THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF MICROFINANCE INSTITUTIONS IN KENYA

BY

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DECLARATION

I declare that this research project is my original work and it has never been presented anywhere as a fulfillment of any examination.

STUDENT

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This research project has been submitted with my approval as a university supervisor.

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DEDICATION

I dedicate this project to my Dear late parents Mr. and Mrs. Patrick Mose who inspired me to sip from the font of knowledge.

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ABBREVIATIONS

AMFI- Association of Microfinance institutions in Kenya

FSS- Financial Self-Sufficiency

MFIs- Microfinance institutions

MIFs- Microfinance Investment Funds

NGOs- Non-Governmental Organizations

OSS- Operational Self-Sufficiency

PAR- Portfolio At Risk

ROSCAs- Rotating Savings and Credit Associations

SACCOS- Savings and Credit Co-operatives

ABSTRACT

This study was about the relationship between capital structure and the financial performance of MFIs in Kenya. The dependent variable for the study was operational self-sufficiency which measures the sustainability of MFIs. The indepedent variables for the study included outreach, portfolio size, debt to equity ratio, debt to total assets and equity to total assets. The study used logistic regression in analysing data drawn from a database of financial statements of MFIs in Kenya for the year 2009. The results indicate that outreach and portifolio size had a positive effect on financial performance of MFIs in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The study is about capital structure in microfinance institutions in Kenya and how it affects performance of these institutions. Microfinance refers to an array of services that include credit, savings and insurance to low income households in developing countries around the world. MFIs can operate as Non-governmental organizations (NGOs), credit unions, non-bank financial intermediaries or commercial banks. Existing research places the evolution of MFI funding sources within the context of an institutional life cycle theory of MFI development. The players operate both in the urban and rural areas and they accept household goods among other items as collateral (Bogan 2009).The capital structure of a firm is basically a mix of debt and equity which a firm deems appropriate to enhance its operations (Myers 1984).

The performance of MFIs is mainly measured using operational self-sufficiency which measures the sustainability of these institutions. Operational self-sufficiency (OSS) of an MFI is given as the total of financial revenue divided by the total of financial expense, operating expense and loan provision expense. Other performance measures include financial self-sufficiency (FSS), outreach, portfolio at risk (PAR) and return on assets. A high debt-equity ratio is likely to lead to a positive performance of MFIs as measured by operational self-sufficiency and return on assets and vice-versa. This is due to tax advantage associated with the use of debt (Bogan 2009).

The capital structure of lending institutions has become an increasingly prominent issue in the world of finance, particularly in the wake of the 2008 banking collapse and the ensuing government bailouts and institutional restructuring efforts. During any time of financial or banking crisis, when bailout funding is available, questions of capital structure have become more salient. How firms make their capital structure decisions has been one of the most extensively researched areas in corporate finance.

Since the seminal work of Modigliani and Miller (1958) on the irrelevance of capital structure in investment decision, a rich theoretical literature has emerged that models firm's capital structure choice under different assumptions. The capital structure of financial institutions mainly consists of equity and debt finance. Equity finance is made up of ordinary share capital and preferred capital. Debt finance is made up of short-term loans and long-term loans. Most of them are quoted in Nairobi Stock Exchange (NSE) to raise more capital for their operations. They also borrow short-term and long-term loans to finance their operations.

Microfinance institutions perform intermediation role in the economy. In the intermediation process the financial intermediary transforms savings, given the preferences of the saver with respect with liquidity of risk, into investments according to the needs and risk profile of the investor. The role of intermediaries is to reduce frictions of transaction costs and asymmetric information. In the traditional Arrow-Debreu model of resource allocation, firms and households interact through markets and financial intermediaries play no role. When markets are perfect and complete, the allocation of resources is efficient and there is no scope for intermediaries to improve welfare. Therefore intermediaries, have a function only because markets are not perfect. They exist because of market imperfections (Bert and Dick, 2003).

Kenya providers of microfinance services fall under three broad categories: formal, semi-formal and informal institutions. The level of formality is defined by the degree of regulation and supervision. Under the formal category are commercial banks, non-bank financial institutions, building societies and post office savings Bank. The semi-formal category includes savings and credit co-operatives (SACCOs) and microfinance entities, while accumulating and rotating savings and credit associations (ROSCAs) and money-lenders (shylocks) dominate the informal category. Microfinance entities offering financial services and products to low income households are over one hundred. They include; trusts, companies, non-governmental organizations (NGOs), societies and co-operative societies. The informal microfinance practitioners account for less than 20% of Kenya's microfinance business.

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A study by financial Access partnership (FAP) entitled "Finaccess" found out that the financially included population was 62% viz commercial banks and post banks 19%. SACCOS and MFIs 8% and informal actors such as ROSCA 35%. The financially excluded population (those using no formal semi-formal or informal financial services providers) on the other hand was 38%. Some of the reasons advanced for low access to formal financial services include: low incomes, inhibiting cost of financial services due to access barriers and high transaction costs, availability of informal (cheaper) like shopkeepers and unavailability of financial services in relative remote parts of the counting like the North Eastern Province.

1.2 Statement of the problem

Microfinance institutions play a financial intermediation role in many economies. Understanding the capital structure of microfinance institutions is important since an optimal capital structure is needed for the performance and hence sustainability of microfinance institutions. The firm's capital structure is a mix of debt and equity which a firm deems appropriate to enhance its operations. Therefore capital structure is deemed to have an impact on a firm's performance against the position held by Modigliani and Miller in their seminal work of 1958 when they stated their capital structure irrelevance in investment decision. For example, theories such as trade off theory rely on traditional factors such as tax advantage and potential bankruptcy, cost of debt while others use asymmetric information or game theoretical framework in which debt or equity is used as signaling mechanism or strategy tool. Yet there is little consensus on how firms choose their capital structure (Mitto, 2002). This paper tries to fill this gap by researching on capital structure in microfinance institutions in Kenya in order to understand how these institutions choose their capital structure.

Microfinance institutions (MFIs) have risen to the forefront as invaluable lending institutions in the development process. Since capital constraints have hindered the expansion of microfinance programmes, microfinance organizations have had various degrees of sustainability; the question of how best to finance these organizations is a key issue. Studies on the impact of capital structure on a firm's performance have been few and in most cases in developed economies. It is in this vacuum that this study is being carried out in Kenya which is a developing economy. Thus this paper examines the capital structure of microfinance institutions in Kenya and explores how changes in capital structure could improve or affect their performance of microfinance institutions in Kenya. The best mix of debt and equity that will ensure solvency and self-sufficiency is a key issue that this paper tries to address (Bogan, 2009). There is a missing link on how debt-equity ratio affects the performance of MFIs in Kenya. This is the puzzle that this paper aims to answer.

The sources of financing for MFIs are usually linked to the various stages of their development. In their formative stages of growth, MFIs typically rely on donor grants and soft loans (loans with subsidized interest rates) for funding .As MFIs mature, private debt capital becomes available as a source of funding and in their last stages of evolution, and traditional equity financing becomes available. The key performance indicators analyzed for MFIs were efficiency, outreach and financial sustainability. These were compared against data for MFI capital structure variables (i.e. debt relative to assets ,grants as a percent of assets and shareholder capital as a percent of assets) and data for MFI characteristic variables(i.e. the MFI age/log of assets, log of number of borrowers ,log of number of savers ,region ,percent of portfolio at risk and whether or not the MFI accepts deposits).Microfinance institutions (MFIs) need to attain operational self-sufficiency and financial self-efficiency in order to be efficient in their operations. Africa has the highest percent of unsustainable microfinance institutions (Bogan, 2009).

Microfinance institutions in Kenya have faced challenges of performance in their operations. MFIs in Kenya lack funds due to limited donor funding. There is also little support from the government and unsupportive legal and regulatory environment.

Kenyan MFIs as at the end of 2008 had a portfolio at risk of 16% as compared to 40% portfolio at risk as at the end of 2007. This bad portfolio was due to post-election violence which affected many MFIs operations. Portfolio quality varies with regions served by MFIs in Kenya. The loan portfolio is MFI most important asset (Nzomo 2007). A study by Matu (2008) on microfinance capital structure found out those MFIs in Kenya have challenges in coming up with best policy decisions to enhance efficiency in their operations. According to his study Kenya MFIs face challenges with efficiently and effectively delivering microfinance services in the country (Matu 2008). MFIs also face a challenge of regulation which leads to other constraints which among other includes inability to get funds from donors to enhance their operations (Omino 2005). MFIs in Kenya tend to report lower levels of profitability, as measured by return of assets than MFIs in other global regions. Operating and financial expenses are very high, and on average, revenues remain lower than other global regions, but in terms of outreach Kenya dominates as compared to other East African countries.The paper seeks to fill the gap on how outreach affects the financial performance of MFIs in Kenya. (Mwangi and Brown 2005)

A study on outreach and financial perfomance in Ethiopia found out that outreach in MFIs rose in the period between 2003 to 2007 on average by 22.9 %. From financial sustainability angle, the study found out that MFIs were operationally sustainable as measured by return on asset and return on equity and the industry's profit was improving over time. The study also found that MFIs were financially sustainable, but the study found no evidence of tradeo-ff between outreach and financial performance (Befekadu 2007). According to Meyer (2007), outreach and financial sustainability are complimentary because as the number of clients increase MFIs enjoy economies of scale and hence reduce costs which help them to be financially sustainable. On the other hand, Hulme and Mosely (1996) argued that there is an inverse relationship between outreach and financial sustainability. Here the argument is higher outreach means higher transaction cost in order to get information about creditworthiness of clients and hence make MFIs financially unsustainable. It is this conflict of study findings that this paper

tries to address in order to fill the gap on how outreach affects financial performance of MFIs in Kenya.

