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Do Efficiency & Outreach Factors Predict Financial Sustainability: Evidence from Microfinance Institutions of Pakistan

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Abstract

This study has determined indicators of financial sustainability of microfinance institutions in Pakistan. This study has followed total population purposive sampling technique. The data from 2010 to 2014 was extracted from Pakistan Microfinance Review. Descriptive analysis showed that microfinance institutions have high operating costs, low yield on gross loan portfolio and have large scale outreach to clients. The econometric results of the study showed that yield on gross loan portfolio, portfolio at risk and average disbursed loan size are significant predictor of financial sustainability of microfinance institutions in Pakistan. Operating expense ratio, staff productivity, cost per borrower and breadth of outreach are not significant determinants of financial sustainability of microfinance institutions in Pakistan.

Key Words: *Microfinance, Rural Support Programs, NGO-microfinance, Outreach Factors, Efficiency Factors, and Financial Sustainability.*

Introduction

Poverty has become main concern in different societies around the globe. Income differentials have worsened the problem. About 3 billion people are living on less than $2.5/day (Ravallion, 2018). Poverty reduction and to uplift marginalized segments of the society has become core objective in the economic policies after establishment of Grameen bank in Bangladesh and ACCION international in Latin America (Almas & Mukhtar, 2015). Poverty is a major issue since the evolution of Pakistan and is disturbing the economy (Tahir, Perveen, Ismail, & Sabir, 2014). Poverty in Pakistan is being reduced in the last decade and it has fallen from 64.3% in 2002 to 29.05% in 2014 (Abbas, Hassan, Asif, & Zainab, 2018) and has the lowest human development index 0.550 in South Asia. Different solutions have been proposed to reduce poverty e.g. investment in infrastructure building to enhance access to basic needs, strict control on population (King & Mason, 2001), debt relief from financial institutions to developing countries (Duncan & Treanor, 2017; Gupta, Clements, Guin-Siu, & Leruth, 2002) and income grants.

The idea of microfinance became popular after 1970 by providing micro loans to marginalized segments of the community. Microfinance is considered a tool to create social equality through income distribution, by enhancing skills and starting entrepreneurial activities in the society (Cull, Demirgüç-Kunt, & Morduch, 2018; Sultana, Jamal, & Najaf, 2017). The level of poverty (intensity) requires to adopt efficient methods of financing e.g. one's access to financial capital and to enhance entrepreneurial capability of the poor in the community. By improving access to financial capital, the marginalized part of the society will be able to start entrepreneurial activities which will help to uplift their standard of living (Demirgüç-Kunt & Levine, 2004; Pearce, Davis, Onumah, & Butterworth, 2004).

Microfinance as a strategy has been used to support and provide financial services in recent years in Pakistan. The establishment of Agricultural Development Bank of Pakistan (ADBP), Agha "Khan rural support program", "Oranagi pilot project" Pakistan microfinance network, "Pakistan poverty alleviation fund" and "Akhuwat" are few examples of microfinance institutions (MFIs) established under microfinance strategy in Pakistan (Rauf & Mahmood, 2009). Microfinance sector is subdivided into microfinance banks, rural support programs (RSP) and NGO based MFIs. These MFIs are working on financial donations and subsidies that arises the problem of financial sustainability. Lack of financial sustainability is a threat for the existence and survival of microfinance institutions. Literature has identified several key factors that may impact and influence the sustainability of these institutions (Christen, Rhyne, & Vogel, 1995; Christen & Rosenberg, 2000; Woller, 2002). These factors are categorized into efficiency factors and outreach factors. These factors are context dependent and may vary in different economies (Christen et al., 1995; Cull et al., 2018). How these key factors influence or impact on sustainability of MFIs are not been studied in Pakistan? This research study is aimed to understand and identify those factors that influence the sustainability of MFIs in Pakistan.

