Impact of Capital Structure on Performance of MFIs in Asia

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To my parents

DECLARATION

I Rukhsana Bibi, solemnly declare that this is an original piece of my work. I am the sole author of this thesis and that during the period of registered study. This work has not been submitted for an award of a degree in any other University.

Rukhsana Bibi

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All praise and exaltation is due to Allah S.W.T The creator and sustainers of all seen and unseen world. First and foremost I would like to express my gratitude and thanks giving to Him for providing me the boundaries and blessings to complete this work.

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LIST OF ACRONYMS:

CS - Capital Structure

OSS - Operating Self-Sufficiency

FSS - Financial Self-Sufficiency

GMM - Generalized method of moments

MFIs - Microfinance Institutions

OLS - Ordinary Linear System

ROE - Return on Equity

ROA - Return on Assets

NGOs - Non Governmental Organizations

CB - Cost per borrower

DTE - Debt to Equity

DA - Debt to Assets

PAR - Portfolio at Risk

GA - Grants to Assets

DTA - Deposit to asset

LLR - Loan Loss Rate

LI - Loan Intensity

FB - Female Borrower

YNG - Young

MAT - Mature

INF - Inflation

GDP - Gross Domestic Product

MEFF – Management inefficiency

PRO - Productivity

REG - Regulated

SA - South Asia

EE - Eastern Europe

EA - East Asia

ME - Middle East

SPI - Social Performance Indicator

LNAB - Number of Active Borrowers

MIX - microfinance information exchange

CGAP - Consultative Group to Assist the Poor

IFC - International Finance Corporation

WDI - World Development Indicator

NPV - Net Present Value

ABSTARCT

The key objective of the study is to examine the impact of capital structure on financial and social performance of microfinance institutions of Asia for the period 2000 to 2013. For the panel data analysis Generalized Method of Moments is applied to deal with endogeneity and fixed effect better describes the models. The profitability and financial performance is measured by return on assets, return on equity, operational self-sufficiency, financial self-sufficiency and management efficiency, the social performance is measured by average loan size and number of borrowers. The main findings regarding capital structure shows that capital structure indicators have positive effect on management inefficiency while damaging effect on sustainability. The results also reveal that deposit to asset ratio has positive impact on outreach and return on asset while grants deteriorates sustainability and return on equity of MFIs. Moreover the findings clearly depict financial theories of capital structure. The results of the study clearly specify that size, NGOs and regulated MFIs influence the performance (financial and social) and productivity of the MFIs in Asia. Number of active borrower inversely effect the sustainability and social performance but have a positive effect on financial performance. Female borrower, cost per borrower, portfolio at risk is a negative contributor to performance, outreach and productivity whereas as loan loss rate acts different only for social performance. It reveals that macroeconomic indicator GDP growth has positive and significant impact on the sustainability and efficiency of MFIs. The implications that emerge from these results is that capital structure of MFIs play key determinant role in the performance of these institutions that remains the same even after including institution specific, country specific and region specific variables.

Keywords: MFIs, operational self-sufficiency, financial self-sufficiency, number of active borrowers, outreach, capital structure, return on asset, return on equity.

CHAPTER 1

INTRODUCTION

1.1 Background of the Study:

The role of capital structure on the performance of MFIs is now a day's most debated issue in financial economics. Financial models have made great progress to explain the capital structure choices and the variables that control these. A number of hypothetical models have been suggested by experts and practitioner in explaining capital structure forms crosswise firms and countries. Many of these model shave been empirically tested in the real business world. However, most of this research has concentrated on capital structure composition of the world-wide microfinance. However, very less work is done on this important issue of capital structure of Asian MFIs.

Microfinance is not a new concept, microfinance operations started in 1970s by Professor Muhammad Yunus founder of Grameen bank. In case of MFI, the entire world is divided in to eight regions. In which the two regions don't have any MFI while other six regions practice in this action that's why financing is rare for many poor people around the world who wish to improve their living standard.Micro financing is the providing financial facilities to small earning peoples with small business activities. (Marzys, 2006).

Without mortgage and high interest rate it is uncertain business by traditional commercial banks to provide loans. Therefore, the banking sector mostly relies on grants and donations with non-profit events with poor involvement from the private sector especially from local commercial institutions. MFIs can continue and broaden their activities only if they can make progress and generate profits in providing financial amenities to low earnings people (Gibbons and Meehan, 1999).It is necessary for Microfinance institutions to be economically viable and sustainable in the future because in the meantime the sustainability of MFIs is not

promising without having strong financial performance. Microfinance sector is growing from the last few decades and is reflected as the future of microfinance a drift towards poverty alleviation (Hermes, Lensink and Meesters, 2008). It commends that MFIs depend more and more on the commercial funding sources through debt or equity financing in order to fund their potential growth (Hsu, 2007; Hermes, 2011). It is imperative in microfinance industry that how MFIs should choose their financial structure to increase their social and financial performance.

In the early 1990s the term microcredit was replaced by microfinance which included not only small credits but also other financial services for poor people (Helms,2006). Formal credit and savings institutions were recognised in Ireland by the Irish Loan fund system as first 1720, using peer monitoring groups for the poor and enforced the weekly repayment in the form of instalments of the initially interest free loans from donated resources (Seibel,2003). According to the most latest estimates, microfinance has reached one hundred and fifty million individuals throughout the world (Armendariz& Labie, 2011) while ninety percent of the population of the under-developed world do not have approach to financial services (Robinson, 2001). Microfinance has confirmed to be the right, actual and effective tool for the poor and for poverty alleviation in order to touch the Millennium goals. Microfinance institutions largely rely on commercial financing to fund this impending growth either through leverage or equity financing. Though; there has been very little research on the effects of financing structure on the performance of MFIs by Asian countries where the level of poverty is wide and they are highly moving towards growth and prosperity.

Sustainability of MFIs states to the ability to maintain a certain position or process in existing systems. In simple words, it is the ability to sustain or long term continue microfinance program after the project activities have been quiet. It entails that an appropriate systems and process have been put in place that will enable the microfinance services to be available

uninterruptedly and the clients continue to benefit from these services in a routine manner. This also would mean that the program would meet the needs of the members through resources raised on their own strength, either from among themselves or from external sources. Capital structure is a commercial tool that might help to determine how firms choose their funding structure to finance business operations.

The financial sustainability of microfinance institutions is also an important condition for the institutional sustainability for institutions (Hollis & Sweetman, 1998) because un-sustainable MFIs may help the deprived clients but they would not be able to help the poorer clients in the prospect because the MFIs will be moved out. Sustainability, financial and social performance of MFIs and how MFIs become financially sustainable with capital structure composition is an important issue and this is the main motivation to undertake this study. Hence, the study is conducted to determine the factors that affect the sustainability and capital structure composition of MFIs in Asia where the level of poverty is wide and deep.

It is quite difficult, for MFIs to achieve their objectives if they would not performs well operationally and financially. The capital structure decisions are an important factor for a firm's sustainability. Therefore, this study focuses on the effect of capital structure on MFIs sustainability, efficiency, productivity and outreach to identify the opportunities for increasing the sustainability and growth of lending institutes.

1.2 Objectives of the Study

This study focuses on funding sources and its impact on sustainability of microfinance institutions that whether funding sources affect social and financial performance of microfinance institutions. This study also shows the impact among capital structure sources of financing and sustainability. More specifically the objectives of the study are:

- To identify how capital structure composition (deposit to asset, debt to asset, share capital to asset, debt to equity and grants to assets) affects the performance of MFIs

by focusing on return on assets, return on equity, operational and financial self-sufficiency and outreach.

- To examine the impact of MFI specific factors such as size of MFI, female borrowers, and legal status of MFIs in addition to capital structure variables.
- To examine the role of economic conditions such as GDP growth and inflation along with capital structure variables affect the performance of MFI.
- To examine the regional effect on MFI (using regional dummies) including capital structure variables, MFI specific and country specific variables.

For achieve this purpose, this study has included several variables regarding capital structure and performance of MFIs return on asset, return on equity, operational self-sufficiency, financial self-sufficiency, breadth of outreach, depth of outreach and management efficiency. This study has used data set that contains information from four regions of the world to check the impact of capital structure on performance of MFIs where MFI growth is fast and poverty is also high.

1.3 Significance of the Study

No such study has been conducted empirically in Asia that exclusively focuses to understand the importance of microfinance capital structure and its (sustainability and outreach) therefore to study this field is of great importance. This is the main motivation to undertake thorough analysis on how capital structure affects the performance of MFIs operating in Asia. This study mainly allows effects of capital structure on microfinance performance as a proxy for operational self-sufficiency, financial self-sufficiency, Return on asset, Return on equity, outreach and management efficiency. This study highlights specifically characteristic variables of MFI performance; classifying financing sources and then determine the effect of capital structure on overall performance of MFI's.

This research work tries to answer the following research questions. Does capital structure impact microfinance institutions? Does funding sources improve sustainability of MFIs? Is there any trade-off between the sustainability and outreach (social performance) of MFIs? How does financing structure affect the outreach of MFIs?

This study contributes to the existing literature in several dimensions. It includes different variables to capture capital structure impact like: deposit to assets ratio, grants to assets ratio, debt to equity ratio, debt to assets ratio and capital to asset ratio. It adds to existing literature by taking the effect of capital structure by young and mature institutes relative to new. It takes account of portfolio at risk and other risk factor like loan loss ratio. The impact of capital structure on efficiency (inefficiency) of MFIs is also investigated. The impact of economic and business conditions of the countries are also considered.

1.4 Structure of the Study:

This thesis is made up by six chapters including the introduction in chapter one. Chapter two gives an overview of the microfinance industry it also includes different microfinance concepts, social and financial performance of MFIs and various performance indicators. Chapter three presents the theoretical framework of the study which is different capital structure theories and empirical literature. The chapter also includes hypothesis and variables that are used in this study. Chapter four presents the data and research methodology that was used in this study, it also presents the econometric models that were used in the multiple regression models. Chapter five presents the data analysis and the findings of the regression models that were performed to analyse the relationship between capital structure and MFIs performance. Chapter six summarizes the findings and presents a conclusion of the analysis and Recommendations for future research are also given at the end.

CHAPTER 2

OVERVIEW OF MICROFINANCE

This chapter gives a brief overview of the microfinance industry and different microfinance concepts. Microfinance is one of those small ideas that turn out to have large implications. In the start of micro operations the credits that were given to poor clients were called micro credits rather than micro lending but very soon the difference became clear that other financial services were used and required by the poor which enlarged the concept of micro credits to microfinance (Felder Kuzu, 2005).

2.1Overview of Microfinance Industry:

According to (Churchill &Frankiewicz, 2006) microfinance is normally associated with small working capital that is funded in microenterprises or income generating projects. This providing of economic services can help the poor transform their lives eternally and move them out of poverty by using these resources to build small businesses for future cash flow in order to become viable in the long run. Microfinance sector remains to put its emphasis consistently on efficiency as well as growth in outreach. Many studies have been conducted and have come to different outcomes about the effect of microfinance on poverty alleviation. These studies examine whether or not microfinance actually helps the poor to move out from poverty. Most studies provide evidence in support of the positive impact of microfinance on increasing the returns of the poor people or reduced their helplessness. Most of research appears to indicate that microfinance has note worthy positive effects on the poverty alleviation in certain situations. The Asian Development Bank (Finance for the poor: Micro Finance Development Strategy, 2000) has recognized microfinance as effective tool to combat poverty, inspire economic growth support the human development and to develop the prestige of women.

Providing loans to the poor without collateral is usually considered as an uncertain business by the traditional commercial banking. Thus, banking sector is mostly carried out by government and donors agencies with non-profit programs with poor participation from the private sector especially from local commercial banks. Though, MFIs can continue and enlarge their operational activities only if they can recover all of their expenses and can generate profits in providing financial services to the low income people (Gibbons and Meehan, 1999). It has been observed that microfinance institutions need to be economically viable in the future meanwhile the sustainability of MFIs is not possible without having strong financial performance. Consequently, the commercial micro financing is growing from the last few years and is considered as the future of microfinance or a new trend towards poverty reduction (Hermes, Lensink and Meesters, 2008). It recommends that microfinance institutions increasingly depend on commercial financing through debt or equity funds to finance their potential growth (Hsu, 2007; Hermes, 2011). Thus, understanding how MFIs should choose their financial structure to improve their financial performance has become more important in microfinance.

2.2 Overview of Capital Structure of MFIs:

The microfinance industry in Asia continues to develop with steady emphasis on performance and strong growth in outreach they access a range of capital sources to finance growth activities. Asian MFIs heavily rely on commercial debt financing through commercial borrowings or equity investments to fund their growth and maximize profitability. Asian MFIs have drawn greatly on debt to fund their growth in portfolio. Commercial debt provide the biggest source of capital for the loan collection.

According to Asian microfinance analysis 2008in against of every dollar in loan portfolio the median Asian MFIs raises 80 cents in commercially price debt. However the global norms for microfinance institutions are the highly capitalized MFIs, the median Asian MFIs held capital

equivalent to 15.2% of the assets. Asian MFIs finance their activities through various sources of debt. Asian MFIs just rely only on voluntary savings to reserve their assets. As a substitute they rely mostly on debt in the form of compulsory savings and loans.

Legal charter constituted a central determinant in MFIs funding structure in Asia. Most of the institutional type MFIs heavily relied on borrowings as debt financing as well as deposits mobilization. In Asia: Rural banking deviated from the typical Asian MFIs debt structure deposit mobilizing meet seventy percent of their requirements directly from their clienteles through retail deposits. Banks match client deposits more than with external borrowings at much higher rate than the global peers. Nongovernment organizations and non-bank financial institutions primarily licensed for the credit services only lent 60-70% of their loaning funds with little or no retail deposits. Financing structure for Asia has evolved as quickly as their services have grown as institutions seeks out new sources of capital support growth and sustainability.

Asian MFIs initially build up its capital base through subsidy and donations but increasingly relied on borrowings from the various ways. The importance of capital structure is now a day's most deliberated issue in financial economics with regard to performance of lending institutions. Financial model has made a great progress to explain the financing structure and the variables that control these. A number of theoretic models have been suggested and examine to explain capital structure forms throughout the globe. However, mainly this research work has concentrated on capital structure composition of Asian countries of the world especially from the critical sectors such as microfinance.

2.3 Overview of Performance Measures of Microfinance:

Performance of any institution shall not be only measured from the objectives of the any organization but also from the industry's benchmark. The main objective of Microfinance is

to alleviate poverty and growth development. When MFI started they were supported by the donor funds that have a poverty alleviation goal. Hence the performance of microfinance institutions was measured on how much they serve to the poor (outreach) and through viability and financial performance indicators. So the performance of MFIs is being measured by several parameters. (Richard Rosenberg; CGAP, 2003) has indicated the basic performance indicators of microfinance institutions written for staff who design and monitor projects that fund MFIs. He has suggested simple tools to measure performance of microfinance institutions in few areas like; Outreach (Breadth of Outreach, depth of outreach) Collection of loans (recovery), sustaining profitability and expanding its activities and efficiency by controlling all administrative expenses. In general these performance indicators should be considered as important measure for microfinance institutions.