This paper therefore seeks to examine the capital structure choice of microfinance institutions in Kenya and how capital structure affects the performance of these institutions. The performance measures which will be examined include outreach, portfolio size, debt-equity ratio, operational self-sufficiency, debt relative to total assets and equity relative to total assets. In this paper, microfinance institutions are viewed as playing financial intermediation role between owners of capital and needy borrowers of funds. Theories of capital structure and theories of financial intermediation form the basis of this study. The link between the two theories is important in understanding the performance and sustainability of microfinance institutions (MFIs).

1.3 Objective of the study

The objective of this study is to find out the relationship between capital structure and the performance of microfinance institutions in Kenya.

1.4 Importance of the study

This study will benefit financial institutions which offer microfinance services in making their capital structure choices. Microfinance institutions in Kenya are fast growing in Kenya and they need information on capital structure and how it affects their performance. Microfinance providers in Kenya include commercial banks like Equity bank which is the leading microfinance Institution in Kenya, cooperative bank of Kenya among other banks. Other providers include informal financial institutions like Kenya Women Finance Trust (KWFT), SISDO, Faulu Kenya, and Jamii Bora among others. All these formal and informal microfinance institutions will greatly benefit from this study.

The study will also benefit the Central bank of Kenya whose role is that of supervising and regulating the financial institutions in Kenya. By getting information on how MFIs choose their capital structure. The central bank will be in a better position to set regulations that will guide the microfinance industry. The central bank will also protect

microfinance clients from high interest rates which may be charged by the microfinance institutions. The regulations will also protect the customers' deposits by setting out how the institutions are supposed to handle the deposits of customers.

The study will also be of great significance to investors who may have an interest of investing in microfinance institutions in Kenya. The investors will have confidence in investing in these institutions when they have knowledge of capital structure in MFIs and how capital structure affects the performance of MFIs in Kenya. The donors will be willing to give grants to MFIs when they know that their funds will be used in an efficient and effective way in financing their operations. They will want to know whether they will have good returns for their investments microfinance institutions in Kenya. The investors will be interested on the profitability, sustainability of the institutions and the liquidity of the institutions in order to make better investment decisions.

This study will also be of benefit to financial analysts who will want to come up with liquidity, profitability and other performance ratios of the MFIs in Kenya. By analyzing the income statements, balance sheet and cash flow statements of microfinance institutions in Kenya the analysts will come up with rations which help these institutions to know about their performance. Financial analysts monitor day to day changes which occur in the stock exchange in order to advise investors on the best investment decisions in order to have good returns on their investments.

The study will be of significance to students who will want to know about the capital structure of microfinance institutions and how it affects their performance. This will be especially researching on capital structure in MFIs to get more insight and to come up will better solutions to various problems facing microfinance institutions in their capital structure choice. The study will help the students to have an understanding of capital structure policies and policies and practices in MFIs in Kenya.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter is about literature review of the study. The chapter starts by highlighting theories of capital structure, and then proceeds to highlighting theories of financial intermediation and linking the two theories. The chapter ends by looking at empirical studies on capital structure.

2.2 Theoretical Background

Capital structure refers to the mix of various debt and equity capital maintained by a firm. A firm can choose among many alternatives capital structures i.e. varying degrees of gearing and issuing various instruments, which may include floating rate preferred stock, warrants, convertible bonds, lease financing, forward contracts e.t.c.

2.2.1 Capital Structure Theories

According to Modigliani and Miller in their seminal paper 'The cost of capital corporation finance and the theory of investment, American Economic Review" (June 1958), they stated their capital structure irrelevance proposition that capital structure has no predictable material effect on corporate market values in a perfect capital market. Their theory was premised on assumptions that firms employ only two types of capital or issue only two types of securities i.e. perpetual risk-free debt and unlimited liability equity, perfect capital markets where there are no transactions or brokerage costs, no corporate income taxes, no personal income tax, no bankruptcy costs   and rational investors. In their theory they also assume that there is no growth in corporate earnings, all firms operate in a homogenous risk class, all securities are perpetuities and that all investors borrow and lend any amount at the risk-free rate.

Modigliani and Miller (1958) suggest that the marginal value of leverage may depend on inflation, as well as the personal tax rate. According to miller's idea of neutral mutation, He suggests that firms fall into some financing patterns or habits which have no material effect on firm value.

Incorporating financial distress costs and agency costs, Baxter (1967) was the first to suggest the existence of an internal optimal capital structure based on bankruptcy costs, stating that "if ………. bankruptcy involve substantial administrative expenses and other costs, and causes a significant decline in the sales and earnings of the firm in receivership, the total value of the levered firm can be expected to be less than that of all-equity company. The value of the firm in bankruptcy is reduced by the fact that payment must be made to third parties (Baxter, 1967).

The trade-off theory of capital structure is based on the basic underlying tenet of optimizing value and therefore shareholder wealth, by choosing a capital structure combination which elicits the lowest possible cost of capital for the firm. This theory argues that value maximizing firms attain an optimal capital structure by balancing the corporate tax benefits of debt against the costs associated with debt. Therefore tax shield benefits of debt financing need to be adjusted against the greater probability and higher expected cost of financial distress that rise with increasing debt levels. Trustee fees, legal fees, and other costs of reorganization or bankruptcy are deducted from the net asset value of the bankruptcy firm and from the proceeds that should go to bondholders. Enormous effort has gone into identifying the relevant costs associated with debt financing. Such costs include bankruptcy costs, agency costs; asymmetric information and corporate tax benefit control considerations. In this view, the optimal capital structure is one in which the next dollar of debt is expected to provide an additional tax subsidy that just offsets the resulting increase in the expected costs of financial distress (Myers, 1984).

The trade-off theory has contributed a lot in finance. It yields an intuitively pleasing interior optimum for firms and gives a rationale for cross-sectional variation in corporate debt ratios i.e. firms with different types of assets will have different bankruptcy and agency costs and different optimal debt ratios. However, the theory has limitations i.e. debt ratios as produced by this theory are significantly higher than observed. Secondly, in many industries, the most profitable firms often have the lowest debt ratios, which is the opposite of what the trade off theory predicts (sunder & Myers, 1999). According to Myers (1984) the trade-off theory also fails to predict the wide degree of cross-sectional and time variation of observed debt rations.

In contrast to the trade-off theory of capital structure, the pecking order theory is based on the premise the dilution associated with issuing equity is so large that it dominates all other considerations. It states that companies have a preferred hierarchy for financing decisions and maximize value by systematically choosing to finance new investments using the "cheapest available source of funds. Myers (1984) in the "capital structure puzzle" journal of finance suggests that companies would only issue equity as a last resort when debt capacity has been exhausted. This theory is based on the two assumptions about financial managers i.e. that there is asymmetric information where managers know more about the firms current earnings and future growth opportunities that do outside investors and there is a strong desire to keep such information proprietary. Secondly, managers will act in the best interests of existing shareholders they will forgo a positive NPV project if raising fresh equity would give more of the projects value to new rather than existing shareholders (Myers & Majluf 1984).

According to the pecking order theory, managers prefer internally generated funds (retained earnings) to external funding, and if necessary, prefer debt to equity because of lower information costs associated with debt issues. According to Donaldson's 1961 study of the financing practices of a sample of large corporations, He observed that management strongly favoured internal generation as a source of new funds even to the exclusion of external funds except for occasional unavoidable "bulges" in the need for funds (Myers, 1984).

While the trade-off model implies a static approach to financing decisions based upon a target capital structure, the pecking order theory allows for the dynamics of the firm to dictate an optimal capital structure for a given firm at any particular point in time (Copeland & Weston 1984). A firm's capital structure is a function of its internal cash flows and the amount of positive-NPV investment opportunities available. A firm that has been very profitable in an industry with relatively slow growth (i.e. few investment opportunities will have no incentive to issue debt and will likely have a low debt-to-equity ratio. A less profitable firm in the same industry will likely have a high debt-to-equity ratio. The more profitable a firm, the more financial slack it can build up. Financial slack is defined as a firm's highly liquid assets (cash and marketable securities) plus any unused debt capacity. Firms with sufficient financial slack will be able to fund most, if not all, of their investment opportunities internally and will not have to issue debt or equity securities. Not having to issue new securities allows the firm to avoid both the floatation costs associated with external funding and the monitoring and market discipline that occurs when accessing capital markets (Myers,1984).

Prudent financial managers will attempt to maintain financial flexibility while ensuring long-term survivability of their firms. When profitable firms retain their earnings as equity and build slack that allows financial flexibility and ultimately long term survival. Pecking order theory explains these observed and reported managerial actions while the trade-off model cannot (Myers, 1984).

The pecking order theory, however, has certain limitations. It does not explain the influence of taxes, financial distress, security insurance costs, agency costs, or the set of investment opportunities available to a firm upon that firm's actual capital structure. It also ignores the problems that can arise when a firm's managers accumulate so much financial slack that they become immune to market discipline. In such a case it would be possible for a firm's management to preclude ever being penalized via a low security price and, if augmented with non-financial takeover defence, immunes to being removed in a hostile   acquisition. For these reasons, pecking order theory is offered as a complement to, rather than a substitution for, the traditional trade-off model.

Therefore, we can say that while the traditional trade-off model is useful for explaining corporate debt levels, pecking order theory is superior for explaining capital structure changes (Myers, 1984).

Another capital structure theory is the signaling theory which can be best explained by the use of two hypotheses; information asymmetry hypothesis and the implied cash flow hypothesis, Myers & Majluf (1984) assumed that the firm's managers have superior information about the true value of the company. If management has favourable information that is not yet reflected in market prices, the release of such information will cause a larger increase in stock than in bond prices. To avoid diluting the value of existing shareholders, managers that believe their shares to be undervalued will choose to issue debt rather that equity, conversely, managers will time a new equity issue if the market price exceeds their own assessment of the stock value i.e. if the stocks are overvalued by the market. This well known propensity of companies to "time" their stock offerings helps explain the market's systematically negative response to announcements of such offerings (Myers and Majluf,1984).