Microfinance

Microfinance means to facilitate, support and provide financial capital, services and aids to uplift marginalized segments of the society (Chakraborty, 2018; Otero, 1999). Financial services include credits, insurance and savings etc. (Ledgerwood, 1999). Schreiner & Colombet (2001, p. 339) stated that financial services and support means poor people's access to capital. Generally, MFI provide financial capital and support to start entrepreneurial activity to improve standard of living of people. These institutions are developed to support and generate economic development/activity to benefit poor segment of the society and to uplift their income level. Ledgerwood (1999) described the role of MFIs as to generate employment opportunities and poverty reduction through entrepreneurial activities, financially empower individuals and support the development of new venture. In short, reduction of poverty is the basic objective of microfinance institutions which is the most significant development objective. However, this objective can only be achieved when MFIs are financially sustainable and strong. Therefore, it is necessary that MFIs are financially sustainable (Hollis & Sweetman, 1998) because it would be difficult for financially unsustainable MFI to help people in future (Schreiner, 2000). It is also argued that it is better to have no MFI instead of unsustainable one (Nyamsogoro, 2010).

Financial Sustainability

Sustainability means permanence, it also means capability of an institution to repeat its performance over time (Wry & Zhao, 2018). Sustainability has a number of dimensions but this research study has only considered financial sustainability of MFIs. It is perhaps the most important facet of microfinance sustainability. It refers to the capability of MFIs to generate adequate income to meet its operations cost (Conroy, Taylor, & Thapa, 1995; Khanam, Parvin, Mohiuddin, Hoque, & Su, 2018). According to Meyer

(2002) financial sustainability means microfinance institutions are running its operations without external aid. All these definitions of financial sustainability emphasize to increase the capability of MFIS to generate profit from its operations. Financial sustainability is divided into "financial sufficiency" and "operational sustainability". Operational sustainability refers to the ability of MFIs to recover its operational expenses and cost from its operations (loans distributed) and financial sufficiency means it has also build capital on its income (Dunford, 2003; Jordão & Almeida, 2017). Microfinance institution cannot be considered financially stable if it is not able to recover its expenses (Prakash & Malhotra, 2017). All these definitions propose that MFIs cannot be considered financially sustainable if it has poor financial performance. The financial sustainability or self-sufficiency is determined as given below.

$$\text{Financial Self-Sufficiency (FSS)} = \frac{\text{Total Financial Revenue}}{\text{(Financial Expense + Operating Expense + Loan Loss Provision +Expense Adjustment)}}$$

Efficiency and Financial Sustainability

Efficient MFIs utilize their resources to manage its operations cost by maximization of its outputs. Microfinance institutions become efficient by managing its human resource, maximizing loan portfolio and assets and minimizing its operations cost which results in profitability and financial sustainability. Efficiency can be measured in three dimensions which includes portfolio quality management, management of assets and liabilities and productivity of human resource (Nyamsogoro, 2010). Portfolio quality management shows how microfinance institutions manage risk of repayments while providing financial services. The management of assets and liabilities represents the ability of such institutions to generate revenues to enhance financial services. Productivity measures the ability of human resource of MFI to increase revenue while minimizing cost (Schubert, 2004). Different efficiency factors are explained below.

Yield on gross portfolio (nominal)

It represents revenue earned over the loans distributed to people. This includes fees and interests received over the loans distributed as the percentage of "average gross loan portfolio" (Nørgaard Jørgensen, 2012). According to Rahman & Mazlan (2014) yield on gross profit and financial sustainability are positively related. In literature, various research studies have highlighted the positive influence of yield on gross profit and sustainability of MFIs (Crabb, 2008; Cull et al., 2018; Gutierrez-Nieto, Serrano-Cinca, & Molinero, 2007; Nørgaard Jørgensen, 2012).

H1: Yield on gross loan portfolio and financial sustainability has significant positive relationship.

Portfolio at risk

It is the ability of microfinance institutions to recover loans or repayments. It shows the efficiency of microfinance institutions to recollect payments. Large portfolio at risk shows low sustainability. Financial sustainability and potfolio at risk are negatively correlated (Ayayi & Sene, 2010; Bogan, Johnson, & Mhlanga, 2007; Nørgaard Jørgensen, 2012; Nyamsogoro, 2010; Tehulu, 2013).

H2: Portfolio at risk and financial sustainability has significant negative relationship.

