FINANCIAL SUSTAINABILITY AND MICROFINANCE INSTITUTIONS FROM AN EMERGING MARKET

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Abstract

The purpose of this paper is to estimate the determinants affecting Financial Sustainability (FS) of Micro Finance Institutions (MFIs) working in Pakistan. The determinants are based on financing charges, size of loans, the age of the firm, size of Microfinance Institute, and proportion of female borrowers. These variables discern the important contribution to the effective financial sustainability of Microfinance institutions working in Pakistan.

Data were collected from 25 Microfinance Institutions of their annual reports from 2008-2015. The multiple regression technique was used to measure financial sustainability with the given determinants.

The results of this study show that financing charges, outreach and the proportion of female borrowers significantly explain the financial sustainability of MFIs. These are crucial determinants for alleviating poverty in Pakistan and attaining sound financial sustainability and survivorship of MFIs.

This is one of the contributing studies in justifying various determinants affecting the financial sustainability in MFIs of Pakistan. This article is helpful for policymaker and management of MFIs to revitalize their focus to address the weaker parts of their capabilities and resources.

Keywords: Financial Sustainability, Microfinance Institutions, Pakistan

1. INTRODUCTION

Microfinance Institutes are equally important in Pakistan for mitigating poverty and bringing economic well-being in society. These institutions are working effectively to enable poor people to earn reasonably and try to overcome the level of poverty (Interim poverty reduction strategy paper, 2001). The purpose of MFIs is not only to cater the neediness in Pakistan but it is rather additionally more concerned with enhancing the status of female and mobilizing resources for convenient paying of wages (Chen, 1992 & Geetha, 2006). According to Microfinance Institutions Ordinance (2001), the main essence of microfinance is assisting the poor people, particularly female of society through advancing social well-being and equity in monetary rewards for growth and empowerment. The need of microfinance is overlooked by the incumbent commercial banks in terms of enhancing the value of the poor through microlending and augmenting thrifts for the overall well-being of society (Schreiner & Colom-bet, 2001). According to United Nations Development Program (UNDP) and World Bank (WB), mitigating and lessening the sufferings of the poor requires an organized monetary program that could uplift the livelihood of the people in terms of human capital, political and social consciousness (Perry & World Bank, 2006).

Microfinance Institutions' main objective is poverty alleviations by empowering individuals through effective sustainable reasonable livelihood (Waweru & Spraakman, 2012). This entails working for that financially vulnerable class of the society who could not afford to conveniently achieve the economic status defined by the world according to the level of poverty.

Financial sustainability of MFIs is usually catered through loans to the financially disadvantaged people with a view to generate sufficient income to overcome all the requisite expenses of livelihood and furthermore to generate

reasonably higher income than expenses to augment growth for their future (Ayayi & Sene, 2010). The world leading two examples of MFIs specifically in the Asian countries like Grameen Bank of Bangladesh and Unit "Desa" at Bank Rakyat of Indonesia comply with the given notion of alleviating poverty through microfinancing (Microfinance Sector, 2014). Since the economies of scales are vital for effective financial sustainability of MFIs, therefore these two organizations are not able to survive without the assistance of donors and governments for their subsidies (Morduch, 1999 & Morduch, 2010).

The role of microfinance institutions is crucial for alleviating poverty in Pakistan where around 24.3% population are living below the poverty level according to Economic Survey (2016). It is important to understand and evaluate related determinants affecting on the financial sustainability of MFIs working in Pakistan to effectively overcome the menace of poverty. This study is highly valuable for policymaker and management of microfinance institutes to formulate better policies to optimize resources for more striking results.

1.1. Background of development of MFIs in Pakistan

In order to provide microcredit and financial assistance to the financially disadvantaged population of Pakistan, various efforts have been initiated in the form of developing institutions for alleviating poverty through effective outreach with financial feasibility and sustainability. The development of the microfinance industry is relatively new in terms of operations and efficiency. Below are some of the highlights of microfinance scenario in Pakistan according to Pakistan Microfinance Review (2016).