2.3 Overview of Sustainability:

Sharma (1997) defines that microfinance institutions attain sustainability when its operating income from loans is enough to cover up all the operating cost. (Pollinger; Outhwaite & Cordero Guzman,2007) states sustainability as the ability to cover yearly budgets that include grants, donations and fund raising. They argue that sustainability of microfinance institution includes both financial sustainability and institutional sustainability (operational self-sufficiency) of the lending institutions. It is the main indicator that shows how the MFI can operate free of subsidies and grants. This change has created a different view on the analysis of performance of the microfinance institutions. Nowadays many key player in microfinance sector use sustainability as one of the main measure to evaluate the performance of microfinance institutions. Sustainability is seen as an appropriate mechanism for attaining the

long term viability in the microfinance industry. Rosenberg 2009point out that it is untrue that sustainable MFIs are usually for profit commercial companies but in actual almost two third of the sustainable MFIs are non-profit organizations, banks or cooperatives unions.

Rosenberg (2009) has identified five general indicators of MFI performance and sustainability. In his study sustainability is measured by Return on asset (ROA), Return on equity (ROE),adjusted return on Asset (AROA), financial sustainability (FSS), Operational sustainability (OSS) and Subsidy Dependency Indicator (SDI). Though, sustainability in this study is measured by operational self-sufficiency and financial self-sufficiency.

Microcredit summit campaign refers a microfinance institution as operationally and financially sustainable if it is covering all the actual operating expense from the revenues earned from its financial services after the adjustment of grants and inflation.

2.3.1 Operational self-Sufficiency (OSS):

Operational self sustainability refers to the operating income generated by MFIs is sufficient to cover operating expense, regardless of whether it is subsidized or not. (Meyer, 2002)

Based upon international experience successful MFIs should be capable to achieve operational self-sufficiency within 3-7 years of establishment. Operational sustainability is calculated as the ratio of operating revenue to the sum of administrative expenses, loan loss provision and interest expenses. A firm will be operationally sustainable if it is 100% or more. Most of the recent studies used this formula to measure sustainability.

Microfinance Information Exchange uses this formula to calculate operational self-sufficiency;

$$\frac{\text{Financial Revenue (Total)}}{(\text{Financial Expense} + \text{LoanLoss Provision Expense} + \text{Operating Expense})}$$

(Microfinance Bulletin 2008)

2.3.2 Financial Self-Sustainability (FSS):

The ability of MFI that can also cover the costs of funds as well as other forms of subsidies received when valued at market rates (Meyer, 2002)

Financial Self Sufficiency is a subsidy adjusted indicator frequently used by subsidised microfinance institutes. It measures the business revenues mainly interest received covers the adjusted costs. It is measure by dividing business revenue excluding grants for operating expenses. Successful MFIs are expected to achieve financial viability within five to ten years. To precise, the financial sustainability is to charge a high interest rate that is enough to cover the operating costs, loan loss and interest and adjustment charge. Though, MFIs need to operate efficiently enough that affordable reasonable and competitive interest rates could be charged to cover those costs. Hence, for long term sustainability MFIs need to manage delinquency, minimize cost of capital low with saving mobilization, revolve their portfolio resourcefully to have low operating costs and most essentially set high interest rates to cover all the costs (Rutherford, 2000). A firm is financially sustainable if it is 110% or more operationally sustainable. Based upon international experiences successful MFIs should be able to achieve financial self-sufficiency within 5-10 years of establishment.

2.4 Financial Performance:

Financial performance is measured: by Return on Assets (ROA) and Return on Equity (ROE) and these indicators measure the MFIs net income in relation to the balance sheet.

2.4.1 Return on Assets (ROA): Return on asset refers to how well the institutions utilizes its assets. It is also used as a general measure of profitability which reflect both: the profit margin and the effectiveness of the institutions. Return on asset (ROA) is measured by the ratio of net profit to total assets as our measure of profitability. Kyereboah Coleman (2007) also used the same indicator as profitability measure.

2.4.2 Return on Equity (ROE):

Return on equity measures profitability of MFIs by revealing how much revenue it generates with the shareholder's investment and calculated as net income to shareholder's equity.

2.5Overview of Social Performance (Outreach):

These are nonfinancial indicators of performance. The social performance of MFIs is measured by breadth of outreach (number of active borrowers) and depth of outreach (average loan size). This section confers more than a few measures of outreach presented by Schreiner (2002) which may help to relate the link with outreach and performance. He divide it into few dimensions as breadth of outreach, depth of outreach, cost of outreach, scope of outreach and length of outreach. These measures for outreach has been used in other literature as well to describe the determining factor of sustainable MFIs (Mersland &Strom 2008;Woller 2002 and 2006). Similartra its were also used by USAID to evaluate the growth in outreach. In this study, I used only the two main aspect of outreach as breadth of outreach and depth of outreach to measure social performance of MFIs.

2.5.1 Breadth of Outreach (Number of Active Borrowers):

Breadth of outreach refers to the number of poor clients helped by lending institutions Numerous research analysis have utilize number of active borrowers or number of active clienteles served as measurement of breadth of outreach like (Mersland & Strom, 2008, 2009; Hermes, Kyereboah Coleman and Osei,2008;Hartarska, 2005 and Woller 2000). Most of the sustainable institutions believe on retaining large the number of borrowers because the large size ofborrowers is the main aspect of MFIs social performance. (LOGOTRI, 2006).

Micro finance industry improves in size there exist need for increased financing with the volatility of donor funds that cause the issue of building a sustainable MFIs to stand on their

own leg. MFIs intend to start covering their own cost of operations form their program revenues.

2.5.2 Depth of Outreach (Average Loan Size):

(Hulme and Mosley 1996) states that without the poor clients, MFI is supposed not to be changed from banking institutions. The depth of outreach refers to how many poor's are served by the MFIs. This suggest that outreach would not only measured by the total number of clients but it ought some what depend onto assist a number of deprive customers. Because it could be possible who are non-poor in the total number of microfinance clients. Size of loan indicate the nature of clients. Small loans indicates poorer customers. Average loan size is most commonly used proxy of depth of outreach these studies also used the same proxy (Adongo and Stork, 2006; Cull, 2007; Hartarska, 2005; Woller and Schreiner 2001); Mersland and Strom, 2009). In this study average loan size is used as proxy for depth of outreach as Woller(1999) suggested that due to unpredictability in depth of outreach or for mediumsize loans, average loan size is consider to be superior proxy of poor clients. Woller (2002) has emphasized that, the average loan size is generally accepted and commonly used predictor for depth of outreach. Hisako (2009) also uses average loan size per borrower as proxy for measurement depth of outreach. This research analysis tries to use small loan size as an indicator of poorer clients. Itunder takes the minimum loan size more the poor customers have been considered and served all customers equally reached that specifies the depth of outreach.

2.6Management Efficiency:

It is the utmost widely used proxy of management efficiency (CGAP,2003). It shows how microfinance institutions being effective in decreasing operating charges at a given level of operation. The negative operating expense ratio will indicate efficiency of MFI as a cost

decline approach. Microfinance Institutes operate at minimum budget which is meant that every thin gequally efficient. Inefficient MFIs incur a high operating expense to total asset ratio. Management inefficiency is computed as operating expense to total asset is used as an indicator of management's ability to control overheads. The same measure for efficiency is also used by Tehulu (2013).

CHAPTER 3

LITERATURE REVIEW

The Impact of capital structure on MFIs financial and social performance is not seriously researched. This chapter reviews the most relevant studies done in this area. This chapter presents the theoretical framework applied for the study, it includes a review of capital structure theory and a brief discussion about the effect of capital structure on MFIs performance in Section 3.1. The hypothesis framed based on theoretical framework and empirical literature is presented in Section 3.2.

3.1 Theoretical Framework

This chapter presents the theoretical framework applied for the study, it includes a review of capital structure theory and a brief discussion about the effect of capital structure on MFI's performance.

3.1.1 Capital Structure Theory:

The choice of capital structure is crucial for any business in a way to maximize the returns and firm profitability. The capital structure theories suggest that firms should select capital structures depending on the attributes that determine the various costs and benefits associated with equity and debt financing. It is the relative portion of debt, equity and other securities that a firm has outstanding create its capital structure (Berk & DeMarzo, 2007). There is also trade-off involved among risk and return to increase shareholders wealth (Berger, Bonime, Covitz& Hancock, 2000). To deal with the competitive environment capital structure choice is essential perspective. Now a days MFI's have several financial and funding sources to finance its activities. There are several theories explaining capital structure of the firm but still the researchers would not set up the optimum capital structure. Therefore (Abor, 2005)

states that the researchers and experts would be able to attain prescriptions that satiate short term objectives. In practice all financial institutions may not pursue the same objectives but the key objective of any financial institution is to reduce its cost. Even though leverage as a similar foundation for MFIs financing is an influential theoretic construct and a suitable phase.

In the current years; with the growth of the microfinance industry large numbers of microfinance institutions (MFIs) have significantly increased their outreach and sustainability. Furthermore, the formal market of microfinance is influenced by the process in which informal MFIs transformed into formal or regulated financial institutions which was denoted to as up scaling before. This usually needs fresh capital from external sources regulatory approval by local the banking consultants and improved governance plus in-house controls. This transformation naturally lets the MFIs to mobilize client deposits as a supplementary source of refinancing and offers additional non-credit products (Frank, 2008). Additionally, with the revolution and growth of their assets, MFIs have improved access to new sources of financing in the capital markets throughout the globe and product divergence also allows them to expand their outreach and assist more clients. Generally, the microfinance market at present is moving towards commercialization which is extensively referring to the application of market-based business principles to microfinance. (Frank, 2008). Several MFIs depend on deposit financing and commercial leverage as an important element of financing future growth in the microfinance segment (de Sousa-Shields & Frankiewicz, 2004). Commercial debt financing is an essential source of financing for MFI both in short term financing as well as in longer term debt financing.

The Modigliani Miller Theorem:

The Modigliani-Miller Theorem states that in perfect capital market in the absence of taxes, liquidation costs, agency costs, and asymmetries of information, and in an efficient market, the worth of a firm would not be affected by how that firm is funded. There is no effect that what the company's dividend policy is. It does not impacts good or bad if the firm's capital is raised by issue of stock or debt. Therefore, the Modigliani Miller theorem is also known the capital structure irrelevance theory. Irrelevance theory of capital structure explains that the capital structure is irrelevant to the value of a firm in perfect capital markets (Abor, 2005; Miller & Modigliani, 1958). That inferred debt may not shake the worth of the firm this only variate the share of cash-flow concerning leverage and equity with the lack of any change in the cash-flow. According to Miller Modigliani the total value of a firm is equal to the market value of the total cash flows generated by its assets and is not affected by its choice of capital structure. The capital's cost of unlevered equity is equal to the cost of capital of levered equity with a premium relative to the market value of debt-equity proportion (Berk & DeMarzo, 2007).

One of the key financial decisions challenging a firm is the choice between debt and equity. Dealing with irrelevance of debt in capital structure for determining the firm value Modigliani-Miller (1958) placed his postulates that is the absence of corporate taxes. When Modigliani and Miller in 1963 factored corporate tax in the model, it established hypothetically that the worth of firm should rise with external financing because of high interest tax shield. Because monotonous level of leverage for high tax shield also raises cost of bankruptcy particularly after the firm's profitability is low and unstable. This leads to trade-off theory of capital structure that suggests an optimum target level of debt where the negligible increase of present value of tax saving is just offset by the same amount of bankruptcy cost.

This irrelevance theory also be sustained in other studies such as (Hamada,1969; &Stiglitz,1974). M-M proposition are the main grounds of investment, moreover this theory is built on very strict rules which would not be applied in the reality as stated by (Abor, 2005). According Kyereboah-Coleman (2007) there have been some of the literature precluded the assertions proposed in M-M theorem, like (Jensen and Meckling, 1976,1986; Myers, 1977; Williams, 1987; Harris and Raviv, 1990; Grossman and Hart, 1982)

The Trade-off Theory:

Most of current studies in the field of financial structure are subject by two main theories stated as trade-off theory and pecking order theory (Swinnen, 2005). Both the theories have been developed from Modigliani and Miller's theorem, which is considered as one of the most important bases of finance (Pagano, 2005).

The trade-off theory says that the firm will borrow up to the point where the marginal value of tax shields on additional debt is just offset by the increase in the present value of possible cost of financial distress. The value of the firm will decrease because of financial distress (Myers, 2001). According to Myers (2001) financial distress refers to the costs of bankruptcy or reorganization and also to the agency costs that arise when the firm's creditworthiness is in doubt. This trade-off encumbrances the advantage of leverage that result from protecting cash-flow from taxes beside the cost of financial stress related to debt. These theories provide the main basis for the effects of financial structure on the firm performance.

It is difficult to find the exact level of debt and equity for MFIs therefore trade off theory explains that that there is an edge to debt financing and the financing requirement may vary from MFI to MFI because it depends on profitability and other operating cost. MFIs with a lot of tangible asset that can be offered as guarantee for debt may have a higher debt ratio, contribute to large percentage of fix interest capital to equity indicate that the MFI is extremely obligated. Hence there exist a risk of becoming bankrupts. While the

MFIs highly leveraged may perform well by enjoying the economies of scale that boost profitability and recover additional cost. Trade off theory also point out the role of time, expectations and adjustment costs. The correct financing choice normally depends on the financing margin that the firms do in advance for the next period, some firms expect to pay out in the form of funds while others expect to raise funds for the subsequent period. This suggests that the optimal capital choice currently tends to depend on what is expected to be optimum in the next time period. These theories explain the difference in debt to equity ratio between businesses but they do not explain changes within the same industry.

Pecking Order Theory:

The alternative theory of finance known as pecking order theory was developed by (Myres, 1984) presents the idea that firms will initially rely on internal funds that is undistributed earnings where there is no existence of information asymmetry then in need of additional funds they will turn to debt and finally they will issue equity as a lender of last resort to cover up their outstanding capital requirements. The preference order of financing reflects the relative costs of the various financing options (Abor, 2005; Berk & DeMarzo, 2007).

It is based on the evidence that in reality the firms in profitable situation not often drive debt financing. The foundation of pecking order theory is asymmetric information where management know much more about a firm's vision than the outside investors. The theory recommends that if the firm issue equity shares to finance a project, then it has to issue shares at less than the fair price. This signals that the shares are over valuated and the managers are not assured to utilize external funds if the project is financed by borrowed money. Hence the issue of shares is a bad news. According to the pecking order firms have a particular pattern for capital used to finance their businesses activities (Myers, 1984). In the presence of information asymmetries between the firm and potential investors, the relative costs of

finance may vary between the financing choices. Where the fund provided is the firm's retained earnings, more information than the new equity holders. The new equity holders can expect a high rate of profit on capital invested resulting in the new equity finance being more costly to the firm than using existing internal funds. A similar argument can be provided between the retained earnings and new debt holders.

There is a greater exposure to the risk associated with the information asymmetries for the various forms of financing choices besides retained earnings, the higher the yield on capital demanded by each source. Thus, the firms prefer retained earnings financing to debt, short-term debt over long-term debt and debt over equity. Whereas if the external borrowing is utilized to fund the project, it shows an indication that the managing authority is confident of the future prospects of serving debt. Hence borrowed money is ideal over shares in financing decisions. If debt is issued it creates a problem. In order to avoid controversy the managers try to fund project by internally generated funds that is retained earnings. As a result, financing follow a specific order firs tretained earnings, then borrowed money and at the end with equity when debt ability gets shattered. This simplifies why the commercial firm uses less debt to stay in profitable situation.