Personnel productivity (Borrowers per staff)

It shows the efficiency of human resource to manger number of borrowers efficiently (Woller, 2002). Borrowers per staff and profitability has positive relationship (Gutierrez-Nieto et al., 2007; Kinde, 2012; Kipesha & Zhang, 2013; Lafourcade, Isern, Mwangi, & Brown, 2005).

H3: Borrowers per staff and financial sustainability has significant positive relationship.

Cost per borrower

It is the indicator to determine cost efficiency in managing borrowers of microfinance institutions. It can be divided into administrative, financial and personnel costs. Profitability is directly affected by cost and higher the cost results in lowers the profitability of MFIs. Profitability and cost per borrower has negative relationship (Cull et al., 2018; Lafourcade et al., 2005).

H4: Cost per borrower and financial sustainability has significant negative relationship.

Operating expense to asset ratio

It determines the inefficiency of the management to manage expense. Higher the ratio results in lower the profitability of microfinance institution shows a negative relationship between profitability and operating expense ratio (Bourke, 1989). Literature reports negative relation between financial sustainability and operating expense to asset ratio (Hartarska, 2005; Miles & Covin, 2000; Van Beurden & Gössling, 2008).

H5: Operating expense ratio and financial sustainability has significant negative relationship.

Microfinance Outreach and Financial Sustainability

MFIs help to generate economic activities and raise standard of living by providing loans and financial services (Hartungi, 2007). MFIs achieve this objective by providing financial support to vulnerable groups (outreach) of the society and by achieving financial sustainability i.e. profitability. According to Schreiner (2000) profitability is not the only criteria for financial sustainability and outreach is also important for MFIs. Therefore, outreach and profitability both are significant for a successful MFI (Aubert, Janvry, & Sadoulet, 2009; Copestake, 2004; Hulme & Mosley, 1996; Yaron, 1994). To reach lager group of marginalized segment of the society, it is essential for MFI to be financially stable because outreach and profitability are linked together (Nyamsogoro, 2010). Outreach factors affect income and expenses which results in profitability. Through outreach profitability is achieved. The outreach includes “breadth of outreach, depth of outreach, cost and length of outreach, product delivery and size of loans” (Nyamsogoro, 2010). This research study considers two dimensions of outreach which includes breadth and depth of outreach.

Breadth of outreach (no. of borrowers)

It shows the number of people served by MFI. Number of borrowers is used to determine breadth of outreach in literature (Hermes, Lensink, & Meesters, 2011; Mersland & Strøm, 2009; Nyamsogoro, 2010). Profitability increases with an increase in breadth of outreach (Nyamsogoro, 2010).

H6: Breadth of outreach and financial sustainability has significant positive relationship.

Depth of outreach (average disbursed loan)

It shows average loan disbursed by MFI. It determines the efficiency of MFIs of loan disbursement. High ratio of depth out outreach is an indicator that MFIs are efficiently providing loans and financial services to society. In literature, disbursed loan size is used to determine depth of outreach (Hartarska, 2005; Hermes et al., 2011). The literature reports positive relationship between depth of outreach and profitability (Awaworyi Churchill, 2018; Hermes et al., 2011; Quayes, 2012).

H7: Depth of outreach and financial sustainability has a significant positive relationship.