Table 1. Highlights of microfinance in Pakistan

Year	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*
Active borrowers (in millions)	1.4	1.6	1.7	2. 0	2.4	2.8	3.6
Gross loan portfolio (PKR billions)	16.8	20.2	24.8	33.1	46.6	61.1	90.2
Active women borrowers (in millions)	0.6	0.8	0.9	1.3	1.4	1.6	2.0
Branches	1,221	1,405	1,550	1,460	1,606	1,747	2,754
Total staff	11,557	12,005	14,202	14,648	17,456	19,881	25,560
Total assets (PKR billions)	30.4	35.8	48.6	61.9	81.5	100.7	145.1
Deposits (PKR billions)	7.2	10.1	13.9	20.8	32.9	42.7	60.0
Total debt (PKR billions)	23.2	27.5	38.3	24.9	26.9	31.1	44.5
Total revenue (PKR billions)	6.4	7.5	10.1	12.5	17.3	24.3	32.8
OSS (percentage)	104.6	99.7	108.4	109.5	118.1	120.6	124.1
FSS (percentage)	86.8	81.7	100.5	107.5	116.5	119.6	121.0
Portfolio at risk > 30 (percentage)	3.4	4.1	3.2	3.7	2.5	1.1	1.5

Source: collected from Pakistan Microfinance review annual reports (2009-16)

The chronological hierarchy is given below for its development over the period of time until to date.

1970s: Agricultural Development Bank of Pakistan (ADBP), currently known as Zari Tarakiati Bank Limited (ZTBL) has created by the government of Pakistan to facilitate mainly the farmers for microcredits. The purpose is to enhance the agricultural productivity and production thereby enhancing the socio-economic uplift of the small farmers in rural areas.

1980s: Two institutions for the first time in Pakistan have started their service for alleviating poverty through effective outreach:

1. Agha Khan Rural Support Program, later on, developed the First Microfinance Bank (FMFB) as well and
2. Orangi Pilot Project (OPP).

The former institution is mainly focused on to serve the people of Northern Areas and Chitral while the latter was focused on the urban poor population of Karachi.

1998: Pakistan Microfinance Network (PMN) has been formally created with the main aim to assist the MFIs working in Pakistan. This institute has developed a fund with the assistance of World Bank in 2006 known as Pakistan Poverty Alleviation Fund (PPAF) whose main focus is lending microloans to MFIs. Microfinance Network is striving to facilitate the incumbent stakeholders of MFIs for ameliorating the hurdles and challenges. According to Pakistan Microfinance Network (2014), this industry has surpassed a total asset of PKR 100 billion. The projected growth is estimated to be around 3 times by 2020. The statistics of active borrowers are: 3.14, 4.20, 5.04, 6.30, 7.87, and 9.84 million for 2014 through 2019 respectively. The incumbent statistics highlight the incumbent as well as the projected growth in the given industry.

Similarly, with the assistance of ADB and DFID (10 million pounds), microcredit guarantee facility has been initiated to enhance the outreach for better utilization of resources to facilitate the financially disadvantaged populous of Pakistan. Accordingly, the PPP government has initiated Benazir Income Support Program (BISP) with an initial capital of PKR 34 billion to effectively outreach the poor female population of Pakistan. Currently, the volume of capital for this fund is around PKR 120 billion (according to the fiscal year of 2015-16).

2000: The first ever formal Microfinance Bank has launched known as Khushhali Bank (KB) with a loan of USD 150 million from ADB with the main motive of outreach and overcoming poverty.

2001: Pakistan has initiated with Microfinance Ordinance with separate prudential regulations for microfinance activities which have deployed in the shape of three models:

1. Microfinance Banks (MFB);
2. Microfinance Institutions (MFIs);
3. Rural Support Programs (RSPs).

The main motive of all these organizations is supporting the financially vulnerable people through short-term group loans. There are few institutes which provide long-term loans to individuals relative to averagely sized market loans, for instance, Tameer Bank (MFI) and First Microfinance Bank.

Similarly RSP's main focus area is health, infrastructural development, education, insurance and mobilization of savings especially in rural areas.

Besides the given formal MFIs, the government and commercial entities are working for the same cause. The government has initiated various programs for microcredit and savings like subsidized credit through Government Rozgar Scheme through National Bank of Pakistan window; Agricultural development through small farmers by enhancing credit facility extended through ZTBL platform. Likewise, there are other governments' institutes working in the given framework are First Women's Bank; Bank of Khyber; Small & Medium Enterprise (SME); Pak Post Saving Banks; National Saving Schemes and Zakat offices for culminating to alleviate poverty and supplement the socio-economic uplift of the society.

Similarly, ORIX leasing being a commercial entity is doing microcredit to enable the less privileged for mobilizing savings.

The Microfinance Institute strives to cater to the optimal utilization of resources for getting the due results through defining various determinants for effectively coping up for getting the efficient survivorship and sustainability. Female borrowers are highly encouraged which is evident from the fact that around 58% of the active borrowers are female who are catering entrepreneurial and other activities to make a better livelihood (PMN 2015).

