Determinants of Financial Sustainability of Microfinance Institutions (MFIs) in Pakistan

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In the name of Allah, the most merciful and beneficent

DEDICATION

This piece of work is dedicated to my beloved parents who have been a source of motivation and encouragement for me during the whole period I had been involved in this degree.

(Acceptance by the Viva Voice Committee)

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Mr. Muhammad Ilyas

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APPRECIATION AND GRATITUDE

No words of gratitude will ever be sufficient for the Allah Almighty who made me capable of learning, blessed me with the knowledge & intellect and facilitated me with the finest of the mentors all through my academic years.

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Mr. Muhammad Ilyas

FORWARDING SHEET

The thesis entitled "Determinants of Financial Sustainability of Microfinance Institutions (MFIs) in Pakistan" submitted by Mr. Muhammad Ilyas as partial fulfillment of MS degree in Management Sciences with specialization in Finance, has completed under my guidance and supervision. The changes advised by the external and the internal examiners hava also been incorporated. I am satisfied with the quality of student's research work and allow him to submit this thesis for further process as per IIU rules & regulations.

Date:_____ Signature:_____

Name : _____

ACRONYMS

ACCION:	A microfinance and micro-lending organization
AKRSP:	Aga Khan Rural Support Program
BPSM:	Borrowers per Staff Members
CPB:	Cost per Borrower
FMFB:	First Micro Finance Bank
FM-OLS:	Fully Modified Ordinary Least Square
GB:	Grameen Bank
KB:	Khushhali Bank
KF:	Kashf Foundation
MF:	Microfinance
MFBs:	Microfinance Banks
MFIs:	Microfinance Institutes
MIX:	Microfinance Information eXchange
NRSP:	National Rural Support Program
OPP:	Orangi Pilot Program
PAR:	Portfolio at Risk
PMN:	Pakistan Microfinance Network
PMN:	Pakistan Microfinance Network
PRSP:	Panjab Rural Support Program
RSPs:	Rural Support Programs
SRSP:	Sindh Rural Support Program

TABLE OF CONTENTS

List of Tables

CHAPTER 1

Introduction

1.1. Background

Today, the microfinance is considered as one of effective poverty alleviating tool Gurses (2009). Especially, in the developing countries it became a most appropriate instrument in alleviating poverty. Microfinance is provision of financial services to economically disadvantage people who are ignored by commercial banks. The features like, collateral free lending, small size of loans, focusing poor clients, simple procedures and provision of nonfinancial services make the Microfinance Institutions (MFIs) distinct and special. In contrast with convictional financial institutions, MFIs provide financial services to poor population with an objective to improve their living standards (Garmaise and Natividad, 2010). The basic goal of MFIs is to remove the financial constraints and enable active poor to initiate entrepreneurial activities. According to Knight and Farhad (2008) microfinance directly improves the quality of life and encourages the poverty reduction.

Indeed, poverty has been one of the crucial issues of Pakistan, since the independence. Many strategies were made and implemented over the past in order to eradicate poverty but could not achieve desired results; and today, it is still one of the most serious issues of the country. According to the Sustainable Development Policy Institute (2012), every third person in Pakistan is living below the poverty line; about 58,700,000 out of 180,000,000

Pakistanis are living below the poverty line. These figures vary in different regions, 52% of population in Baluchistan, 33% in Sindh, 32% in KPK and 19% in Punjab are living below the poverty line. Most of the regions specially the rural areas of Pakistan are facing burnt of poverty.

By evidencing the successful inception of microfinance programs in Bangladesh, Indonesia and some other countries, several NGOs and welfare organizations introduced this concept in Pakistan in late 1980s, with a social objective to eradicate poverty from the country. In 1990s, government started the microfinance programs at provincial level with a name of rural support programs (RSPs). Later, the development of Pakistan Microfinance Network (PMN) as a platform for coordination, exchange of ideas and peer-learning, made microfinance sector more formalized. Several specialized MFIs were developed thereafter, and presently 18 MFIs operating in microfinance sector are associated with PMN. It has been two and half decades, since the inception of microfinance programs in Pakistan. In this journey, the microfinance sector has been passed through different stages; it faced constrains and interruptions at different times. Several institutions were developed and some were dissolved due to severe financial issues. This has effected the performance of whole microfinance sector.

Financial sustainability of MFI provide basis for the sustainability of whole sector (Hollis & Sweetman, 1998). According to Hollis & Sweetman, (1998) financial sustainability of MFIs is very important for the continuation of microfinance provision, which is quite associated with the success of poverty reduction program. Financial sustainability of MFIs has a great importance for institutional sustainability. Therefore, several researchers have

studied the financial sustainability of MFIs and the factors affecting financial sustainability of MFIs, aiming to sort out the factors and develop strategies accordingly to insure financial sustainability. However their results vary from study to study (Cull et al 2007; Woller and Schreiner 2002). This study has attempted to assess the determinants of financial sustainability of MFIs in Pakistan. Hence, the findings of this study will provide empirical evidences to microfinance practitioners, so they would consider the important factors to insure financial sustainability.

1.2. Statement of the Problem

Microfinance has received worldwide recognition as a most effective poverty alleviating tool (Bakhtiari, 2006). The microfinance directly improves the quality of life and discourages the poverty (Knight and Farhad, 2008). It is the founding stone for poverty reduction (Ravinder and Ghirmai, 2006). However, the sustained microfinance program is essential to uplift living standards of poor; which entirely depends on the financial health of MFIs. According to Hollise and Sweetman (1998) only financially strong and self-sufficient institutions can provide consistent financial service to poor clients. Financially unsustainable MFI might help the poor today, but may not be able to help in future since it will be dissolved; because financial sustainability of MFIs is a basic condition for institutional sustainability. Likewise, institutional sustainability is a basic condition for the success of microfinance program. Thus, because of its great importance, various studies were conducted to analyze the financial sustainability of MFIs and its determinants (Tehulu 2013; Kinde 2012; Cull et al 2007; Woller and Schreiner 2002; Christen, 2000). However, these determinants vary with study. The determinants that are significant in one economy

or applicable to a set of microfinances institutions are found to be insignificant in other economies (Cull et al, 2007; Woller and Schreiner 2002). Indeed, financial sustainability of MFIs has not been studied in Pakistan. The question regarding determinants of financial sustainability of MFIs in Pakistan was yet to answer. Therefore, this study has attempted to analyze the financial sustainability of MFIs in Pakistan, and tried to bridge the knowledge gap.

1.3. Objective of the Study

Main Objective

- To study the determinants of financial sustainability of MFIs in Pakistan

Sub Objectives

- To find out the impact of outreach on the financial sustainability of MFI,
- To find out the impact of MFIs' efficiency on the financial sustainability of MFI,
- To find out the impact of capital structure on the financial sustainability of MFI,
- To fine out the impact of portfolio at risk on financial sustainability of MFI,
- To find out the impact of loan intensity on financial sustainability of MFI,
- To find out the impact of age and size of MFIs on the financial sustainability of MFIs,

1.4. Research Questions

By considering above objectives, the study has attempted to answer the following questions.

- What are the determinants of financial sustainability of MFIs in Pakistan?

