# DETERMINANTS OF CAPITAL STRUCTURE OF MICROFINANCE BANKS IN KENYA

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**A Research Project Submitted to the School of Business and Economics in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Business Administration (Finance option) of Kabarak University.**

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## DECLARATION AND RECOMMENDATION

**Declaration**

This research project is my original work and has not been submitted for an award of any Diploma, Degree or fellowship or other similar titles of any other university or institution.

Signature _____ Date _____

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**Recommendation**

The research project has been submitted for examination with our approval as University Supervisors.

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## DEDICATION

I dedicate this work to my late father Mr. Patrick Ndung'u, my loving mother Mrs. Rebecca Ndung'u, my sisters Faith Muthoni, Ann Wambui, Eliza Wanjiru and my nephew Ryan Kamunyo for their tireless prayers and support which has made this research project completion possible.

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## ABSTRACT

Most capital structure studies to date are based on data from developed countries' firms and very few studies provide evidence from developing countries. Capital structure of Microfinance banks in Kenya has not been investigated; there is no clear understanding on how microfinance banks construct their capital structure and what internal (firm-specific) factors influence their corporate financing decision. This study attempted to fill this gap by analyzing the capital structure for microfinance banks in Kenya. Guiding study objectives were; to determine influence of Profitability, Tangibility, firm Size, Age, Business risks, Capital Adequacy and Tax-Shield) on capital structure of Microfinance banks. The study was guided by static trade off theory, agency theory, pecking order theory and bankruptcy theory. A sample of three major microfinance banks was selected and secondary data were collected. Consequently, multivariate regression analysis was made based on financial statement data of the selected microfinance banks over the five year period. The findings of the study indicated that (size, age and profitability, business risks and capital adequacy) variables are the significant firm level determinants of capital structure in Kenyan microfinance banks ($p<0.001$, $p<0.001$, $p<0.001$ and $p<0.001$) respectively. In addition, (size, age and profitability) variables showed a positive relationship with capital structure ($\beta =0.216$, $\beta =0.015$, $\beta =0.667$) while the remaining four variables (asset tangibility, tax-shield, business risks and capital adequacy) showed a negative relationship with capital structure ($\beta= -0.166$, $\beta= -0.317$, $\beta= -0.158$ and $\beta= -0.007$) respectively. According to the research findings, there is consistency between Size and Static Trade off Theory, Age and Static Trade off Theory, Profitability and Static Trade off Theory, Tax shield and Static Trade off Theory Business risks and Agency Cost theory and Bankruptcy Cost Theory in Kenyan microfinance banks. It was recommended that microfinance banks should try to maintain an optimum mix financing between short-term and long term debt capital since the findings revealed that microfinance banks in Kenya tends to use short term debt capital to finance their operations as opposed to long term debt capital. Microfinance banks were found to rely on debt financing than equity financing. They should diversify in their capital financing strategy by considering equity financing also through selling stocks to members of the public or through private placement to institutional investors so as to maintain an optimum capital structure. The findings show that shows that microfinance banks in Kenya are not benefiting from tax advantage of interest expenses, thus finance managers should focus their on tax-shield variable



*Key words: Microfinance banks, Leverage ratio, Capital structure, Size, Age, profitability, Asset Tangibility, Tax charge, Business risks, Capital adequacy*

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| | |
|---|---|
| **ACCION** | Americans for Community Co-operation in Other Nations |
| **AMFIK** | Association of Microfinance Institutions in Kenya |
| **BMSB** | Bursa Malaysia Securities Exchange |
| **CAR** | Current Asset Ratio |
| **CLRM** | Classical Linear Regression Model |
| **DTM** | Deposit Taking Microfinance |
| **FEM** | Fixed Effect Model |
| **KSE** | Karachi Securities Exchange |
| **MFBs** | Microfinance Banks |
| **MFIs** | Microfinance Institutions |
| **NGO** | Non-Governmental Organizations |
| **NIM** | Net Interest Margin |
| **NPV** | Net Present Value |
| **OLS** | Ordinary Least Squares |
| **REM** | Random Effect Model |
| **ROC** | Return on Capital |
| **ROE** | Return on Equity |
| **SMEs** | Small and Medium Enterprises |

# CHAPTER ONE
# INTRODUCTION

## 1.1 Background to the Study

One of the foremost necessary decisions of managers within a company is to find a suitable financial instrument to finance their company and production. Capital structure is one of the most debatable and important points in financial management. It includes project finance, dividend policy, issuing of long term debts, buyouts, financing of mergers, etc. The optimal capital structure is obtained when there is a minimal cost of capital and a maximizing dividend to shareholders (Gungor, 2014). For any business organization, capital structure decision is one of the most important topics in corporate finance (Bhabra & Tirtiroglu, 2008). Appropriate capital structure decisions would increase firms' value. According to numerous researches, capital structure decisions are determined by a complex set of factors (Getzmann & Spreman, 2010). Microfinance Institutions (MFI) have risen to the forefront as invaluable institutions in the development process. Nevertheless, capital constraints have hindered the expansion of microfinance programs such that the demand for financial services still far exceeds the currently available supply. Moreover, it is observed that microfinance organizations have had various degrees of sustainability. Thus, the question of how best to fund these programs is a key issue (Hazlina, 2011).