There are dozens of problems associated with microfinance institutes working in Pakistan which are: inflated lending costs, loan defaulting, liquidity risk, reputational and operational risk, law and order situation. There are many studies to pinpoint the welfare and alleviating poverty through MFIs (MFN Risk assessment, 2015) but actually, very little efforts are being made so far for determining the determinants of financial sustainability for MFIs. The conceptual mapping of this study is to look from the institutional perspective and define the determinants having an effective role in defining the financial sustainability of any MFI working in Pakistan.

The objective of this article is to determine the various determinants and factors affecting the financial sustainability of 25 MFIs working in Pakistan from 2008-15 (consecutive 8 years). The leading determinants for determining the financial sustainability of MFIs are as following:

1. Financing charges/costs;
2. The breadth of outreach;
3. Age of the firms;
4. Size of the firms;
5. Proportion of female borrowers.

This research contributes to the incumbent literature on financial sustainability of MFIs working in Pakistan. The findings and results of this paper are vital for the MFIs and the State Bank of Pakistan for effective regulations and promulgation of effective measures.

2. LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

2.1. Concepts of microfinance and financial sustainability

It is imperative to change society for betterment in terms of having access to better livelihood and development (Peet & Hartwick, 2009). The essence is to remove the obstacles for overcoming the menace of poverty. These days, almost 74% of the world's total population has no access to the formal banking system. The emergence of microfinance institutions effectively since the 1970s has been playing its role for equipping the poor and financially disadvantaged people for generating employment by their own through small entrepreneurial activities and enhances their income. This would pave towards sustainable development and prosperity in society (Yunus, 1998). The practical element of microfinance is attaining the phenomena of impact, outreach and effective sustainability (Fischer and Sriram, 2002). There are two contradicting approached of microfinance. One is the welfarists' view and another one is institutionalist's view. The welfarists focuses on enhancing the welfare of the poor through effective outreach and offering interest at subsidized rates while the institutionalist rely on developing financial organizations to assist the poor and low income for effectively attaining the financial needs (Woller et al., 1999). The role of MFIs is to ensure the welfare of the low income and the poor by sanctioning reasonable credits and mobilizing savings for more growth and development. Till 2010, more than 200 million people were facilitated across the globe through MFIs (Maes & Reed, 2011).

The incumbent research paper entails the representation of financial sustainability by taking the aggregate of two variables i.e. OSS (Operational Self Sufficiency) and ROA (Return on Assets) while Independent variables are taking which influence MFIs' sustainability in Pakistan.

2.2. ROA (Return on Assets)

The Return on Assets is calculated for determining the firms' overall net income relative to total assets that depicts the overall utilization of resources. ROA is one of the effective measurement determinants taking as Dependent variables that would be reflected through the overall performance of MFIs determinants for effective utilization of assets which enhances survivorship and sustainability.

2.3. Operational self-sufficiency (OSS)

OSS determines the level of adjusted operating Income that would be enough to cover the aggregate costs i.e. monetary cost, credit misfortune, working cost, besides taking stipends, gifts and endowments. OSS is operationally feasible when it caters 100% but monetarily optimal when the OSS achieves 110% level (Bogan et al., 2007). It is measured by taking the adjusted operating income in the numerator and dividing it by adjusted operating expenses.

The operationally sustainability and supportability attracts the capability of MFIs to comply with operational expenses (Meyer, 2002). The effective administration is required to enhance the operational efficiency of MFIs and add monetary supportability and sustainability (Ayayi & Sene, 2010). The operational efficiency is closely related to facilitate the poor incumbents for providing more monetary facilitation in the shape of microfinancing that would enhance the operational productivity (Battilana & Dorado, 2010).

2.4. Determinants/factors affecting financial sustainability

There are various factors which affect the financial sustainability of MFIs. This study caters the most

crucial 6 variables that affect the Financial Sustainability of MFIs. The variables are being defined in the later section of this paper.

Some of the important variables in literature affecting the financial sustainability are as follow: size and age of firms, status, lending model, type of the product, cost per debtor, number of debtors, portfolio's yield, profitability of staff, cost of financing, management efficiency, compensation of staff, financing portfolio, efficiency of work, volume of the capital resources and macroeconomic factors-interest rate, inflation, and lending rate (Woller & Schreiner, 2001; Hartarska & Nadolnyak, 2010; Iezza, 2010; Ayayi & Sene, 2010; Nyamsogoro, 2010; Bogan, 2012; and Kinde, 2012).