- Does the outreach of MFIs affect the financial sustainability of MFIs?
- Does the capital structure affect the financial sustainability of MFIs?
- Does the efficiency of MFI reflect in financial sustainability of MFIs?
- Does the portfolio at risk effect the financial sustainability of MFI?
- Does the loans intensity reflects in financial sustainability of MFI?
- Does the age and size of MFIs influence its financial sustainability?

1.5. Theoretical Framework

1.5.1. Theory of social welfare

According to Yaron (1994) Judgments of the performance of microfinance organizations have been based on the concepts of outreach and sustainability. Considering the importance of outreach for poverty reduction and self-sustainability of MFIs Schreiner (1998) first presented the framework for outreach, and has since been cited by more than 200 researchers.

"I propose a framework for outreach, the social benefits of microfinance in terms of six aspects: worth, cost, depth, breadth, length, and scope. The framework encompasses both the poverty approach to microfinance and the self-sustainability approach. The poverty approach assumes that great depth of outreach can compensate for narrow breadth, short length, and limited scope. The self-sustainability approach assumes that wide breadth, long length, and ample scope can compensate for shallow depth" (Schreiner 1998).

On the bases of this framework, Navajas at al., (2002) has described the outreach and sustainability in terms of the theory of social welfare. The basic purpose is to reconcile the terminology of microcredit with the standard tools of project analysis.

Outreach is the social value of the output of a microfinance organization in terms of depth, breadth, length, worth to users, cost to users, and scope. Outreach is commonly measure by the proxies like, size of the loan contract, total number of clients, the financial strength of the lender, the price and cost borne by clients, and the number of products offered (Navajas at al. 2002).

Sustainability is a state of being consistent and permanent. The social goal is not to have sustainable microfinance organizations but rather to maximize expected social value minus social cost discounted through time, including the net gain of microfinance organization from loans and deposits, the operating cost borne by the microfinance organization, and the social opportunity cost of the resources used. However, sustainable organizations tend to improve welfare the most. Unsustainable microfinance organizations tend to impose costs on the poor in the future in excess of the gains enjoyed by the poor now (Navajas at al., 2002).

1.6. Significance of the Study

1.6.1. Theoretical Significance

According to Rauf and Mahmood (2009) evaluating the performance of microfinance sector is relatively new in Pakistan; most of the research studies conducted in the sector are focused to evaluate the impact of microfinance on poverty reduction and women

empowerment. In spite of having a huge research work done in other aspect of microfinance, financial sustainability has not been studied. Therefore, this study has attempted to evaluate financial sustainability of MFIs in Pakistan, and tried to bridge the knowledge gap. It has also attempted to pave the way for future research in the same area, by providing empirical evidences on determinants of financial sustainability of MFIs in Pakistan.

1.6.2. Practical Significance

To make the microfinance program successful, MFIs are required to be financially sustainable (LOGORTI, 2006; Schreiner, 2000). Thus, by realizing the importance of financial sustainability, this study has attempted to determine the factors affecting financial sustainability of MFIs in Pakistan. The findings of this study might concentrate the attention of microfinance practitioners toward the basic determinants of financial sustainability, and facilitate them with basic information. So that they would consider the important factors and insure the financial sustainability of MFIs in Pakistan.

1.7. Dissertation Layout

This study is comprises of five chapters. First chapter contain, study background, problem statement, objectives, research questions and significance of the study. The second chapter all about comprehensive discussion on the literature that help to developed bases for this study. Chapter three covers the methodological issue including data and sample, variables and their measurement, and econometric models. The forth chapter is about the data analysis and interpretation, and the final chapter concludes the study.

CHAPTER 2

Literature Review

2.1. Microfinance

Microfinance refers to the provision of financial services to active poor of the society. These financial services primarily include credit and saving facility; these services may also include insurance services and money transfer and payment services (Ledgerwood, 2000). According to (Hermes and Lensink, 2004) it is a concept of providing appropriate financial services to low-income clients including credit, deposit, insurance and payment facilities. Microfinance is an effort to improve the access of low-income holders to financial services, who are neglected by commercial banks. It has some unique features that make it distinct and special in financial sector; some exclusive characteristics are, Assets based collateral free loans, Small size of loans, and various non-financial services. Likewise Malik (2011) microfinance is process of lending to the low-income holders of the society who are ignored by the commercial banks. Microfinance has three distinguished features that make it distinct from commercial banking; including small size of loans and savings, absence of assets based collaterals and simplicity of operations. However, in the

report of World Bank (2007) regarding impact evaluation of microfinance, some additional features of microfinance has been noticed, that are; targeting poor clients, group lending, simple procedures, collateral free lending, providing services, focusing female clients, lending for entrepreneurial activities, market-level interest rates.

2.2. Differentiation of Microfinance Institutions

Microfinance institutions are specialized organizations providing small loans to low-income client (Garmaise and Natividad, 2010). Microfinance market is consists of MFIs, NGOs, and some welfare organization which facilitating economically disadvantage people with financial services. According to Jansson, (2003) the basic objective of MFIs is to improve the living standards of low-income holders of the society by lessening the financial constraints and enable them to startup entrepreneurial activities. In return, MFIs charge for the services provided to clients; which help them to sustain their operations. However according to Jansson, (2003) MFIs receive financial assistance from Government, social entrepreneur, and donors to strengthen and sustain core activities.

2.3. Historical background of Microfinance

According to Krieger (2006) microloans normally starts in communities, where friends and relatives get together in saving clubs and money-sharing groups. These groups can be found all over the world. They have functioned for many years, possibly since the evolution of currency. These clubs developed with different names in different regions. They were called "Tontines" in West Africa "Pasanaku" in Bolivia and "Tandas" in Central America and Mexico.

Irish Loan Fund system was one of earliest formal microcredit organization, developed by the Irish author and nationalist Jonathan Swift in 1700s. In 1837 Swift's Loan Fund system was standardized, when Loan Fund Board took a control over hundreds of independent loan funds in Ireland. They introduced formalized laws like; maximum loan amount should be £10 and no longer maturity than 20-weeks with weekly repayment. Furthermore, in 1840, it became flourish all over the country with the about 300 Fund institutions, providing financial services to 20% of Irish households (Hollis and Sweetman, 2003). In Europe, several types of formal landing and saving institutions started to arise among rural and urban poor in mid 1800s; these institutions were named as Credit Union, People's Bank, and Saving and Credit Co-operatives. The notion of Credit union was first developed by Friedrich Wilhelm Raiffeisen; later his supporters strengthened his idea use it improve their welfare and to end their dependency on moneylenders. From 1870s, Unions quickly spread in various regions of Europe. Apart from Europe this movement expended rapidly also in North America and several developing countries, supported by corporative movement and donors. In Indonesia, The Bank Perkreditan Rakyat (BPR) established in 1895; later it became the largest microfinance system in Indonesia (Krieger 2006).