Secondly, another signaling theory hypothesis is implied cash flow hypothesis which is premised on the idea that managers know more that investors do. It claims that financing decisions are designed primarily to communicate management's confidence in the firm's prospects and, in cases where management thinks the firm is undervalued, to increase the value of the shares. Increasing leverage has been suggested as one obligates the firm to make a fixed set of cash payments over the term of the debt security, with potentially serious consequences on default. Issuing more debt capital can therefore serve as a credible signal of higher expected future cash flows. On the other hand, raising additional equity by a firm signal also that the net operating cash flows of current operations are disappointing. Investors associate relatively large issues of equity with more severe cash flow changes, resulting in more severe price reactions and therefore firm value (Ross, 1977).

Bayless and Chaplinsky (1996) have proposed another capital structure theory known as "the debt market accessibility hypothesis". The rationale is based on the consideration of investors about the decision of managers to issue equity. If a company is already highly levered, it will be considered as being relatively risky by capital suppliers. Hence, accessing the debt market will be less attractive and issuing additional equity instead becomes a sound decision. If investors reason in this manner, it is expected that highly levered equity issues will be associated with better post-issue stock performance than issues with relatively low debt-to-equity ratios.

2.2.2 Theories of Financial intermediation
2.2.3 The Perfect Model
In the neoclassical model of a perfect market, e.g. the perfect market for capital or the Arrow-Debreu world, the criteria which must be met include; on individual party on the market can influence prices, conditions for borrowing/lending are equal for all parties under circumstances, there are no discriminatory taxes, absence of scale and scope economies, all financial titles are homogeneous, divisible and tradable, there are no information costs, no transaction costs and no insolvency costs.

The arrow-Debreu world is based on the paradigm of complete markets. In case of complete markets, present value prices of investments projects are well defined. This model is the starting point in the present theory of financial intermediation. All deviations that exist in the real world and which cause intermediation by the specialized financial intermediaries are seen as market imperfections (Bert and Dick, 2003).

Raymond (1969) gave stylized facts on financial structure and economic development. He found that in the course of economic development a country's financial system is the separation of saving and investing among different groups of economies. Since the early 1990's there has been growing recognition for the positive impact of financial intermediation on the economy. Both theoretical and empirical studies find that a well developed financial system is beneficial to the economy as a whole. Basically the argument behind this idea is that efficient allocation of capital within an economy fosters

economic growth (Levine, 1997). Financial intermediation can affect economic growth by acting on the saving rate, on the fraction of saving channeled to investment or on the social marginal productivity of investments. In general, financial development will be positive for economic growth. But some improvements in risk-sharing and in the credit market for households may decrease the saving rate and hence, the growth rate (Pagan, 1993).

2.2.4 Modern theories of Financial Intermediation

First, and that used in most studies on financial intermediation, is the informational asymmetries arguments. These asymmetries can generate adverse selection, moral hazard and resulting in auditing or costly state verification and enforcement. The informational asymmetries generate market imperfections i.e. deviations from the neoclassical frame work. Many of these imperfections had to overcome these costs, at least partially. For example, Diamond (1984) considers banks as coalitions of depositors that provide households with insurance against idiosyncratic shocks that adversely affect their liquidity position. He shows that these intermediary coalitions can achieve economies. Diamond (1984) is also of the view that financial intermediaries act as delegated monitors on behalf of ultimate savers. Monitoring will involve increasing returns to scale, which implies that specializing may be attractive. Individual households will delegate the monitoring activity to such a specialist i.e. to the financial intermediary. The household will put their deposit with the intermediary. They may withdraw the deposits in order to discipline the intermediary in his monitoring function. Furthermore, they will positively value the intermediary's involvement in the ultimate investment (Hart and Moore, 1998).

Also there can be as signal of a positive incentive effect of short term debt, and in particular deposits on bankers. Leland (1977) suggested that an intermediary can signal its informal status by investing its wealth in assets about which it has special knowledge. Rajan (2001) show that deposit finance can create the right incentives for a bank's management. Illiquid assets of the bank result in a fragile financial structure that is essential for disciplining the bank manager. Note that in the case households that do not turn to intermediated finance but prefer direct finance, there is still a "brokerage" role for

financial intermediaries, such as investment banks. Here, the reputation effect is also at stake. In financing, both the reputation of the borrower and that of the financial are relevant (Hart and Moore, 1998). Dinc (2001) studies the effects of financial market competition on a bank reputation mechanism, and argues that the incentive for the bank to keep its commitment is derived from its reputation, the number of competing banks and their reputation, and the competition from bond markets. These four aspects clearly interact.

The "informational asymmetry" studies focus on the bank/borrower and the bank/lender relation in particular. In bank lending one can basically distinguish transactions-based lending (financial statement lending, asset-based lending, credit scoring, etc) and relationship lending. In the former class information that is relatively easily available at the time of loan organization is used. In the latter class, data gathered over the course of the relationship with the borrower is used. Central themes in the bank/borrower relation are the screening and monitoring function of banks, the adverse selection problem, credit rationing and the moral hazard problem. Central themes in the bank/lender relation are bank runs, why they occur, how they can be prevented and their economic consequences (Diamond 1984).

Second is the transaction costs approach. In contrast to the first, this approach does not contradict the assumption of complete markets. It is based on no convexities in transaction technologies. Here, the financial intermediaries act as coalition of individual lenders or borrowers who exploit economies of scale or scope in the transaction technology. The notion of transaction costs encompasses not only exchange or monetary transactions costs, but also search costs and monitoring and auditing costs. Here, the role of the financial intermediaries is to transform particulars financial claims into other types of claims so-called qualitative asset transformation. As such they offer liquidity (Pyle, 1971) and diversification opportunities. The provision of liquidity is a key function for savers and investors and increasingly for corporate customers, where as the provision of diversification increasingly and institutional financing. This liquidity should play a key role in asset pricing theory.

The result is that unique characteristics of bank loan emerge to enhance efficiency between borrower and lender. In loan contract design, it is the urge to be able to efficiency bargain in later negotiations, rather than to fully assess current or expected default risk that structures the ultimate contract, with transaction costs, and in contract to the information asymmetry approach, the reason for the existence of financial intermediaries, namely the case in the third approach (Holmstrom and Tirole, 2001).

Merton (1995) notes that intermediaries can transact at near zero costs while individuals have high trading costs. This means that intermediaries can create a large number of synthetic assets through dynamic trading strategies. By hedging appropriately, they can create products with very safe payoffs which Merton argues are particularly valuable to some intermediaries' customers. Alternatively they can engineer products with varying degrees of complexity if their customers need such securities. He has also given the functional perspective of financial intermediaries. According to Merton the functions performed by financial intermediaries are providing a transaction and payments systems, a mechanism for the pooling of funds to undertake projects, ways and means to manage uncertainty and to control risk and provide price information. He suggests a path of the development of financial functions .Instead of a secular trend, away from intermediaries towards markets; He acknowledges a much more cyclical trend, moving back and forth between the two.

Froot (1989) incorporates financial distress costs in financial intermediation .He states that external financing is costly than internally generated funds due to capital market imperfections. These may include discrete transaction costs to obtain external financing, imperfect information as to the riskiness of investment opportunity present in the firm, or the high cost of potential future bankruptcy. At the same time, the firm has an investment opportunity set which can be ordered n terms of net present value. The presence of market imperfections results in underinvestment in some states, where internally generated funds, fall short of the amount of new investment that would be profitable in the absence of these market imperfections i.e. the volatility of profitability causes the firm to seek external finance to exploit investment opportunities when profits are low.

Intermediation can also be linked with participation costs in financial markets. Traditional frictionless theories do not add value and there is no need for intermediaries to manage risk assumes all investors are involved and there is full participation in markets. However, there is extensive evidence that full participation is not an assumption that holds in practice. Typical households hold few stocks and participate in only a limited number of financial markets. Rather than full participation there is limited market participation. One explanation of limited market participation is that there are fixed costs of learning about a particular stock or other financial instrument .In order to be active in a market, an investor must devote time and effort to learning how the market works, the distribution of asset returns and how to monitor changes through time . With fixed setup costs of this kind, it is optimal to invest in a limited number of assets (Allen, 1991).

In addition to the fixed costs of market participation there are also arguably extensive marginal costs of monitoring markets on a day to day basis. Such monitoring is necessary to see how the expected distribution of payoffs is changing and how portfolios need to be adjusted. A theory of intermediation based on participation costs is thus consistent with the fact that intermediaries trade risk and undertake risk management to a large extent. By creating products with stable distributions of cash flows they can lower participation costs for their customers. In extreme cases this may involve creating low risk debt, but even with more risky securities the stability of distributions is important in minimizing the costs of revising portfolios through time. Thus participation costs are crucial to understanding the current activities of intermediaries and in particular focus on risk management (Bert and Dick, 2003).

The third approach is based on the regulation of money production and of saving in and financing of the economy. Regulation affects solvency and liquidity with the financial institution. Rajan (2000) show that bank capital affect bank safety, the bank's ability to refinance, and the bank's ability to extract repayment from borrowers or its willingness to liquidate them. The legal- based view especially sees regulation as a crucial factor that shapes the financial economy (La Porta et al, 1998). Many view financial regulations as something that is completely exogenous to the financial industry.

However, the activities of the intermediaries inherently, "ask for regulations". This is because they, the banks in particular, by the way and art of their activities (i.e. qualitative asset transformation), are inherently insolvent and illiquid. Furthermore, money and its value, the key raw material of the financial services industry, to a large extent is both defined and determined by the nation state. Regulation of financial intermediaries, especially of banks, is costly. There are the direct costs of administration and of employing the supervisors, and there are indirect costs of the distortions generated by monetary and prudential intermediaries when they go into the dynamics of financial regulation (Bert and Dick, 2003).

While the modern theories of financial intermediation outline need for financial intermediaries in an economy, it is important to understand why customers of intermediaries have a need to trade and manage risk. This is important since trading of risk appears to have become central to the role of intermediation. By dealing in financial assets, intermediaries are by definition in the financial risk business. By virtue of this fact they originate, trade or service financial assets, intermediaries are managing and trading risk (Bert and Dick, 2003).