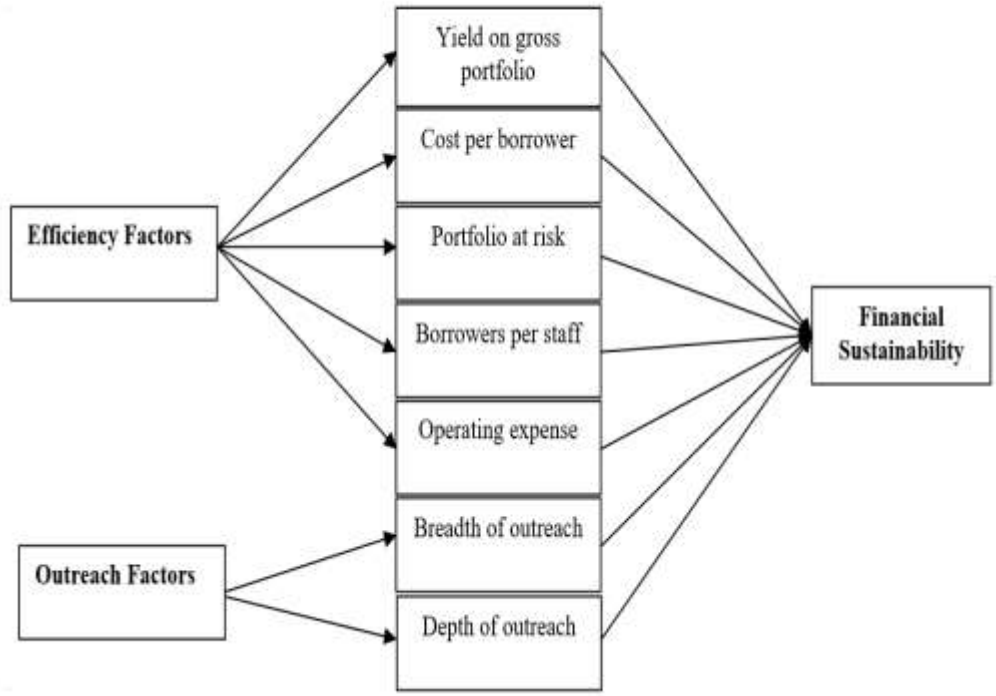

Figure 1: Conceptual model

Research Methodology

This research study followed total population purposive sampling technique (Ghauri & Grønhaug, 2005). The sample of the study consists of 21 non-banking MFIs (NBMFI) from 23 NBMFI which were reporting to State Bank of Pakistan and has more than 5 years of existence. The sample of 21 NBMFI is composed of 16 NGO-based MFIs (NGO-MFI) and 5 rural support programs (RSP). This study used 7 explanatory variables. The number of observations for this study is 7*15 = 105 (Hair, Black, Babin, Anderson, & Tatham, 2006, p. 196). The data of 5 years from 2010 to 2014 was extracted from Pakistan Microfinance Review.

