Literature review on microfinance

The consultative Group to assist the poor defines Microfinance as "… the supply of loans, savings, and other basic financial services to the poor." It is the provision of fundamental financial services to the poor to whom the commercial banks do not cater to. The major function of microfinance institutions is the provision of microcredit which is basically small amounts of loan given out to groups or individuals. The poor people need to have access to financial services as they may need to raise capital for a small venture or for an occasion such as weddings of their children or in case of a natural calamity such as disease or storm or adverse weather conditions that leave them with little or no sustenance.

The key issues concerning the microfinance industry and its participants are the tradeoff between outreach and sustainability, and how to excel in one without deteriorating the pace of the other (Hamada, 2010). Microfinance Industry Assessment: A Report on Pakistan, issued by the Pakistan Microfinance Network (September, 2008) traces out the presence of microfinance in Pakistan over the decades. The Comila project, the Orangi Pilot Project, the Agha Khan Rural Support program and some other rural credit and savings projects were among the first experiences of microfinance. However the sector started meeting growth and expansion in the 1990's. Microfinance was first time recognized as a specialized activity having its own identity in 1996 with the establishment of specialized microfinance NGO, Kashaf Foundation. In 1998 the national association for microfinance providers was established which in 2001 was given the status of a formal organization called the Pakistan Microfinance Network. In 2000 the sector saw further met with growth when the Pakistan Poverty Alleviation

Fund was created whose job was to extend funds to partner organizations for microfinance. As the scope and scale grew, the State Bank also got involved in the sector and developed a separate division to manage microfinance activities. Soon enough, the Microfinance Institutions Ordinance 2001 was passed which is believed to have caused an increase in the inclination towards the commercialization stance making microfinance a financial enterprise along with its prior social role Microfinance Industry Assessment: A Report on Pakistan (September, 2008). To present, the expansion has been on the rise and the number of microfinance institutions and the services offered by them have increased, making the microfinance sector more equipped with achieving the goals of social advancement poverty alleviation.

2. 1. 2 The informal credit sector in Pakistan

There is a significant presence of the informal financial sector in Pakistan. These markets are characterized by the fact that dealings taking place in them are without any official regulation or presided over by any monitoring body. The players may include different types of agents who may be moneylenders and " aartis", or commission agents. In rural areas the transactions are usually interwoven; the agents provide farmers with required inputs and agree to sell their harvests. There are other industries where supplier's credit is commonly seen and the players operate within themselves without any dealings with legal financial institutions. The system of informal finance is also observable in the SME sector. The informal sector can provide lower costs per loan then the formal financial institutions and also there are added advantages of flexibility and quick transfer of needed funds, Microfinance Industry Assessment: A Report on Pakistan (September,

2008). The general concern for microfinance institutions is to get most of the market share in their hands from the informal sources, this can be achieved only slowly as the outreach and penetration of MFIs increases and the level of awareness among the common masses of rural and urban poor increases as to the difference between the regular financial institutions and the microfinance institutions.

2. 1. 3 Social impact of MF

Daley-Harris (2002), Rubana (2008), Lalitha, 2008 and many other studies came to the conclusion that microfinance is an effective tool for combating poverty. Luong (2010) mentions that MFIs give the poor a chance to enjoy various financial services that they can't access through the regular banking system. They can acquire small loans to establish small businesses in their communities and make a steady living out of it. Performing micro financing activities requires these institutes to go into villages and rural settings with little or no infrastructure, also to attract customers they usually have to increase their outreach and thus incur massive costs for expanding their setup and hiring and training of workers. The advances they give out are small in amount and hence cannot be the sole source of meeting costs. Hence microfinance institutions cannot easily reach the state of self-sufficiency by covering their costs (Zeller & Meyer 2002).

Nghiem et al (2003) cites various studies like UNDP (1996a), Seibel and Kunkel (1997), Hung (1998), Llanto (2000) and McCarty (2001) which have found a positive correlation between microfinance and poverty alleviation. Further Nghiem et al (2003) quotes the statistical figures from the Vietnam

Living Standard Survey (VLSS) that poverty rate in Vietnam dropped from 58 percent to 37 percent during the period from 1993 to 1998 (GSO, 1994; 2000). In the same time frame the percent of rural population having access to credit grew from 23 percent to 40 percent. Hence it is believed that provision of microfinance helped in reducing poverty in Vietnam (as cited in Nghiem et al, 2003).