Thus, to summarize according to the modern theory of financial intermediation, financial intermediaries are active because market imperfections prevent savers and investors from trading directly with each other in an optimal way. The most important market imperfections are informational asymmetries between savers and investors. Financial intermediaries, banks especially, fill-as agents between ultimate savers and investors. This is because they have a comparative informational advantage over ultimate savers and investors. They screen and monitor investors on behalf of savers. This is their basic function, which justifies the transaction costs they charge to parties. To ensure the sustainability of financial intermediation, safety and soundness regulation has to be put in place. Regulation also provides the basis for the intermediaries to enact in the production of their monitories service (Bert and Dick, 2003).

2.2.5 Link between theories of capital structure and theories of financial intermediation.

The theories of capital structure and theories of financial intermediation are interlinked to a large extent. They both consider the concept of perfect capital market traditionally. According to Modigliani and Miller (1958), they stated their irrelevant capital markets in a perfect capital market. The concept of perfect capital market is also adopted by theories of financial intermediation. The perfect market for capital or the Arrow-Debreu world is based on the paradigm of complete markets. This is the starting point for the modern theories of capital structure and modern theories of financial intermediation.

Moving away from the idea or concept of perfect markets, both theories adopt the information asymmetries argument. The informational asymmetries generate market imperfection i.e. deviations from the neoclassical framework. Both theories consider the issue of transaction costs in the financial intermediation played by lending or financial institutions in the economy.

2.2.6 Measures of performance

The measures of performance include; Operational self-sufficiency (OSS) which is total financial revenue divided by the total of operating expense, financial expense and loan provision expense, Debt-equity ratio which is a measure of capital structure, Outreach which is the number of the clients who have benefited from MFI loans, Portfolio size which is the total outstanding loan balance, Debt to total assets and Equity to total assets

2.2.7 Empirical evidence of capital structure in MFIs

Germaine and Natividad (2008) have examined the effects of asymmetric information on lending using MFIs. They provide direct evidence on the impact of asymmetric information on both financing and investment through a study of credit evaluations of MFIs.Their empirical setting is based on microfinance institutions in the whole world. The MFI industry encompasses thousands of entities worldwide and has become the main context for policy discussion and research on microfinance. The wide variety of institutional characteristics and organizational forms in the industry results in

heterogeneity and skewness. For example, of 2,572 MFIs reporting to the 2003 microcredit summit, the 30 largest accounted for more than 90% of the clients. Moreover, the very nature of MFIs varies substantially, as many of them maintain a non-profit orientation and tend to rely on donations and subsidies (Germaine and Natividad, 2008).

Their main source of data was a database of audited financial statements and selected operating variables on MFIs provided by micro Rate. Occasionally featured in industry publications (Stauffenberg and Abrams 2007) and general interest reports (The economist, 5 November 2005), the data have been collected and maintained systematically by Micro Rate, the oldest microfinance rating agency in the world, but never opened to empirical research before. The data covered 112 MFIs over the period 1997-2007. Micro Rate carries out both qualitative evaluations and qualitative credit ratings, making fields visits to MFIs headquarters and branches to gather information. The data were presented mostly in a semester (6 months) basis. There were 1147 MFIs period observations in total. The MFIs were drawn from 23 countries in Latin America and Africa (Germaine and Natividad, 2008).

The database provided audited information on both the financing and lending activities of the MFIs. The median asset of the MFIs was $ 10.19 Million. The median portfolio of loans given by MFIs was $ 6, 81 Million and the median amount of financing received by the MFIs in a given semester was a$ 3.09 Million. The median size of a loan originated by the MFI in a given semester was 12,900.

In their study they made theoretical predictions-which linked credit evaluations (and reductions in information asymmetries) to the financing and investments policies of firms. Their empirical strategy made use of the eligibility for the Rating fund subsidy as an instrumental variable to discern the causal impact of evaluations and thus to assess the theoretical predictions (Germaine and Natividad, 2008).

The first prediction stated that credit evaluation will lead MFIs to receive more financing. This prediction arises from the Myers and Majluf (1984) intuition that information

asymmetries reduce the provision of finance. Credit evaluations reduce the severity of finance. Evaluations may, of course reveal either good or bad information about an MFI, but in the absence of an evaluation, will in and of itself discourage financing. This effect should be more pronounced for commercial sources of financing, because governments and non- profits non-governmental organizations are likely to be less interested in financial returns and thus should be less concerned with information issues. The reductions in information asymmetries that is caused by an evaluation may also improve the terms on the MFIs are able to borrow (Germaine and Natividad, 2008).

The second prediction stated that evaluated MFIs will borrow at lowers interest rates. As discussed in Sharpe (1998) and Rajan (1992), lenders with extensive and long term relationships with borrowers may be able to capture information rents and charge higher rates. An exogenous increase in information supply via an evaluation may serve to particularly reduce the rents enjoyed by these lenders. Evaluated MFIs will also be charged lower rates by lenders with whom they have extensive and long-term relationships. In addition to providing information about the current condition of the firm, a regular regimen of evaluations also serves a monitoring function. MFIs that are evaluated on an on-going basis may be expected to function more efficiently, in order to secure positive future evaluations. Evaluated MFIs anticipate that their performance will be communicated to the market by the rating agency. Strong performance will lend access to additional financing. In essence evaluations serve to make MFIs subject to the discipline of the capital markets that rewards better results and cut off weak firms. This should lead to greater efficiency in MFIs operations (Germaine and Natividad, 2008).

Their third prediction stated that evaluated MFIs will operate more efficiently. Specifically, they will make more loans to more clients, controlling for the MFIs physical assets and number of employees. In addition to increasing the quantity should also lead MFIs to make better quality loans (Germaine and Natividad, 2008).

Fourthly, they predicted the evaluated MFIs will have higher portfolio qualities while evaluations improve financial access for MFIs and allow them to expand and

professionalize their business, evaluations may also drive MFIs to focus more on profitability and to neglect their social missions. In particular, MFIs may make fewer small loans to poor clients. Lastly, they predicted that evaluated MFIs will have larger loan sizes (Germaine and Natividad, 2008).

After conducting tests on the above predictions, Germaine and Natividad (2008) came up with the following results. They found out that there is a positive relationship between evaluations and financing demonstrating that evaluations lead to more financing. A 10% point increase in the probability of an evaluation increases the log of all subsequent financing received by 3.8% of its mean. Evaluation increases not only the dollar value of commercial lending but also the total number of commercial lenders. Evaluations have a positive and significant (t-stat=2.07) impact on the log of the number of commercial lenders financing an MFI. A 10% point increase in the probability of an evaluation increases the number of commercial lenders by 30.3 % (Germaine and Natividad, 2008).

Evaluation has a positive and significant (t-stat=2.03) impact on the future weighted average rate paid by the MFI. This result may be driven by the fact that the MFIs increasingly borrow from commercial lenders after an evaluation. These lenders are likely to charge higher rates than non-commercial lenders that is, an evaluation may facilitate access for the MFIs to the more expensive loans offered by commercial finances. A change in the composition of MFI borrowing with a greater tilt towards commercial lenders may thus be driving the overall increased rate (Germaine and Natividad, 2008).

As discussed in Sharpe (1990), lenders may extract information rents over time and charge borrowers higher rates. Consistent with this hypothesis, they found in the two-stage specification for the whole sample that as the relationship between the lender and the MFI increases in length, the rate charged by the lender rises in a statistically significant (t-stat-2.84) manner (Germaine and Natividad,2008).

Prediction 3 was that evaluated MFI will be more efficient and will make more loans to more clients, controlling for physical assets and employees. Regressing the manner of

future loans originated by the MFI per employee on (instrumented) evaluation and the standard controls (which include the number of credit staff) the results show that evaluation lead to significantly (t-stat-2.37) increase future per employee. Evaluations also lead to significantly more MFI clients in the future. These results show quite clearly that evaluation lead MFIs to originate more loan to more clients. They find a negative yet insignificant effect of evaluations personnel expenses. This suggests that the increased loans per employee generated by evaluations are not driven by hiring of more expensive staff. To analyze the impact of evaluations on the asset usage strategies of MFIs, they regress fixed properly in the future on (instrumented) evaluation and the standard controls. The results show that the evaluation lead to significant (t-stat=1.66) reductions in fixed property. MFIs that receive evaluations make more efficient use of their physical assets in supporting their central loan-making and investment activities (Germaine and Natividad, 2008).

In addition to efficiency, another critical questions was that the impact of increased commercial funding (facilitated by evaluations) on the soundness of MFIs lending activities prediction 4 was that evaluated MFIs will make better quality loans. They analyzed the impact of evaluations on portfolio quality. They regressed portfolio quality on (instrumented) evaluations and the controls. Their finding was that evaluation has a positive and significant effect (t-stat-2.45) on portfolio quality. A 10% point increase in the probability of an evaluation raises portfolio quality by 4.4% point which is 4.6% of the mean portfolio quality. This indicates that the information and monitory functions of evaluation lead to more efficient and less risky lending decision by MFIS.

This evaluations lead to increase in both quantity and quality of MFIs loan originations. Evaluations increase the financing of MFIs and lead them to make more efficient manner (Germaine and Natividad, 2008). In another study of capital structure and MFIs by Bogan (2009), He studies capital structure and sustainability. He utilized panel data on MFIs in Africa, East Asia, Eastern Europe, Latin America, the Middle East and South Asia for the years 2003 and 2006. The MFIs data were collected from individual institutions as reported to Mix market. Mix market defines an MFI as "an organization that offers

financial services to the very poor. It classifies MFIs according to the level of information disclosure provide. The analysis concentrates on outreach, efficiency and financial sustainability.