In early 1900s' several countries have adopted these financing modes around the globe. The drivers behind the adoption of these models were, to improve the rural sector, by rising savings and increasing investment through loans, reducing repressive feudal relations that were impose through indebtedness and to improve agriculture sector. The period from 1950s to 1970 was effective in the provision of loans to the agriculturists to modernize and increase output of agriculture sector

In the start of 1970s, experimental provision of microcredit to women masses in Bangladesh, Brazil and some other countries reflected good results. These loans were based on solidarity group lending, where every member of a group assured repayment of all members. This experiment was made with the sole mission that economically disadvantage people will find employment opportunities by themselves and make investments in productive activities like, manufacturing and processing, livestock and poultry farming, storage, aggregation and transportation of agricultural products (Faridi, 2004). Especially, in Bangladesh Noble Laureate Professor Muhammad Younus introduced asset based collateral free micro loans in a Jobra village; where he lent $27 to a group of 42 villagers. The borrower employed that money in basket-weaving and soap-making businesses and repaid the loan within a specified time period (Lepeska, 2008). The success continued with time and finally led to formation to first legalize and autonomous microfinance Institute named "Grameen Bank".

The credit of initiating microfinance program is also associated student volunteer movement, started in Brazil and Venezuela, has formed a social development organization named, ACCION international in early 1960s. The coincidence of ACCION international with Grameen Bank programs resulted when ACCION International started provision of small loans to Brazilian entrepreneurs in mid 1970s. Moreover, with the mutual participation of Bolivian businessman, ACCOIN International developed a non for profit organization named, PRODEM; with a purpose of providing micro loans to small businesses. In 1992 its success led it to formed specialized microfinance bank with a name of BancoSol. Both pioneers of Microfinance, Grameen Bank and ACCION International

have initiated their programs with different approaches but with a same objective as Grameen model focuses on poverty reduction to achieve social development, while the BancoSol model efforts on meet social objectives with development, integration and commercialization of financial markets (Khan and Platteau, n.d.).

Several NGOs and MFIs were developed around the world after evidencing the success of these two pioneering bodies. The Microfinance Institutions and Bank established at that time were, Unit Desa and Bank Rakyat Indonesia, Grameen Bank Bangladesh, Kenyan Rural Enterprise Program Kenya, BancoSol Boliva and so forth. These institutes challenged traditional lending procedures and formulated new methods for granting loans, to ensure recovery from clients without asset-based collaterals. These distinct techniques comprises of, group based lending, absences of asset-based collaterals, small size of loans and targeting active poor (Khan and Platteau, n.d.).

2.4. Development of Microfinance in Pakistan

Microfinance program were formally started in Pakistan in 1980s when Aga Khan Rural Support Programme (AKRSP) and Orangi Pilot Project (OPP) initiated there microfinance activities, with a social objective to alleviate poverty. The AKRSP was established in 1982 by Aga Khan Foundation, its prime focus was Northern Areas of Pakistan. OPP was initiated by a development activist Akhter Hamid Khan in 1987; later he established Orangi Charitable Trust, which was focused on the development of urban poor in Karachi. The success of these two pioneering bodies induced government to initiate Microfinance programs at national level and this led to development of Rural Support Programs (RSPs)

(Rauf and Mahmood, 2009). Beside these RSPs, various MFIs and NGOs offered microfinance services in different regions with social development objectives. These microfinance providers have then collectively established Pakistan Microfinance Network (PMN) in 1997 as informal platform for coordination, exchange of ideas and peer-learning. Since then the Network has developed significantly, and has made recognition at national and international level as national association for retail players in microfinance industry of Pakistan. Later in 2001 it was registered with Securities and Exchange Commission of Pakistan (SECP) under the Section 42 of Company Ordinance and became a successful separate entity. However, early in 2000, Pakistan Poverty Fund (PPAF) laid its formation as an apex organization, with help of World Bank to strengthen the capacity of MFIs. The basic drivers behind the formation of PPAF were to strengthen the institutional capacity of Microfinance providers, to increase the market access and market share of poor community and to support the creation of new organizations of the poor. Since its formation, PPAF is playing pivotal role in Microfinance Industry and in 2009 Almost 56% of micro loans granted by Microfinance Institutions, ware financed by PPAF (PPAF, 2014). In 2000, Khushali Bank was emerged as a part of government poverty reduction program with a lone of $150 million from Asian Development Bank (ABD). PPAF and KB both were based on same objectives to encourage and enhance the credit capacity of Microfinance provides. Furthermore, in 2001, the Microfinance Ordinance was developed and separate prudential regulations were formulated as part of microfinance initiatives.

Presently, three different microfinance models are active in Pakistan such that; Micro Finance Banks (MFBs), Microfinance Institutions (MFIs) and Rural Support Programs

(RSP). Five Microfinance Banks (MFBs), thirteen Microfinance Institutions (MFIs) and five Rural Support Programs (RSPs) are currently active in sector. According to Rauf and Mahmood, (2009) Microfinance Banks like First Microfinance Bank and Tameer Bank have diversified their activities into individual based large loans relative to average loan size of market. Whereas, RSPs provide multiple products of microfinance including, credit and saving facilities, insurances services and infrastructure development projects. Besides MFBs, MFIs and RSPs, some government institutions and commercial banks also provide microfinance services. The government-owned institutions provide micro credit and saving services for microfinance clients and subsidized credit for government's poverty reduction schemes like, credit and saving services by ZTBL and subsidized credit Rozgar Scheme by National Bank of Pakistan (NBP).

2.5. Financial Sustainability of Microfinance Institutions

According to Dunford (2003) financial sustainability is the ability of MFIs to continue its operations without depending on donor support. Thapa et al. (1992) defined financial sustainability as ability of MFIs to cover all of its costs from its operating income. MFIs are said to be sustainable if the operating income is sufficient enough to meet the operating cost (Sharma and Nepal, 1997). Financial sustainability can be further categorized into two stages, operational sustainability and financial self-sufficiency (Kinde, 2012). MFIs are consider to be operationally sustainable when they cover their operating cost from the operating income. Likewise, financial self-sufficiency is the ability of MFIs to cover both operating and financing cost from their own generated income (Meyer, 2002).

Subsidy is also an important factor to consider in calculating financial sustainability, since majority of MFIs are subsidized and bear either very minimal or no financing cost. In this study, the subsidies and donations of subsidized MFIs has adjusted with market to find the real picture of financial sustainability.

2.6. Determinants of Financial Sustainability

Breadth of Outreach

The breadth of outreach is defined as the number of active borrowers served by MFIs Hishigsurem (2004). Generally it is assumed that breadth of outreach has an implicate impact on financial sustainability of MFIs. According to Kinde (2012) larger number of borrowers improves the financial sustainability of MFIs. The breadth of outreach is found to be a biggest sustainability factor of MFIs (LOGOTRI, 2006). On the other hand, Ganka (2010) found negative relationship between outreach and financial sustainability; he explained that the increased outreached itself does not improves financial sustainability, because this may also increase inefficiencies of MFIs. However, Hartarska (2005) has reported that there is no significant relationship between breadth of outreach and financial sustainability. In line with Ganka (2010) this study has used total number of borrowers as a proxy to measure of breadth of outreach.

H_1: Breadth of outreach has positive relationship with financial sustainability of MFIs.