Agency Cost Theory:

The agency cost theory is stated on the idea when the interest of shareholders and the firm’s managers and are not perfectly associated with each other. Jensen and Meckling (1976) highlighted the importance of the agency costs of equity. They argue that agency costs of equity in corporate finance arise from the separate ownership and controller of firms whereby the managers tend to maximize their own utility rather than the value of the firm. Agency cost rises when there is a state of conflict between the management and shareholders of an organization. There could be diverse kind of conflict such as fund disbursement, Asset-

substitution, Claim-dilution, underinvestment between managers and stakeholders of the company. Due to Stockholders rights; they may take unnecessary advantage over the bond holders in a way to maximize their capital in a firm. Bond holders are therefore bound to defend themselves from such possibilities. Such agreements adversely affect the corporate reasonable operations to some extent the costs of efficiency and other costs. Although Modigliani and Miller (1963) commends that firms should maximize their debt financing such a situation does not hold in the long run due to such agency problems between stake holders. Cost related to protecting covenants is extensive and rise with the increase in debt financing. In such cases management may take those decisions that favour stakeholders of the organization by moving capital from owners to them. In a situation when fund disbursement of a company especially raising its funds. In such a manner the properties of the company reduces whereas risk for lever age rise that leads to a shift of interest from lenders to stakeholders. In a situation of asset replacement a company utilize external funds that such investment maximize its insecurity. Investment in the form of debt most of the time turn out to be effective and mostly the returns were in favour of stakeholders while debt financing don't work well then its price will be tolerated by the creditors. If debt investment fails then project would not show positive net present value (NPV) that shows a decline in the value of the company. By this way it rises the value of stock and in the meanwhile the importance of the leverage decreases. One more conflict rises when company offer leverage even in the being there exist current debit balance. For such a case older debt holders have few secure right on the capital of company this is the indications of transmission of wealth from the previous debt holder to the stakeholders. One other struggle that arises is that an organization may forbid an investments that expect minimum risk and a positive(NPV) the stakeholders of the firm would not fund the surplus capital in or derto start the new investment projects in-case of riskiness of debt. It is unfavourableto stakeholders. Even the investments is

favourable the stakeholders might be mischief since the riskiness of the leverage drop and its worth arise.

3.2 Hypotheses Development:

The study includes six dependent variables as performance measures for measuring profitability and sustainability of microfinance institutions ROA, ROE, OSS, FSS, EFF and Outreach (ALS, LNAB) are deliberated as measure for performance and act as dependent variables. In this study there are three dummy variables included in the study those are legal status, region and regulation which take the value of1 if they arepart of the institutions otherwise 0. The conceptual framework of this study is as follow.

In general the study hypothesize that microfinance institutions with better capital choices would become sustainable however, the question arises what type of such capital structure would concentrate an MFIs for sustainability.

The following hypothesis tested the relationship between independent variables and dependent variables.

H1: Highly debt financed microfinance institutions has more sustainability

H2: Highly debt financed microfinance institutions has more financial performance

H3: Highly debt financed microfinance institutions has more social performance

H4: Large deposit to asset ratio, in microfinance institutions has more sustainability

H5: Large deposit to asset ratio, in microfinance institutions has more financial performance

H6: Large deposit to asset ratio, in microfinance institutions has more social performance

H7: Highly debt financed microfinance institutions are more efficient

H8: There exist a tradeoff between outreach and sustainability

H9: There exist a tradeoff between breadth of outreach and depth of outreach

3.3 Empirical Review:

A number of studies carried out on the impact of capital structure and firm profitability. Such studies have been carried out on large listed companies both in developed and under-developed countries. Capital structure has been a reflected a controversial agenda from years to explain the firm optimal capital structure. A number of concepts proposed by researcher and experts. In spite of this, many theories are presented on this concern still the practitioners were unable to present the exact proportion of capital (inside and outside debt) or the optimum capital choice.

MFI's has an operation to reduce poverty not only to exploit the firm value. So, the institutional financing structure and capital flows to microfinance institutions have become much more imperious for sustainability (Bogan, 2007).

Sustainability of MFIs is the ability to continue operative as progress in financial organization for the rural poor (Khandker&Khalily,1995). Currently modern MFIs are serving a dual objective: providing financial services by reaching un banked poor's to make the sustainable (Armendariz & Morduch, 2005 and Hartarska, 2005).

Booth, Demirgüç-Kunt, and Maksi- Movic(2001) disclose that capital structure choices are affected by the same variables in developed and underdeveloped countries with respect to microfinance institutions also relevant for other types of lending institutions operating as non-governmental organizations (nongovernment organizations, credit unions, nonbank financial intermediaries(NBFIs); and regulatory commercial banks (Bogan,2011).

Sustainability of microfinance institutes in general means the ability to continuously carry out activities and services in pursuit of its statutory objectives. For an ideal MFI this means the ability to continue operating as a development financial institution for the rural poor (Khandker and Khalily, 1995). Since MFIs focus on their financial activities as profitable

businesses, so it's imperative to look its operations in order to operate as cost effective and economically viable.

Mohamad (1994) investigated the link between capital structure and profitability of listed firms of the Kuala Lumpur Stock Exchange (KLSE). The study incorporates OLS as estimation technique and Correlation Analysis to scrutinize the data which consist of two datasets. Return on Investment was used as profitability indicator while debt to equity and debt to total assets ratio as indicators of capital structure were used. The assumptions of miller Modigliani theorem contradicts with the study indicating remained significant relations between market imperfection and change in capital structure on firm performance. This study was also in agreed with the U.S. judgements somewhere the size of debt and equity were negatively correlate to profit margin.

Raghuram G Rajan&Luigi Zingales (1995) investigate empirically the determinants of capital structure choice by analysing the financing deacons of 8000 companies from 31 countries of US for the period of 1987-1991. Findings show that profitability is negatively correlated with leverage. If dividends and investments are fixed in the short run and debt financing is only the mode of external financing then profitability will be negatively correlated with the firms. This negative influence becomes stronger as firm size increases. Highly levered firms are more likely to pass up profitable investment opportunities (Myers 1977).

Hence the firms expect more development opportunities should use more equity finance to become cost-effective.Myers (2001) there are diverse capital structure claims exist some are cited above but there does not exist any unique theory with regard to capital choices. Financing choice be influenced by some situations. Every business must apt those financial source which are fits for functioning. On the other hand the purpose of any capital structure choices is to improve the performance and growth.

Demirguc-Kunt and Huizinga (2000) are the first who study the impact of financial structure on bank performance for a large number of developed and underdeveloped countries for the period of 1990-1997. They investigated the effects of financial structure on profitability and bank interest margins. The observed results show that greater bank development is related to lower profitability as well as interest margins. It means that lower the profitability and lower the interest margins should be the reflections of improved efficiency due to a high level of competition amongst banks. The study also concludes that financial development has an important impact on the performance of bank. These findings are consistent with the pecking order theory.

Kiogora (2002) worked out that either capital structure of listed firms were dependable over the time and to ascertain whether companies listed on the Nairobi stock exchange (NSE) in the same industry had same capital structure. Variances in capital structure among industry groups were found: there was an adverse connection between returns of the firms listed on the NSE and their level of debt and the enterprises in the Farming sector had constant levels of equity from year to year. Organizations within a given sector incline to group towards roughly target Equity to Total Asset indicating that an optimum capital structure exist. He also established that returns upturns with the increase in leverage ratio, this supports the traditional view of an ideal capital structure.

Abor (2005) has conducted an empirical analysis on “The effect of capital structure on firm profitability of Ghana. The findings show a positive relationship between the short-term debt ratio and profitability. While a negative relationship between long-term debt ratio and profitability. In terms of the relationship between total debt ratio and profitability, the results of study indicated a significantly positive relationship between total debt ratio and profitability. There have also been other studies providing empirical evidence supporting this positive association between debt level and firms performance (Champion, 1999; Gill, Biger,

& Mathur, 2011; Hadlock & James, 2002; Hutchinson, 1995; Roden& Lewellen, 1995; Taub, 1975).

Hartarska (2005), investigates the relation between governance and financial performance from the period 1998-2002 for East European MFIs. Financial performance and outreach were the main dependant variable dimensions and governance tools include managerial compensation board characteristics and external governance mechanisms. The author finds that performance-based compensation of managers is not associated with better performance of MFIs. She also identified that an independent board has the better ROA, but the board of employee directors gives lower financial performance and lower outreach. Finally, it concludes that external governance mechanism seems to have a limited role in performance and outreach.

Armendariz De Aghion &Morduch (2005) have analysed that there is a need to support MFIs with the increase of external funding for the role in the international poverty alleviation. Such funds may be generally in the form of; debts or deposits from clients and borrowings from banks and other financial institutions and grants that establish the financing structure through which customers are avail compulsory strict financial facilities (Bogan 2007). He has also revealed that necessity for small loans by the poor is flexible. Only large interest fee associated with it may be preventing the ability of MFIs to serve the poorer potential clients. The loans are may be of short term, medium term, only a few programs require borrowers to put up collateral against credit. This high operating costs and capital constraints prevent MFIs in meeting their massive demand while local government, Supportive donor agencies, and others are encouraging rivalry and stress in financial viability as a way to expand the outreach to minimize poverty (Armendarizd Aghion & Morduch, 2004).

Berger and Bonaccorsi Di Patti (2006) argue that capital structure and firm performance could be closely correlated with each other. The study has used data on commercial banks in the US and the findings are consistent with the agency theory that high leverage reduces the agency costs of outside equity and increases firm value by inspiring manager to work more in the interests of stockholders of the company.Against the assumptions apprehended by (Modigliani&Miller1958) focused on capital structure impact on a performance.

Hutchison and Cox (2006) test the causal relationship between bank capital and profitability by using bank data from the US in two different time span the time period from 1983-1989 the less regulated period and from 1996-2002 the more highly regulated period. The results conclude that financial leverage is found to be positively correlated with the return on equity (ROE) or the return on assets (ROA). The findings of this study tendto support the proposition of trade-off theory.

Makau (2006) has conducted a study on the effect of capital structure on firm value evidence from Nairobi stock exchange. From the study, the researcher has concluded that there exist a regression equation that is relating the firms leverage to its own profitability, growth, size, liquidity and non-debt ratio tax shields, the study has found that there is a general increase in leverage from 2003-2007. It is also concluded that in order to increase firm leverage it should increase those factors that leads to increase in its growth and size. It is also found that the firm's own capital structure affects its value and profitability of the firm affects its leverage.

Girardone (2006) examine the cost X-efficiency levels in European banks initiating from differences in ownership, bank type and financial structure for the period of 1998-2003. The findings of the study are mixed with respect to the financial structure hypothesis, suggesting that bank efficiency should not be statistically diverse in bank-based economies versus market-based economies. The hypothesis seems to hold for the sub-sample. The study also

determines that characteristics like bank type have an important role in explaining the differences in cost efficiency across the financial system. This issue should be of fundamental importance to policy-makers who are involved in corporate governance principles at the international level.

The study by Abor (2007) on Debt policy and performance of SMEs an evidence from the firm of Ghana and South Africa. Cost of funds and ROA were used as indicators to observe the capital structure impact on the profitability of MFIs. The study finds that financing structure particularly long term and total debt, undesirably affects performance of low and medium enterprises. But it was argued that some other factors also effect the profitability of MFIs like debt to asset ratios and debt to equity ratios and also some unconventional variables, nature of owner-ship and county variable. Some other studies have also provided empirical indication supporting this negative relationship between debt level and firm performance and the suggestions are consistent with the pecking order theory (Cassar & Holmes, 2003; Fama & French, 1998; Gleason,& Mathur, 2000; Majumdar & Chhibber, 1999; Titman & Wessels, 1988).

Cull (2007) investigate MFIs financial performance and outreach as well, with the main focus on controlling capital, labour cost and lending methodology as well as institutional features by using the data of 124 rated MFIs from 49 countries, the results show that MFIs providing loans to individuals perform better in terms of profitability as compared to group lending. The fraction of poor borrowers and female borrowers in the loan portfolio of these MFIs is lower than for MFIs which focus on group lending. The study suggests also that individual-based MFIs especially if they grow larger, focus on wealthy clients, a phenomenon termed as “mission drift”. This mission drift does not occur as strongly for the group-based MFIs. The study gives empirical evidence for the trade-off between outreach and profitability. The limited academic investigation into the link between governance and performance of MFIs in

terms of outreach and sustainability, and other governance mechanisms justify the importance of study in the Euro Mediterranean zone, characterized by a very active and diverse microfinance sector completed the former studies.

Pollinger (2007) have used dataset of more than 150 institutions working as bank in United States of America and analyzed that if institutions do not concern the reverse causality phenomena exist among the funding sources and performance, then this failure to take the reverse causality might result in simultaneous equation bias. The results show that the high debt level of firm in their capital have great level of profit margin.

Capital structure theories suggest how some of the factors are associated with debt. There are several findings on capital structure and performance which report that if there is more leverage in funding structure, it will decrease the profitability of the firms as reported by Olivares-Polanco (2005). Caesar & Holmes (2003),Chiang(2002), other studies that find high debt level in the capital structure to decrease firm profitability includes Gleason et al (2000), Hirota (1999), Krishnan & Moyer (1997), Rajan &Zingales (1995). Most of these findings are stable with pecking order theory. With diverse evidence in the literature, it is clear that funding choices and performance is akey outline in the entire domain.

Silva (2008) has conducted a study on capital structure and MFI performance by using a panel data comprise of 290 microfinance institutions from sixty countries. Return on asset and Return on equity are used as profitability indicators. Whereas for capital structure debt dependency ratio are utilized and some controlling factors. The study has point out that maximum lending institutions use high debt finance for operating activities mostly long term leverage as well as short term leverage. Furthermore the results indicate that more debt financing allow MFI to accomplish by enjoying economies of scales and expanding outreach, subsequently the MFIs would be able to face challenging circumstances and threats. The

outcomes also shown that total debt and short term debt ratio effects negatively and on ROA and positively on ROE. This work also exposed that Long term debt ratio has a positively significant impact on ROE but insignificant impact on ROA. This point out that if MFI use long term debt for their processes this may put a lesser amount of financial stress on the administration of MFI. It clarify; that profitable MFIs rely mostly on long term debt.

Kyereboah-Coleman (2007) has worked on similar phenomena by using some other control variables. The study has comprised on panel data of 10 years for the period of 1995-2004 with the sample of 52 MFIs from Ghana. Total debt, short term debt and long term are used as capital structure indicators whereas return on asset and return on equity are used as profitability measures. Age, size and risk level are used as control variables. The findings show that the MFIs are highly debt financed and that their capital structure is explained partially by standard finance theory and other through alternative variables. Debt is positively related to performance; using short term and long term debt. While use of debt is inversely related to risk, study also recommend that some institutions enjoy long term borrow in gin spite of portfolio risk. It also commends that Profitability is inappropriate in explaining the capital structure choices. To conclude, the study shows that board characteristics considerably affect capital structure choices.