Additional data on country macroeconomic variables (Foreign direct investment, GDP, GDP growth, and inflation) were collected from the World Bank key development data and statistic web site. There is a substandard variation in the types of institutions contained in the data set. When broken down by region, there were interesting regional differences Africa had the highest percent of unsustainable MFIs (37.70%) the highest percent of portfolio at risk (7.02%), and the lowest average return assets (0.43%). The East Asia and Pacific region had the lowest percent of unsustainable MFIs (6.56%). The Eastern Europe and Central Asia region had the highest return on assets (5.25%), the lowest percent of portfolio at risk (3.16%), and the highest average cost per borrowers (us$ 273.27). South Asia had the lowest average cost per borrower (Us $ 36.31) with respect to capital structure, there seemed not to be any regional patterns in the raw data (Bogan, 2009).

He used the data to test the life cycle theory of MFI financing where stages in the life cycle are defined by the number of years that the MFI has been operating de-Sousa-shield and Frankiewicc (2004). He divided the sample into three groups corresponding to the de souse-shields and Frankiewicz (2004) Life cycle stages (new, young and mature) and created dummy variable for these three life cycle stages in order to analyze the relationship between life cycle stages definitions, he used standard benchmarks for new (0-4 years), young(5-8 years) and mature (>8 years) MFIs. With these benchmarks, 56.8% of the sample was mature, 29.1 % of the sample was young and 14.1 % of the sample was new. From the regression results, one observed that the life cycle stage variables were significantly related to both operational self-sufficiency and financial sustainability (Bogan, 2009).

The results of the study indicated that the age of the MFI is related to operational self-sufficiency. The independent variables included: MFI capital structure variables (e.g.

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debt relative to assets, grants as a percent of assets, shareholders capital as a percent of assets), MFI characteristics variables (e.g. a dummy variable for whether or not the MFI was classified as a bank, a dummy variable for whether or nor the MFI accepted deposits, the MFI age, the log of assets, log of number of borrowers, log of number of severe, region dummy variables, percent of the portfolio at risk, and country level macroeconomic indicates e.g. direct foreign investments, GDP and inflation (Bogan, 2009).

Another specification was whether or not an MFI was financially sustainable and the independent variables were MFI capital structure variables, MFI characteristic variables and country level macroeconomic indicators. His results indicated log of assets was significant at the 1% level and positively related that larger institutions, as measured by assets, have increased self-sufficiency likely associated with delivery of services to a larger group of clients or with extending credit in the form of larger loans to clients. (Bogan 2009).

Grants as a percent of assets was significant at the 1% level and negatively related to operational self-sufficiency. It is negative and significant at 5% level. Subsidized funding rather than having a positive impact on operational self-sufficiency had a negative effect. He found a strong empirical support for the notion that asset size was significantly and positively related to sustainability (Bogan, 2009).

Matu (2008) in his research paper entitled "Attracting microfinance investment funds promoting microfinance Growth through increased investments in Kenya" has studied microfinance capital structure in order to find out best policy decisions to enhance efficiency in MFI in Kenya. According to his study Kenya still faces major challenges with efficiently and effectively delivering microfinance services in the country. He analyzed three policy alternatives i.e. maintaining status quo, the government regulation of all MFIs and voluntarily for closing the microfinance gap in the supply of microfinance services. All these three alternatives were evaluated against the following

criteria: efficiency, financial and political feasibility, and accessibility to determine the best policy option.

His paper explored the feasibility of microfinance investment funds (MFI) as key drivers for channeling alternative sources of funding to microfinance institutions (MFIs). The growing competition to access funding sources had led to a financial gap in supplying microfinance services, which is jeopardizing MFI sustainability in the country. In 2006, the microfinance Act was passed to enhance the regulating and legal framework for microfinance and to support the growth and development of microfinance in Kenya. This had greatly helped boost the sector resulting in increase in microfinance loans volumes, especially the deposit-taking MFIs such as Equity Bank, K-rep Bank and Jamii Bora. The ability of MFIS to collect deposits has some advantages, especially as the pool for alternative funding shrinks. A vast majority of MFIs in Kenya are informal and unregulated, which has limited their funding sources further weakening their institutional capacity to supply microfinance services and limits their ability to grow (Matu, 2008).

In 1999, the Association of Microfinance institutions (AMFI) was registered under the societies Act as an umbrella organization to represent the microfinance institutions operating in Kenya. The AMFI's activities were initially funded through a 3 year grant from the United States Agency for international Development (USAID) which aimed to support the growth and development of MFIs, by promoting sustainable, efficient and effective delivery of microfinance services. Further, AMFI aimed to organize a network of MFIs in the country who were committed to developing and making available a wide array of microfinance services to those who needed it, especially those whose needs were unmet by the formal financial sector (Matu, 2008).

His data for the study included MFIs in Kenya especially those affiliated to AMFI. They included Jamii Bora, Equity Bank, Faulu Kenya, SISDO, Jitegemee Credit Scheme, Micro Kenya Limited, Kenya Women Finance Trust Co-operative bank, CIC insurance, K-rep bank Limited, Aga khan Foundation among others. While Kenya has 250 organizations that practice some form of microfinance business, only 20 practice pure

Microfinance, of which 4 are deposit taking and 16 are credit only. The remaining 230 MFIs in Kenya are classified into three different tiers, with the first tier being deposit-taking institutions such as bank, the second tier being credit only facilities and the third tier being informal organization supervised by an external agency other than the government. These distinct classifications have led to some of the MFIs specializing in certain niche markets, which have contributed to their growth and sustainability in delivering microfinance. For example, the ability to collect deposits has enabled Equity Bank to appeal to those excluded by the high costs of accessing traditional banks, while Jamii Bora has identified itself as the financial provider to former thieves and beggars (Matu, 2008).

Despite the enactment of the microfinance Act, AMFI still faces challenges in building the capacity of the Microfinance sectors and reducing the inefficient delivery of microfinance products and services. Furthermore the continued success and rapid growth of microfinance has led to a financial gap in the funding needed to meet the growing demand. This could serious impact the ability of Kenyans to access the financial resources needed to obtain basic socio-economic benefits such as education, health care services, land ownership, income generating activities and credit facilities. A study on the financial sector found that 35.2% who are entirely excluded from accessing any financial services. This has greatly undermined the overall wellbeing of the poor people by limiting their opportunities to improve their socio-economic status (Matu, 2008).

There are a range of Microfinance investment fund (MIF) investors. According to presentations at the 2004 Financial sector Development Symposium Berlin, the main types of MFIs investors fall under four categories; private donors, development agencies, private individuals and institutional investors. These investors use a variety of lending instruments such as grants, subsidized loans, and loans at or close to market rates, equity participation, guarantees, and technical assistance (TA) as a means of supporting the microfinance sector (Matu, 2008).

After conducting his study Matu (2008) analyzed his data. In 2007, there were more than 45 microfinance investment funds (MIFs) that either allocated their investments directly or indirectly to MFIs in Africa. These MFIs ranged in their total assets where a majority (89.8%) operated above the conventionally accepted sustainable size of having microfinance portfolio of at least $ 20 Million. According to the Mix market, of the 45 MIFs that reported in investing in Africa, only 38 MIFs reported their total asset and share of fund allocation. The total assets of the 38 MIFs were approximately % 1.7 Billion and they were invested in 150% MFIs (Matu, 2008).

The major findings of the case analysis of MIFs investing in Africa found that; a country's risk rating, the corporate governance systems that protect investments the administrative and economic environments that businesses operate under and the ease of accessing domestic capital markets play an integral role in determining where investors choose to place their investments. Found out that there is an inverse relationship between the government's involvement in the economy and levels of investment. The share of government activity in the economy as a share of GDP may crow-out private investments activity. According to the crowding out theory, government spending that competes with the private sector inherently causes the cost of private investment to increase. As consequence, the policy implication for a country trying to attract MIF investments is to ensure that they have a favourable business environment, where the government does not crowd out investors and corporate governance systems are in place to mitigate potential investments in the country (Matu, 2009).

After analyzing various policy alternatives to enhance efficiency, financial feasibility, political feasibility and accessibility the best policy alternative was selected. The preferred policy alternative should consist of rules and frame work for provision and delivery of microfinance in Kenya and it should apply to all rules to guide MFIs operation, in addition to providing the information, performance criteria and governance structure. Based on the evaluation criteria, a combination of policy alternatives 2 and 3 (government regulations and self-regulation policies) is the best policy option for closing

the financial gap facing MFIs in the country and for providing the greatest opportunity for the growth and development of microfinance in Kenya (Matu,2008).

According to Mwangi and Brown (2005) on their study entitled "Overview of the outreach and financial performance of MFIs in Africa", MFIs still face many challenges. Operating and financial expenses are very high, and on average, revenues remain lower than in other global. Efficiency in terms of cost per borrower is lowest for African MFIs. The MFIs for the study were grouped according to regions. Kenyan MFIs were categorized under East African which among other countries which included Ethiopia, Tanzania and Uganda. This formed 42% of the MFIs for the study. The main questions were how performances of African MFIs sector compare with global peers and how performance varies among African MFIs. The African MFIs were examined through the lens of standard performance metrics over a series of variables: outreach (breadth and depth), financial structure, financial performance, efficiency and portfolio at risk.

Efforts to extend microfinance services to the people who are underserved by financial institutions are classified as outreach. Outreach in East Africa varies by regions. East Africa region dominates outreach results with 52% of all savers and 45% of all borrowers in Africa. This dominance is explained by the presence of two large borrowing institutions in Kenya i.e. Postbank and Amhara saving institution in Ethiopia. Kenya has 65% of borrowers. According to findings of the study MFIs in Africa which includes Kenya tend to report lower levels of profitability as measured by return of assets than MFIs in other global regions. Among the African MFIs that provided information for the study, 47% post positive unadjusted returns. Regulated MFIs report the highest return on assets on asset of all MFI types averaging around 2.6% as compared to unregulated MFIs. The findings also show that African MFIs fund only 25% of assets with equity. (Mwangi and Brown 2005).

According to George Omino (2005) on his study entitled "Regulation and supervision of MFIs in Kenya'' MFIs have faced a number of constraints that need to be addressed to improve outreach and sustainability. The major impediment to the development and

performance is lack of specific legislation and set of regulations to guide the operations of the microfinance sub sector. MFIs have operated without an appropriate policy and legal framework. This has contributed to a large extent to the poor performance and eventual demise of many MFIs. This has had a bearing on a number of other constraints faced by the industry namely; diversity in institutional form, inadequate governance and management capacity, limited outreach, limited access to funds and lack of performance standards.