Therefore, MFIs are supposed to be considered as a trade-off between the social benefit and monetary costs. The parameters of gauging the social benefits are done through net female debtors, credit measures and overall country's customers (Balkenhol, 2007).

2.5. Development of hypotheses

2.5.1. Financing charges/costs

All non-deposit taking MFIs are taken in this study. There are three MFI's sources of funding which are: debts, donors and clients. Information asymmetry normally raises the cost of financing in countries and institution where the regulations are lenient or the market is not fully established. There it eventually makes expensive to raise capital for firms and hamper growth. The MFIs' financing is different from that of the conventional banking system on two grounds: Firstly, MFIs don't rely upon the deposits from the third party, and secondly, the financing is given by noncommercial lenders besides commercial ones to MFIs (Fehr & Hishigsuren, 2006).

Noncommercial debts/loans are intended for achieving higher growth and eradication of poverty from a society which is normally provided by governments, developmental agencies, cooperatives and other Microfinance institutions while commercial loans are provided by local banks, global banks and commercial funds. According to study conducted by Hermes and Lensink (2007), commercial funds are significantly important beside other sources of funding.

The Nobel cause of charity and welfare has augmented the interest of many commercial investors and multinational banks for investing in MFIs (Matthäus-Maier & von Pischke, 2006).

Since capital is scarce resource especially in developing countries where investment opportunities of getting higher returns are difficult due to higher volatility; as an outcome, MFIs are largely found to be commercially enticing investment potentials (De Mel et al., 2008).

The longer the maturity of loans coupled with a higher probability of credit risk which eventually enhances the financing costs for MFIs in Pakistan (Addo & Twum, 2013).

According to the study conducted by Rubana (2010), regarding capital structure where the costs related to default, liability and information asymmetry dictate the providence of debts by financial organizations. The MFIs has focused on other sources of funding as such deposits from saving class, equities redeemed and debts from other funding bodies. According to Banking Bulletin (2006-2007), almost 70% of funds are acquired through commercials loans and deposits. The providence of loans is effectively estimated by their requisite returns on it as well as the opportunity cost of sanctioning the debts.

There is huge difference between commercial banks and MFIs with respect to default on loans and information's cost. The stance of this paper is that MFIs which rely more on client/shareholders' funds are more effective in achieving financial sustainability. Therefore, the first hypothesis would be as follow:

H_1: The relationship between financing charges/costs is negatively related to the financial sustainability of MFIs.

2.5.2. Breadth of outreach

Since the transactional cost of managing the small debts are high contrary to larger debts, therefore, a tradeoff between servicing the poor with broader accessibility i.e. outreach and financial viability is essential (Mersland & Strom, 2010). Based on rigorous research of 8 years (2001-2008) comprising 379 MFIs in 74 various countries, it has been evident that as the size of the average loan enhances with profitability, the cost were decreasing. This contemplates that MFIs intending to have higher financial rewards are negatively affecting the outreach which contradicts the MFIs notion of alleviating poverty (Nyamsogoro, 2010).

H_2: Breadth of outreach (BO) is positively related with Financial Sustainability of MFIs

2.5.3. Size of MFIs

The size is determined by taking the natural log of total assets. Various related studies (Tehulu, 2013; Bogan, 2008; Mersland & Storm 2007; Cull et al., 2008) examined and determined positive association between size of MFIs and financial sustainability (FS). Likewise, another study found and examined a significantly positive association between size of MFIs and FS (Nyamsogoro, 2010; Burki, 2017). One of the major advantages of size is related to the financial performance which implies economies of scale. However, Cull et al. (2007) determined that mostly big MFIs are having low outreach as they are enticed by more profit spreads. Therefore, the focus is mostly the well-off clients instead of the poor ones. The size of MFIs is linked to more financial sustainability for conveniently approaching a large number of unattended clients. Therefore, it can be safely developed to hypothesize as:

H_3: Size of firm is positively associated with Financial Sustainability (FS) of MFIs.

2.5.4. Age of MFIs

The age determines the total duration of MFIs working since inception. It is considered to be one of the crucial variables in terms of evaluating efficiency and growth of MFIs for outreach (Cull, 2007 & Gonzalez, 2007). According to a study of Robinson (2001), the institution having at-least six years of age is having 100% financial sustainability. However, according to Keyeboah-Coleman & Osei (2008), the age of MFIs is not critical to determine the level of outreach. Based on it, it can be hypothesized as:

H_4: Age of firm is positively associated with Financial Sustainability (FS) of MFIs.