The capital structure of a Microfinance industry is basically a mix of funds which MFIs choose to fund its operations (Frank & Goyal, 2009). Moreover, high leverage or low equity/asset ratio reduces agency cost of outside equity and thus increases firm value by compelling managers to act more in the interest of shareholders (Berger & Di Patti, 2006). Therefore capital structure is deemed to have an impact on a firm financial performance against the position held by Modigliani and Miller in their seminal work of 1958. Modigliani and Miller (1958) argue on the basis of the following assumptions existence of perfect capital market; homogenous expectations; absence of taxes; and no transaction cost, that, capital structure is irrelevant to the value of a firm. Capital requirement as set is a MFI regulation, which sets a framework on how MFI and depository institutions must handle their capital. Bichsel and Blum (2005) supported this proposition arguing that these regulations help in reducing negative externalities such as disruptions to the payments system and a

general loss of confidence in the banking system in addition to boosting the financial performance. Regulated MFIs' capital structure has also been maturing and is progressively approaching the structure that predominates in banks. While many MFIs initially depended on domestic and international borrowing, their main source of funds is now by far deposits. At the same time, borrowing has generally decreased in importance in the MFI capital structure. The issuance of bonds, while promising, continues to be little used. Although precise estimates are not available, issuing stock to add new shareholders is a mechanism rarely used by MFIs. Instead, the capital base of the MFIs has been increased mostly by reinvesting a large share of the sizable profits that the MFIs have generated (Jansson, 2003). In banking as in any industry, it is common knowledge that higher leverage normally means higher returns (but also greater risk). The concept of capital structure as used in Kenya refers not only to choices regarding capital structure (or the mix debt/equity) but also to the kind of securities used to structure the equity and the debt that is influenced by the outside context (Frank, & Goyal, 2009). Growing rapidly, the sector is moving away from its original non-profit, socially motivated agenda, with lenders seeking to reach as many of the poor as possible, to state profiteering using various techniques. The use of joint liability contracts and dynamic incentives has shown that MFIs can be profitable. This has attracted profit motivated institutions and other regular banks into the sector (Sibilkov, 2009).

The result has been that some of these institutions are moving away from government subsidies and donor dependence to accessing funds from the capital market. This move is also motivated by the MFIs' desire to ensure institutional sustainability through minimizing their subsidy and donor dependence and adopting the practices of good banking. This process has cost implications and has, therefore, further strengthened the profit agenda (Getzmann & Spremann, 2010). Mintesinot (2010) undertook an attention-grabbing study on the determinants of capital structure evidencing manufacturing firms in Tigray, Ethiopia. Mintesinot (2010) has used eight explanatory variables: Tangibility, Profitability, Growth, Age, Uniqueness, Size, Earnings Volatility, and Non-Debt Tax Shields. After regressing these variables against leverage, he could come up with the outcomes as following: Tangibility, Growth, Age, Size, Earnings Volatility and Non Debt Tax-Shield variables are the

significant determinants of capital structure in at least one out of the three models for capital structure employed in his study. In general, there are a large number of empirical papers on the determinants of capital structure. Nevertheless, understanding the determinants of capital structure is as important for banks as for non-banking firms. Diamond and Rajan (2000) found that a bank's capital structure affects its stability as well as ability to effectively provide liquidity and credits to debtors and borrowers, respectively. Given that a well-functioning and well-developing banking system plays a crucial role in promoting growth of an economy, it is imperative to understand the factors which drive the capital structure decision of banks. One of the well known researches was carried out by Gropp and Heider (2007) evidencing banks from developed countries (US and 15 EU members, for 14 years) to study capital structure determinants of banks. Their results provided strong support for the relevance of standard determinants of capital structure on bank capital by testing the significance of size, profitability, market-to-book ratio and asset tangibility. Another study by Octavia and Brown (2008) investigated whether the standard determinants of capital structure can be applied to banks in developing countries. The results of Octavia and Brown suggested that the standard determinants of capital structure do have power in explaining leverage of banks in developing countries. According to The capital structure decision is one of the most important decisions made by financial managers in this modern era. The capital structure decision is at the center of many other decisions in the area of corporate finance. One of the many objectives of a corporate financial manager is to ensure low cost of capital and thus maximize the wealth of shareholders. Hence, capital structure is one of the effective tools of management to manage the cost of capital. An optimal capital structure is reached at a point where the cost of the capital is minimal (Fisseha, 2010).