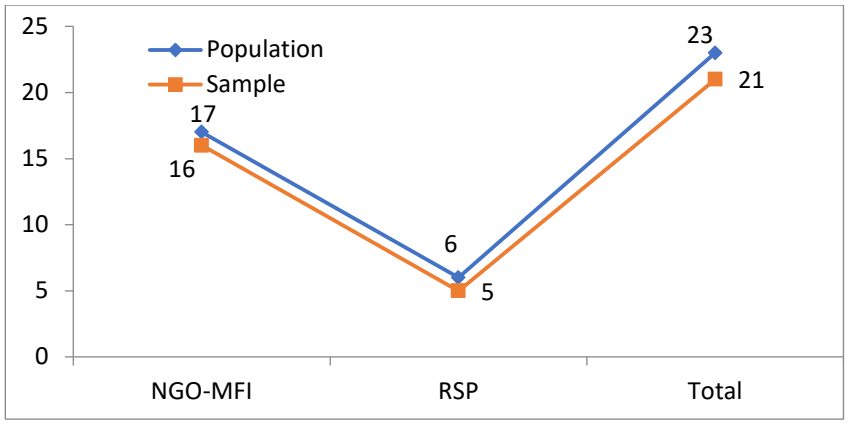

Figure 2: Sample composition

Data Analysis

Before using panel data regression, certain assumptions are checked and verified. Normality of the data is analyzed using "visual plots" (kernel density). The seven explanatory variables were not normally distributed. These variables are normalized by taking their natural log (Cameron & Trivedi, 2010; Hair et al., 2006; Verbeek, 2008). The assumption of multicollinearity is analyzed using correlations, tolerance (T) and VIF. The correlation coefficients of all the variables are below 0.70, tolerance (T) were > 0.1 and VIF were < 10 showed that data don't have multicollinearity issue (Gujarati, 2009; Kennedy, 2003). Data showed serial autocorrelation and was analyzed using Wooldridge test. Breusch-pagan/Cooks-Weisberg test showed that data has heteroscedasticity issue. The "Fisher Test of Panel Unit Root" with "Augmented Dickey Fuller Test" (ADF) showed that the issue of unit root is not present in the model. The literature proposed to use idiosyncratic error terms in regression if autocorrelation and heteroscedasticity is present in the data (Cameron & Trivedi, 2010; Verbeek, 2008). Regression analysis on proposed model is performed with autocorrelation and heteroscedasticity consistent standard errors. "Breusch and Pagan Lagrangian Multiplier" test suggest to use random effects model instead of pooled OLS regression model. The Hausman test proposed to use random effect model instead of fixed effect model.

Table 1: Breusch and Pagan Lagrangian multiplier test

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        fss[name,t] = Xb + u[name] + e[name,t]

        Estimated results:
                     |       Var      sd = sqrt(Var)
             ---------+------------------------------
                 fss |    .1421115        .3769768
                   e |    .0586395         .242156
                   u |    .0305048        .1746564

        Test:   Var(u) = 0
                                 chibar2(01) =     14.51
                              Prob > chibar2 =    0.0001
```

Table 2: The Hausman test