The lack of oversight, however, has enabled them to innovate and develop different techniques of providing microfinance services. Therefore to stimulate development of the sector, appropriate laws, regulations and supervision framework need to be in place. According to Him regulation and supervision will lead to quality growth, broaden the funding base for MFIs eligible to mobilize and administer deposits and initiate the process of integrating these institutions into the formal financial system. The regulation of the sector will enable authorities to define procedures for their operations, entrance, and exit and ultimately create an environment for fair competition and efficiency in the sector (Omino 2005).

2.2.8 Conclusion

MFIs face many challenges in their operations according to various studies in the local and global context. An appropriate capital structure is still a challenge facing MFIs. The key question still remains on how to come up with the best mix of debt and equity in order to improve MFIs performance. The studies have focused on the effects of asymmetric information on MFI performance. Germaine and Natividad (2008) have found out that evaluated MFIs will operate more efficiently and will receive more financing for their operations. Other studies have concluded that the age of an MFI is positively related to operational self-sufficiency and that there is need for regulations to improve MFIs performance.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined the research methodology used to carry out the study. It started with research design used which was hypothesis testing research design. It stated the research population, the sample size, the sampling design used, data collection, analysis and presentation.

3.2 Research Design

The study used inferential research design to find out the relationship between independent variables and dependent variables of the study. Inferential research design is used in quantitative research which is used for quantifying relationships between variables. This design is used to test the relationship between independent variables and dependent variables in order to come up with conclusions of the relationships between the variables. Inferential research design is justified for this study since the study testing the relationship between capital structure measures such as debt-equity ratio, debt relative to total assets and equity relative to total assets which are independent variables for the study against Operational Self Sufficiency (OSS) which is the dependent variable for the study. Outreach and portfolio size will also form part of independent variables.

Statistical inference is the process of making conclusions using data that is subject to random variation, for example, observational errors or sampling variations. Statistical inference makes propositions about populations using data drawn from the population via some form of random sampling. Given a parameter or hypothesis about which one wishes to make an inference, statistical inference uses a statistical model of the random process it is supposed to generate data, and a particular realization of the random process. (Freedman and David, 2009). This research design is appropriate for this study because it helps to draws conclusions on the relationship between capital structure and financial performance of MFIs in Kenya. The study is quantitative in nature making this design to be appropritiate since similar studies have used the same design.

3.3 Research Population

The research population was 28 microfinance institutions in Kenya which provide financial services to low income people in Kenya. The study analyzed financial statements of these MFIs to find out the relationship between capital structure variables and MFI performance variable which is Operational Self Sufficiency (OSS).

3.4 Data collection

The data for the study was drawn from a database of audited financial statements of MFIs in Kenya. The data collected for the study from the financial statements included capital structure variables which include debt, equity and total assets and The data will be captured by studying financial statements of listed MFIs from Nairobi Stock Exchange (NSE) and those obtained from the MFIs which are not listed in the stock exchange. The data was for the year of 2009.

3.5 Data Analysis

Using a logistic regression model the data collected was analyzed using regression analysis. The data mainly focused on capital structure in MFIs in order to come up with an appropriate analysis. The data analyzed was presented using graphs and pie charts . Capital structure was measured using debt-equity ratio and this will be independent variable. Debt to total assets, equity to total assets, outreach and portfolio size also will be the other independent variables.

Outreach was measured as the number of clients who have benefited from MFI loans. Operational Self-Sufficiency (OSS) was the dependent variable for the study. Operational self-sufficiency (OSS) was measured as total financial revenue divided by the total of financial expense, operating expense and loan provision expense. An MFI was operationally self-sufficient if OSS is 100% and above. Statistical Package for Social Sciences (SPSS) software was used to analyze the data. The model is is suitable since it analyses how various independent variables above affect the financial performance of MFIs in kenya as measured by OSS.

The multiple regression model used for the study has the following assumptions; Firstly, it assumes that the relationship between variables is linear; secondly, it assumes that the residuals are distributed normally; thirdly, the variables are measured without error (reliably) and the last assumption is that of homoscedasticity which means that the variance of errors is the same across all the levels of the IV. When the variance of errors differs at different values of the IV heteroscedasticity is indicated. According to Berry (1985) slight heteroscedasticity has a little effect on significance tests, however, when heteroscedasticity is high it can lead to serious distortion of findings and seriously weaken the analysis thus increasing the possibility of type I error.

The benefits of multiple regression model include its ability to; use both continuous and categorical or nominal independent variables, examine trends in the data (i.e. look for patterns beyond linear data represantation), has more flexibility and conceptual clarity, understand where statistically significant means are ocurring beyond a simple omnibus test, has the potential to increase the statistical power against Type II error and has more thoughtful hypotheses about the data. It is in the light of these benefits that this model has been adopted for use in this study.

The use of this model for this study is consistent with the model used by Bogan (2009) in his study on capital structure and sustainability of MFIs in the world. The model assisted him to effectively come up with results which form part of literature review for this study. The model was also used by Bekefadu (2007) in his study on the relationship between outreach and financial performance of MFIs in Ethiopia. This study adopts this model since these previous studies on the same area produce results which are relevant for the study. The model has been used for this study to find the relationship between debt-equity ratio, equity to total assets ratio, outreach, portfolio size and financial performance of MFIs in Kenya. Multiple regression model is also appropriate for this study because it can simultaneously manage over a hundred variables, compensate for random error and invalidity and disentangle complex interrelationships into their major and distinct regularities. (Freedman and David, 2009)

Multiple regression however suffers from some limitations. There is a mismatch between multiple regression and comparative research. Another limitation of all regression techniques is that you can only ascertain relationships but cannot be sure of the underlying causal mechanism. Multiple regression is challenged by case-oriented assumption that any one cause depends on the broader constellation of forces in which it is embedded. If multiple regression models try to emulate this assumption they are likely to quickly exhaust available degrees of freedom. Multiple regression is further challenged by another causal assumption that it flourishes in case-oriented analysis, namely that there may be more than one constellation of causes capable of producing the phenomenon of interest. That in some cases are explained by one causal configuration and others by differerent configurations. Staticians refer to the phenomenon of multiple pathways to a common outcome as causal heterogeneity. Multiple regression cannot handle this by increasing the number of independent variables. The results can be ambiguous because they will be unable to distinguish between additive effects, conditional relations and mulitiple causal pathways. The model fitted on the variables is as follows;

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + u$$

Where

$Y =$	Dependent variable which is Operational Self Sufficiency (OSS)
$X_1 =$	Debt-equity ratio
$X_3 =$	Equity to total Assets ratio
$X_4 =$	Outreach
$X_5 =$	Portfolio size
a, b_1, b_2, b_3, b_4	Estimated coefficients of the regression model
$u =$	Residual term that includes the net effect of other factors not in the model and measurement errors in the dependent and independent variable.

The independent variable in the model is Operational Self-Sufficiency. The dependent variables for the study include debt-equity ratio, equity to total assets ratio, outreach and portfolio size. Operational Self-Sufficiency (OSS) is calculated as the total financial revenue divided by the total of financial expense, operating expense and loan provision expense. This is a measure used by MFIs to know their sustainability. When operational self-sufficiency is above 100%, the MFI is sustainable and when it is below 100%, the MFI is unsustainable i.e. it is not able to meet its costs. Debt-equity ratio measures capital structure. This is the ratio of the mix between debt and equity in a particular MFI. Different MFIs use different capital structure decisions in financing their operations. Equity to total assets measures the percentage of equity used to finance assets. Some MFIs finance their operations from equity others from debt.

Outreach as a performance measure gives the number of clients with MFI loans. Outreach is given by active clients who have borrowed from MFIs. This is an important measure because the number of clients who have borrowed from MFIs help them to get interest income from loans advanced to them. Portfolio size is an important independent variable which greatly influences MFIs performance. Portfolio size measures the total outstanding loan balances of MFIs. These are the amounts of loans outstanding at a particular point in time from the loans advanced to clients served by MFIs. Outreach and portfolio size are the most important MFIs performance measures which have been incorporated in the model alongside the capital structure variables in order to find out how they affect financial performance of MFIs.

The model is therefore used to analyse how these variables affect the performance of MFIs. Outreach for the various MFIs used for the study was extracted from MIX database which gave out the number of clients served by the MFIs. Portfolio sizes were also extracted from the database. The model is used to simultaneously analyse the relationship between these variables to give results which are useful for the study.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents the data findings on the relationship between capital structure and financial performance of microfinance institutions in Kenya. Secondary data collected from the MIX database of country MFIs for the year 2009. Full dataset was collected on I4 MFIs out of the sample size of 28 targeted. This is 50% of the total hence representative of the total population for the study. This was due to incomplete data as some were registered or started operations within the period.Other MFIs failed to post their financial statements on this database. Some MFIs could not give their financial statements due to confidentiality purposes. Some also coud not give their information due to poor performance of these organisations.

The database collected was on Operational Self-Sufficiency (OSS), debt-equity ratio, debt to total assets, equity total assets, outreach and portfolio size. In the beginning, sample profile is discussed and then the normalitity, skewness and kurtosis for the study indicators are computed. After that descriptive analysis are demonstrated, followed by correlation and regression analysis. At the end, the results are then presented, discussed and summarized.