Depth of outreach

According to Hulme and Mosley (1996) without focusing on poor, a hypothetical MFI is no longer different from a commercial bank. Navajas et al, (2012) the depth of outreach is the value the society attaches to net gain of a given client. The number of clients as a measure of outreach considers only the total number of clients served from various products of an MFI without their relative level of poverty (Ledgerwood, 1999). The outreach of microfinance should not be measured by just total number of clients but it should rather be based on the number of poor clients served. According to Mersland and Strom, (2009) the small size of loans indicates poor clients. Therefore, several studies have used average loan size to measure depth of outreach (Cull et al, 2007; Ádongo and Stork, 2006; Hartarska, 2005; Woller and Schreiner 2002).

Empirical evidence regarding the relationship of depth of outreach and financial sustainability are quite mixed. Woller and Schreiner (2002) found a positive relationship between depth of outreach and financial Sustainability. However, according to Hulme and Musley (1996) delivering small loans to the poor and the relatively hard-to-reach clientele is inherently costly. This study has tested this relationship in Pakistan using "average loan size" as proxy to measure of depth of outreach of MFIs.

H_2: Depth of outreach has a positive relationship with sustainability of MFIs.

Scope of Outreach

Scope of outreach refers to a range of products offered by MFIs to their clients. These products may include credit, savings, insurance, house loans, transfer facilities and so forth, depending upon customer needs. MFIs could enhance the sustainability by offering broad range of financial services to the active poor (LOGOTRI, 2006). Because, the wider range of products is expected to increase the number of clients of MFIs. According to Woller, (2002) demand for saving and deposits facilities relatively higher than demand for loans. Saving and deposits enable MFI to expend their outreach as increased capital enhances its loaning capacity. Richardson and Lennon, (2000) found that a blend of financial products and services at reasonable interest rates enable MFIs to expand their outreach over a large number of poor clients. This study has initially considered the scope of outreach as a potential determinant of financial sustainability but after assessing the real data this variable was excluded. The MFIs in Pakistan has same range of products over the years, so the scope of outreach has not qualified as a variable in Pakistan.

Efficiency

According to Woller, (2000) efficiency is an ability to maximize output at a given level of input. In the context of microfinance it is the most effective way to provide financial services to poor clients that minimize operating cost and maximize the outreach. Hence the concept of efficiency involves two dimensions, productivity and cost management dimension. Productivity is refers to the ability of MFI to maximize the outreach and revenuer; while the cost management is refer to the ability of MFI to minimize the

operating cost. In literature, the productivity dimension of efficiency is measured using the number of borrowers per staff member; while, cost management dimension is measured using cost per borrower (Kinde, 2012; Ganka, 2010; Woller and Schreiner, 2002).

Woller and Schreiner (2002) studied the relationship of borrowers per staff member with sustainability and found it one of the most significant determinants of profitability. In contrast, Ganka (2010) found negative and statistically significant relationship between productivity and financial sustainability. However, according to Christen *et al.* (1995) there is no significant relationship between productivity and sustainability.

Several studies have investigated the relationship of cost per borrower and financial sustainability, such that; Kinde (2012) studied the impact of cost per borrower on financial sustainability and found it negatively significant. Similarly, Ganka (2010) tested this relationship and concluded that, cost per borrower has negative and statistically significant impact of financial self-sufficiency. According to Zubair and Yasmin (2014) Cost efficiency is very important, as cost efficiency increases, loan size becomes small, which ultimately fulfil the promise of maximum outreach to the core poor clients.

H_3: Borrowers per staff member has a positive relationship with financial sustainability.

H_4: Cost per borrower has a negative relationship with financial sustainability of MFIs.

Capital Structure

The proportion of debt and equity in capital structure could potentially affect the performance and sustainability of MFIs. According Kyereboah (2007) capital structure has

a significant impact on the performance of MFIs. Further, the capital structure of MFIs may include loans, shares, deposits and donations (Bogan et al, 2007; Fehr and Hishigsuren, 2006; Woller and Schreiner, 2002. The size of MFI determines its capital structure; the large number of clients depends on microfinance commercial sources of funds, which in turn depends on institutional sustainability. Therefore, the MFIs with higher capital are expected to have high breadth of outreach than those with less capital.

Over the years various studies have been carried out to explain the impact of capital structure on sustainability of MFIs such that; Kyereboah (2007) has reported that highly levered MFIs have higher ability to deal with adverse selection and moral hazards than those with unlevered. On the other hand Ganka (2010) has stated that the different sources of capital structure do not improve the performance and sustainability of MFIs. Hence, this study has tested the impact of capital structure on financial sustainability of MFIs in Pakistan.

H_5: Capital structure has a positive relationship with financial sustainability of MFIs.

Portfolio at Risk

Portfolio at risk is one of the most important tools used to assess MFI's asset quality. It represents the, proportion of an MFI's total gross outstanding loan portfolio that is at default risk. Higher the portfolio at risk implies higher the default risk and lowers the repayment rate, therefore lowers the financial sustainability. According to Nymsogoro (2010) and Tehulu (2013) Portfolio at risk, negatively influences the financial sustainability of MFI. Similarly, Segun and Anjugam (2013) found negative relationship between Portfolio at

Risk and efficiency of MFIs. Hence, on the basis of empirical evidences this study has considered Portfolio at Risk a potential determinant of financial sustainability of MFIs in Pakistan. It will be calculated through the following method defined by PMN.

PAR has been calculated using following reserve factors

- No provisioning for PAR up to 89 days dues
- 50% of more than 91 days past dues are considered as PAR
- 100% of more than 181 days past dues are considered as PAR
- 50% of renegotiated loans are considered as PAR

H_6: Portfolio at risk has a negative impact on financial sustainability of MFIs

Loans Intensity

According to Tehulu (2013) the Loans Intensity is one of promising determinants of financial sustainability of MFIs. In his study, Tehulu (2013) tested the impact of loan intensity on financial sustainability of MFI and found positive and statistically significant results. He justify the results by arguing that, the gross loan portfolio is the main source of income of MFI and thus, the higher the loan, the higher the interest revenue and profit. However, Okumu (2007) found that the Loan intensity has negative impact on financial sustainability of MFI, as the level of MFIs' risk increases with increase in loan asset ratio. In line with Tehulu (2013), this study has used the ratio of gross loan portfolio to total assets as a proxy to measure of loan intensity.

H_7: Loan intensity has positive impact on financial sustainability of MFI

Size of an MFI

Size of MFI is also a potential factor that could influence the level of outreach and financial sustainability MFIs. The total assets of MFI are widely used to measure Size of MFI (Mersland and Strom, 2009; Hermes et al, 2008; Bogan et al, 2007; Lafourcade et al, 2005). According to Cull et al (2007) the size of an MFI has a positive effect on financial performance; while, Hartarska (2005) has stated that the size of MFIs has no significant effect on financial sustainability. Mersland and Strom (2009) stated that, the size of MFI is highly associated with financial sustainability; because large capital size enables MFI to reach large number of clients which ultimately expend outreach and enhance financial sustainability. Kyereboah-Coleman and Osei (2008) also tested this association and found significant and positive. Thus, on the basis of literature this study has considered the size of firm as one of influential factors of financial sustainability of MFIs.

H8: Size of MFIs has positive relationship with financial sustainability of MFIs.