2.5.5. Female borrowers

According to the study conducted by Hartarska et al. (2006) for the performance of MFIs working in central Asia and Eastern European states during 1999 and 2004, they estimated the cost function based on three models: the first one is relying on utilizing the number of debts as a resulting measure; the second one is utilizing the volume of loans as a resulting measures. The concluding result shows that subsidies enhance the cost of MFIs.

The incumbent study based on cost function summarized that provision on group loans and debts to female borrowers lower the cost of MFIs for the reason of having lower default. Since majority portion of the society comprises of female and sanctioning loans to them are naturally felt to be a major cause of alleviating poverty in society coupled with lower default riskiness and hence lower cost to MFIs. Being less accessibility to raise capital, the social return to the capital on average is greater than men.

Contrary to that there are some research studies which estimated that provision of grouped loans and loans to female borrowers are relatively more costly. The results of their studies concluded that autonomous MFIs do not focus on to sanctioning loans to female borrowers but instead put their requisite funds which give them higher return with high payback guarantee. Hence fewer loans are sanctioned to female borrowers (Mersland & Strom, 2010; Haulouani & Boujelbeni, 2013).

Therefore, our study concludes that MFIs financial sustainability is highly associated to proportion of female borrowers. Thus the requisite hypothesis is:

H_5: the financial sustainability of MFIs is positively related to the proportion of female borrowers.

3. RESEARCH METHOD

In order to determine the effect of independent variables (Financing Charges, Loan Size/outreach, Age of MFIs, Size of the organization, Proportion of female borrowers) on Dependent variable (financial sustainability representing through Operational Self Sufficiency-OSS and Return on Assets-ROA), this paper utilizes the quantitative method. The data are taken from the annual reports of the requisite 25 MFIs working in Pakistan for 8 consecutive years (2008-2015) for estimating the financial sustainability based on the given crucial determinants for effective contribution in the literature and valuable significant contribution as a point of reference for policy makers, management and regulators in Pakistan. The panel data are utilized for conducting research to determine and examine the FS of MFIs. This is one of the primitive studies from the perspective of looking at the various determinants' efficacy in overall financial sustainability of MFIs working in Pakistan. The research is summarized using the descriptive statistics and analysis, correlation coefficients and multiple regression analysis for determining and understanding the effect of independent variables on financial sustainability. The given model determines the overall relationship between the independent variables and financial sustainability of MFIs of Pakistan.

$$FS = \beta_0 + \beta_1 FC + \beta_2 LS + \beta_3 FS + \beta_4 FB + \beta_5 Age + \varepsilon \quad (1)$$

Where

FS: Financial Sustainability (FS is represented by OSS and ROA);

OSS: Operational Self Sufficiency;

ROA: Return on Assets;

Financial Charges: FC;

LS: Loan Size/Outreach;

SZ: Size of the organization;

FB: Proportion of female borrowers;

Age: Number of years of existence or operations of MFIs.

Table 2. Operationalization of variables

Variables	*Operationalization*
Dependent variable:	
-Financial Sustainability (FS)	Financial Sustainability is determined through Operational Self Sufficiency (OSS) and Return On Assets (ROA), where: OSS= Operating Income/Total Operating Expenses; ROA=Net Income/Total Assets
Independent variables:	
-Size of the Organization	SZ=Natural Log of Total Asset
-Financing charges	FC=Financing Cost/average debt accrued (including interest paid on saving and borrowed capital);
-Loan Size	Loan portfolio/credit clients;
-The proportion of female borrowers	FB=Female borrowers/total borrowers
-Age	Number of years of existence or operations of MFIs

4. RESULTS/FINDINGS AND DISCUSSIONS

This part presents the results obtained of the given variables explaining the financial sustainability of MFIs working in Pakistan for 2008-2015. The incumbent section comprises the descriptive as well as regression analysis of the results which are as follows:

Table 3. Descriptive statistics

	Mean	*SD*	*Min*	*Max*	*Median*
Dependent variables					
Operational Self Sufficiency	97.95	31.023	21.098	175.876	88.897
Return on Assets	0.2576	0.0651	-0.2854	5.765	0.3476
Explanatory variables					
Size of the Organization	12.05	2.435	7.56	17.98	12.75
Financing Charges	4.55	1.09	0.487	25.69	2.65
Loan Size	11.256	7.501	254	3891	3541
Proportion of Female Borrowers	0.511	0.17	6.39	0.85	0.238
Age	14.02	8.05	1.05	35.06	16.25

The incumbent descriptive results show that ROA is around 26%. This means how much MFIs working in Pakistan is utilizing their requisite assets efficiently. This may be linked to higher discount rates granted on the given capital of loan by MFIs. This stance is also validated by Waweru & Spraakman (2012). The female borrowers on average are around 51% which depicts that female are mostly relying on MFIs for small loans.