According to Luong (2010), this lack of sustainability stalls microfinance institutions' efforts to expand their services to the extremely poor people and communities and a tradeoff between sustainability and outreach comes into existence. So to pursue their policy of reaching the poor and deprived, the MFIs need to explore ways to manage surviving themselves without dependence on donor and government. There are certain Microfinance institutions that only cater to women borrowers and thus limit their clientele to women trying to make a living using the means at their disposal. In a paper by Hussein and Hussain (2003) the authors list various studies that have been conducted to assess the impact of microfinance on poverty. They mention the fact that while assessing the performance of microfinance the major source has been anecdotal evidence from people and only one proper study had been conducted in this regard funded by the State Bank of Pakistan. Any study of the poverty impact needs to be conducted usually on primary basis and with the creation of control groups. It is difficult to monitor the impact on people as it is hard to monitor them in the long run and keep record of all their financial and economic activities to truly measure and separate out the effect of microcredit or any other microfinance facility they avail. Nonetheless, the sector provides readily available credit to the poor

with little time taken in transfer of funds and thus can be considered a plausible solution to the financial needs of the poor households.

2. 1. 4 Type of institutional Structure

The microfinance services may be provided by a variety of institutions operating for the common goal of empowering the rural and urban poor. Among the newest entrants are the microfinance banks which are established according to the State Bank regulations, these banks are the only microfinance institutions providing services of deposits. Other microfinance institutions include NGOs and Rural support programs which are non-governmental organizations serving to fulfill a multidimensional development program with focus on rural areas (Microfinance Industry Assessment: A Report on Pakistan; Sept. 2008). Then there is a fourth category called " other" which includes all other organizations that do not come under any of the first three categories. All these different types of institutions vary in their capital structure and operations and this in turn has an effect on their efficiency. There is also reliance on borrowing and subsidies to perform their daily activities as the institutions are not financially self-sustainable.

2. 1. 5 Structure of Lending and Funding

Haq and Saleem (2009) list various sources of funds for microfinance institutions operating in Pakistan. Among them are equity, grants, guarantees and on lending facilities. There are several international bodies and aid agencies which take part in assessing the needs of additional funds according to the regional requirements and give grants along with sharing

experiences of other microfinance practicing countries thus to increase the performance and quality of microfinance sector of the subject country.

Microfinance institutions give out loans to their customers using two main techniques; group-based lending which is also called solidarity lending, and individual lending (Ledgerwood, 1999; Hartarska, Caudill, and Gropper, 2006). In group based lending groups of people are formed who are together responsible for fulfilling the terms of agreement of the loans. This technique leads to a higher repayment rate as there is added peer pressure on each group member to fulfill his end of the promise. Loans given out to individuals are similar to the consumer loans given out by regular banks to customers. This type of lending relies more on bank-customer relationship and the responsibility of the bank staff increases to ascertain whether the loan will be repaid or not by the borrower. Ledgerwood (1999) says that the individual lending strategies are less costly and less labor-intensive to implement than the group-based strategies. The type of lending strategy can affect the efficiency and performance of the microfinance institution. One cannot establish the predominance of one strategy over the other as each geographical setup may have varying circumstances and it rests on the microfinance institution to use that mode of lending which increases its efficiency and performance the most in particular circumstances and communal setup. Like in urban areas individual based lending may be a better way whereas in rural areas the solidarity lending may help in achieving higher repayment rates.