Age of an MFI

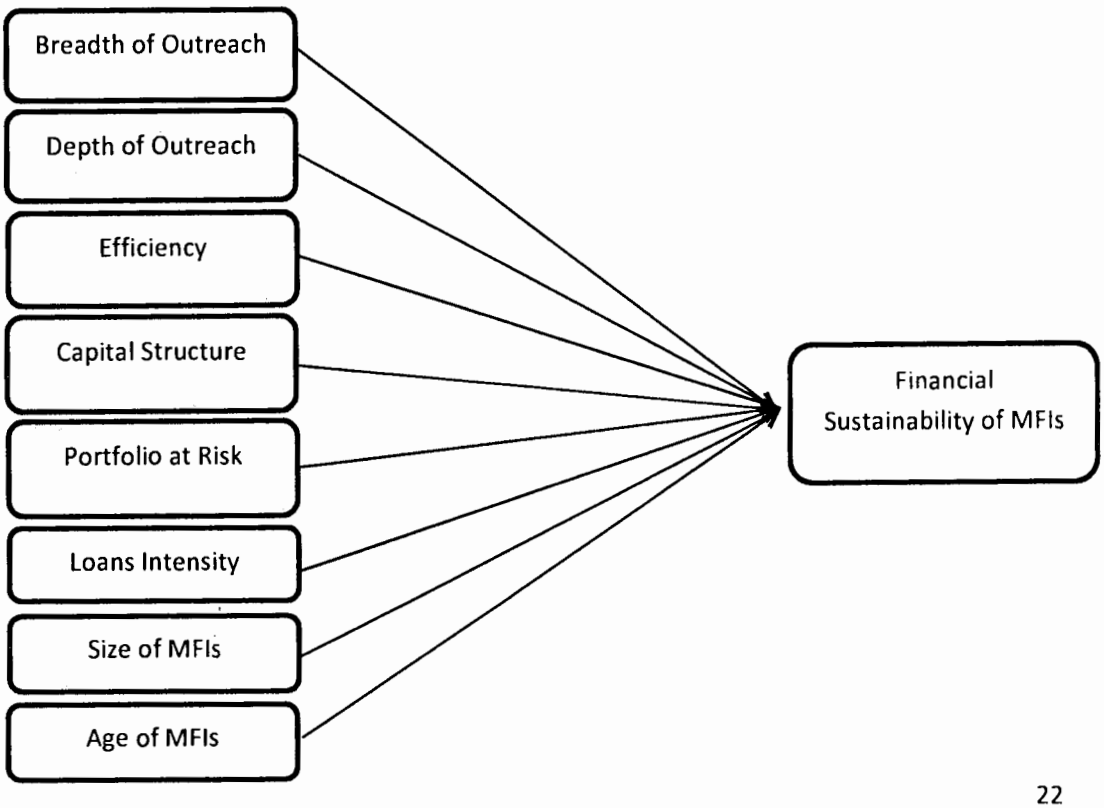
The age of MFI is refers to the number of years MFI has been active since its formation. The Age MFIs could be linked with financial sustainability of MFIs. According to Cull et al, (2007) age can influence the efficiency and growth in terms of outreach. Similarly, Gonzalez, (2007) age of MFIs can affect efficiency and performance of MFI, especially in its early years. The study carried out by Robinson, (2001) concludes that the experienced MFIS with age of above six are 102 percent financially sustainable, those with the age of three to six are 86 percent financially sustainable, and institutions with less than 3 are 69

financially sustainable. Bogan et al (2007) found that the age of MFIs has a strong association with financial sustainability. However, according Nyamsogoro (2010) there is no significant relationship between age of MFIs and financial sustainability. Similarly, Nadiya (2011) has found no significant association between MFIs and operational sustainability. This study has to test the relationship between age of MFI and financial sustainability, using business cycle approach.

H_9: Age of MFIs has positive relationship with finàncial sustainability of MFIs.

2.7. Theoretical Model

Theoretical model of the study comprises of explanatory variables (determinants of financial sustainability) at left side, response variable (financial sustainability) at right side; the arrows targeting response variable.



CHAPTER 3

Research Methodology

3.1. Research approach

This study has used deductive research approach to assess the determinants of financial sustainability of MFIs in Pakistan on the basis of existing theories and empirical evidences. According to Wilson, (2010) a deductive approach enable researchers to develop hypotheses base on existing theory, and then design research strategy to test these hypotheses.

3.2. Data and Sample

According to PMN (2013) eighteen MFIs, eight MFBs and five RSPs active in the microfinance sector have reported their annual reports to PMN. Before the development of PMN in 2001, there was no proper mechanism and centralized body to maintain and share the annual reports of microfinance sector of Pakistan; therefore, the financial data of MFIs prior to development PMN is not available. In 2004 only eight MFIs have shared their annual reports with PMN, though, this number is now extended to eighteen.

Initially the data of all the eighteen MFIs were considered as sample for the study. However to make the balance panel data over the period of ten years from 2004 to 2013, some of the MFIs have been excluded, because they were developed in 2005 and later years. The final

sample of this study has included the annual data of 12 MFIs over the period of 10 years from 2004 to 2013.

Currently the total number of Microfinance institutions registered with Pakistan Microfinance Network (PMN) are 20 and their names are as follow, ASA Pakistan limited, Agahe, Al-Mehran Rural Development Organization (AMRDO), Community Support Concern (CSC), BRAC-Pakistan, Farmers Friend Organization (FFO), Development Action for Mobilization and Emancipation (DAMEN), Ghazi Barotha Taraqiati Idara (GBTI), Kashf Foundation (KF), Jinnah Welfare Society (JWS), Micro Options (MO), Mojaz Foundation, Naymet Trust (Naymet), National Rural Development Program (NRDP), Organization for Participatory Development (OPD), Orangi Charitable Trust (OCT), Orix Leasing Pakistan Ltd. (OLP), Rural Community Development Society (RCDS), SAFCO Support Fund (SAFCO), Saath Development Society (SDS), Shadab Rural Development Organization (SRDO) and Villagers Development Organization (VDO).

3.3. Type of Data

The secondary data of all Microfinance Institutes registered with PMN has been used to conduct the study. The reason for collecting secondary data is that, it is easy to access and more reliable than primary data as it is authenticate by PMN. Collecting Primary data is very costly process; especially in case of financial institutes it is really tough to access the financial data as they have very strict rules to maintain the privacy.

3.4. Variables

3.4.1. Dependent

Financial sustainability of MFIs has been used as dependent variable, since this study is aimed to access the determinants of financial Sustainability of MFIs. In line with Kinde (2012) the ratio of total revenue to total operating and financing cost has been used to measure the financial sustainability. In the case of donations, the opportunity cost of donated amount has been considered as financing cost.

3.4.2. Explanatory Variables

The selection of explanatory variables are based on the theoretical relationship with outcome variable (Tehulu, 2013; Kinde, 2012; Nyamsogoro, 2010; Ganka, 2010). The selected predictor variables are expected to explain the outcome variable (financial sustainability). The explanatory variables of the study include, breadth of outreach, depth of outreach, productivity and cost management, capital structure, portfolio at risk, loan intensity, size of MFI and age of MFI.