Table 4. Correlation statistics and analysis (OSS)

	OSS	*FC*	*LS*	*Age*	*FS*	*FB*
OSS	1.0000					
FC	-0.4350***	1.0000				
LS	0.2015**	0.0183	1.0000			
Age	0.1920*	-0.1420	0.4230***	1.0000		
FS	0.0703	0.0062	0.0303	0.0879	1.0000	
FB	0.5620***	-0.1601	0.1301	-0.1898**	-0.2875**	1.0000

*Note: Level of significance *, **, *** at 10%, 5% and 1% respectively*

Table 5. Correlation statistics and analysis (ROA)

	ROA	*FC*	*LS*	*Age*	*FS*	*FB*
ROA	1.0000					
FC	0.2703**	1.0000				
LS	0.0901	0.0179	1.0000			
Age	0.2220**	-0.1320	0.4201	1.0000		
FS	-0.0401	0.0055	0.0291	0.0898	1.0000	
FB	0.3705***	-0.1605	0.1278	-0.1907**	-0.2825**	1.0000

*Note: Level of significance *, **, *** at 10%, 5% and 1% respectively*

The correlation coefficients determined in Tables 4 and 5 are showing small correlation among the incumbent explanatory variables which are less than 0.7- a benchmarked one that suggests that there is no issue of multicollinearity (Tabachnick & Fidell, 1996).

Table 6. Regression statistics and analysis

Dependent variables	*OSS*		*ROA*	
	Coefficient	*p*	*Coefficient*	*p*
Constant	4.5753***	0.001	2.1985***	0.001
Financing Charges	-1.0755**	0.031	-0.0675***	0.001
Loan Size	2.1571***	0.001	2.0001**	0.045
Age	-0.0185	0.245	0.3105***	0.001
Firm Size	0.1405	0.121	-0.9825**	0.0132
Prop. of Female Borrower	4.0725***	0.001	2.7020***	0.001
R-Square	79.95		87.50	
F-Value	81.75		76.55	

Table 6 is presenting the regression analysis of the given model that indicates the significance of independent variables' power. The given R-Square of the incumbent two models of OSS and ROA are 79.95% and 87.50% respectively while the requisite F-Values of OSS and ROA are 81.75 and 76.55 respectively which shows higher significance. The incumbent regression results show that OSS and ROA are best explained by Financing Charges, Breadth of Outreach and proportion of female borrowers.

Our first hypothesis is supported by our results that are evident from the negative relationship of financing charges and OSS. This means that higher financing charges would retard the financial sustainability of MFIs. The outcomes are further augmented by the correlation results between the given two variables that depict the significant correlation between financing charges and financial sustainability's proxies of OSS and ROA.

Our findings are supported by the incumbent literature which indicates that high OSS ratios cater more profitability for MFIs. The association of lower financing charges and higher financial sustainability has been achieved by Rubana (2010), and Addo & Twum (2013).

Our second hypothesis is supported by having significant positive association and relationship between the breadth of outreach and financial sustainability. Small loans are relatively more costly than larger ones to administer. Our findings are in line with Kinde (2012) i.e. MFIs prefer to collect the requisite repayments from groups. This enhances financial sustainability with lower transactional costs.

The third hypothesis entails no significant relationship between OSS and age of the MFIs while our results indicate a positive association between the age of MFIs and ROA. This result suggests that MFIs with more age may perform better than those whose age is relatively less.

Our research has catered no significant relationship between the size of the firm and financial sustainability of MFIs. Thus it is evident that our fourth hypothesis is not supported.

The fifth hypothesis is supported by having a significant positive association between the proportion of female borrowers and Operational Self Sufficiency. Similarly from Tables 4 and 5 that indicates a significantly positive correlation between the requisite variables of female borrowers and financial sustainability proxy through Operational Self Sufficiency and Return on Assets. This would mean that MFIs having more female borrowers incurring lower financing as well as administrative expenses and there are higher chances of attaining the financial sustainability of MFIs.

Thus in conclusion, this research indicates the most important high impact determinants that explain and be a source of achieving higher financial sustainability of MFIs are: the proportion of female borrowers, financing charges, and size of debts.