```
. . hausman fixed

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    fixed         random       Difference          S.E.
-------------+------------------------------------------------------------
      lnborr |   -.006831     -.0179271       .0110961        .0622558
   lnloansize |    .34996      .2407413       .1092187        .0405616
lnopexpasset |   -.1742531     -.1424679      -.0317852        .0743027
       lnpar |   -.9975691     -1.239724       .2421554        .2619761
yieldnominal |    .6200151      1.032813      -.4127979        .2422316
    lncpborr |   -.1008625     -.1249045        .024042         .023346
  lnborrstaf |    .1437086      .0996287       .0440799        .0339352
 lnstaffcost |   -.1491115     -.0868499      -.0622616        .0292109
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =         6.86
                Prob>chi2 =       0.5515
                (V_b-V_B is not positive definite)
```

Descriptive Analysis

The mean value of non-banking microfinance institutions (NBMFI) = 1.055 shows that NBMFIs are capable to cover their operating expenses from disbursed loan and 105.5% <110% it shows that NBMFI are not able to generate profit. RSP program is financially more sustainable than NGO-MFI. The NBMFI has 4.2% mean of "portfolio at risk" (par30toglp) signifying high repayment rates. It shows low credit risk and high efficiency. "Portfolio at risk" of RSP has mean value of 2.7% and NGO-MFI has mean value of 5.7% indicating RSP has high repayment rates and efficiency than NGO-MFI. The "average yield on gross loan portfolio" (yieldnominal) of NBMFI = .287 indicates that on PKR 100 outstanding loan portfolio, NBMFI are earning PKR 28.7. "Yield on gross loan portfolio" of NGO-MFI is greater than RSP. NGO-MFI is earning PKR 32.8 on PKR 100 from outstanding loan portfolio while RSP is earning only PKR 24.6. The mean "breadth of outreach" (noofborrow~s) of NBMFI is 93124.755 indicates a good breadth of outreach (Kinde, 2012). The "mean breadth of outreach" of NGO-MFI is 68616.210 and RSPs is 117633.30 indicating both NGO-MFI and RSP have large scale outreach to client. "The mean cost per borrower" (costperbor~r) of NBMFI is PKR 3409.726. The mean of "cost per borrower" of NGO-MFI is PKR 4177.088 and RSPs is PKR 2642.363 which means RSP is comparatively more cost efficient than NGO-MFI. The "average disbursed loan size" (avgdisburs~e) of NBMFI is PKR 13018.215. It means that MFIs are serving low income groups of society. The "average disbursed loan size" of NGO-MFI is 1433.120 and RSPs is 11703.310 indicates that RSP has higher depth of outreach than NGO-MFI. The mean value of "borrowers per staff" (borrower~f) for NBMFI is 179.024 shows high productivity of human resource. The NGO-MFI has mean 211.482 and RSP has mean 146.566 of "borrowers per staff" indicating NGO-MFI has higher human resource productivity. The

mean of "operating expense ratio" (operatinge~s) of NBMFI is .163. This shows that MFIs are inefficient in managing operating expense. The average "operating expense ratio" of RSPs is .149 and NGO-MFI is .177 shows that RSP is more efficient than NGO-MFI in managing its operating expense. The results of the descriptive analysis are given in the following table 3.

Table 3: Descriptive analysis

	Observations	NGO-MFI	RSP	Mean of NBMFI
fss	105	0.967	1.143	1.055
par30toglp (PAR)	105	0.057	0.027	0.042
yieldnominal	105	0.328	0.246	0.287
noofborrow~s	105	68616.210	117633.300	93124.755
costperbor~r	105	4177.088	2642.363	3409.726
avgdisburs~e	105	14333.120	11703.310	13018.215
borrowerpe~f	105	211.482	146.566	179.024
operatinge~s	105	0.177	0.149	0.163

-> legalstatus = MFI

Variable	Obs	Mean	Std. Dev.	Min	Max
fss	80	.9669163	.3729211	.0084	2.352
par30toglp	80	.0566735	.1089175	1.00e-05	.5230692
yieldnominal	80	.3284625	.1045107	.016	.551
noofborrow~s	80	68616.21	78121.41	3975	312182
costperbor~r	80	4177.088	5040.666	647.096	35642.13
avgdisburs~e	80	14333.12	5999.246	3862.36	35172.58
borrowerpe~f	80	211.4823	508.4099	35.17399	4617.98
operatinge~s	80	.1770875	.1152647	.039	.701

-> legalstatus = RSP

Variable	Obs	Mean	Std. Dev.	Min	Max
fss	25	1.142936	.4534165	.154	1.895
par30toglp	25	.0265707	.0346289	1.00e-05	.1605464
yieldnominal	25	.245852	.0565555	.171	.357
noofborrow~s	25	117633.3	147229.4	1121	492338
costperbor~r	25	2642.363	3824.407	727.8671	19643.18
avgdisburs~e	25	11703.31	2881.82	6874.129	16255.34
borrowerpe~f	25	146.566	53.76807	37.36666	225.1946
operatinge~s	25	.1494	.1501222	.019	.691

Econometric results

The equation 2 represents the operational model derived from equation 1 based on explanatory variables used in this study.

$Y_{it} = \alpha_{it} + \sum_{J=1}^{k} \beta X_{it} + \varepsilon_{it}$ ----------eq1

$FSS_{it} = \alpha_i + \beta_1 \text{yieldnominal}_{it} + \beta_2 \text{lnpar}_{it} + \beta_3 \text{lnborrstaf}_{it} + \beta_4 \text{lncpborr}_{it} + \beta_5 \text{lnopexpasset}_{it} + \beta_6 \text{lnborr}_{it} + \beta_7 \text{lnloansize}_{it} + \varepsilon_{it}$ ----------*eq2*

Wald statistic (Wald chi2 (7) = 41.78, p<0.01) indicating that all coefficients are not equal to zero. R^2 = .3897 indicating that the independent variables explains 38.97% variation in the dependent variable (Financial sustainability) and R^2>20% indicates that result drawn from panel data regression are reliable (Cameron & Trivedi, 2010).

Table 4: Panel data regression analysis

```
. . xtreg fss lnborr lnloansize lnopexpasset lnpar yieldnominal lncpborr lnborrstaf , re vce(robust)

Random-effects GLS regression                   Number of obs      =       105
Group variable: name                            Number of groups   =        21

R-sq:  within  = 0.4592                         Obs per group: min =         5
       between = 0.3127                                        avg =       5.0
       overall = 0.3897                                        max =         5

                                                Wald chi2(7)       =     41.78
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