3.5. Measurement of Variables

By following the footsteps of literature, the following proxies have been used to measures the dependent and independent variables.

Variable	Abbreviations	Measurement
Dependent Variable		
Financial Sustainability	FS	Total Income / (Operating Cost + Financing Cost)

Independent Variable		
Breadth of Outreach	AB	Natural log of number of active borrowers
Depth of Outreach	ALS	Average loan size
Productivity	BPSM	Number of clients per staff member
Cost Management	CPB	Total cost of MFI / total number active borrowers
Capital Structure	DER	Debt-Equity ratio
Portfolio at Risk	PAR	Portfolio at risk
Loans Intensity	LNI	Gross loan portfolio as a percentage of total assets
Size of MFI	TA	Natural log of Total Assets
Age of MFI	AGE	Number of years of MFI since been establish

3.6. Econometric Model

As this study aimed at assessing the determinants of financial sustainability of MFIs in Pakistan, therefore to test the level of casualty by independent variables (determinants of financial sustainability) in dependent variable (financial sustainability) regression analysis has been carried out. In line with (Segun and Anjugam 2013; Kinde 2013; Ganka. 2010) panel data regression model has been used to test this causal relationship. The common effect, fixed effect and random effect models have been employed to consider the time specific and individual specific effects.

To carry out empirical investigation, the following operational model has been used.

$$FS_{it} = \alpha + \beta_1 AB_{it} + \beta_2 ALS_{it} + \beta_3 BPSM_{it} + \beta_4 CPB_{it} + \beta_5 DER_{it} + \beta_6 PAR_{it} + \beta_7 LNI_{it} + \beta_8 TA_{it} + \beta_9 AGE_{it} + \varepsilon_{it}$$

Where,

- FS = Ratio of total revenue to total operating and financing cost
- AB = Natural log of number of active borrowers
- ALS = Average loan size
- DER = Debt Equity ratio
- BPSM= Number of borrowers per staff member
- CPB = Cost per borrowers
- PAR = Portfolio at Risk
- LNI = Gross loan portfolio as a percentage of total assets
- TA = Log of total assets
- AGE = Number of years since the inception of MFI
- α = Constant
- $\beta_{1,2,3....13}$ = are logit coefficients to be estimated

- ε = error term
- i = MFIs i
- t = Time t

3.7. Multicollinearity and Variance Inflation Factor (VIF)

Multicollinearity is a statistical term which refers to the situation where two or more explanatory variables in a multiple regression model are highly correlated, and one can be linearly predicted from the others. In this situation the small changes in model cause abnormal and unreliable change in coefficient estimates of the multiple regression. Therefore, the explanatory variables of the study has been tested for multicollinearity using variance inflation factor (VIF).

$$VIF = \frac{1}{1 - R_i^2}$$

3.8. Unit Root Test

Unit root test is statistical technique, use to check the stationarity of data. As this study has a panel data, comprise of both time series data and cross sectional data; so the unit root test has been applied to check the stationarity of panel data.

3.9. Timeframe of the Study

S. no.	Research Activities	Timeframe (2014-15)								
		Feb.-Mar.	April	May-June	July-Aug.	Sep.	Oct.	Nov.	Dec.	Jan. -feb.
1	Preliminary literature review									
2`	Developing theoretical model, research objectives									
3	Finalizing and submitting research proposal									
4	Data collection									
5	Data analysis and interpretation									
6	Finalizing dissertation									
7	Proofreading & Submission of dissertation									

Chapter 4

Results and Discussions

In this chapter, statistical tools are applied to the panel data, that is comprises of 12 organizations over the period of 10 years from 2004 to 2013. As discussed in in previous chapters the microfinance is relatively new concept in Pakistan. Though several organizations are active in the microfinance industry but all of them do not formally maintain and share their financial reports with Pakistan Microfinance Network (PMN) which is the main source of data for this research. Further, to make pool of panel data over the period of 10 years from 2004 to 20013, some of the organizations have been excluded. Thus the cross sections (number of microfinance organizations) are restricted to above mention number.

4.1. Descriptive Statistics

Descriptive statistics are very useful measures to describe the nature of data and its basic features. So, to evaluate the basic features of the data before going to test complicated model this study has calculated descriptive statistics; where the descriptives of all the explanatory and response variables are calculated through the software package named Eviews.

Table 01: The below table shows the mean and standard deviation values of all explanatory and response variables.

Table 01 Descriptive Statistics

	Mean	Standard Deviation
Financial sustainability	0.924	0.408
Breadth of outreach	98,183.86	91,838.52
Depth of outreach	9,960.787	4227.963
Borrowers per staff members	157.6402	91.210
Cost per borrower	8,768.099	44639.65
Debt equity ratio	3.26	9.39
Portfolio at risk	33,578,380	54288840
Loan intensity	0.676	0.703406
Total assets	2,083,314,458	2,852,485,737
Age	13.5	5.2

The above table shows that the mean value of financial sustainability of MFIs is (0.924) with the standard deviation of (0.408) which represents that MFIs in Pakistan are not financially self-sustainable. The deviation (0.408) shows that some of the MFIs are financially self-sustainable but on the other hand some institutions are not even operationally sustainable. The mean value of breadth of outreach is (98,183.86) with the standard deviation of (91,838.52), represents the average active borrowers of MFIs in Pakistan and the deviation shows inconsistency of the breadth of outreach of these institutions. The mean value of depth of outreach is (9,960.787) with the standard deviation

of (4227.963) shows the average loan sized offered by MFIs to their clients. The mean value of (157.6402) represents the number of borrowers per staff members of MFIs and the mean value of (8,768.099) shows the cost per borrower incurred by MFIs. The mean value of (3.26) shows the debt equity ratio of MFIs, and the standard deviation of (9.39) shows the variation in debt equity ratio. The mean value of portfolio at risk (33,578,380) shows the nonperforming loans of MFIs, which is considered one of basic constrains in attaining financial self-sustainability. The mean value of loan intensity (0.676) shows that the MFIs of Pakistan disburse 67.6% of their assets among active borrowers. The mean value of total assets of MFIs is (2,083,314,458) and the mean value of age of MFIs is (13.5).

4.2. Correlation Analysis

Correlation is an important statistical tool to measure relationship between two or more variables. The value of correlation coefficient is always between +1 and -1; where +1 indicates perfect positive correlation, -1 indicates perfect negative correlation and 0 indicates that there is no linear relationship. Hence, to test the relationship between all explanatory and response variable, correlation has been applied. The results are shown in the table below.