5. CONCLUSIONS

The purpose of this study is to determine the determinants impacting the financial sustainability of MFIs working in Pakistan for a sample period of 2008-2015. This research implies that financing charges, size of the debts and proportion of female borrowers are significantly related and explaining the financial sustainability of MFIs working in Pakistan. The mean results of ROA are around 26% and the proportion of female borrowers is around 51% which show that MFIs working in Pakistan have greater prospects given the female being provided with more focus for easy and convenient loans. In this regard, MFIs working in Pakistan should have to rely on reducing the financing charges more to entice and encourage more female borrowers and to attain the best optimal survivorship and financial sustainability of MFIs. This will be a leading step for reducing poverty especially from rural areas of Pakistan. The size of the loan is another positively significant variable explaining variation in financial sustainability. The financial sustainability of MFIs is highly depended on loan size. Therefore, the loan size implies a positive implication on OSS and ROA. This study is specifically crucial for management of MFIs as well as the government stakeholders to give more attention of the given determinants for more dynamic and strong MFIs system that could be capable to effectively bring financial sustainability and survivorship.

The outcomes of this paper should be interpreted keeping in view the following limitations: First, this study considers only MFIs working in Pakistan, therefore, generalizability would not be optimal at this stage as the other developing countries may be variant results given the same variables for research. Secondly, this research holistically caters the results of collectively 25 MFIs working in Pakistan irrespective of segregating them on the basis of types such as Microfinance Institution, Microfinance Bank, and Rural Support Program. Therefore, the findings may be expected different than the given ones if it is determined on the basis of its various types. Thirdly, this data did not incorporate separately the management efficiency and depth of outreach as individual variables; therefore, incorporating these variables may cater to different results than the given ones by future researchers.

This research is limited only to MFIs working in Pakistan. Future researchers may extend it by incorporating more south Asian countries by taking the same determinants for estimating and analyzing the cross-country results.

REFERENCES

1. Addo, C. K., & Twum, S. B. (2013). Sustainability of microfinance institutions in developing countries through sound credit risk management: evidence from business experience, purpose of loan, loan term and provide maximization motive. *Global Journal of Finance and Banking Issues*, *7(7),* 9-18.
2. Ayayi, A. G., & Sene, M. (2010). What drives microfinance institution financial sustainability? *The Journal of Developing Areas*, *44(1),* 303-324.
3. Balkenhol, B. (2007). *Microfinance and public policy outreach, performance and efficiency.* London: Palgrave Macmillan.
4. Battilana, J., & Dorado, S. (2010). Building sustainable hybrid organizations: The case of commercial microfinance organizations. *Academy of Management Journal, 53(6),* 1419-1440. https://doi.org/10.5465/amj.2010.57318391
5. Bogan, V. (2012). Capital structure and sustainability: An empirical study of microfinance institutions. *Review of Economics and Statistics, 94(4),* 1045-1058. https://doi.org/10.1162/REST_a_00223
6. Bogan, V., Johnson, W., & Mhlangay, N. (2007). *Does capital structure affect the financial sustainability of microfinance institutions?* Retrieved from: https://pdfs.semanticscholar.org/67d8/3ce37b962ed cbfa4046 9e435c8093f0f90c3.pdf
7. Bogan V. (2008). *Microfinance institutions: Does capital structure matter*. Retrieved from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1144762.
8. Bogan V. (2009). *Capital structure and sustainability: An empirical study of microfinance institutions*. Retrieved from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.565.3779&rep=rep1&type=pdf
9. Burki, A. K. (2017). Financial crisis and determinants of capital structure of investment banking sector in Pakistan. *Journal of Administrative and Business Studies 3(3),* 153-160.
10. Cull, R., Demirgùç-Kunt, A., & Morduch, J. (2007). Financial performance and outreach: a global analysis of leading microbanks. *Economic Journal*, 117(1), 107-133. https://doi.org/10.1111/j.1468-0297.2007.02017.x
11. De Mel, S., McKenzie, D., & Woodruff, C. M. (2008). *Who are the microenterprise owners? Evidence from Sri Lanka on Tokman v. de Soto* (World Bank Policy Research Working Paper No. 4635).
12. Economic Survey 2015-2016 (2016). *People living below poverty line plunge to 24.3pc.* Retrieved from: http://www.ruralfinanceandinvestment.org/node/323
13. Fischer, T., & Sriram, M. S. (2002). *Beyond microcredit, putting development back into microfinance.* New Delhi: Vistaar Publications.
14. Geetha N., & Meyers R .L. (2006). Rural finance today: Advances and challenges. *Microfinance Institutions Ordinance, 2001*. Retrieved from: http://www.ruralfinanceandinvestment.org/node/323
15. Gonzalez, A. (2007). Efficiency drivers of microfinance institutions (MFIs). The case of operating costs. *Micro-Banking Bulletin, Microfinance Information Exchange (MIX), 15,* 37-42.
16. Hartarska, V. (2005). Government and performance of microfinance institutions in Central and Eastern Europe. *World Development, 33(10)*, 1627-1643. https://doi.org/10.1016/j.worlddev.2005.06.001
17. Hartarska, V., Caudill, S. B., & Gropper, D. M. (2006). *The cost structure of microfinance institutions in Eastern Europe and Central Asia* (William Davidson Institute Working PaperNo. 809). Retrieved from: http://ssrn.com/abstract=905911