Aburime (2008) observes the impact of ownership structure on bank profitability in Nigeria for the period of 1989-2004 and find out that there is no substantial impact of ownership structure on bank profitability. The finding are not consistent with other comparative studies. The findings of La Porta (2002) and Micco (2004) have recommend that state owned banks operating in underdeveloped countries tend to have low profitability than privately owned ones because of low net interest margin, higher overhead costs and higher non-performing loans. This seems to suggest that concentration in ownership may increase performance by diminishing monitoring costs. However, it may work in the reverse direction (Leech and

Leahy, 1991) since there is opportunity; that large shareholders may use their control rights to attain private benefits (Zeitunand Tian, 2007).

Kiiru (2008) has conducted a study on the effect of funding structure on the financial performance in Kenya for the period of 2011-2012. Return on assets are used as indicator of financial performance, while capital structure of deposit taking microfinance institutions is measured as deposits of customers and borrowings to total assets. The results show that there is positive connection between funding and performance. It is concluded that increase in customer deposits and assets in deposit taking microfinance institutions would significantly improve the performance of deposit taking microfinance institutions while the borrowings significantly reduces the financial performance of deposit taking microfinance institutions. Further this study reveal that; deposit taking microfinance institutions preferred customer deposit as source of funding and increase in asset while borrowing generally leads to reduce profitability. The outcomes further determines that most of deposit taking microfinance institutions in Kenya were spending borrowed funds but incrementally using more of deposits as financial performance improvement tool. A stable increase in deposit as a percent of total asset that leads to a total low cost of funds therefore high profit margin. The study also mention that management should focus on improving Customer Deposits and assets as a source of funds as there exist a strong and positive correlation amongst ROA and deposits. The results of the study are valuable in getting consistent understandings on relationship between funding structure and profitability of deposit taking microfinance institutions and evenly high deposit as a percentage of total assets is also related with improved profitability supposed that the deposits are cost efficient. While borrowings have significantly negative correlation with ROA. The study also exposed that there exist a positive relationship between customer's deposit and assets with financial performance of deposit taking microfinance institutions.

Kibet (2009) has carried out a study to establish a relationship between capital structure and profitability of microfinance institutions in Kenya. The study has used descriptive statistics to define the main features of a collection of data in quantitative terms. The study has found that the choice of capital structure is the key for any business organization. The choice is important for any organization to maximize revenues to various organizational constituencies because the impact of such a decision has on an organization's ability to deal with competitive environment. The findings of the study show that most of microfinance institutions in Kenya were using equity or donations as their key source for financing in Kenya which accounted for by 72.42% and 27.58% in form of debt financing. The study further indicate a positive affiliation among capital structure and profitability of microfinance institutions in Kenya.

Bogan (2009) examines the link between the capital structure and sustainability of MFIs by testing the life cycle theory of financing on the larger MFIs with the total assets above US dollar one Million. The results conclude that the life cycle stage variables are considerably related to sustain ability operational and financial. The age of the MFI is found to be positively allied to OSS. There is causal relationship among increased use of grants and operational self-sufficiency, Grants are found to be negatively related to sustainability but positively related to cost per borrower. These results are also established with the findings of Matu (2008). The feasibility of investment funds is considered to be a key indicator for channelling alternative sources of financing to MFIs. The growing rivalry to access financing sources leads to a financial gap in the supply of MF service. Therefore, increasing financing for MFIs during the financial crisis should be on a short term basis (Littlefield and Kneiding, 2009).

Ganka (2010) has conducted a study on Tanzanian rural microfinance the findings show negative and strongly statistically significant relationship between the number of borrowers

per staff and financial sustainability. However capital structure effects financial sustainability but change in financing choices does not increase financial self-sufficiency. It is also identified that that equity financing improves sustainability as it is the cheapest source of financing.

(Nawaz, 2010; Mersland and Strom, 2007) have examined the agency cost propositions empirically in the banking and finance, the literatures are various and still under debatable situation. Mostly the research of the agency costs theory is built on regression estimates that measures the firm performance of equity-capital ratio and other measures of debt as well as including some control variables. In some of the studies there is a positive relationships reported. Even though some of the studies also indicate it negative. The following diverse outcomes are due to the chance of reverse causality that exist between profitability and capital structure in some of the prior findings stated by several experts.

The study by Asin Garmaise and Natividad (2010) examine the effects of asymmetric information on lending using MFIs and the reductions in information asymmetries based on the postulates of Myers and Majluf (1984). It is found that MFIs with most effective performance have easily accessibility to investment funds and the rise in the number of MFIs made them provide better quality loans to the deprived. A positive relationship between evaluations and financing suggests that evaluations lead MFIs to provide new loans to the poor. The empirical results provide clear confirmation of the impact of financing and investment on lending. The nature of MFIs differs greatly as many of MFIs maintain as non-profit status and rely on aids and grants. (Lafourcade, 2005) attempts to prolong microfinance services to the poor, who are un served by MFIs and classified as outreach. The findings also show that African MFIs fund only 25% of the total assets with equity. MFIs finance their activities with the funds from various sources, both debts and equity or mix. Probably any findings with respect to micro finance institutions could be significant for other types of

lending institutions.

Mahjabeen (2010)investigates empirically by comparing the provision of small loans between MFIs highlighting the performance of United States and Japan. The study is conducted on the MFIs of Uganda to understand the importance of MFI's funding choices and its composition, which creates a literature gap in previous works, hence to study the arena is imperative. Generally the study seeks to establish the inferences of funding choices on MFI performance measured by sustainability; definitely characteristic variables of MFIs performance; identify capital structure and then defining the impact of funding structure on MFIs performance; This study assumed that MFIs with improved funding choices might be highly viable, but the point comes that what would be the type of such funding structure that leads to MFIs sustainability both operational and financial. As a result the study set up a hierarchal; sample research design of collecting data of all microfinance institutions from the key leading institutes where genuineness is mostly projected and somewhere gap be exist, the sole microfinance institutions will easily be approached. Grant as a part of funding structure were taken from the donor agencies free of charges and allowed to agriculturalists at a certain charges associated with it. This implies that microfinance institutions which are extremely supported by grants have high sustainability ideally. The study has concluded that funding structure choices largely influence returns on assets in microfinance institutions.

Mwendwa (2011) has conducted a study on the relationship between capital structure and profitability of Commercial Banks in Kenya. The study seeks to fill the gap by determining effects of funding structure on financial performance in DTMFIs in Kenya. The study seeks to answer the question that does funding structure effects the financial performance of deposit taking microfinance institutions in Kenya?

(Uwalomwa and Uadiale, 2012) have led an empirical study by using 31 companies listed on the Nigerian Stock Exchange over a period of 2005-2009. They have proposed that short-term debt has a noteworthy positive affiliation with the performance of firms suggesting that short-term debt be disposed to be least expensive and therefore increasing short-term debt in capital structure tends to rise in performance level of firms. Similarly, the study also have revealed that while shareholders fund (equity shareholders) has a significant and positive impact on the performance of firms. Contrary to this, it was observed that long term debt has a noteworthy negative influence on the performance of firms since it is relatively more expensive due to definite direct and indirect cost is associated with it.

Kar (2012) has conducted a study by using a panel dataset of 782 MFIs in 92 countries for the period 2000-2007. ROA, ROE and operating expenses per dollar lent (OELP) are used as indicators for financial performance and some of the indicators of capital structure are capital-asset ratio, debt-equity ratio, loans asset ratio and PAR>30. This seek out to response the query that "Does financing structure have any significance with the performance?" with the perception an agency theory. The results of the study confirm the agency theoretical claim that an increase in leverage raises profit efficiency. It also indicates that with the decrease of leverage cost efficiency will also decreases. Leverage has an adverse impact on depth of outreach, but the capital structure does not have any noticeable impact on breadth of outreach.

Kinde (2012) has conducted a study on Financial Sustainability of fourteen Microfinance Institutions (MFIs) in Ethiopia over the period of 2002-2010.The findings show that debt to equity ratio has insignificant and negative effect on financial sustainability of MFIs while there is a significant and negative relationship between financial sustainability and dependency ratio at one percent level of significance. The study has found that outreach, dependency ratio and cost per borrower affects financial sustainability of microfinance

institutions. However; the capital structure composition and staff productivity have negligible impact on financial sustainability of MFIs.

Bogan (2012) has revealed that share capital as a percent of assets is significant and negatively related to MFI's financial sustainability. Lislev and (2012) has identified the effect of capital structure on overall financial performance of (MFIs). This study contains cross sectional data of 403 MFIs in 73 countries. Return on assets and cost of funds were used as performance indicator and debt to equity and debt to assets were used as measures for the capital structure with control variables. The findings indicate that mostly the MFIs are highly leveraged and uses approximately four times more debt financing than equity. Further the regression results show that short debt to assets and total debt to assets have a positive and significant effect on cost of funds. Long term debt to assets also has a positive impact on cost of funds, but the relationship is insignificant. Total debt to assets and long term debt to assets have a negative and significant effect on return on assets. Short term debt to assets also has a negative effect on return on assets, but the relationship was insignificant. In this study. There is no significance between the debt to equity ratios and MFIs performance.

Sekabira (2013) has conducted the same research study for Uganda where the MFIs sector faces a surplus of twenty five percent decrease in clienteles every year (Wright, 1998). In order to study the impact of the different type of funding including subsidies and advances on sustainability(OSS,FSS). The study involves panel data of 14 MFIs of Uganda from the period of 2004-2008. OSS and FSS are used as performance measures while deposit on assets, debt on assets, share capital, retained earnings and percent of grant on assets are used as capital structure indicators. Short term debt, percentage of grant on asset and total debt on total equity are undesirably linked with financial sustainability, indicate that actually borrowings and subsidies decreases efficiency thus they financially sustainability. When MFIs borrower's increases with more lending it may increase the scope and enlarge the

source for operational incomes because lending institutions receive interest charges from its clients. Almost 30% of MFIs are unsustainable that means that they are unable to earn enough revenues to cover up their expenses. Share capital to assets is highly correlated to operational as well as financial sustainability. Grants has a negative significant impact on MFIs sustainability, the study indicate that debt and grants have a damaging consequences on MFIs performance hence funding structure is a crucial aspect of MFIs sustainability. Such MFIs which have enhanced share-capital proportion in their capital structure are highly inked with sustainable MFIs such as debts and grants composition descends sustainability of MFIs.

Ngo (2013) has conducted an empirical investigation to find the link between funding and the performance of microfinance institutions of Vietnam. The study propounded that profitable and regulated MFIs which considerably relay generally on debt financing constitutes higher level of sustainability, efficiency and outreach. The results of the study suggest that MFIs may take on more debts to achieve a positive impact on sustainability and to have the ability to expand their outreach. This may lead to the fact that MFIs can expand their outreach to attain sustainability based on the advantages of economies of scale. The study also find out a causal relationship between outreach and sustainability, Sustainable MFIs tend to serve the large number of borrowers.

The study by (Tehulu, 2013) investigates empirically the determinants of financial sustainability of microfinance institutions in East Africa where poverty is a problematic issue. The study Uses unbalanced panel data of 23 microfinance institutions (MFIs) in East Africa from the period of 2004-2009.The results conclude that MFIs financial sustainability is significantly and positively driven by size and loan intensity. Though, management inefficiency and portfolio at risk have a significant and negative impact on financial sustainability. Leverage is measured by debt to equity ratio and have a significant and negative impact on financial sustainability of MFIs. Financial sustainability is positively and

significantly influenced by the gross loan portfolio to total asset and size of the firm whereas efficiency and credit risk have a negative and significant impact on financial sustainability of MFIs. The study also reveals that Breadth of outreach and deposit mobilization are not main determinants of financial sustainability while Firm size, Management inefficiency, loans intensity and portfolio at risk are important determinants of microfinance institutions financial sustainability in East Africa.

Summary:

This chapter analysed previous empirical studies regarding the impact of capital structure on performance with respect to various indicators that provide diverse evidence. On the other hand there is no such study has been documented that empirically examines the impact of capital structure on performance of MFIs in Asia where the profitability of MFIs is already squeezed by greater rivalry in the industry (Lascelles, 2008) a fast growing phenomena. Therefore; this study is motivated by the need to close this knowledge gap by studying the association between the capital structure and performance of MFIs in Asia.

CHAPTER 4

DATA AND METHODOLOGY:

This chapter present the research design and methodology that is used to carry out the research. It presents the research design, sample size, data gathering and data analysis.

4.1 Data and Sample

For research purpose; the study used secondary data collected for the microfinance institution from the microfinance information exchange. The study restricts dataset to include only Microfinance institutions whose data is practically reliable and for this reason the related data is collected from individual institutions as reported to MIX Market on four star and five star diamond disclosure ratings. The data is collected form four regions of Asia where MFIs are growing fast and poverty is relatively high such as Eastern Europe and Central Asia, the Middle East and North Africa, East Asia and Pacific and South Asia for the year of 2000-2013. Specifically; for the capital structure variables and MFI characteristic variables, the study uses data from MFI yearly reports provided to MIX Market. The study uses the data from all of the MFIs with over $US1.3 million in total assets, at its diamond disclosure rating on MIX Market and audited annual financial statements. Here, the analysis concentrates on the viability of MFIs. Given that the MFI data are collected from MIX Market, so the MIX Market definitions for operational self-sufficiency and financial self-sufficiency are used. Moreover the data of macroeconomic variables is collected from world development index.

4.1.1 Variable Description

The variables definition and their measurement are as follows:

DEPENDENT VARIABLE				
Variables	**Abbreviation**	**Effect**	**Definition**	**Source**
Operational-self sufficiency	**OSS**		Financial Revenue /(Financial Expense + Impairment Losses on Loans +Operating Expense)	MIX Market
Financial-self sufficiency	**FSS**		Adjusted Financial Revenue / Adjusted (Financial Expense + Impairment Losses on Loans +Operating Expense)	MIX Market
Return on assets	**ROA**		Net profit to total assets	MIX Market
Return on equity	**ROE**		Net profit to total equity	MIX Market
Breadth of outreach	**LNAB**	Negative	Log of active borrowers	MIX Market
Depth of outreach	**ALS**		Average loan size per borrowers	MIX Market
Management efficiency	**MEFF**		Operating expense to total asset costs	MIX Market
INDEPENDENT VARIABLES				
Loan intensity	**LI**	Positive	Gross loan portfolio as a percentage of total assets	MIX Market
Portfolio at risk>30days	**PAR**	Negative	The level of credit risk or inversely portfolio quality	MIX Market
cost per borrower	**CB**	Negative	Cost associated with borrowing	MIX Market
Productivity	**PRO**	Positive	$\frac{\text{active borrowers}}{\text{number of loan officiers}}$	MIX Market
female borrower	**FB**	Negative	Female clients	MIX Market

Loan loss rate	**LLR**	Negative	Non receivables	MIX Market
Young MFIs	**YNG**	Indeterminate	Dummy	MIX Market
Active borrowers	**LNAB**	Negative	Number of borrowers with loan outstanding	MIX Market
Mature	**MAT**	Positive	Dummy	MIX Market
Firm Size	**FS**	Positive	Natural logarithm of total assets	MIX Market
Regulated	**REG**	Indeterminate	Dummy	MIX Market
Banks	**Bank**	Indeterminate	Dummy	MIX Market
Nongovernment organizations	**NGO**	Indeterminate	Dummy	MIX Market
Debt relative to assets (%)	**DTA**	Negative	Total debt/ total assets	MIX Market
Deposits relative to assets (%)	**DA**	Positive	Number of deposits/ total assets	MIX Market
Grants as a % of asset	**GA**	Negative	Grants/ total assets	MIX Market
Share capital as a % of assets	**SA**	Negative	Share capital/ total assets	MIX Market
Debt on total equity (%)	**DTE**	Negative	Total debt/ total equity	MIX Market
Gross domestic product	**GDP**	Indeterminate	Gross domestic product	WDI
Inflation	**INF**	Negative	Inflation	WDI

4.2 Methodological Framework

Literature on Microfinance put in consideration: life cycle model which is a basic process of MFIs transformation. It suggests that financing is linked with the phases of MFIs growth therefore the study mainly focuses on the impact of capital structure choices on the financial performance.