                                (Std. Err. adjusted for 21 clusters in name)
------------------------------------------------------------------------------
             |               Robust
         fss |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      lnborr |  -.0282855   .0519291    -0.54   0.586    -.1300648    .0734937
   lnloansize |   .2705258   .1053607     2.57   0.010     .0640225    .4770291
 lnopexpasset |  -.1602261    .12183    -1.32   0.188    -.3990085    .0785563
       lnpar |  -1.256152   .4846714    -2.59   0.010    -2.206091   -.3062136
 yieldnominal |   1.460542   .4574074     3.19   0.001     .5640398    2.357044
     lncpborr |  -.186119    .102193    -1.82   0.069    -.3864135    .0141755
   lnborrstaf |   .0900128   .0741786     1.21   0.225    -.0553747    .2354003
        _cons |  -.9386418    .786604    -1.19   0.233    -2.480357    .6030736
-------------+----------------------------------------------------------------
      sigma_u |  .15540736
      sigma_e |  .26163068
          rho |  .26080897   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

"Yield on gross loan portfolio" *(yieldnominal)* b = 1.460, p = .001 shows that NBMFI has significant positive influence on financial sustainability. This means that "yield on gross loan portfolio" is a significant predictor of financial sustainability. In literature, various research studies have determined the positive relationship between "yield on gross profit" and financial sustainability (Crabb, 2008; Cull et al., 2018;

Gutierrez-Nieto, Serrano-Cinca, & Molinero, 2007; Nørgaard Jørgensen, 2012). "Portfolio at risk" *(lnpar)* b = -1.256, p = .010 shows that it has significant negative influence on financial sustainability. Financial sustainability and "portfolio at risk" are negatively correlated and this finding is consistent with literature (Ayayi & Sene, 2010; Bogan, Johnson, & Mhlanga, 2007; Nørgaard Jørgensen, 2012; Nyamsogoro, 2010; Tehulu, 2013). "Number of borrowers per staff" (*lnborrstaf*) = (b = .090, p = .225) shows that it has positive influence on financial sustainability. This positive relationship shows that an increase in "number of borrowers per staff" results in the staff efficiency which contributes to profitability which enhances financial self-sufficiency of NBMFI. However, this relationship is statistically insignificant and this finding is consistent with study of (Christen et al., 1995) but inconsistent with previous studies (Gutierrez-Nieto et al., 2007; Kinde, 2012; Kipesha & Zhang, 2013; Lafourcade, Isern, Mwangi, & Brown, 2005). "Cost per borrower" (*lncpborr*) has insignificant negative influence on financial sustainability (b = -.186, p = .069) indicating that financial sustainability decreases when cost per borrower increase. The literature also reports negative relation between profitability and "cost per borrower" (Cull et al., 2018; Lafourcade et al., 2005). "Operating expense ratio" (*lnopexpasset*) has insignificant negative influence on financial sustainability (b = -.160, p = .188) indicating that financial sustainability decreases when "operating expense ratio increases". The literature also reports negative relationship between profitability and "operating expense ratio" (Bourke, 1989). The literature also reports negative relation between financial sustainability and "operating expense to asset ratio" (Hartarska, 2005; Miles & Covin, 2000; Van Beurden & Gössling, 2008). "Number of borrowers" (*lnborr*) has insignificant negative influence on financial sustainability (b = -.028, p = .586). Although financial sustainability and "number of borrowers" has inverse relationship due to higher transaction cost and operating expense but this relationship is not statistically significant. However, literature reports a positive relationship between financial sustainability and "number of borrowers" (Nyamsogoro, 2010). The "average disbursed loan size" (*lnloansize*) has significant positive influence on financial sustainability (b = .271, p = .010). Financial sustainability of MFI and "average disturbed loan size" has positive relationship and this finding is consistent with previous stream of literature (Awaworyi Churchill, 2018; Hermes et al., 2011; Quayes, 2012).

Table 5: Results of the study

Sr.#	Hypothesis	Results
H_1	Yield on gross loan portfolio and financial sustainability has significant positive relationship.	Supported
H_2	Portfolio at risk and financial sustainability has significant negative relationship.	Supported
H_3	Borrowers per staff and financial sustainability have significant positive relationship.	Not supported
H_4	Cost per borrower and financial sustainability has significant negative relationship.	Not supported
H_5	Operating expense ratio and financial sustainability has significant negative relationship.	Not supported
H_6	Breadth of outreach and financial sustainability has significant positive relationship.	Not supported
H_7	Depth of outreach and financial sustainability has a significant positive relationship.	Supported

Conclusion

Microfinance institutions are considered important tool to improve socio-economic development and eradicate poverty and world-wide. A number of MFIs are established to provide microfinance services

over the years. The question of sustainability of these institution has become important. This research study has determined several key factors that play an important role in the financial sustainability of these institutions by using panel data regression.