2. 1. 6 Regulatory framework of Microfinance Sector

Regulating microfinance has become necessary as there is asymmetric information in the market, Hardy et al. (2003), Marulanda and Otero (2005) and Hermes (2008). However, regulations which focus excessively on achieving financial goals such as maintaining capital adequacy and financial sustainability may shift focus of the MFIs from their primary goal of catering to the poorest. However, Empirically speaking, Hartarska & Nadolnyak (2007) used data for 114 MFIs from 62 countries to investigate the impact of regulation on the performance of MFIs and they didn't find any evidence that regulations affected sustainability or outreach of MFIs, a similar finding has been found for banks in general,(Barth et al., 2004) (as cited in Hermes, 2008). In Pakistan the financial sector is regulated by the State Bank of Pakistan and the Securities and Exchange Commission (SECP). All types of Non- banking financial institutions and the development finance institutions are supervised by the SECP. The Microfinance banks are registered in the State Bank under the Microfinance Institutions Ordinance 2001 while the NBFIs are registered as NGOs under the Companies Ordinance (1984). Several other regulations have been issued by the State Bank for regulating the microfinance sector, Prudential Regulations for Microfinance Banks (2003), Guidelines for NGO Transformation (2005) and Prudential Regulations for commercial Banks to undertake Microfinance Business (2006) are a few examples (Microfinance Industry Assessment: A Report on Pakistan; Sept. 2008). The regulatory framework and modifications to it depicts the importance given to the microfinance sector and acknowledges its separate existence in the realm of finance.

2. 2 Commercialization and Financial Sustainability

To date, there have been two paradigm shifts in microfinance; from 1960's to 1980s focus was on agri-credit or microcredit subsidized by government and donors to small farmers; but after the 1980s the target shifted to the poor population. The new paradigm recognized the problem of high transaction costs and risks because of information asymmetries (Zeller and Meyer 2002), and the focus became the building of cost-efficient MFIs (Robinson 2002). The second paradigm was from microfinance to inclusive finance, from supporting discrete MFIs and initiatives to building inclusive financial sectors (United Nations 2006) and it started to emerge in the mid-2000. In 2004, CGAP endorsed the " key principles of microfinance." which were explained within a framework for an inclusive financial system. The framework recognized that the massive number of excluded people would gain access only if financial services for the poor were integrated into all three levels of the financial system: micro, meso, and macro, (Helms, 2006) (as cited in Hamada, 2010). Hamada (2010) suggests that a shift in the industry's focus is taking place, from microfinance as a social movement to the integration of microfinance into the formal financial sector. " Transformation" and " Commercialization" are the widely discussed issues today, where the term " transformation" is used to refer to the institutional process whereby a microfinance provider or a microfinance project converts into a regulated financial institution and " commercialization" of microfinance refers to the application of market-based principles (Ledgerwood and White 2006). Charitonenko and Afwan (2003) finds that due to commercialization, MFIs may be able to reach financial sustainability by utilizing market based funds and as profit seeking financial institutions which are a functional part of the financial system.

Many MFIs around the globe have reached the state of financial sustainability by cooperating with banks and business organizations as to cross-sell additional products such as savings, pensions and insurances which generate stable income for MFIs to cover cost, make profit and be able to serve more customers (Luong, 2010). This has led to an increasing competition and commercialization of the microfinance institutions, Rhyne and Otero (2006) (as cited in Hermes et al. 2008). Hamada (2010) goes a step ahead of Zeller & Meyer (2002) by stating that due to increased competition merely covering their costs is not enough for MFIs and they should try to make their financial base stronger than before and have a profit oriented administration and operation. Although too much attention to profits may lead to shifts in customer groups, from extremely poor to marginal or above poverty line group; MFIs would start targeting poor from the urban areas and shift their focus from the extreme poor living in the rural areas, (Zeller & Meyer, 2002) (as cited in Loung, 2010).

Microfinance sector has been so far unaffected by the financial crises that have come now and then through the 1990's till present. This is one of the reasons why large domestic commercial banks in many countries are entering into the microfinance markets Hamada (2010). Elizabeth Littlefield (Director & CEO of CGAP), explained that throughout past financial crises, especially those of the1990s (in Mexico, Asia, and Russia), microfinance showed remarkable resilience to shock and the loan portfolios of MFI's hardly changed whereas the corporate portfolios collapsed, (Littlefield, 2008) (as cited in Hamada 2010). The creation of an investment fund called Profund in 1995, which raised $23 million to finance Latin American MFIs was the first

example of commercial capitalization. In 2006 private investment funds, also known as microfinance investment vehicles (MIVs), held portfolios of MFIs shares with a total value of $2. 3 billion (CGAP, 2007). Yet, the increased interest from commercial players has also raised the need for MFIs to become financially sustainable and enhance their efficiency (as cited in Hermes et al. 2008).