Various Studies on firm performance used a number of measures to test the estimates of different financing Structure hypothesis. Some of the most common measures of performance that have been used over the years comprise of financial ratios (Madajewicz,2008). For the purpose, this study utilizes return on assets, return on equity, operational self-sufficiency, financial self-sufficiency, outreach and management efficiency as proxy of performance. The Microfinance Financial Reporting Standards recommend the use of return on asset(ROA) and return on equity(ROE) as a measure of microfinance institutions profitability. In this study two measures of financial sustainability namely as operational self-sufficiency and financial self-sufficiency are used while return on asset and return on equity are used as financial performance. The social performance is measured by number of active borrowers to capture (breadth of outreach) and average loan size to measure (depth of outreach). The management efficiency is also used as a proxy for performance.

The study applies the following model suggested by Bogan (2009) and Ngo (2013). Hence the baseline model is specified as follows:

$$Perf_{ijt} = \alpha_0 + \sum_i \alpha_i X_{ijt} + \sum_i \beta_i Y_{ijt} + \sum \gamma_j Z_{ijt} + \sum_K \phi_k R + \varepsilon_{ijt}$$

Where αi, βi, γj and ϕk and are parameter for prediction; ε denote error terms and α_0 the constant; represent significance of performance, if all the consider variables were 0.

In this study MFIs' performance (PERF) is measured by (1) financial sustainability namely as operational self-sufficiency and financial self-sufficiency. The social performance is measured by the number of active borrowers to capture breadth of outreach and average loan size to evaluate depth of outreach. The management efficiency is used as performance measure. The financial performance is measured by return on asset(ROA) and return on equity (ROE). The set of country specific variables Z are for j countries and R is set of regional dummies.

Explanatory variables includes: Capital Structure variables for i MFIs (**Xi)** like Debt relative to assets (DA), Deposits relative to assets (DTA), Grants as a % of asset(GA) , Share capital as a % of assets (SA), total debt on total equity (DTE). The set of MFI characteristics variables for i (Yit) comprise of Size (FS), loan intensity (LI), Portfolio at risk>30days (PAR), cost per borrower (CBR), Productivity (PRO), female borrower (FB), loan loss rate (LLR), active borrowers (LNAB). MFI specific dummies for region, legal status (banks, NGOs) and regulated capturing MFI fixed effects. Whereas growth in gross domestic product and inflation are macroeconomic variables j countries.

4.2.1 Impact of Capital Structure on Sustainability

In this study sustainability is measured by two proxies namely operational self-sufficiency (OSS) and financial self-sufficiency (FSS). As suggested by Bogan (2009) and Ngo (2013) the base line model is written in specific form given below:

$$Sustainability_{ijt} = \alpha_0 + \alpha_1 DA_{ijt} + \alpha_2 DTA_{ijt} + \alpha_3 GA_{ijt} + \alpha_4 SA_{ijt} + \alpha_5 DTE_{ijt} + \alpha_6 LNAB_{ijt} + \alpha_7 PRO_{ijt} + \alpha_8 CB_{ijt} + \alpha_9 FB_{ijt} + \alpha_{10} LL_{ijt} + \alpha_{11} LI_{ijt} + \alpha_{12} PAR_{ijt} + \alpha_{13} GDP_{ijt} + \alpha_{14} INF_{ijt} + \varepsilon_{ijt}$$

The above equation constitutes sustainability as dependent variable and explanatory variables include capital structure; MFI characteristics and economic indicators which effects sustainability of MFIs.

4.2.2 Impact of Capital Structure on Financial Performance

The financial performance is measured by return on assets(ROA) and return on equity(ROE):

$$FincialPerf_{ijt} = \alpha_0 + \alpha_1 DA_{ijt} + \alpha_2 DTA_{ijt} + \alpha_3 GA_{ijt} + \alpha_4 SA_{ijt} + \alpha_5 DTE_{ijt} + \alpha_6 LAB_{ijt} + \alpha_7 PRO_{ijt} + \alpha_8 CB_{ijt} + \alpha_9 FB_{ijt} + \alpha_{10} LL_{ijt} + \alpha_{11} LI_{ijt} + \alpha_{12} PAR_{ijt} + \alpha_{13} GDP_{ijt} + \alpha_{14} INF_{ijt} + \varepsilon_{ijt}$$

In the above equation, dependent variable denotes performance and explanatory variables include capital structure; MFI characteristics and economic indicators which effects profit margin of MFIs.

5.2.3 Impact of Capital Structure on Social Performance

The social performance is measured by number of active borrowers to capture breadth of outreach and average loan size to measure depth of outreach.

$$SocialPerf_{ijt} = \alpha_0 + \alpha_1 DA_{ijt} + \alpha_2 DTA_{ijt} + \alpha_3 GA_{ijt} + \alpha_4 SA_{ijt} + \alpha_5 DTE_{ijt} + \alpha_6 ROA_{ijt} + \alpha_7 PRO_{ijt} + \alpha_8 CB_{ijt} + \alpha_9 FB_{ijt} + \alpha_{10} LL_{ijt} + \alpha_{11} LI_{ijt} + \alpha_{12} PAR_{ijt} + \alpha_{13} GDP_{ijt} + \alpha_{14} INF_{ijt} + \varepsilon_{ijt}$$

In the above equation, dependent variable denotes outreach and explanatory variables include capital structure; MFI characteristic and economic indicators which effects outreach of MFIs.

5.2.4 Impact of Capital Structure on Management Efficiency

The management efficiency is measured by operational expense to total asset ratio.

$$MEFF_{ijt} = \alpha_0 + \alpha_1 DA_{ijt} + \alpha_2 DTA_{ijt} + \alpha_3 GA_{ijt} + \alpha_4 SA_{ijt} + \alpha_5 DTE_{ijt} + \alpha_6 ROA_{ijt} + \alpha_7 PRO_{ijt} + \alpha_8 CB_{ijt} + \alpha_9 FB_{ijt} + \alpha_{10} LL_{ijt} + \alpha_{11} LI_{ijt} + \alpha_{12} PAR_{ijt} + \alpha_{13} GDP_{ijt} + \alpha_{14} INF_{ijt} + \varepsilon_{ijt}$$

In the above equation, dependent variable denotes management efficiency and explanatory variables include capital structure; MFI characteristics and macro-economic indicators which effects efficiency of MFIs.

4.3 Estimation Technique

As this study uses the information for MFIs over the period of 2003 to 2013 operating in countries in four regions of Asia to test impact of capital structure on MFIs performance, panel data estimation technique is suitable for this purpose. Empirical researches on capital structure analysis possibly go through from two sources of discrepancies which are missing variables and endogeneity biases, therefore generalised method of moment GMM estimation

technique which deals with omitted variable and endogeneity biases is more suitable for this analysis. When panel data is used, question arises whether the individual effect is taken as a common, fixed or random. To compare between common effect model and fixed effect Radandant fixed model is used. Then fixed effect and random effect models are compared based on Hausman test.

The generalised method of moment model suggested by Arellano and Bond (1991) and modified by Blunder and Bond (1998) is used as estimation technique. GMM estimators are consistent under two conditions. First instruments should be valid and second error terms should not be serially correlated. Arellano and Bond (1991) have suggested two tests to deal with this issue. First test is a Sargan test of over identifying restrictions. It checks the overall validity of the instrumental variables by examining the sample analogue of the moments conditions. Its null hypothesis is that instruments are valid. Second test check whether error terms are serially correlated.

CHAPTER 5

EMPIRICAL RESULTS AND DISCUSSION

Capital structure theories has made great progress in explaining capital structure decisions and the conventional variables that limit it. There are various theoretical models suggested to explain capital structure worldwide and many of these models have been empirically tested in this study like Miller Modigliani theorem, peeking order theory, trade off theory and agency cost theory.

The real effects of financing on performance in theory can be positive or negative due to their influence to financial revenue. It depends on the variances in the features of MFIs that contribute to the effect of financial structure on performance in a number of ways. Financing sources are allied with costs that raise financial expense and have negative effects on net profit. The empirical results are discussed in this chapter:

Summary statistics is presented in this section 6.1. The results of impact of capital structure on performance using panel data analysis is presented in section 6.2.

5.1 Summary Statistics

Table: 01 Descriptive Statistics

	Mean	Standard Deviation	Skewness	Kurtosis	Observations
AB	10.31485	2.131458	-0.30592	5.489358	2500
ALS	4.890349	0.6327237	1.0372566	7.111138	2544
CA	0.103385	0.190172	1.821978	10.20658	2546
CB	13.27927	49.85003	20.12276	626.6062	2528
DA	0.378469	0.434539	0.998388	8.841496	2546
DE	4.872102	37.63447	20.00973	637.9159	2546
DTA	0.06894	0.15987	2.730325	10.51869	2489

EFF	0.054078	0.08562	1.756873	30.09583	2522
EA	0.103083	0.190285	1.823675	10.1981	2545
FB	0.406407	0.465297	0.356963	1.204521	2499
FS	3.331915	3.500364	0.14899	1.122866	2546
FSS	0.341356	0.604242	1.761599	8.359717	2546
GA	3.459003	2.224659	0.135008	2011.06	2544
LI	2.093615	13.70849	15.21491	332.4287	2421
LLR	0.00459	0.040182	23.95135	705.3791	2509
PROD	5.62570	1.696493	-0.00050	3.113681	2527
OSS	0.458759	0.627596	1.182128	6.258177	2546
PAR	0.032615	0.188285	25.10744	857.8	2521
ROA	0.00015	0.06612	-6.15703	71.48418	2527
ROE	0.208844	5.647355	46.75516	2285.312	2527

The descriptive statistics of the dependent and independent variables used in the study is as follows:

It shows the value of mean, Standard Deviation, Skewness, Kurtosis and Jarque-Bera of the variables. The results of table 1 showed that mean value of number of active borrower in logarithmic form is: 10.31485, Average loan size:4.890349, Share capital to asset: 0.103385,Cost per borrower: 13.27927, Debt to Assets: 0.378469, Debt to equity: 4.872102, Debt to Assets: 0.06894, Management efficiency: 0.054078, Equity to asset: 0.103083, Female borrowers: 0.406407, Size of MFI: 3.331915, Financial self-sufficiency: 0.341356, Grants to Assets:3.459003, Loan Intensity: 2.093615, Loan Loss Rate: 0.00459, Productivity:5.62570, Operational self-sufficiency: 0.458759, Portfolio at risk: 0.032615, Return on asset: 0.00015, Return on equity: 0.208844

Correlation Matrix:

	LNAB	ALS	SA	CB	DA	DTE	DTA	MEFF	EA	FB	FS	FSS	GA	LI	LLR	PRO	OSS	PAR	ROA
LNAB	1																		
ALS	0.002	1																	
CA	0.075	0.070	1																
CB	-0.007	0.236	0.307193	1															
DA	0.066	0.392	0.253243	0.189362	1														
DTE	0.000	0.046	-0.01726	0.007509	0.16328	1													
DTA	0.127	0.273	0.17084	0.18856	0.453736	0.034508	1												
MEFF	0.028	0.285	0.502199	0.386345	0.642307	0.049029	0.261046	1											
EA	0.075	0.070	0.999708	0.307025	0.254102	-0.0174	0.16947	0.500819	1										
FB	0.091	0.277	0.452485	0.136298	0.855783	0.127361	0.353031	0.630127	0.451082	1									
FS	0.122	0.365	0.544277	0.276959	0.898341	0.123647	0.48254	0.661459	0.545136	0.901096	1								
FSS	0.117	0.216	0.399445	0.06692	0.52353	0.016986	0.374904	0.25828	0.398417	0.577217	0.604566	1							
GA	-0.006	0.016	0.132389	0.016598	0.2678	-0.00453	-0.01178	0.287375	0.132417	0.068347	0.035192	0.050848	1						
LI	-0.009	0.020	0.094938	0.000388	0.096406	0.019342	0.014257	0.084734	0.095069	0.130793	0.08143	0.091395	0.050095	1					
LLR	0.008	0.050	0.090311	0.12599	0.116404	-0.01092	0.047831	0.155326	0.090293	0.063447	0.138573	-0.00646	-0.00517	-0.01032	1				
PRO	-0.007	0.031	0.108911	0.005751	0.072186	-0.0026	0.096568	0.042826	0.10899	0.10156	0.115832	0.105059	0.014909	0.015208	0.005944	1			
OSS	0.117	0.269	0.456122	0.093055	0.687999	0.069293	0.416937	0.369988	0.455302	0.742169	0.768401	0.864545	0.049493	0.100184	0.001155	0.124805	1		
PAR	0.027	0.070	0.098098	0.053428	0.157735	0.050142	0.117445	0.093364	0.097725	0.159774	0.179605	0.01709	-0.00182	0.022267	0.121015	0.00757	0.070023	1	
ROA	0.065	-0.129	0.100508	-0.2109	0.048779	0.010863	0.104175	-0.30329	0.100192	0.084521	0.044146	0.423935	0.152991	-0.04114	-0.26112	0.056565	0.423204	-0.13607	1
ROE	-0.001	0.003	-0.13245	0.00526	0.10052	-0.00709	-0.00468	0.045128	-0.1324	0.035307	0.043677	0.006355	-0.00046	-0.00141	0.313507	-0.00143	0.002322	0.05722	-0.21458

The above table of correlation matrix shows the correlation among the variables used in this study. The existence of multi-colinearity among the variables has been tested and the results showed that variables are not highly correlated with each other. This low correlation among the variables indicates, there is no multi-colinearity between variables.

5.2 Results of Panel Data Regression Analysis:

The panel data estimation is done by applying Generalized method of moments as discussed in methodology chapter. The lag instrument variables are used as instrument and validity of the instruments is checked by Sargan J test. The analysis begins with by taking only the capital structure variables as regressors on all performance indicators following Bogan (2009) to assess the impact of capital structure variables on performance in model 1, then MFI specific variables are included. Thereafter country specific economic conditions and regional dummies are incorporated in model 3 and 4. The Hausman support fixed effect models for 1, 2 and 3 whereas model 4 with regional dummies Generalized least square is used.

5.2.1 The impact of Capital Structure on Sustainability:

In literature, there is evidence that capital structure effects operational self-sufficiency, so in first model only capital structure variables are regressed in model. In model 2 it is extended to MFIs characteristic variables. Model 3 incorporates the economic indicator, and in model 4 all the capital structure and economic indicators are regressed including dummies to capture the regional effect. GMM is the estimation technique to avoid endogeneity and lag explanatory variables are used. Hausman test in model: 1, 2, 3 supports, that fixed effect model best defines the data.