Table 02 Correlation

Variables	FS	AB	ALS	BPSM	CPB	DER	PAR	LNI	TA	AGE
FS	1.00									
AB	0.17	1.00								

ALS	0.20	0.32	1.00							
BPSM	0.14	0.01	-0.05	1.00						
CPB	-0.06	0.04	0.08	-0.10	1.00					
DER	0.09	0.33	0.13	0.11	0.03	1.00				
PAR	0.02	0.60	0.43	-0.02	0.01	0.06	1.00			
LNI	-0.04	-0.06	-0.17	0.08	-0.04	-0.01	-0.12	1.00		
TA	0.14	0.87	0.55	-0.08	0.07	0.19	0.79	-0.13	1.00	
AGE	0.37	-0.05	-0.01	0.37	-0.13	0.22	-0.14	0.08	-0.15	1.00

The above table demonstrates the correlation analysis of all explanatory and response variables, including financial sustainability, active borrowers, average loan size, borrowers per staff member, cost per borrower, debt equity ratio, portfolio at risk, loan intensity, total assets and age of MFIs. Here, in this study the purpose of testing correlation analysis is, first to analyze the relationship between all explanatory and response variables, secondly it is carried out to check the chances of multicollinearity between the explanatory variables. The correlation coefficient of all the explanatory variables are quiet normal except the correlation coefficient between total assets and active borrowers, which is (0.87). The strong correlation between the variables depicts the chances of multicollinearity, thus the following test has been carried out to check the multicollinearity issues.

4.3. Multicollinearity Analysis

Multicollinearity is a statistical term which refers to the situation where two or more explanatory variables in a multiple regression model are highly correlated and one can be linearly predicted from the others. In this situation the small changes in model cause abnormal and unreliable change in coefficient estimates of the multiple regression.

Thus, the explanatory variables of this study have been tested for multicollinearity. Variance inflation factor (VIF) has been used to detect and quantifies the severity of multicollinearity in the model. The result shows that the VIF is 4.219, which is quite lesser then cutoff point 10 (Dimitrios & Stephen, 2007), so there is no multicollinearity issue in the data.

4.4. Unit Root Analysis

To observe the stationary of panel data, the Levin, Lin and Shu test has been applied; as this test is very common in practice to check the stationarity of panel data. The null hypothesis of this model hypothesized that the unit roots exist in the series; however, the alternative hypothesis of the model hypothesized that unit root doesn't exist in the series. The result of the Levin, Lin and Shu test are shown in the table below.

Table 03 Unit Root Test (Levin, Lin and Shu)

Variables	T-Statistic	Significance	Level
FS	-4.66505	0.0000	Level
AB	-20.3043	0.0000	Level

ALS	-3.72430	0.0001	Level
BPSM	-8.94055	0.0000	Level
CPB	-2.18887	0.0143	Level
DER	-3.15380	0.0008	Level
PAR	-4.94357	0.0000	Level
LNI	-2.61275	0.0045	Level
TA	-2.84369	0.0022	Level

The results shows that the financial sustainability is significant with the t-statistic of (-4.66505) at the significance level of (0.000), thus the alternative hypothesis is accepted as there is no unit root at level. The results shows that breadth of outreach is significant with the t-statistic of (-20.3043) at the significance level of (0.0000), thus the alternative hypothesis is accepted as there is no unit root at level. The t-statistic of depth of outreach is (-3.72430) with the significance level of (0.0001) at level, which obviously favors alternative hypothesis. BPSM and CPB are significant at level with the t-statistic of (-8.94055) and (-2.18887) respectively. Debt equity ratio is significant at level with t-value of (-3.15380) which obviously reject the null hypothesis. The t-value of Portfolio at risk is (-4.94357) at significance level of (0.000), so the results favor alternative hypothesis as there in no unit root at level. Loan intensity is significant at level with t-value of (-2.61275) and the total assets is also significant at level with the t-value of (-2.84369) so in both series null hypotheses has been rejected at level.

4.5. Regression Analysis

To study the determinants of financial sustainability of MFIs in Pakistan, ordinary least square (OLS) has been applied to panel data. From the above statistical test it has been cleared that the data is normal and fulfill all the conditions of OLS. So the hypothesized determinants, Breadth of outreach, depth of outreach, efficiency, capital structure, portfolio at risk, loan intensity, total assets and age of MFIs have been regressed with financial sustainability of MFIs. As panel data analysis techniques are of three types; common effect model, fixed effect model and random effect model so the F-test and Hausman test have been used to select the most appropriate model for the study.

Table 04: the below table shows the results of common effect, fixed effect and random effect model.

Table 04 Regression Analysis for Panel Data

Variables	**Common effect**	**Fixed effect**	**Random effect**
	T-Stat. Prob**	T-Stat. Prob**	T-Stat. Prob**
AB	-1.429 (0.155)	-0.267 (0.789)	-1.806 (0.073)
ALS	1.378 (0.170)	-0.462 (0.644)	1.742 (0.084)
BPSM	-1.939 (0.055)	-2.709 (0.007)	-2.451 (0.015)
CPB	-4.429 (0.000)	-5.802 (0.000)	-5.597 (0.000)
DER	-1.689 (0.094)	-4.521 (0.000)	-2.135 (0.035)
PAR	-4.090 (0.000)	-4.804 (0.000)	-5.169 (0.000)

LNI	-0.622 (0.535)	-0.790 (0.431)	-0.786 (0.433)
TA	3.341 (0.001)	1.941 (0.068)	4.222 (0.000)
AGE	6.176 (0.000)	7.502 (0.000)	7.806 (0.000)
R-squared	0.493	0.714	0.493
Durbin-Watson stat	1.138	1.967	1.138
F-statistic	11.91	12.39	11.91
Prob (F-statistic)	0.000	0.000	0.000

4.6. F-test

To select the right model for the study between common and fixed model, F-test has been used. F-test hypothesized that the fixed model should be applied. The decision criteria of F-test is that if the value obtain from F-test is greater than 2 the alternative hypothesis should be accepted; which recommends the fixed effect model. The null hypothesis for F-test is that the common effect model should be applied. The result of T-test is as under,

$$F = \frac{(R^2_{FE} - R^2_{CE})/(N-1)}{(1-R^2_{FE})/(NT-N-K)}$$

$$F = \frac{(0.71-0.49)/(18-1)}{(1-0.71)/(18(10)-10-9)}$$

$$F = 7.1845$$

The value of F-statistic is 7.1845, which is greater than 2. So the null hypothesis is rejected; and alternative hypothesis is accepted that the fixed effect should be applied.

4.7. Hausman Test

To select the appropriate model between fixed effect and random effect models, the hausman test has been used. The decision criteria of hausman test is that, if the houseman statistic is less than 2 the null hypothesis should be accepted and if it is greater than 2, than alternative hypothesis should be accepted. The null hypothesis of Hausman test states that the random effect model should be applied and alternative hypothesis states that the fixed effect model should be applied. The results of hausman tests are shown in the below table,

Table 05 Hausman Test

Test Summary	Chi-Sq. Statistic	Prob**
Cross-section random	76.430590	0.0000

The Hausman statistic is greater than critical value 2 and P value is less than 0.05, so the alternative hypothesis has been accepted that the fixed model should be applied.

4.8. Fixed effect model Analysis

On the basis of hausman test the fixed effect model has been applied to the panel data. The results are shown in the table below.