Financial Sustainability

Financial sustainability means that MFIs is covering all transaction costs, including loan losses, financial cost and administrative cost, with a positive return on equity (net of any subsidy received), and consequently function without subsides. It is the ability of an MFI to maintain or increase its flows of benefits or service through internally generated income or funds (Sharma, 2008).

The importance of self-sustainability and financial sustainability cannot be overstressed. Studies like Hulme and Mosley (1996); Conning (1999); Paxton and Cuevas (2002); Lapenu and Zeller (2002) state that unit transaction costs for small loans are higher for microfinance institutions; and they usually cannot cover the costs of providing credit (and other financial facilities) to the poor as sizes of loans are small, and infrastructure development costs are high as well, Hermes et al. (2008). Therefore they receive support in the form donations and subsidies by government and international and local aid organizations to cover their losses and to help them move towards a financially sustainable position.

Hermes et al. (2008) and Hamada (2010) point out that recently the attention is being diverted to issues like financial sustainability and efficiency of the MFIs rather than financing their activities through subsidies. Thus issue is being raised that how MFIs can cover their costs by the income they generate from provision of services and by reducing their costs as much as possible. According to Rhyne and Otero (2006) (as cited in Hermes et al. 2008) this increased importance given to financial sustainability is due to the recent developments in the microfinance business like the increased competition in MF industry, commercialization and increased interests of commercial banks and investors in MF, regulation of MF industry by governments and financial liberalization.

Hermes (2008) reports advent of new technology in banking sector; the liberalization of financial markets and the imposition of regulations in the microfinance industry have increased financial sustainability of MFIs. Vanroose (2006) & (2008), Honohan (2004), Gonzalez (2007), Krauss and Walter (2008) and Ahlin et al. (2008) investigate the relationship of various country specific macroeconomic variables and the performance of MFIs (as cited in Vanroose & D'Espallier 2009). Nawaz (2010) uses the operational selfâ€ sufficiency, return of assets and the Subsidy Dependence Index (SDI) as a measure of profitability. Nawaz (2010) also addresses the implications of subsidization on the cost efficiency and staff productivity of MFIs as measured by cost per borrowers and borrowers per staff respectively. Results of productivity regressions of Hudon and Traca (2008) and Nawaz (2010) show the inefficiency of subsidized MFIs due to higher costs associated with larger loan sizes. Suggesting that subsidized MFIs are

obliged to hire qualified staff and offer better and innovative products to relatively well-off clients which contributes towards higher administrative cost. The results also lend support to the trade€ off between staff productivity and subsidy dependence (as cited in Nawaz, 2010). Hermes (2008) reports two recent developments that have helped MFIs in improving MFIs sustainability. One being the new technology introduced in banking sector, which facilitates the use of mobile phones and ATM cards and internet, has also found its way in the microfinance industry and has reduced costs and improved delivery network. The other major development, which can be seen in many developing countries, is the liberalization of financial markets and the imposition of regulations in the microfinance industry. Both these developments add positively towards the state of financial sustainability of MFIs.

2. 3 Performance Measurement of Microfinance Institutions

The performance appraisal of microfinance institutions and various factors that affect the performance have been the subject of many studies. Researchers all over the world have tried to link microfinance performance with various factors that could impact the efficient operations and long term operations. Vanroose (2006) linked microfinance and macro-economic environment for the Latin American region. Honohan (2004) studies various macro-economic variables that may microfinance markets on a global level. He finds weak correlations with the variables he investigates but has taken only around 50 countries into account for his analysis as pointed out by Vanroose & D'Espallier (2009). Gonzalez (2007) studies different measures of MFIs' financial performance but concludes that macroeconomic