Table: 03

Results of impact of Capital structure variables on Operational Self Sufficiency:

OSS	Model 1	Model 2	Model 3	Model 4
C	1.746*** (1.779)	-0.221 (-0.460)	-4.362 (-1.471)	0.907 (0.550)
DA	0.001*** (11.49)	-0.101*** (11.28)	-0.109*** (-12.17)	-0.120*** (-12.47)
GA	0.001*** (6.21)	0.005*** (8.86)	-0.005*** (9.32)	-0.005*** (9.30)
SA	0.334*** (4.29)	-0.371 (3.83)	-0.370 (-4.13)	-0.565*** (-5.31)
DTA	-0.134** (1.80)	-0.145*** (3.59)	-0.144*** (-3.39)	-0.183*** (-2.30)
DTE	0.009** (1.99)	0.021*** (3.19)	0.022*** (2.81)	0.029*** (2.90)
LNAB		-0.01*** (9.53)	-0.007*** (-11.48)	-0.008*** (-11.79)
FS		0.141*** (8.52)	0.137*** (9.47)	0.156*** (8.48)
PRO		0.002 (0.61)	0.002 (-0.76)	0.001*** (-3.44)
CB		0.011*** (2.98)	0.015*** (3.77)	-0.027*** (3.61)
FB		-2.790 (0.61)	-0.228 (-0.47)	-0.368 (-0.72)
LLR		-0.721*** (3.41)	-0.678*** (-3.04)	-0.631*** (-4.48)
LI		0.032 (1.50)	0.042*** (2.08)	0.056*** (3.25)
PAR		-0.329 (1.08)	-0.279 (-1.10)	-0.368 (-1.06)
YNG		6.88*** (2.20)	6.477*** (2.50)	9.285*** (2.89)
MAT		5.35** (1.95)	5.276** (1.83)	9.771** (1.98)
NGO		7.25** (2.53)	6.807** (2.32)	8.791*** (3.30)
Bank		-4.70 (0.00)	-4.258 (0.00)	-0.002 (0.00)
REG		-4.39 (1.38)	0.001 (-1.26)	-5.666 (-1.16)
GDP			0.601*** (3.27)	0.003*** (3.61)
INF			0.603 (1.10)	-0.428 (1.05)
SA				-7.782*** (4.30)

EE				-6.393* (-1.74)
EA				9.682* (2.21)
[1]Hausman(p value)	0.000	0.000	0.001	
[2]Sargan J test (p-value	0.099	0.070	0.091	
R^2	0.355	0.377	0.398	0.401

Note: The values in parentheses are asymptotic t-statistic***, **,* indicates statistical significance at 1%, 5% and 10% respectively. [1] it is asymptotically distributed as chi^2 under the null hypothesis that the explanatory variables are un-correlated with the error terms. [2] it is a test of over identifying restrictions and is asymptotically distributed as chi^2 under the null hypothesis that used instruments are valid and the instruments are not correlated with the error terms.

The results reported in Table 3 indicate that the capital structure variables: Debt to asset(DA), Grants to asset(GA), Share capital to asset(SA), Deposit to asset(DTA) are negatively and highly significant correlated to operational sustainability in the main regression model 4 while DTE insignificantly effects OSS where all the control variables are included. From these results we observe that the sources of financing are main and subsidized financing has a negative effect rather than having a positive impact on operational self-sufficiency. These capital structure variables come up with almost the same impact on OSS in model 1, 2 and 3 indicating that capital structure variables are important determinants to operational self-sufficiency. The results are consistent with the study of (Campion, White,2001; Fernando;2004 and Bogan, 2009) that highly profitable MFIs take more debt and are therefore generate more revenue and attain higher sustainability than the non-profitable MFIs. It also highlights that change in the capital structure contribute significantly undesirable towards change in the operational self-sufficiency as suggested by capital structure theories.

As regards MFI specific characteristics, number of active borrowers deteriorate OSS because in actual OSS is affected by the type of borrowers not by the number of active borrowers. It may be due to servicing lower income clients cause more cost and it reduces operational self-

sufficiency. Same results are found in the study of (Bogan,2009). The size of an MFI is highly associated to the OSS. (Mersland &storm, 2009; Cull 2005& 2007; Bogan; Hartarska and Nadolnyak, 2007) these studies have also confirm positive and significant impacts of the size of the MFI on OSS. Productivity is calculated by dividing active number of borrowers to the number of loan officer(CGAP, 2003). Regression result show that the number of borrowers per staff is positively related to the sustainability, the positive figure of this variable indicates that the impact was immaterial that mean rise in the number of borrowers per loan officers increases the viability of lending institutions in Asia. This reveals that the large the number of clienteles to be serve by loan officers it will increase operational self-sufficiency of microfinance institutions. The results are in line with (Christen,1995;Kinde, 2012). The findings of this study are in line with (Dissanayake, 2012) who find significant and negative relationship between cost per borrower and operational sustainability. The results of lending to female borrower and loan loss rate are negative and insignificant. This seems consistent with the prior outcomes of the literature and the comprehensive review. It may leads to the point of the fact that focusing on lending to female borrowers makes MFIs less effective and therefore decreases performance (Hermes, 2011). This may be due to because institutions are subsidy dependent and the lending interest earnings and fees they generate would not cover the administrative expenses that leads to very gradual MFI operational sustainability (Hilesillasie, 2001). Numerous arguments against focusing on advancing loans to female borrowers have been considered as a good decision of MFIs. Because in order to expand MFI operations, external finance providers have a tendency to focus on the main performance indicators instead of lending to female borrowers indicator to determine financing decisions. Therefore it is concluded that female borrowers does not contribute in MFI sustainability. There is positive and significant link between loan intensity and OSS, one would expect (Bourke, 1989). PAR a measure of risk has negative impact on

OSS, because with regard to the trade-off theory, higher volatility of risk raises firm's probability of financial distress. Young and mature(YNG,MAT) MFIs and NGOs are positively linked at 1% and 5% level of significance while banks decreases sustainability. (Hartarska,2005) also find out that NGOs are highly correlated to OSS at 1% levels of significance. BANK and Regulated MFIs does not relate to OSS because sometimes regulated status for highly debt dependant MFIs has some disadvantages which leads to low sustainability. The results are reliable with (Christen and Rosenberg, 2000; Ngo and Nguyen, 2007; David,2009 and Ngo, 2013).

As case of economic conditions of the country the results reveal that GDP growth has positive significance while INF has negative and insignificant impact on OSS of MFIs. Regional comparison indicate that relative to the base region Middle East: operational sustainability performs worse in South Asia and Eastern Europe while better in East Asia.

Determination coefficient (R^2) was also carried out to determine the strength of the relationship between independent and dependent variables. The study established an adjusted R^2 ranges between 35.5%. to 40%. The Sargan J test supports that instruments are valid.

Table: 04

Results of Impact of Capital structure variables on Financial Self Sufficiency:

FSS	Model 1	Model 2	Model 3	Model 4
C	0.129 (1.475)	-0.103 (-0.209)	-4.447 (-1.461)	0.038 (-0.024)
DA	-0.011*** (-7.35)	-0.796*** (-8.06)	-0.779*** (-8.56)	-0.950*** (-8.67)
GA	-0.005*** (-5.17)	-0.004*** (-6.68)	0.004*** (6.98)	-0.004*** (-7.03)
SA	0.293*** (14.09)	-0.220** (-2.20)	-0.219*** (-2.33)	-0.381*** (-3.39)
DTA	-0.128*** (-2.24)	-0.113*** (2.32)	-0.109*** (-2.16)	-0.149*** (-1.83)
DTE	0.011**8 (2.36)	0.022*** (3.02)	0.023*** (2.74)	-0.029*** (2.85)

LNAB		-0.006*** (6.83)	-0.005*** (-8.21)	-0.006*** (-8.53)
FS		0.112*** (6.54)	0.108*** (7.17)	0.126*** (6.38)
PRO		0.002 (0.46)	0.003 (-0.65)	0.001*** (-2.97)
CB		0.003 (0.66)	0.005 (0.96)	-0.015*** (2.23)
FB		-0.508 (1.05)	-0.452 (-0.91)	0.593 (-1.13)
LLR		-0.153 (6.57)	-0.148 (-6.13)	-1.276*** (-7.85)
LI		0.037 (1.96)	0.047 (2.56)	0.055*** (3.27)
PAR		-0.542 (1.38)	-0.490 (-1.45)	-0.606 (-1.39)
YNG		9.876*** (3.11)	9.431*** (3.47)	11.154*** (3.29)
MAT		7.670*** (2.47)	7.593*** (2.31)	11.838*** (2.29)
NGO		5.341*** (2.06)	4.872*** (1.85)	6.284*** (2.43)
Bank		-7.729 (0.00)	-7.250 (0.00)	-9.193 (0.00)
REG		-7.668*** (2.38)	0.002*** (-2.26)	-9.193*** (-1.88)
GDP			0.627*** (3.43)	0.472*** (3.55)
INF			0.626 (1.12)	-0.665 (1.12)
SA				-5.998*** (-3.35)
EE				8.619* (-1.74)
EA				8.619 (1.16)
[1]Hausman(p-value)	0.001	0.000	0.002	
[2]Sargan J test (p-value	0.071	0.071	0.071	
R^2	0.680	0.390	0.411	0.430

Note: The values in parentheses are asymptotic t-statistic***, **,* indicates statistical significance at 1%, 5% and 10% respectively. [1] it is asymptotically distributed as chi^2 under the null hypothesis that the explanatory variables are un-correlated with the error terms. [2] it is a test of over identifying restrictions and is asymptotically distributed as chi^2 under the null hypothesis that used instruments are valid and the instruments are not correlated with the error terms.

In the same pattern as above in table 4, model 1,2,3 and 4 are estimated by taking financial self-sufficiency as performance measure the result are quite similar to OSS with capital structure. Debt to equity ratio (DTE) has negative and statistically significant impact. That assures MFIs do not pay dividends and this makes equity a cheaper source of financing as compared to debt financing. Pecking order theory seems to be applicable and several other studies provide evidence supporting this negative relationship between debt level and performance.

As the case of capital structure variables results, DA is negatively and statistically insignificant with FSS. Deposit to asset is negatively and significant at the all levels of significance. Share capital to assets is positively linked to MFI financial sustainability but insignificant. Which emphasis on the significance of funding obtained from shareholders in MFI financial sustainability such funding's may boost competitive operations in MFIs. The empirical findings are in line with (Kinde,2012; Roden and Lewellen,1995; Champion,1999; Berger and Bonaccorsi Di Patti, 2006). In this study it is found that increased use of grants and donations have negative and insignificant impact that pushes down operational self-sufficiency (Bogan2009; Vicki 2008). It is observed that development and donor organizations such as the IFC (International Finance Corporation) realized that by preventing off donor dependency and adopting a commercial orientation, MFIs truly attract the capital and savings base they need to scale up their microloan portfolio that may boost up sustainability, outreach, lower lending interest rates, and start fulfilling the demand of clients.

For MFI characteristics, number of active borrowers has negative and insignificant impact on financial sustainability. (Hartarska, 2005 & Ganka 2010) also found no significance between number of active borrowers and financial sustainability. Size is significant and positively influencing financial sustainability of an MFI. (Bogan &Cull,2007;

Mersland &storm, 2009; Kyereboah Coleman & Osie, 2008) also confirms that the size of an MFI is positively effecting its financial sustainability.

Empirical result of productivity showed that the number of borrowers per staff are positively related to the financial sustainability but statistically insignificant. The positive figure of this variable indicates that the impact was not material that means more the number of borrowers per loan officers increases the financial sustainability of microfinance institutions in Asia. This suggests that the large the number of borrowers to be served; by loan officers it will increase financially sustainable of microfinance institutions. The results are in line (Christen1995;Kinde, 2012). Cost per borrower, loan loss rate and loan intensity(CB, LLR, LL) negatively and significantly explains the financial self-sufficiency of MFIs. Minimum cost per borrower will significantly makes an institution to be more sustainable financially. Same finding is supported by (Woller and Schreiner 2002; Christen, 1995; Ganka 2010 and Dissanayake 2012). Female borrowers have insignificant and positive relation with FSS. In MFI literature it is observed that female borrowers have high repayment rate (Makombe, 2005; Premchander, 2003; Kabeer, 2001; Mayou,1999) and consequently leads to financial sustainability. Though, the relationship is not statistically significant. Financial sustainability is positively and significantly influenced by loan intensity.Same results by (Tehulu, 2013). The portfolio at risk >30 days (PAR) measures how efficiently microfinance institutions makes collection in 30 days. More the portfolio at risk implies low the repayment rates and therefore, less financial sustainability. (Nyamsogoro, 2010) finding indicates that there is a negative and insignificant link between portfolio at risk and FSS of microfinance institutions. The findings depict that the least efficient the microfinance institution (high portfolio at risk); the less will be its financial sustainability. Therefore the statistics for these variables indicates that there is insignificant relationship between the two variables. NGOs type MFIs, Young and mature MFIs have positively connected to FSS but young MFIs and NGOs are highly

correlated to financial sustainability while BANK has no significant effect on performance. Regulated status has negative and significant influence on FSS.

Macroeconomic variables have their significance on FSS like GDP growth has positive influence while inflation has no significant influence on financial sustainability of MFIs. Regional comparison indicate that relative to the base region Middle East financial sustainability performs better in Eastern Europe while worse in South Asia.

From the econometric results the value of R^2 specifies that the percentage change in the dependent variables which can be explained by the independent variables is 43%in the main regression model 4. However, (Cameron, 2009; Ganka, 2010) articulates that for panel data, the value of R^2above 0.20is suitable for the reliability of decisions. The Sargan J test supports that instruments are valid.