Table 06 Panel Least Squares (Fixed Effect)

Variables	Coefficient	Std. Error	T-Statistic	Prob**
AB	-0.019890	0.074411	-0.267295	0.7898

ALS	-0.039433	0.085212	-0.462766	0.6445
BPSM	-0.001174	0.000433	-2.709873	0.00791
CPB	-0.297728	0.051309	-5.802608	0.0000
DER	-0.014133	0.003126	-4.521929	0.0000
PAR	-0.113833	0.023691	-4.804966	0.0000
LNI	-0.029366	0.037157	-0.790332	0.4312
TA	0.10359	0.05335	-1.94171	0.0686
AGE	0.107466	0.014324	7.502361	0.0000

R-squared	0.7146	Mean dependent var	0.9237
Adjusted R-squared	0.6925	S.D. dependent var	0.4085
S.E. of regression	0.2392	F-statistic	12.398
Durbin-Watson stat	1.9676	Prob(F-statistic)	0.0000

R-square determines the fitness of the statistical model. It measure the proportion of variation in response variable that is explained by explanatory variables. Adjusted R-square is s modified R-square that adjusts the statistic based on number of terms in the model. R-square increase with the addition of new variable in the model but Adjusted R-square increases only if new variable improves the model. The R-square of this study is (0.71) which shows that the model has explained 71% of variation in response variable (financial sustainability) that is explain by explanatory variables. Adjusted R-square is (0.69) which

is quite closer to R-square, indicates that there is no irrelevant term in the model. The number of active of borrowers (AB) which measure the breadth of outreach, is not statistically significant in improving financial sustainability of MFIs. This result is inconsistent with the hypothesis, but is in line with (Hartarsks, 2005) that there is no significant relationship between breadth of outreach and financial sustainability. The average loan size (ALS) which measure the Depth of outreach is not statistically significant in influencing financial sustainability. This result is also inconsistent with the hypothesis. Borrowers per staff member measure the productivity dimension of efficiency has negative and statistically significant relationship with financial sustainability, with the t-value of (-2.709) at significance level of (0.007). This result is in line with Ganka (2010), where he justify these findings by arguing that, increased in borrowers per staff members from a certain level caused inefficiencies, and create monitoring and management issues for MFIs, which ultimately affect their performance. The Cost per borrower measure the cost management dimension of efficiency has negative and statistically significant relationship with financial sustainability, with t-value of (-5.8026) at significance level of (0.000). This result is consist with hypothesis and in line with the findings of (Zubair and Yasmin, 2014; Kinde, 2012; Ganka, 2010). The debt equity ratio (DE) represent the capital structure of MFIs has a negative and statistically significant impact on financial sustainability. Several studies provide empirical evidences to this negative relationship between capital structure and firm performance (Tehulu, 2013; Booth at al, 2001; Wald, 1999; Rajan and Zingales, 1995). The portfolio at risk is negatively and statistically significant in influencing financial sustainability with t-value of (-4.80) at significance level of (0.000), which is consistent with hypothesis and in line with Literature (Tehulu, 2013; Segun and Anjugam, 2013;

Nymsogoro, 2010). The loan intensity measures the ratio of gross loan portfolio to total assets, is not statistically significant, which is in line with (Okumu, 2007). This result is inconsistent with the hypothesis. The total assets measure the size of MFIs is statistically significant at the 10% level. Finally the age of MFIs is positive and significant in influencing financial sustainability of MFIs, with the t-statistic of (7.502361) at significant level. This result is consistent with the hypothesis and also in line with (Nadiya, 2011, Bogan et al, 2007; Cull et al, 2007)

Chapter 5

Conclusion and Recommendations

5.1. Conclusion

On the basis of the research objectives, and the discussion made in previous chapter, this conclusion has been derived. The arithmetic mean of financial sustainability of the selected sample of MFIs is 92.4% indicating financial unsustainability. This shows that, microfinance sector in Pakistan is not financially self-sufficient; it needs the help from donors and government to survive. The average loan size is (9960) depicting that MFIs are reaching poor which is the main objective of MFIs, however this amount is not enough to initiate an entrepreneurial activity. The MFIs should increase the average loan size, so the client would able to initiate an operating activity. The mean of portfolio at risk is (33,578,380) which is one of basic constrains in attaining financial self-sufficiency. MFIs should make effective mechanisms to reduce the number of non-performing loans. The average cost per borrower is (8,768) almost close to average loan size, which is a big question mark for the MFIs. MFIs have on an average 13.5 years now in this industry and there average total assets are (2,083,314,458) which is a good sing and expected to grow with increase in age.

To determine the determinants of financial sustainability of MFIs this study has hypothesized the breadth of outreach, depth of outreach, borrowers per staff members, cost per borrower, capital structure, portfolio at risk, loan intensity, total assets and the age of

MFIs are statistically significant predictors of financial sustainability. However, the study found that, borrowers per staff member, cost per borrower, capital structure, portfolio at risk, total assets and age of MFIs are statistically significant in predicting financial sustainability of MFIs in Pakistan.

The findings of the study are consistent with the literature, the significant negative relationship of borrowers per staff member is in line with (Ganka, 2010).The significant and negative relationship of cost per borrower and financial sustainability is consistent with (Kinde, 2012; Ganka, 2010). The relationship of capital structure and financial sustainability is consistent with (Tehulu, 2013; Booth at al, 2001; Wald, 1999; Rajan and Zingales, 1995). The statistically significant relationship of portfolio at risk and financial sustainability is consistent with (Tehulu, 2013; Segun and Anjugam, 2013; Nymsogoro, 2010). Total assets of MFIs is in line with (Woldeys, 2012) and the age of MFIs is consistent with (Nadiya, 2011, Bogan et al, 2007; Cull et al, 2007).

On the basis of findings the following concluding remarks have been made,

- Microfinance institutions in Pakistan are not financially sustainable,
- Predictors like, borrowers per staff member, cost per borrower, capital structure, portfolio at risk, total assets and age of MFIs are statistically significant in influence financial sustainability.
- Breadth of outreach, depth of outreach and loan intensity are not statistically significant with financial sustainability.
- Microfinance institutions in Pakistan are not cost efficient in terms of cost per borrower, it is almost close to average loan size.

- Borrower per staff member negatively influence the financial sustainability of MFIs in Pakistan.

5.2. Recommendations

On the basis of findings, this study recommended certain points which are thought to be very pivotal for the development of microfinance institutions in Pakistan. The suggestions are as follow,

- Managing and monitoring small loans are very costly so the microfinance institutions should increase the size of loan to reduce the operational cost.
- Small size of loans have higher chances of default, because they are very small to initiate a productive activities, rather they are consume in nonproductive activities. So increase in the size of loan will possibly reduce the non-performing loans.
- The negative relationship of borrowers per staff member with financial sustainability shows the inefficiencies of MFIs in lending, monitoring and recovering loans, so microfinance institutions should make their management efficient, to make increase in clients productive for institution.
- Microfinance institutions should increase the total assets, to increase the size of loan and number of borrowers.
- Microfinance institutions should reduce the debt equity ratio and focus on equity financing.

5.3 Limitations and Future Research Directions

This study has considered the most common determents of financial sustainability of MFIs, from the research studies conducted around the world. So there is possibility that the overlooked determinants may also influence the financial sustainability of MFIs in Pakistan. Secondly, due to relatively new and small industry, number of observations of the study are limited to 120. Thus the small number of observations may affect the robustness and reliability of findings.

Future research may also consider the determinants like, geographical location, ownership, growth stages, credit risk and lending behavior. The future research should also examine the determinants of credit risk and lending behavior since these are important determinants of financial sustainability.

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