developments do not influence them in a significant manner. Krauss and Walter (2008) investigate if the global capital markets influence an MFI's portfolio and find no proof of that; however they do find a significant exposure of MFI performance to changes in the GDP. A possible explanation for the differences between these studies is that they concentrate on other financial measures. Ahlinet al. (2008), investigate empirically the relationship between different sets of macro-economic variables and the performance of MFIs and find variables, like GDP growth and institutional design, are positively significant in explaining differences in MFI performance. Vanroose (2008) takes into account all developing countries, identifies macro-economic factors that may explain why the microfinance sector is more developed in some countries while not in others and found a positive influence of population density, GNI and aid per capita on MFI-outreach (as cited in Vanroose & D'Espallier 2009). Nawaz (2010) states that traditional financial ratios like the operational selfâ€ sufficiency and return of assets etc. are used to measure the profitability of the microfinance institutions. He also uses Subsidy Dependence Index (SDI) as a measure of profitability. Cull et al. (2007) found evidence that raising interest rates resulted in increased profitability for individual based lending MFIs whereas for solidarity based lenders, the reverse is true (as cited in Nawaz, 2010). Nawaz (2010) also found evidence that raising the interest rates lead to improved financial performance and profitability with lower subsidy dependence and higher operational selfâ€ sufficiency. Nawaz (2010) also addresses the implications of subsidization on the cost efficiency and staff productivity of MFIs as measured by cost per borrowers and borrowers per staff respectively. Results of productivity regressions of Hudon and Traca (2008)

and Nawaz (2010) show the inefficiency of subsidized MFIs due to higher costs associated with larger loan sizes, suggesting that subsidized MFIs are obliged to hire more qualified individuals and offer better and more innovative products to relatively well-off clients which adds towards higher level of administrative cost. Further Nawaz concludes that the results also provide evidence to the tradeâ€ off between staff productivity and subsidy dependence. (as cited in Nawaz, 2010).

2. 4 Efficiency as a Measure of Performance

While measuring the overall performance of a microfinance institution or the industry the concept of efficiency is a good implement at hand. There are other methods as well that can be used for the measurement of performance of Microfinance institutions but among the most famous and emerging approaches is the concept of measuring efficiency by using a set of inputs and outputs and analyzing how the firm managed to use its inputs to get the best possible returns. This technique was used for the first time by Farrell (1957) and has since then been extensively used and improved to incorporate other factors that may be considered important in the workings of an institution towards efficient performance. Haq, Skully, and Pathan (2010) cite Farrington (2000) who related various variables like administrative expense ratio, number of loans per loan officer and loan officers to total staff, portfolio size, loan size, lending methodology, source of funds and salary structure with efficiency of MFIs. Cost per borrower and Cost per saver is used to determine the same by Lafourcade, Isern, Mwangi and Brown (2005) (as cited in Haq, Skully, and Pathan, 2010)

2. 4. 1Efficiency and Best Practices Function

The basic underlying principle behind efficiency is the difference between the actual and the optimum values of various inputs and outputs (Fried, Knox Lovell, and Schmidt, 2008). The closer an institution is in bringing its actual values to optimal values the efficient it is considered. This type of efficiency is called technical efficiency and an institution can achieve a higher level of technical efficiency by either enhancing its outputs while utilizing the same amount of inputs, or by decreasing its inputs while keeping its outputs at the same level; the former method is referred to as output maximization technique and the latter as input minimization (Koopmans, 1951) as cited in Gonzalez (2008). In other words it means that given the current technology available in the industry, there is no wastage of inputs while producing the outputs (Ahmed et al 2006). There is another type of efficiency which takes into consideration prices of inputs used and quantifies the firm ability to choose the best possible combination of inputs (Sengupta, 1999).

Farrell(1957) was the first to decompose economic efficiency into these two components of technical and allocative efficiency discussed above, later Charnes, Cooper and Rhodes (1978) further developed on Farrell's work and refined the mathematical form of the concept.

Bhagavath, (2006) explains theoretically the meaning of " best practice". He states that it is the optimum or ideal point at which an organization can operate given the current technological innovations, thus the best practice point is taken as a benchmark and any firm operating on its best practice point is said to be technically efficient, with a technical efficiency score of

100%. Various factors may influence the position of the firm, macroeconomic, industry specific, or firm specific such as decision and policies made my upper hierarchy of management. However technical efficiency does not incorporate the prices of inputs and for that reason allocative efficiency is used. The best practice or the frontier function can be represented by the production frontier graphically, where points on the production frontier represent efficient outcomes and points below it are relatively inefficient, Ahmed and Qayyum (2006).