5.2.2 Impact of Capital Structure on Financial Performance (ROA,ROE):

In this section regression analysis is done considering return on asset and return on equity as performance indicators. In the same pattern as above model 1, 2, 3 and 4 are estimated by taking return on asset and return on equity as performance measure with capital structure variables, the result are as follows:

Table: 05

Results of Impact of Capital structure variables on Return on Assets:

ROA	Model 1	Model 2	Model 3	Model 4
C	0.001 (1.049)	0.001 (-0.441)	0.001 (0.770)	0.002 (0.969)
DA	0.001*** (7.50)	-0.031** (1.99)	-0.031** (-1.99)	-0.039** (-1.97)
GA	0.001** (1.83)	0.002*** (2.33)	0.001*** (2.35)	0.001*** (2.62)
SA	0.039*** (4.14)	0.004 (0.15)	0.003 (0.11)	0.043*** (2.44)
DTA	0.022*** (7.13)	0.042*** (4.06)	0.042*** (4.12)	0.043*** (1.76)
DTE	0.001 (0.98)	0.001 (0.53)	0.002 (0.52)	-0.001*** (4.23)

LNAB		0.003*** (2.30)	0.002*** (-2.42)	0.001*** (-2.63)
FS		0.002* (1.77)	0.002* (1.81)	0.002*** (3.05)
PRO		0.001 (0.44)	0.000 (0.45)	0.002 (0.72)
CB		0.001 (4.91)	0.003 (-5.02)	0.001*** (-2.34)
FB		-0.003 (0.42)	-0.002 (-0.30)	-0.001 (-4.95)
LLR		-0.004 (4.12)	-0.004 (-4.10)	-0.004*** (-2.17)
LI		0.002 (0.80)	0.002 (0.84)	0.001 (-4.39)
PAR		-0.062** (1.88)	-0.062** (-1.88)	-0.064** (-1.79)
YNG		0.043*** (3.05)	0.043*** (2.98)	0.041*** (3.02)
MAT		0.040*** (3.53)	0.040*** (3.49)	0.040*** (3.84)
NGO		-0.0138*** (2.28)	-0.013*** (-2.33)	-0.011*** (-1.94)
Bank		-0.010 (0.00)	-0.010 (0.00)	-0.010 (0.00)
REG		-0.010 (1.45)	0.000 (-1.41)	0.001* (-1.92)
GDP			0.003*** (2.90)	0.001*** (2.91)
INF			-0.001* (-1.78)	-0.002* (-2.73)
SA				-0.002 (0.38)
EE				0.041 (0.63)
EA				-0.041** (-2.27)
[1]Hausman(p value	0.001	0.000	0.001	
[2]Sargan J test (p-value	0.091	0.090	0.091	
R^2	0.377	0.394	0.400	0.423

Note: The values in parentheses are asymptotic t-statistic***, **,* indicates statistical significance at 1%, 5% and 10% respectively. [1] it is asymptotically distributed as chi^2 under the null hypothesis that the explanatory variables are un-correlated with the error terms. [2] it is a test of over identifying restrictions and is asymptotically distributed as chi^2 under the null hypothesis that used instruments are valid and the instruments are not correlated with the error terms.

In the same pattern as above in table 5 explains the results of return on asset as performance measure. Among capital structure variables, Debt to asset and debt to equity and grants to

assets have negative influence on ROA. Nikolaos (1996) also found the negative and statistically significant relationship between debt to equity ratio and profitability. The findings are parallel to (Mohamad, 1994; Kiiru, 2008) that debt to asset ratio and debt to equity ratio are negatively related to profitability while deposit to asset ratio have positive impact on performance. With reference to Jensen's (1986) theory of the agency cost reflects debt financing as a penalising device which enforces managers to maximize shareholders wealth rather than building domains. Hence, there exist a negative relation among capital structure and financial performance and evidence provided by (Chen,2004; Friend and Lang,1988; Rajan and Zingales,1995 andWald,1999). It has been observed that ROA ratio is positively associated to deposits to assets. From the regression results, a unit increase in deposit to assets ratio would lead to a significant positive increase in ROA. While equity would lead to decrease in ROA. It is found that lower Deposit to assets ratio, the larger is the MFI ability to invest in its assets from deposits. Large deposits as of total assets will usually leads to an overall lesser cost of capital. The results are concurred with (Hollis and Sweetman, 2007; Kiiru, 2008). With (Cull, 2011), it is suggested that MFIs should consequently expand their services towards offering more deposits. Share capital to assets is positively and noteworthy linked to financial sustainability. Which emphasis on the significance of financing obtained from shake holders in microfinance institutions financial Sustainability. Such as financing may boost competitive operations in MFIs. Results are in line with the results of (Sekabira, 2013).

As regards MFIs' specific variables number of active borrowers, size of an MFI and productivity (LNAB, FS, and PRO) contribute increase in return on asset. Woller and Schreiner (2002) found same in his study with productivity. Female borrowers and loan intensity (LI) insignificantly behaves with ROA. Loan loss rate and portfolio at risk. PAR is the proxy of risk; is significant and destructively associated with return on asset, suggesting

that regulatory cost incur to combat future risks is the key aspect however such cost compromises MFIs efficiency. Such a cost may incur in the form of loan loss reserves. It also indicates that as the risk increase the profitability of MFI decreases. Young and mature (YNG, MAT) MFIs have significant control on return on asset. Mature MFIs are highly related to performance. Robinson (2001) has also taken in account that mature MFIs can reach large number of poor clients and hence contribute more in profitability. It is also observed that MFIs which achieve a significant scale and profitability are mostly regulated ones. NGOs have negative influence that means not generating enough revenues from commercial debt financing. Bank is negatively related to profitability Consistent with Myers (1984) and Bogan (2009), microfinance banks are regulated and profitable MFIs which have a tendency to rely more on debt financing than subsidized funds for their lending's. To become profitable microfinance banks need to increase their services and scale of operations to attain economies of scale and reduce operating expenses (Cull, 2011).

GDP growth and inflation are significant at 1% whereas cost per borrower and GDP growth is productive with ROA while INF is not effective. This indicates that high inflation cause increase in cost of capital as well as MFI expenditures. The financial performance indicator ROA is insignificantly higher in Eastern Europe relative to base region Middle East whereas South Asia, East Asia lowers ROA.The study established an adjusted R^2 ranges between of 37.7% to 42%. The Sargan J test supports that instruments are valid.

Table: 06

Results of Impact of Capital structure variables on Return on Equity:

ROE	**Model 1**	**Model 2**	**Model 3**	**Model 4**
C	0.201 (1.333)	0.004 (0.058)	0.038 (0.895)	0.066 (0.817)
DA	0.002*** (3.14)	0.145*** (1.27)	1.439 (1.27)	0.914 (1.38)
GA	0.001 (0.88)	0.002 (1.54)	0.002 (-1.54)	-0.001 (-1.63)

SA	-0.855 (1.03)	-0.254 (1.12)	-2.553 (-1.12)	-0.314 (-1.05)
DTA	0.341*** (2.91)	-0.175 (1.02)	-1.697 (-1.02)	-0.186 (-1.06)
DTE	-0.001 (0.64)	-0.003** (1.73)	-0.003** (-1.73)	-0.003 (-1.77)
LNAB		0.001 (0.32)	0.001 (0.24)	0.001* (-1.78)
FS		0.098 (0.85)	0.099 (0.86)	0.137 (-2.96)*
PRO		0.002 (0.82)	0.002 (0.82)	0.001 (0.02)
CB		0.003 (0.59)	0.001 (0.58)	0.001 (0.59)
FB		-0.634 (1.10)	-0.623 (-1.09)	-0.587 (-1.13)
LLR		0.072 (0.75)	0.072 (0.75)	0.072** (-1.79)
LI		-0.001 (0.81)	-0.001 (-0.86)	-0.002 (-1.37)
PAR		0.141 (0.83)	1.411 (0.83)	-1.400 (0.79)
YNG		-0.035 (0.23)	-0.043 (-0.27)	-0.085 (-0.51)
MAT		-0.287** (-1.93)	-0.288** (-1.93)	-0.038 (-0.25)
NGO		0.403 (1.54)	0.404 (1.54)	0.250** (-2.11)
Bank		0.088 (0.00)	0.090 (0.00)	0.110* (0.001)
REG		0.001 (0.53)	0.001 (0.55)	0.001 (2.03)**
GDP			-0.006 (0.83)	0.005 (0.97)
INF			-0.006 (-1.10)	-0.004 (-0.72)
SA				-0.109 (-0.89)
EE				-0.018 (-0.54)
EE				0.677 (0.895)
[1]***Hausman(p value)***	0.003	0.001	0.001	
[2]***Sargan J test (p-value***	0.075	0.076	0.075	
R^2	0.399	0.421	0.433	0.450

Note: The values in parentheses are asymptotic t-statistic***, **,* indicates statistical significance at 1%, 5% and 10% respectively. [1] it is asymptotically distributed as chi^2 under the null hypothesis that the explanatory variables are un-correlated with the error terms. [2] it is a test of over identifying restrictions and is asymptotically distributed as chi^2 under the null hypothesis that used instruments are valid and the instruments are not correlated with the error terms.

In the same pattern as above in table 6 explains results of by return on equity as performance measure with and without capital structure variables. The study finds a positive and statistically insignificant relationship between debt to asset and return on equity. Which is consistent with Bokpin (2009). GA, SA, DTA have undesirable and statistically insignificant relationship with financial performance of MFIs. In case of MFI specific variables number of active borrowers is negative and significant at 1% significance level. The productivity and cost per borrower has positive effect. Loan intensity is negatively influencing ROA, these findings are also concurrent with (Okumu,2007) and it may leads to loan losses. FS, NGO, BANK and REG status of MFIs statistically significant predictor variables that improves ROE. While FB, PAR, mature and young MFIs have negative and insignificant association with ROE. It has been observed from the results that size of MFI, NGOs and regulated status of MFIs contribute in the financial performance of MFIs by using more debt financing. Consistency with the study of (Christen and Rosenberg, 2000; Ngo and Nguyen, 2007; and David, 2009), It has been argued that only regulated MFIs can achieve a significant scale and profitability.

GDP growth have positive insignificant impact and inflation has negative effect. The comparatively high return on equity compared to South Asia, Eastern Europe to the base region Middle East is attributed to the liberalized economic market in Asia; promoting a viable open market where the financialists exploit each chance to get the best from their funds. The study established an adjusted R^2 ranges between of 39.9% to 44%. The Sargan J test supports that instruments are valid.

5.2.3 Impact of Capital Structure on MFI Social Performance:

There is heterogeneity between financial structure and MFIs characteristics. This tells us that some MFIs may take on more debt to increase outreach. From the empirical results, there is possible trade-off between breadth of outreach and the depth of outreach. With (Goldberg, 2005 and Cull, 2007) number active of borrowers can lead to decline in average loan size due to financing limitations.

Table: 07

Results of Impact of Capital structure variables on Breadth of Outreach(LNAB):

LNAB	Model 1	Model 2	Model 3	Model 4
C	3.150 (1.934)**	-6.213 (-1.789)***	2.136 (0.748)	-4.509 (-1.462)
DA	0.002*** (3.27)	-0.234* (1.72)	-0.236* (-1.72)	0.202* (1.74)
GA	0.001** (1.94)	0.011* (1.70)	0.011* (1.70)	-0.010* (-1.72)
CA	0.118*** (2.76)	-0.213 (1.61)	-0.215 (-1.61)	-0.161 (1.39)
DTA	0.362*** (4.17)	0.568** (1.82)	-0.461* (1.76)	0.113** (1.94)
DTE	0.006*** (3.11)	0.012* (1.76)	0.010* (1.74)	0.002* (1.77)
ROA		-0.327 (1.46)	-0.361 (-1.48)	-0.428 (-1.39)
FS		0.171* (1.77)	0.177* (1.77)	0.138* (1.77)
PRO		0.002 (1.31)	0.002 (-1.29)	0.001 (-1.32)
CB		-0.039 (1.34)	-0.042 (-1.37)	-0.029 (-1.22)
FB		0.679* (1.78)	0.688* (1.77)	0.567* (1.80)
LLR		0.191 (1.60)	0.186 (1.59)	0.132 (1.18)
LI		-0.131* (2.02)	-0.158* (-1.90)	-0.132* (-1.77)
PAR		-0.841 (1.34)	-0.957 (-1.34)	-0.982 (-1.41)
YNG		12.692 (1.47)	12.220 (1.46)	12.572 (1.36)
MAT		35.096* (1.70)	35.089* (1.70)	32.793* (-1.76)
NGO		21.219 (1.32)	21.690 (1.33)	18.868 (-2.27)*
Bank		55.782 (0.00)	55.619 (0.00)	0.009 (0.00)
REG		56.672* (1.73)	0.001* (1.72)	42.181* (1.78)
GDP			-0.138 (0.11)	0.167 (0.78)
INF			-0.137 (-1.60)	-0.848 (-1.54)
SA				16.713 (1.248)

EE				14.972*** (-1.74)
EA				-26.531 (-1.64)
[1]Hausman(p value	0.000	0.001	0.001	
[2]Sargan J test (p-value	0.071	0.070	0.072	
R^2	0.362	0.378	0.391	0.440

Note: The values in parentheses are asymptotic t-statistic***, **,* indicates statistical significance at 1%, 5% and 10% respectively. [1] it is asymptotically distributed as chi^2 under the null hypothesis that the explanatory variables are un-correlated with the error terms. [2] it is a test of over identifying restrictions and is asymptotically distributed as chi^2 under the null hypothesis that used instruments are valid and the instruments are not correlated with the error terms.

In capital structure variables, deposit to asset, debt to asset, and debt to equity (DTA, DA and DTE) has positive influence on breadth of outreach while grant to asset and stock to asset impacts negatively and insignificantly to number of active borrower. Debt to asset and debt to equity ratios are positively related to the number of active borrowers. The result specifies that using more deposits and debt financing allows MFIs to reach a larger number of borrowers and may allow them to offer smaller loans to the poor clients. Findings are in line with (Yunus, 1998; Arora and Meenu, 2010 &Opportunity Fund, 2011), this also makes MFIs cost efficient and allows them to offer small loans mostly associated with high operational costs.

The results can be generalized that MFIs are good at, size, female borrowers, NGOs, mature and regulated MFIs (FS,FB,NGO, MAT, REG) are surely effecting active number of borrowers and statistically having significant relationship. The results of NGO coefficient is in line with (Harksaka, 2005). Productivity, loan loss rate, young MFIs and banks (LLR, YNG, BANK) have insignificant impact on breadth of outreach.

Findings of the study indicate that equity is more expensive and debt financing is necessary for expanding outreach at initial level. Banks may have high costs of deposit mobilisation and they need to expand their services to attain economies of scale and safe more deposits for an overall minor cost of funds.

With increase in cost per borrower and loan intensity (CB, LI) decreases number of active borrowers, because the average cost per borrower is quite high due to refinancing costs and nonfinancial operating expense. Negative effect of loan intensity on MFIs is consistent with (Okumu, 2007). Mature MFIs can realise extensive outreach to the poor (Robinson, 2001)

The effect of macroeconomic variables on breadth of outreach: GDP growth is positively linked while is Inflation negatively related to the breadth of outreach and have no significance. Increase in inflation decreases number of borrowers.

Number of active borrowers is more pronounced in East Europe while insignificant in South Asia East Asia from the base region Middle East. The study established an adjusted R^2 ranges between 36% to 44%. The Sargan J test supports that instruments are valid.

Table: 08

Results of Impact of Capital Structure Variables on Depth of Outreach (ALS):

First model only includes capital structure variables. In model 2 it is prolonged to MFIs characteristic variables, model 3 incorporates the economic indicator, and in model 4 all the capital structure and economic indicators including dummies variables are added to capture the regional effects.