Figure 4.1 Demographic analysis of MFI'S in Kenya
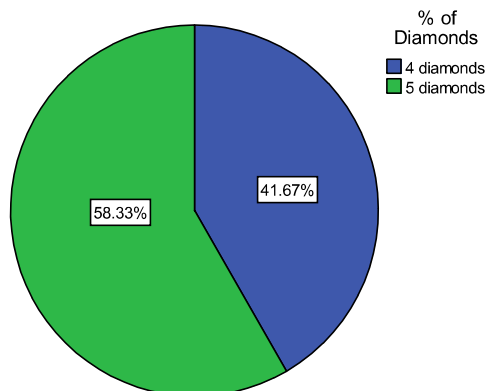
4.3 Preliminary Analysis

For example, if the data have a non-normal distribution, the weighted least square (WLS) estimation should be used with a large sample size. Otherwise, the maximum likelihood (ML) or generalized least squares (GLS) estimation process is suggested. Subsequently, if the data achieve normal distribution and the sample size is large enough, the maximum likelihood (ML) or generalized least squares (GLS) are recommended because these estimation methods produce computational simplicity, accuracy, and correctness of statistical results.

Generally, the normality of variables can be tested by skewness and kurtosis. Zero assumes perfect normality in the data distribution of the variable. Skewness can be categorized into two directions; positive skewness indicates a distribution with an asymmetric tail extending toward more a positive value, and negative skewness shows a distribution with an asymmetic tail extending toward more negative values. Kurtosis refers to the proportions of scores in the middle of a distribution or in its tails relative to those in a normal curve, and it usually explains the relative peakedness or flatness of a distribution compared to the normal distribution. Positive kurtosis indicates a relative peak, and negative kurtosis indicates a relative flat.

As a rule of thumb, variables can be considered as moderately non-normal if they indicate skewness values ranging from 2.00 to 3.00 and kurtosis values from 7.00 to 21.00; extreme normality is defined by Skewness values greater than 3.00, and kurtosis values greater than 21 . (Freedman and David, 2009)

The results of skewness and kurtosis on each measurement scale for five variables were examined and reported in table 4.1: operating self sufficiency, portfolio size, outreach, debt to total asset ratio, equity to total asset ratio and debt to equity ratio. With the above categories as guidelines, and with skewness and kurtosis values of above 2 in portfolio size and outreach, a log transformation was carried out to normalize the two variables as shown in table 4.1 below.

Table 4.1: Normality, Skewness and Kurtosis

Descriptive Statistics						
	N	Mean	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Operating self sufficiency	14	0.9538	0.4040	0.5970	0.4480	1.1540
Ln portfolio size	13	8.9395	0.9620	0.6160	0.5100	1.1910
Ln Outreach	14	4.2687	-1.6170	0.5970	4.2950	1.1540
Debt to total Assets ratio	13	35.9958	1.3190	0.6160	1.7920	1.1910
Equity to total Assets ratio	13	20.2375	-0.0800	0.6160	1.9690	1.1910
Debt to equity ratio	14	3.1529	-1.1410	0.5970	4.6810	1.1540
Valid N (listwise)	12					

4.4 Descriptive analysis Results

Descriptive statistics on important variables are (e.g. mean, std, min, max) given in the table 4.1. For the univariate analysis we take the averages and standard deviations of the financial indicators for each MFI that submitted financial statement to the MFI board in the financial year 2009. These descriptive statistics are given on operational self-sufficiency, portifolio size, outreach, debt to total assets, equity to total assets and debt to equity ratio.the mean of operational self-sufficiency 0.9538, log portfolio size is 8.9395, the meam outreach in log form is 4.2687, mean debt to total assets ratio is 35.9958, mean debt to equity ratio is 3.1529 and mean equity to total assets ratio is 20.2375.

All these descriptive statistics are important for this study since they give the means for the variables for the study. The measures of skewness annd kurtosis are also given by the descriptive statistics given on table 4.1 above.

The statistics software SPSS 17.0 provides the results shown in the table 4.2. This software was used to come up with the results that are given on key performance areas. The results are shown for each variable used for the study to find the relationships between the variables. The descriptive results also highlight the standard deviations for the various key financial indicators for the study. All these results are given in table 4.2.

Table 4.2: Descriptive of the Key financial indicators

Descriptive Statistics						
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Operating self sufficiency	14	0.4829	1.5563	0.9538	0.0744	0.2782
Ln portfolio size	13	7.8602	10.7772	8.9395	0.2295	0.8275
Ln Outreach	14	0.9987	5.8549	4.2687	0.3126	1.1698
Debt to total Assets ratio	13	6.3350	90.8833	35.9958	6.3808	23.0061
Equity to total Assets ratio	13	-18.3514	57.8590	20.2375	4.9789	17.9518
Debt to equity ratio	14	-6.4500	9.9700	3.1529	0.9425	3.5265
Valid N (listwise)	12					

The average age for our sample firms is 41 years, the mean OSS is 95.38%, log portfolio size is 8.9395, log outreach is 4.2687, debt to total assets ratio 35.9958%, equity to total assets ratio 20.2375%, and debt to equity ratio is close to 3.1529%. It is important to note that standard errors are quite high for our accounting measures.

4.5 Correlation Analysis

Further correlation analysis revealed that outreach is strongly positively related (r>0.7) to OSS measure. The strongest relationship is found between outreach and portfolio size   (r = 0.953, p<0.000) but is not related to both equity to total asset ratio and debt to total asset ratio. The results indicate an important relationship between capital structure and financial performance of MFIs.

These results have been given in Table 4.3 below. The table indicates the correlation results which show a strong relationship between Operational Self-Sufficiency and outreach. This shows that the higher the number of clients served by MFIs the higher is their performance. The results show MFIs performance is not related to capital structure as anticipated in this study. This therefore gives an important gap for further study on the area on capital strucrure and MFIs performance. However MFIs need to empashize on outreach and portifolio size to improve their performance.

Table 4.3: Results of Correlation Analysis

		OSS	outreach	Portfolio size	Equity to total Assets ratio	Debt to total Assets ratio
		Correlations				
OSS	Pearson Correlation	1	0.761**	.672**	.211	-0.370
	Sig. (2-tailed)		0.002	0.009	.489	.213
	N	14	14	14	13	13
outreach	Pearson Correlation	0.761**	1	.953**	0.033	-.324
	Sig. (2-tailed)	0.002		0.000	.915	0.281
	N	14	14	14	13	13
Portfolio size	Pearson Correlation	0.672**	0.953**	1	0.050	-0.384
	Sig. (2-tailed)	0.009	.000		.870	0.195
	N	14	14	14	13	13
Equity to total Assets ratio	Pearson Correlation	.211	.033	.050	1	-.468
	Sig. (2-tailed)	0.489	.915	.870		.107
	N	13	13	13	13	13
Debt to total Assets ratio	Pearson Correlation	-0.370	-.324	-.384	-0.468	1
	Sig. (2-tailed)	0.213	0.281	0.195	0.107	
	N	13	13	13	13	13

**. Correlation is significant at the 0.01 level (2-tailed).

4.6 Multiple Regression analysis Results

Results of table 4.4 shows the model summary for firm performance. The coefficients for the entire multiple regression models are presented in the table 4.4 below. The coefficient of determination [R^2=0.605] indicates that the log Outreach alone significantly explains 60.5% of the variation in firm performance. The results of F statistic ($F_{(1,10)}$=15.288, $P<0.05$) indicates that the model adequately fitted the data. This mean that about 31.5 of the variation is explained by other factors not investigated in this study. The summary of of the multiple regression analysis of firm performance is shown below. Outreach in microfinance institutions is the most significant factor affecting the financial performance of the institutions. The other capital structure variables are not significant.

Table 4.4: Summary of the multiple regression analysis of firm performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	P-value
1	0.778	0.605	.565	.1911864	.605	15.288	1	10	.003
a. Predictors: (Constant), log outreach									

ANOVAb									
Model		Sum of Squares	df	Mean Square	F	P-value			
1	Regression	0.559	1	0.559	15.288	0.003			
	Residual	0.366	10	0.037					
	Total	0.924	11						
a. Predictors: (Constant), log outreach									
b. Dependent Variable: OSS									

Coefficientsa								
		Unstandardized Coefficients		Standardized Coefficients			95.0% CI for B	
Model		B	Std. Error	Beta	t	Sig.	LCI	UCI
1	(Constant)	-0.402	0.351		-1.144	0.279	-1.184	0.381
	Log outreach	0.302	0.077	0.778	3.910	0.003	0.130	0.474
a. Dependent Variable: OSS								

The results indicates that log outreach was statistically significant ($p<0.05$, b=0.003); however log portfolio size, equity ratio, debt to total asset ratio and debt to equity ratio were not statistically significant ($p>0.05$). Equation 1 below shows that for a unit increase in log outreach, the operating self sufficiency of MFI's is predicted to have a difference by 0.302. The regression coefficient is -0.402 given that all other factors are held constant though not statistically significant ($p>0.05$). The results of the study have come up with a regression from the analysis of the variables. Only outreach is the significant variable after the analysis. The regression equation thus can be expressed as:

$$Y = -0.402 + 0.302\,X_1 \tag{1}$$

Where

Y= operating self-sufficiency of the MFI,

X_1 =log transform of the Outreach;

b_0 is the least square coefficient when X=0;

b_1=is the least squares regression coefficient for log transform of outreach.