2. 4. 2 Parametric and Non- parametric Approaches

Nghiem, Coelli, and Rao (2003) cite Berger and Humphey (1997) who did a review of financial sector efficiency analyses and came to the conclusion that all efficiency studies could be broadly classified into two approaches " parametric" and " non-parametric". Parametric takes into account random disturbances in the measurement of efficiency whilst the non-parametric assumes no random error. However, the parametric approach needs to assign a functional form for the estimated frontier whilst the non-parametric approach does not need any assumption on functional form (as cited in Nghiem, Coelli, and Rao, 2003).

Both parametric and non- parametric models have been used to measure efficiency of microfinance institutions, among the parametric approaches, the study of Hassan and Tufte (2001) uses Stochastic Frontier Analysis to come to the conclusion that those branches of Grameen Bank which had female employees operated more efficiently than the branches with male employees. Desrochers and Lamberte (2003) measure the efficiency of

cooperative banks operating in rural areas of Philippines using parametric approach and came to the conclusion that good governance was an important determinant of efficiency (as cited in Haq et al 2010).

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Haq, Skully, andPathan, (2010) followed McCarty and Yaisawarng (1993) and used controlled as well as uncontrolled inputs for microfinance institutions in their two stage non parametric data envelopment analysis to measure cost efficiency of 39 microfinance institutions in Africa, Latin America and Asia. Their results showed that under the production approach, non- governmental MFIs were the most efficient in achieving the dual objectives of poverty alleviation and financial sustainability. Under the intermediation approach the microfinance banks were found to be the most efficient and it was concluded that in the long run the microfinance banks may get ahead of the non- government microfinance institutions in their performance (Haq et al 2010).

2. 4. 3 Data Envelopment Analysis

Bhagavath, (2006) defines Data envelopment Analysis as " Data envelopment analysis is a Linear Programming Problem that provides a means of calculating apparentefficiency levels within a group of organizations. The efficiency of an organization is calculated relativeto the group's observed best practice."

Haq et al (2010) use DEA for a number of reasons among which were that DEA allows for there to be multiple inputs and outputs in the model, it does not require for the parametric functional form to be specified for the

production function, no information on prices is required, it provides information to the managers on how to improve the efficiency and lastly it allows for other than constant returns to scale assumption which makes it feasible to be applied for the analysis of non- profit organizations. This research uses DEA due to its many advantages over other non-parametric and parametric techniques.

Guitierrez-Nieto, Serrano-Cinca and Molinero (2006) use data envelopment analysis (DEA) to measure the efficiency of 30 Latin American MFIs and did an analysis of the efficiency scores thus computed developing 21 specifications using two inputs and three outputs, their results showed one NGO and one non- bank financial institution as efficient Haq et al (2010). Nghiem, Coelli, and Rao (2003) use DEA to measure the technical and scale efficiency of the microfinance industry in Vietnam by surveying 46 schemes in the north and the central regions of the country. In their results, they find that age and the location of the scheme both tend to influence the efficiency of the MFIs.

Among the several advantages of using DEA model is the one that the functional form of the relationship does not have to be specified by the researcher. It does not make any assumptions of a particular direction of relationship between variables, thus is very suitable for analyzing " not for profit" institutions such as MFIs working for social gains and whose performance cannot just be gauged by profit maximizing behavior and financial gains. It allows for great flexibility in the choice of outputs and inputs to be incorporated in the model and thus increases flexibility in the research.

The disadvantage of using a non-parametric technique is that there is no accounting for the error in the model- which is referred to as the assumption of no random noise, and all the deviations from efficiency are regarded as inefficiency. This may lead to distorted efficiency scores and may eventually affect the analysis and interpretations. Another limitation is that the choice of inputs and outputs may also affect the efficiency scores varyingly. So the choice of inputs and outputs has to be made with deliberation and after reviewing the decision making units and their operations properly. The merits of using DEA outweigh its shortcomings which can be adequately dealt with by properly analyzing the results, thus Data Envelopment Analysis is the model chosen to compute efficiency scores in this research (Gonzalez, 2008; Haq et al 2010).

2. 4. 5 Selection of Inputs and Outputs

Haq, Skully and Pathan (2010) used both the production and intermediation approach in their analysis