ALS	Model 1	Model 2	Model 3	Model 4
C	210.207* (3.525)	-8.827*** (-2.778)	-5.770 (-1.099)	17.739 (1.528)
DA	0.001*** (3.20)	-0.250*** (2.42)	-0.249*** (-2.41)	-0.235*** (-2.26)
GA	-0.016*** (4.07)	0.014*** (2.86)	0.014*** (2.86)	-0.013*** (2.66)
SA	0.190*** (6.24)	-0.381*** (-3.46)	-0.385*** (-3.54)	-0.365*** (-2.62)
DTA	0.198*** (11.64)	0.230*** (2.17)	0.234*** (2.19)	0.219*** (2.20)
DTE	0.178*** (2.82)	0.108 (1.49)	0.107 (1.48)	-0.116 (1.18)
ROA		0.210 (0.84)	0.199 (0.80)	0.226 (0.88)
FS		0.764*** (5.19)	0.759*** (5.12)	0.735*** (4.88)

PRO		0.002 (0.39)	0.002 (0.39)	0.000 (-0.55)
CB		0.292*** (7.27)	0.291*** (7.26)	3.023*** (6.38)
FB		-0.167*** (5.12)	-0.162*** (-4.92)	-0.167*** (-5.25)
LLR		0.167 (0.38)	0.173 (0.49)	1.701 (0.30)
LI		0.837** (2.37)	0.806*** (2.40)	0.772** (1.88)
PAR		-0.367 (0.95)	-0.376*** (-2.27)	-0.369 (-0.98)
YNG		15.733 (0.29)	11.920 (-0.98)	9.848 (0.18)
MAT		18.013 (0.43)	17.611 (0.22)	27.265 (0.72)
NGO		-31.985 (2.90)	-32.971*** (2.41)	39.61*** (-2.54)
BANK		38.928 (0.00)	41.034 (0.00)	0.004 (0.00)
REG		27.558 (1.46)	0.001 (1.54)	22.878** (1.90)
GDP			-0.994*** (2.62)	0.006*** (2.49)
INF			-1.102 (-1.24)	-0.132 (-1.72)***
SA				-35.888** (1.81)
EE				9.183 (0.68)
EA				-2.804 (-0.06)
[1]***Hausman(p value)***	0.000	0.000	0.000	
[2]***Sargan J test (p-value***	0.091	0.090	0.090	
$\mathbf{R^2}$	0.644	0.668	0.674	0.690

Note: The values in parentheses are asymptotic t-statistic***, **,* indicates statistical significance at 1%, 5% and 10% respectively. [1] it is asymptotically distributed as chi^2 under the null hypothesis that the explanatory variables are un-correlated with the error terms. [2] it is a test of over identifying restrictions and is asymptotically distributed as chi^2 under the null hypothesis that used instruments are valid and the instruments are not correlated with the error terms.

In capital structure variables debt to asset, grants to asset and share capital to asset (DA, GA and SA) has no impact on average loan size per borrowers. This indicates that commercial debts may be more expensive than equity and other funding sources. Therefore, debts are not desirable for expanding outreach. The effect of DTA is positive on ALS because MFIs focus

on providing large loans size. With the study of Lafourcade (2005): regulated MFIs tend to be bigger than the unregulated one's because they can reach more depositors.

In MFI specific variables the impact of NGOs type MFI is desirable and significant at 5% in serving poor clients consistent with (Harksaka, 2005), Loan intensity and cost per borrower encourages average loan size and significant at 1% level, increase in loans size reduces cost per borrower. From the findings of (Gonzalez, 2007; Gregoire & Tuya, 2006 and Hermes,2011): larger loan size is highly linked with high cost efficiency and leads towards increase in social performance. Loan loss rate, young and mature, bank type and regulated MFIs (LLR, YNG, MAT, BANK) are insignificantly connected to loan size of an MFI. The empirical findings point out that regulated MFIs may be providing large loan size to the poor clients in order to exploit the benefits of fixed costs and reduces the transaction cost of providing small loans. Hartarska & Nadolnyak (2007) also prove that regulated MFIs realize better outreach than unregulated MFIs. Regulated MFIs may provide larger loans to the poor clients to increase the fixed costs and curtail transaction cost of providing small loans to large number of borrowers,

The effect of macroeconomic variables on depth of outreach is both positive and negative. GDP growth is confidently correlated at 5% significance level while Inflation is negatively related at 1% level of significance.

Average loan size behaves better but statistically immaterial in Eastern Europe. The regions East Asia, South Asia performs poor with the base region Middle East.

Table: 09

Results of Impact of Capital Structure Variables on Management Efficiency (MEFF):

Management efficiency is measured as Operational expense to total asset. Lesser the operational expense more the MFIs becomes efficient.

EFF	Model 1	Model 2	Model 3	Model 4
C	0.024 (2.946)***	-0.002 (-1.314)	-0.003 (-1.085)	0.015 (11.369)
DA	0.001*** (5.90)	0.045*** (3.80)	0.045*** (2.000)	0.033*** (2.72)
GA	0.001*** (11.81)	0.001*** (7.25)	0.004*** (2.011)	0.006*** (6.79)
SA	0.231*** (30.60)	0.134*** (10.03)	0.134*** (3.024)	0.234*** (11.66)
DTA	0.130*** (24.99)	0.053*** (2.98)	0.053*** (3.003)	0.052*** (3.11)
DTE	0.001*** (2.64)	0.000 (1.26)	0.001 (0.208)	0.200 (2.22)***
ROA		-0.633*** (7.79)	-0.632*** (3.110)	-0.643*** (-8.255)
FS		0.006*** (4.00)	0.006*** (2.760)	0.006*** (3.77)
PRO		0.001*** (2.84)	0.001*** (2.005)	0.001*** (-3.64)
FB		0.057*** (6.08)	0.056*** (3.080)	0.059*** (6.49)
LLR		-0.001*** (-2.68)	-0.001*** (-4.007)	-0.002*** (-3.46)
LI		0.001* (1.78)	0.001* (1.76)	0.001* (-1.76)
PAR		-0.031** (-1.89)	-0.031* (-1.858)	-0.032** (-1.94)
YNG		0.027*** (3.94)	0.027*** (3.450)	0.029*** (4.17)
MAT		-0.001 (0.24)	-0.001 (0.807)	-0.003 (-1.04)
NGO		0.019*** (2.83)	0.019*** (3.004)	0.023*** (2.77)
Bank		-0.023 (0.00)	-0.023 (0.000)	-0.019*** -(3.75)
REG		-0.021*** (4.07)	0.001 (0.000)	0.001*** (-3.44)
GDP			0.003 (0.241)	-0.001 (-2.14)**

INF			0.002 (0.633)	0.000 (0.71)
SA				-0.032*** (-6.75)
EE				-0.016*** (-3.14)
EA				-0.104*** (-5.53)
[1]Hausman(p value)	0.002	0.001	0.001	
[2]Sargan J test (p-value	0.090	0.091	0.091	
R^2	0.762	0.779	0.781	0.788

Note: The values in parentheses are asymptotic t-statistic***, **,* indicates statistical significance at 1%, 5% and 10% respectively. [1] it is asymptotically distributed as chi^2 under the null hypothesis that the explanatory variables are un-correlated with the error terms. [2] it is a test of over identifying restrictions and is asymptotically distributed as chi^2 under the null hypothesis that used instruments are valid and the instruments are not correlated with the error terms.

In capital structure variables. there is positive and significant impact of debt to asset , grants to asset, deposit to asset, share capital to asset and debt to equity ratio (DA, GA, DTA, SA, DTE), this implies that funding increase inefficiency of MFIs. Capital structure theories also explains that large borrowings lead to less efficient MFIs.

Moreover the impact of capital structure on efficiency was positive for regulated MFIs. This end result point out that regulated MFIs are less efficient, engaging high leverage may increase operational expense ratio for MFIs. With Masood and Ahmad (2010); regulated MFIs also experienced more expenses and face disadvantage of being regulated one's. This put emphasises on the importance of building a better environment for MFIs to develop and strengthen themselves in promoting a sustainable systems of microfinance (Omino, 2005). In case of banks, capital structure negatively relate to efficiency that suggest more debt financing lean towards more cost efficiency. In other words highly levered MFIs each time faces the threat of being failure to repay liability. This may be the pointer of foreclosure and bankruptcy of the MFI. Even though the cost of debt is lower than the cost of equity due to tax advantages, it raises forth financial risks that increase the cost of equity.

Large size of an MFI, female borrowers, productivity and loan intensity highly contributes highly inefficiency of MFIs. YNG MFIs are closely connected with efficiency while mature MFIs does not have impact. Hermes (2011) found a negative among efficiency and loan size. Consequently, this study put an additional indication to the current works; there is a significant positive link between efficiency and the loan intensity. (Ngo, 2013) also predicts this undesirable impact of female borrower and loan intensity effecting with efficiency of MFIs.

ROA is the measure of profitability and is negatively related to efficiency, increase in return on assets declines operational expense of MFIs. From the findings it proves that efficient MFIs are the profitable one's. PAR is the proxy of credit risk has negative and 5% significant influence on inefficiency, as loan loss rate and portfolio at risk increases, the efficiency increases by increasing risk factor. Macroeconomic variables also effect the inefficiency of MFIs in like GDP effects negatively at 5%.

Coefficient of determination (R^2) is also carried out to determine the strength of the bond between dependent and explanatory variables. The study established R^2 ranges between of 76% to 78.8%. The Sargan J test supports that instruments are valid.

The efficiency of MFIs in Eastern Europe, East Asia and South Asia acts considerably improved with the base region Middle East.

CHAPTER 6

CONCLUSION

This study is designed at identifying the impact capital structure of MFIs performance in Asia, and to ascertain whether capital structure theories explain the financing decisions of microfinance institutions. The aim is particularly important; by considering the fluctuating pattern of MFI financing, which has suggestions for their capital structure. A sample of 523 MFIs was selected from Asia and data of four star and star MFIs obtained from 2000-2013. The Analysis was carried out on unbalanced panel data using generalize method of moment(GMM) to avoid endogeneity. The effect of capital structure on performance can be positive or negative due to the difference between financial structure and the heterogeneity in MFIs characteristics. The estimated results of the study highlighted significant effect of different financing sources on performance of MFIs considering capital structure theories. Deposit to assets on the performance behaves very well by increasing the financial performance of the firms to a greatextent and make them cost efficient. The empirical findings confirm that customer deposits; a cheapest source of financing for MFIs. It also indicate that high leverage makes microfinance institutions less efficient and unproductive in case of sustainability while opposite in case of outreach and efficiency. It is also evident that MFIs with large size are cost efficient and statistically profitable expect in case of breadth of outreach. It can be inferred that NGOs, REG, and MAT MFIs significantly contribute efficiently in social and financial performance of MFIs. I also found the causal evidence to support affirmation that the use of grants pushes down financial performance while boost up efficiency of MFIs. This also emphasizes that the use of grants for long term may be related to inefficiently operations due to lack of competitive pressures linked with attracting market funding. Notably, the results do not indicate that grants are related to greater or more costly breadth of outreach. Hence grants could obstruct the growth of MFIs into competitive and

sustainable operations. It can be inferred that NGOs and regulated form of MFIs are good at outreach and they command high portfolio quality even though not operationally sustainable.

This study also predicts a trade-off between sustainability and outreach. In fact, the use of high subsidies and grants do not let an MFI to reach self-sufficiency. The effect of capital structure on outreach can be positive or negative due to the difference between financial structure and the heterogeneity in MFIs characteristics. This tells us that some MFIs may take on more debt to increase outreach. From the empirical results, there is possible trade-off between breadth of outreach and the depth of outreach and this trade-off it may be due to financing limitations. With (Goldberg, 2005 and Cull, 2007) number active of borrowers can lead to decrease in average loan size. Large size of an MFI, female borrowers, productivity and loan intensity highly contributes highly inefficiency of MFIs. YNG MFIs are closely connected with efficiency while mature MFIs does not have impact. Hermes (2011) found a negative link among efficiency and loan size. Consequently, this study put an additional indication to the current works; there is a significant positive link between efficiency and the loan intensity. (Ngo, 2013) also predicts this undesirable impact of female borrower and loan intensity effecting the efficiency of MFIs. Whereas our results predicts a progressive relationship between efficiency and the LNAB found in this study of Asia. Consistent with the results of (Titman and Wessels;1988), Pecking order theory suggests that bigger firms reveal low information asymmetry and are thus able to issue more equity finance as compared to small firms.

Thepositive and significant impact of debt to asset , grants to asset, deposit to asset, share capital to asset and debt to equity ratio (DA, GA, DTA, SA, DTE), implies that funding increases inefficiency of MFIs. Capital structure theories also explains that large borrowings lead to less efficient MFIs. Moreover the impact of capital structure on efficiency was positive for regulated MFIs. This end result point out that regulated MFIs are less efficient

engaging high leverage may increase operational expense ratio for MFIs. With Masood and Ahmad (2010); regulated MFIs also experienced more expenses and face disadvantage of being regulated one's. This put emphasises on the importance of building a better environment for MFIs to develop and strengthen themselves in promoting a sustainable systems of microfinance (Omino, 2005).

In case of banks, capital structure negatively relate to efficiency that suggest more debt financing lean towards more cost efficiency. While in other cases banks do not performance of MFIs. In other words highly levered MFIs each time faces the threat of being failure to repay liability. This may be the pointer of foreclosure and bankruptcy of the MFI. Even though the cost of debt is lower than the cost of equity due to tax advantages, it raises forth financial risks that increase the cost of equity.

Return on asset is the measure of profitability and is negatively related to efficiency, increase in return on assets declines operational expense of MFIs. From the findings it proves that efficient MFIs are the profitable one's. PAR is the proxy of credit risk has negative and 5% significant influence on inefficiency, as loan loss rate and portfolio at risk increases, the efficiency increases by increasing risk factor. Macroeconomic variables also effect the inefficiency of MFIs in like GDP effects negatively at 5%.

By adding regional dummies in model 4 having Middle East as base region depicts that: Operational sustainability performs better in East Asia while worse in Eastern Europe and South Asia.In case of efficiency the MFIs in Eastern Europe, East Asia and South Asia acts considerably improved with the base region Middle East. It is concluded that East Asia has better both sustainability and efficiency margin.

Return on asset, return on equity and Average loan size behaves better but statistically immaterial in Eastern Europe while financial self-sufficiency is significantly higher in

Eastern Europe. Breadth of outreach is more pronounced in Eastern Europe while insignificant in South Asia and East Asia from the base region Middle East.

6.1 Recommendations:

- There is need to utilize commercial sources of financing properly to generate more cash and financial revenue. For such a purpose they have to adopt better risk management strategies for the lending to see them as credit worthiness and the management has to be cautious in searching more commercial source of capital.
- The portfolio at risk and the related loan loss provision for the bank type MFIs has to be carefully observed by their particular executives.
- MFIs should go for immense scaling up policies as female borrowers has a clear impact on profitability and sustainability of MFIs.
- It has been realised that MFIs in Asia provides average small loans, these small loan increases operational costs per borrower. An increase in the average loan size increases the performance by reducing the PAR and the cost per borrower. Therefore, they (MFI) should increase average loan size, in order to reduce cost per borrower in the proportion to the amount they advance.
- Unless financial sustainability is touched, the long-term delivery of financial facilities are weakened by the continued requirement to rely on grants and donations. Generally, financial self-sufficiency should also cover the cost of capital and the losses in the real value of equity due to macroeconomic predictor like inflation. Berne states that if an MFI does not reach at sustainability level then the equity will compact by the losses or it must be compensated by grants and donations.

6.2Limitations and Suggestions for Further Studies:

- This study covers only four star and five star MFIs so one star; two star; three star MFIs shall be considered for advance study.

- This study covers only young and mature MFIs future research can incorporate new MFIs, like wise credit union and NBFIs can also be added.
- The secondary data of some MFIs was not timely available and this might have limited the precision of this research findings. The study recommends that in upcoming revisions dealing with the same phenomena, primary data should be exploit to enhance the reliability and for the purpose of quality findings.
- This empirical study covers only four regions of the world new research can cover more regions of the world.
- This study include only two macroeconomic variable GDP growth and Inflation, novel study can be done by including more than two macroeconomic variables.

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