Figure 4.2 Normal P-P Plot of OSS
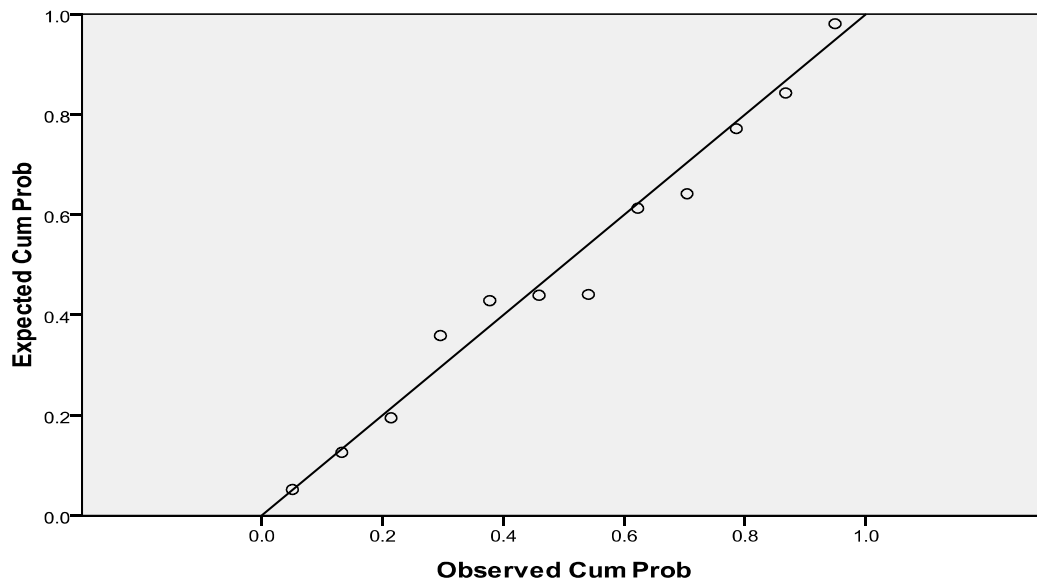
Excluded Variablesb

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
Log portfolio size	.032[a]	0.046	.964	.015	.092
Equity to total Assets ratio	.313[a]	1.690	.125	.491	.974
Debt to total Assets ratio	-.188[a]	0-.920	.382	-.293	.964
Debt to equity ratio	-.072[a]	0-.301	.770	-.100	.764

a. Predictors in the Model: (Constant), log outreach

b. Dependent Variable: OSS

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents discussions based on the findings from chapter four, conclusions and recommendation on the data findings analyzed in the previous chapter.

5.2 Discussions

The study measured the performance of the MFIs using the operational self-sufficiency (OSS) which measures whether MFIs are sustainable or not in their operations.An MFI is sustainable if OSS is above 100% and vice-versa.

2009 Regression (R^2 = 0.605)

OSS=-0.402+0.302Xi

From the regression findings, Outreach had the highest postive effect on performance and statistically significant($p<0.05$). Debt-equity ratio, log portfolio size , equity to total assets and Debt to total assets were not stastically significant($P>0.05$). This shows that log outreach explains 60.5% of MFIs performance.

The correlation results show that there is a positive relationship between outreach and Operational Self-Sufficiency implying that outreach leads to higher financial performance as measured by OSS. This indicates that the more the clients a particular MFI intakes the more income it gets. This explains why outreach has a positive performance of MFIs portifolio size also lead to higher performance.

The correlation results also show a strongest relationship between portfolio size and outreach.This therefore shows that the more the clients an MFI serves the higher the portifolio size which then leads to higher financial perfomance as indicated by Operational Self-Sufficiency (OSS).

From the correlation results there seems to be no relationship betweem OSS and capital structure variables such as debt to total assets ratio and equity to total assets ratio.This is contrary to expected relationship between these variables.

5.3 Conclusions

The study concludes that MFIs do have low financial performance especially during market entry as they incur entry cost and unstable capital structure. Funding cost could also contribute to low performance as interest has to be paid.

The study also concludes that acquisition of more clients into MFI's would substantially improve their performance. This owes to the fact that a large market size would translate into higher liquidity. The study also established that portfolio size would also lead to higher performance as credit provision form a substantially portion of finance intuitions' revenue. Hence an MFI that has a higher loan portifolio would increase its operational self-sufficiency (OSS) and hence increase performance as the loan administration cost would be sufficiently covered by the interest accrued.

5.4 Recommendations

From the findings and conclusions, there-to, presented above, the following recommendations can be drawn. To begin with, MFIs should strive to increase their market share which would lower the cost they incur versus the revenue obtained from such cost expended. The MFIs should also increase their financial performance by recruiting more clients which would enable them generate more income through interest rates.

5.5 Areas for Further Studies

It is suggested that the same study should be conducted on banks. Given that the difference between MFI and commercial banks lies in the scope and scale of operation, this would help in comparing how capital structure of the two institutions would lead to performance.

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APPENDIX I

MFIs registered by AMFI include the following;

(i)	Business Initiative and Management Assistance Services (BIMAS)
(ii)	Canyon Rural Credit Limited
(iii)	Ecumenical Church Loan Fund (ECLOF) Kenya
(iv)	Equity Bank
(v)	Family Bank
(vi)	Faulu Kenya
(vii)	Greenland Fedha Limited
(viii)	Jamii Bora
(ix)	Jitegemea
(x)	Jitegemea Credit Scheme
(xi)	Juhudi Kilimo Company Limited
(xii)	Kenya Agency for the Development of Enterprise and Technology (KADET)
(xiii)	Kenya Entrepreneur Empowerment Foundation
(xiv)	Kenya Post Office Saving Bank (Post bank)
(xv)	Kenya Rural Enterprise Programme (K-Rep) Bank
(xvi)	Kenya Women Finance Trust (KWFT)
(xvii)	K-rep Development Agency
(xviii)	Micro Africa Limited (MAL)
(xix)	Microcredit Enterprises
(xx)	Microcredit Limited (MIC)
(xxi)	Molyn Credit Limited
(xxii)	Opportunity International
(xxiii)	Opportunity Kenya
(xxiv)	Pamoja Women Development Programme (PAWDEP)
(xxv)	Small Micro Enterprise Program (SMEP)
(xxvi)	Smallholder Irrigation Scheme Development Organization (SISDO)
(xxvii)	Taifa Option Microfinance
(xxviii)	Yehu Enterprises Support Services

Source: MIX Database

Table 4.1

Descriptive analysis Results

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Operating self sufficiency	14	0.4829	1.5563	0.9538	0.0744	0.2782
Ln portfolio size	13	7.8602	10.7772	8.9395	0.2295	0.8275
Ln Outreach	14	0.9987	5.8549	4.2687	0.3126	1.1698
Debt to total Assets ratio	13	6.3350	90.8833	35.9958	6.3808	23.0061
Equity to total Assets ratio	13	-18.3514	57.8590	20.2375	4.9789	17.9518
Debt to equity ratio	14	-6.4500	9.9700	3.1529	0.9425	3.5265
Valid N (listwise)	12					

Table 4.2

Test of Normality and skewness of the data

Descriptive Statistics						
	N	Mean	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Operating self sufficiency	14	0.9538	0.4040	0.5970	0.4480	1.1540
Ln portfolio size	13	8.9395	0.9620	0.6160	0.5100	1.1910
Ln Outreach	14	4.2687	-1.6170	0.5970	4.2950	1.1540
Debt to total Assets ratio	13	35.9958	1.3190	0.6160	1.7920	1.1910
Equity to total Assets ratio	13	20.2375	-0.0800	0.6160	1.9690	1.1910
Debt to equity ratio	14	3.1529	-1.1410	0.5970	4.6810	1.1540
Valid N (listwise)	12					

Table 4.3

Test of Multicollinearity

Correlations		OSS	Outreach	Portfolio size	Equity to total Assets ratio	Debt to total Assets ratio
OSS	Pearson Correlation	1	.761**	.672**	.211	-.370
	Sig. (2-tailed)		.002	.009	.489	.213
	N	14	14	14	13	13
outreach	Pearson Correlation	0.761**	1	.953**	.033	-.324
	Sig. (2-tailed)	0.002		.000	.915	.281
	N	14	14	14	13	13
Portfolio size	Pearson Correlation	.672**	.953**	1	.050	-.384
	Sig. (2-tailed)	.009	.000		.870	.195
	N	14	14	14	13	13
Equity to total Assets ratio	Pearson Correlation	.211	.033	.050	1	-.468
	Sig. (2-tailed)	.489	.915	.870		.107
	N	13	13	13	13	13
Debt to total Assets ratio	Pearson Correlation	-.370	-.324	-.384	-.468	1
	Sig. (2-tailed)	.213	.281	.195	.107	
	N	13	13	13	13	13
**. Correlation is significant at the 0.01 level (2-tailed).						

Multiple Regression analysis Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.778	0.605	.565	.1911864	.605	15.288	1	10	.003

a. Predictors: (Constant), ln outreach

ANOVAb

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.559	1	.559	15.288	0.003
Residual	.366	10	.037		
Total	.924	11			

a. Predictors: (Constant), ln outreach

b. Dependent Variable: OSS

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-0.402	0.351		-1.144	.279	-1.184	.381
Ln outreach	0.302	0.077	.778	3.910	.003	.130	.474

a. Dependent Variable: OSS

Excluded Variablesb

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
1 Ln portfolio size	.032[a]	.046	.964	.015	.092
Equity to total Assets ratio	.313[a]	1.690	.125	.491	.974
Debt to total Assets ratio	-.188[a]	-.920	.382	-.293	.964
Debt to equity ratio	-.072[a]	-.301	.770	-.100	.764

a. Predictors in the Model: (Constant), ln outreach
b. Dependent Variable: OSS

APPENDIX III: RAW DATA

Name	Year	Debt to equity ratio	Outreach	Equity to total Assets ratio	Portfolio size	OSS
Juhudi Kilimo	2009	3.66	3,562	21.4420	72480944	48.29%
Opportunity Kenya	2009	-6.45	6,758	-18.3514	238409865	62.25%
KADET	2009	2.4800	17,358	28.7106	418980576	70.53%
K-rep Development Agency	2009	5.45	56,534	15.5093	4816960000	84.99%
Micro Kenya Limited	2009	0.7300	3,225	57.8590	152739000	90.25%
Faulu Kenya	2009	5.6000	102,371	15.1450	2923596000	91.04%
BIMAS	2009	1.6500	10,353	37.7434	165252143	91.16%
PAWDEP	2009	3.7300	27,624	2.5012	632660219	103.79%
SMEP	2009	3.6000	85,678	21.7445	894201861	106.00%
Kenya Ecumenical Church Loan Fund	2009	2.4600	15,995	28.9421	306687783	117.06%
Kenya Women Finance Trust (KWFT)	2009	4.3900	334,188	18.5431	9678103000	124.64%
Equity Bank	2009	3.14	715,969	24.1814	59868000000	155.63%
Jamii Bora	2009	3.7300	79,194		632660219	115.10%