18. Hartarska, V., Shen, X., & Mersland, R. (2013). Scale economies and input price elasticities in microfinance institutions. *Journal of Banking and Finance 37(1),* 118-131. https://doi.org/10.1016/j.jbankfin.2012.08.004
19. Kinde, B. A. (2012). Financial sustainability of microfinance institutions (MFIs) in Ethiopia. *European Journal of Business and Management*, *4(15),* 1-11.
20. Kyereboah-Coleman, A., & Osei, K. A. (2008). Outreach and profitability of microfinance institutions: the role of governance. *Journal of Economic Studies, 35(3),* 236-248. https://doi.org/10.1108/01443580810887797
21. Iezza, P., & La Cour, L. (2010). *Financial sustainability of microfinance*. Copenhagen: Copenhagen Business School.
22. Mersland, R., & Strøm, R. Ø. (2010). Microfinance mission drift? *World Development, 38(1),* 28-36. https://doi.org/10.1016/j.worlddev.2009.05.006
23. Microfinance Sector (2014). *JCR-VIS Credit Rating Company Limited.* Retrieved from: http://jcrvis.com.pk/kc-sect.aspx
24. Morduch, J. (1999). The microfinance promise. *Journal of Economic Literature, 37(4)*, 1569-1614. https://doi.org/10.1257/jel.37.4.1569
25. Morduch, J. (2000). The microfinance schism. *World Development, 28(4),* 617-629. https://doi.org/10.1016/S0305-750X(99)00151-5
26. Maes, J. P. & Reed, L. R. (2011). *State of the microcredit summit campaign report 2012*. Retrieved from: http://www.microcreditsummit.org/resource/46/state-of-the-microcredit-summit.html
27. Mersland, R., & Strom, O. (2010). Microfinance mission drift? *World Development*, *38(1),* 28-36. https://doi.org/10.1016/j.worlddev.2009.05.006
28. Nyamsogoro, G. D. (2010). *Financial Sustainability of rural microfinance institutions in Tanzania* (Ph.D. thesis, University of Greenwich, Australia).
29. Policy Wing, Finance Division, Poverty Reduction Cell, Planning Commission & Government of Pakistan (November, 2001). *Interim poverty reduction strategy paper (I-PRSP).* Retrieved from: http://siteresources.worldbank.org/INTPRS1/Resources/Country-Papers-and-JSAs/pakistan_iprsp_.pdf
30. Pakistan Microfinance Network (2016). *Pakistan microfinance review.* Retrieved from: http://www.microfinanceconnect.info/assets/articles/6fd98af54d11c055afb11add1c9bd176.pdf
31. Perry, G., & World Bank. (2006). *Poverty reduction and growth: Virtuous and vicious circles. World Bank Latin American and Caribbean studies.* Washington, DC: World Bank. Retrieved from: http://www.jcrvis.com.pk /docs/MFB201404.pdf
32. Peet, R., & Hartwick, E. (2009). *Theories of development: Contentions, arguments, alternatives.* New York, NY: The Gulford Press.
33. Rubana, M. (2010). On the provision of microloans: Microfinance institutions and traditional banks. *Journal of Economic Development*, 35(1), 59-73.
34. Tabachnick, B. G. & Fidell, L. S. (1996) *Using multivariate statistics* (3rd ed.). New York: Harper Collins.
35. Tehulu, T. A. (2013). Determinants of financial sustainability of microfinance in East Africa. *European Journal of Business and Management, 5(17),* 152-158.
36. Waweru, N. M. & Spraakman, G. (2012). The use of performance measures: case studies from the microfinance sector in Kenya. *Qualitative Research in Accounting and Management*, *9(1),* 44-65. https://doi.org/10.1108/11766091211216105
37. Woller, G. M., Dunford, C., & Woodworth, W. (1999). Where to microfinance. *International Journal of Economic Development, 1(1),* 29-64
38. Yunus, M. (1998). *Banker to the poor: The Autobiography of Muhammad Yunus.* London: Aurum Press.