Due to small amount of the loans given to low income groups, MFIs in Pakistan have high operating cost and low yield on gross loan portfolio. Microfinance institutions in Pakistan are not generating profit but these institutions are managing their operating expenses from micro financing and RSP program is financially more sustainable than NGO-MFIs. The NBMFI are operating with low credit risks indicating high repayment rates and RSP has high repayment rates and efficiency than NGO-MFIs. NBMFI are earning PKR 32 on PKR 100 and yield on gross loan portfolio of NGO-MFI is greater than RSP. Microfinance institutions have large scale outreach and RSP has higher scale outreach than NGO-MFIs. RSP is comparatively more cost efficient than NGO-MFIs. Both RSP and NGO-MFIs are serving low income groups of the society but RSP has higher depth of outreach than NGO-MFIs. NBMFI have high productivity of human resource and NGO-MFIs have higher human resource productivity. The econometric results of the study have determined that "yield on gross loan portfolio", "portfolio at risk" and "average disbursed loan size" have positive relationship with financial sustainability of MFIs. However, "operating expense ratio", "borrowers per staff", "cost per borrower" & "breadth of outreach" are not significant predictor to determine financial sustainability of MFIs.

Theoretical & Practical Contribution

This research study has both theoretical and practical significance. In literature there are several factors that may impact and influence the sustainability of micro-finance institutions (MFIs) and are categorized into efficiency and outreach factors (Christen, Rhyne, & Vogel, 1995; Christen & Rosenberg, 2000; Woller, 2002). These factors are context dependent and may vary in different economies (Christen et al., 1995; Cull et al., 2018). This research study provides empirical evidence about factors that influence the sustainability of MFIs of Pakistan. This research study has identified those factors that influence the sustainability of MFIs in Pakistan. This research is a contribution in sustainability of micro-finance institutions literature and it fills the gap by outlining important factors in local context. Practically, this study helps to understand the grey areas of MFIs of Pakistan that need improvement. This study can help MFIs of Pakistan not only to improve their performance but also to become more financially sustainable. Financially stable institutions can serve better and provide improved services to the poor people. Also, financially strong MFIs can reach to more people and help them to improve their financial conditions. In the long run, this will help to improve the financial standards of the community by investing more on people.

Recommendations

MFIs in Pakistan are not cost effective. Institutions can minimize their cost by making repayment rates high. The cost efficiency can be insured by reducing cost of transactions which is linked or shared by collecting information about the suitable or credit worthiness of the clients. Profitability of MFIs is directly associated with efficient costs management. MFIs in Pakistan have low cost and service efficiency to clients because MFIs are serving to low income groups and revenue generation is thus costly. Financial assistance from different bodies to these institutions to meet their expenses has also played a role to make them inefficient. Capacity building, trainings, innovation and research is required to make micro finance institutions more cost efficient. The use of office automation and new ICT technology in these institutions might help to increase efficiency and productivity e.g. transaction cost can be reduced by implementing different software to monitor defaults and for performance evaluation. Mobile phones can

be used to access potential customers and funds transfer by saving the cost of travelling. This will help to reduce transaction costs and the process will become more efficient and productive. MFIs require to adopt more flexible approach to provide and support financial service to people.

Economy of scale can be achieved through product diversification but lack of trained staff is a major obstacle to achieve this. It is not possible for MFIs to conduct "in-house training programs" for employees due to financial issues. Establishment of training center for MFIs for managerial and technical trainings can serve the purpose and as a result outreach of this industry can be increased through product diversification. Transaction cost can be reduced by increasing breadth of outreach and this eventually will help to achieve economies of scale. MFIs need to ensure depth of outreach is being achieved by providing loans to low income groups of the society along with stale return rates.

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