2011) mentioned that the ultimate reason for the efficiency in MFIs is the limitations on the technological and the differences in strategies of the management. This study measured the economic efficiency's determinant of MFIs which are in operation in Ghana. For data analysis, the observation used the Cobb-Douglas Stochastic Frontier approach methodology. The observation focused on the economic behavior of the units at a high level of efficiency. The result stated that efficiency was significantly determined by age, saving, cost per borrower, outreach indicators, and productivity. Another definition of efficiency (Annim, 2010) is defined as the optimum combination of staff numbers that are efficiently allocated, staff time, and operation cost to create the maximum number of borrowers. An MFI that is operated efficiently will always encourage the management to focus on operational activities that create maximum outputs to the institutions and clients with a minimum cost. Special attention should be given by the management to the correct product line designs, efficiency in targets, effective market strategy, and removing the limitations in supply gradually.

The most commonly used parametric frontier approaches are the Stochastic Frontier Approach (SFA), Thick Frontier Approach (TFA) by (Berger and Humphrey, 1997), and the Distributional Free Approach (DFA) by (Schmidt and Sickles, 1984). Attached to these parametric approaches are the main characteristic which is the previous assumption of the study or the formulation prior to the efficiency function and form of the frontier. For the non-parametric approach, the tool commonly used is Data Envelopment Analysis DEA. This tool has been used to investigate exponential progress in academic study for more than the last forty years (Emrouznejad and Yang, 2017).

For measuring the efficiency in the financial institutions, many researchers recommend the DEA approach. DEA is a better approach than one stage and two-stage parametric approaches (Natarajan, 2008) to estimate the MFI's individual productivity. Until 2017, there were a total of 10,300 articles published which used DEA as the efficiency calculation tool (Emrouznejad and Yang, 2007). Compared to other efficiency measurements in parametric methods, DEA is based on a complex multi-input/output structure (Cooper et al., 2006). As DEA is a non-parametric approach, the assumptions concerning error distribution are avoided. DEA investigates the

efficiency of each unit individually in relation to its reference and makes sure that the relative measure of efficiency for every unit. For small size institutions that require smaller data and assumptions, DEA is a suitable measurement approach (Evanoff & Israilevich, 1991). A longer time series does not require in the DEA (Anayiotos et al., 2010). Unfortunately, the biggest disadvantage of the DEA approach is that it does not consider the error distribution measurement (Mester, 1996). DEA is based on non-parametric linear programming efficiency analyses, which forms a linear production frontier above all of the data (Emrouznejad et al., 2008). The benchmark or the best-practice units that form the production frontier are the decision-making units (Cooper et al., 2006). The indices of all these DMUs are equal to “1” while all the DMUs with DEA indexes range between “0” and “1” are considered as inefficient (Ramanathan, 2003).

From the above previous studies, it is noted that economic efficiency should be studied to examine whether there is a lack in the efficiency of the MFIs. For the last decades, the growth of MFIs increased considerably. But on the other side of the coin, the number of poverty and the poor people are not decreasing. Meanwhile, microfinance providers are facing different challenges. As studied and stated by many researchers, the aggressive marketing presence, the profit-oriented programs, commercialization of the programs, high level of competition, the people’s entrepreneurial behaviors, difference in cultural dimensions, high-interest rates, unstable political situation, growth addiction, stability or short term profitability focus, loan repayment focus, no follow-up programs, lack of awareness, loan misuse, fear of defaults, lack of technical support etc are the main challenges facing by the microfinance sector. For future studies, the researches should focus on growth outreach, empowerment, organizational structure, optimum level of available financial resources, growth addiction. It has been also suggested the Stability, Interest rate, firm size and age in market can be used as mediator.

REFERENCES

- Alawattage, C., Graham, C., & Wickramasinghe, D. (2019). Microaccountability and biopolitics: Microfinance in a Sri Lankan village. *Accounting, Organizations and Society*, 72, 38–60. <https://doi.org/10.1016/j.aos.2018.05.008>
- Berger, A. N., & Humphrey, D. B. (1997). *Efficiency of Financial Institutions: International Survey and Directions for Future Research*. * Board of Governors of the Federal Reserve System. *Efficiency of Financial Institutions: International Survey and Directions for Future Research* I 1. introduction. *Journal of Operational Research*. Retrieved from <https://www.federalreserve.gov/pubs/feds/1997/199711/199711pap.pdf>
- Bibi, U., Balli, H. O., Matthews, C. D., & Tripe, D. W. L. (2018). Impact of gender and governance on microfinance efficiency. *Journal of International Financial Markets, Institutions and Money*, 53, 307–319. <https://doi.org/10.1016/j.intfin.2017.12.008>
- Brau, J. C., & Woller, G. M. (2004). Pension Fund: A Comprehensive Review of the Existing Literature. *Journal of Entrepreneurial Finance and Business Ventures*, 9(1), 1–26.
- Donou-Adonsou, F., & Sylwester, K. (2017). Growth effect of banks and microfinance:

- Evidence from developing countries. *Quarterly Review of Economics and Finance*, 64, 44–56. <https://doi.org/10.1016/j.qref.2016.11.001>
- Dr. Muhammad Farooq, Zahoor Khan. (2014). The Social and Financial Performance of Conventional and Islamic Microfinance Institutions in Pakistan. *The Social and Financial Performance of Conventional...*, (June).
- Efendic, V., & Hadziahmetovic, N. (2017). The social and financial efficiency of microfinance institutions: The case of Bosnia and Herzegovina. *South East European Journal of Economics and Business*, 12(2), 85–101. <https://doi.org/10.1515/jeb-2017-0018>
- Evanoff, D. D., & Israilevich, P. R. (1991). Productive Efficiency in Banking. *Economia Perspectives*, 15(4), 11–32.
- Gong, Y., Liu, J., & Zhu, J. (2019). When to increase firms' sustainable operations for efficiency? A data envelopment analysis in the retailing industry. *European Journal of Operational Research*, 277(3), 1010–1026. <https://doi.org/10.1016/j.ejor.2019.03.019>
- Goodell, J. W., Goyal, A., & Hasan, I. (2019). Comparing Financial Transparency Between For-Profit and Nonprofit Suppliers of Public Goods: Evidence from Microfinance. *Journal of International Financial Markets, Institutions and Money*, (xxxx), 101146. <https://doi.org/10.1016/j.intfin.2019.101146>
- Hartarska, V., Caudill, S. B., & Gropper, D. M. (2011). The Cost Structure of Microfinance Institutions in Eastern Europe and Central Asia. *SSRN Electronic Journal*, (809). <https://doi.org/10.2139/ssrn.905911>
- Javid, A. Y., & Abrar, A. (2015). Microfinance institutions and poverty reduction: A cross regional analysis. *Pakistan Development Review*, 54(4), 371–387. <https://doi.org/10.30541/v54i4i-iiipp.371-387>
- Kar, A. K., & Rahman, S. (2018). Changes in total factor productivity and efficiency of microfinance institutions in the developing world: A non-parametric approach. *Economic Analysis and Policy*, 60, 103–118. <https://doi.org/10.1016/j.eap.2018.09.012>
- Khan, A. A., Mustafa, F., Khursheed, A., & Siddiqui, F. (2018). Social Business Innovation : Comparison of Operational Efficiency of Microfinance Institutions in Pakistan, 4(3), 12–20.
- Mia, M. A., & Ben Soltane, B. I. (2016). Productivity and its determinants in microfinance institutions (MFIs): Evidence from South Asian countries. *Economic Analysis and Policy*, 51, 32–45. <https://doi.org/10.1016/j.eap.2016.05.003>
- Morduch, J. (2000). The Microfinance Schism. Princeton University, New Jersey, USA. *World Development*, 28(4), 617–629.
- Morduch, Jonathan, & Graduate, R. F. W. (2002). Analysis of the Effects of Microfinance on Poverty Reduction Analysis of the Effects of Microfinance on Poverty Reduction.
- Muhammad, S. D. (2010). Microfinance challenges and opportunities in Pakistan. *European Journal of Social Sciences*, 14(1), 88–97.
- Oteng-Abayie, E. F. (2011). The measurement and determinants of economic efficiency of microfinance institutions in Ghana : a Stochastic Frontier approach. *African Review of Economics and Finance*, 2(2), 149–166.
- Widiarto, I., & Emrouznejad, A. (2015). Social and financial efficiency of Islamic microfinance institutions: A Data Envelopment Analysis application. *Socio-Economic Planning Sciences*, 50(2015), 1–17. <https://doi.org/10.1016/j.seps.2014.12.001>
- Wijesiri, M. (2016). Weathering the storm: Ownership structure and performance of microfinance institutions in the wake of the global financial crisis. *Economic Modelling*, 57,

238–247. <https://doi.org/10.1016/j.econmod.2016.05.011>