Nevertheless, understanding the determinants of capital structure is as important for banks Diamond and Rajan (2000) found that a bank's capital structure affects its stability as well as ability to effectively provide liquidity and credits to debtors and borrowers, respectively. Given that a well-functioning and well-developing banking system plays a crucial role in promoting growth of an economy, it is imperative to understand the factors which drive the capital structure decision of banks. Currently, there is no clear understanding on how microfinance banks operating in Kenya choose

their capital structure and what internal factors influence their corporate financing behavior. In this study, the researcher has tried to identify the factors which determine capital structure decisions by selecting 7 (seven) relevant firm-specific explanatory variables such as profitability, collateral value of assets (tangibility), size of the firm, capital adequacy, age of the firm, business risks and tax-shield from the empirical studies of Titman and wassels (1988) in USA, Rijan and Zingales (1995) in G7 countries, Booth *et al*. (2001) in developing countries, Ashenafi (2005) in Ethiopia, Gropp and Heider (2007) in banks of developed countries, Octavia and Brown (2008) in banks of developing countries, Bas *et al*. (2009) in developing countries and Mintesinot (2010) in Ethiopia.

### 1.1.1 Micro-Finance Institutions in Kenya

Microfinance institutions play a critical role in financial inclusion of the low income households, thus is an important tool in poverty alleviation and promotion of economic opportunities globally (Morduch, 1999). Microfinance institutions fall into two categories; Deposit Taking microfinance institutions (Microfinance Banks) and Non-Deposit taking microfinance institutions (Retail microfinance institutions). Microfinance institutions started in Kenya at early 1980's. The industry is estimated to have an asset base of over six billions and it continues to grow rapidly (Central bank of Kenya, 2008). Microfinance is the provision of financial services to the low-income poor and very poor self-employed people. These MFIs take three forms of ownership: Corporations, Firms registered under business names act and NGO's. Some MFIs have also graduated into banks in a process commonly referred to as transformation. Recently, the government of Kenya established the Youth Development Funds, Women Enterprise Fund in recognition that MFIs are the engines for economic growth (ROK, 2014). This new shift heralded the beginning of an almost desperate search for capital from various sources, a case applicable to all MFIs. The way in which MFIs search for private capital is significantly different from the way the MFIs attract donor funding. Indeed, managing the liability side of the balance sheet, hitherto an under-appreciated part of MFI business strategy, is fast becoming a key ingredient to growth and success. This is as true for debt and deposit management as it is for equity capital, each of which demand distinct, but somewhat overlapping strategies. Funding and capitalization strategies take place within the

context of a sector transforming from one driven primarily by a social mission ethos to one that also responds to the needs and interests of private capital. The transition to private capital is well underway and some MFIs are mostly or entirely funded by private capital. But the transition has been slow and difficult as many MFIs lack the management capacity to attract and absorb private capital. Best practice knowledge, improved regulatory regimes, and stronger sector associations, among other interventions, are having positive effects on the sector's capacity. While improvements vary by country and institution, many MFIs now have or can develop the capacity to profitably employ commercial capital. However, there is some evidence that most transformed MFIs have achieved encouraging results. They have found new shareholders, increased their equity capital and improved governance, institutional sustainability and outreach to the poor (Hüttenrauch & Schneider, 2009).

### 1.2 Statement of the Problem

There has been increased internal and external pressure for MFIs to decrease dependence on subsidized or grant funding (Kyereboah, 2007). The determinants of optimal capital structure decisions in microfinance industry have not been adequately determined this may have led to inappropriate choice of financing which might have resulted to failure of MFIs. Specifically, the influential factors in determining how MFIs select the financing options are considered to be questionable. This has limited MFIs' transactions, failure in monitoring and maintaining efficient account management system, thus hampering returns on investments and expenses of a particular MFI (Lokong, 2010). How MFIs make their capital structure decisions have not been empirically determined leading to choosing financing options in amorphous manners (Beck, Demiguc-Kunt & Maksimovic, 2008). This has made the MFIs to choosing expensive financing option which has been costly for the MFIs (Orua, 2009). Despite a critical role played by capital structure choice in maximizing returns of MFIs, there has been scanty empirical studies that have investigated factors influencing capital structure decisions in Kenyan Microfinance institutions with only a few focusing on capital structure determinants in microenterprises in Kenya (Nyanamba, 2013) and others on profitability, for example Lokong (2010) who determined impact of capital structure on profitability of Microfinance institutions in Kenya. Most capital structure studies to date are based on data from developed

countries' firms and very few studies provide evidence from developing countries. The capital structure Microfinance banks has not also been investigated; there is no clear understanding on how microfinance banks construct their capital structure and what internal (firm-specific) factors influence their corporate financing decision. Therefore, given the unique financial features of microfinance banks and the environment in which they operate, there was a strong ground to conduct a study on capital structure determinants in Microfinance banks in Kenya as microfinance institutions (Deposit and non-Deposit taking) play a key role in financial inclusion for those excluded from the mainstream financial system( CBK, 2015).

### 1.3 General Objective

To analyse factors that determine capital structure of microfinance banks in Kenya.

#### 1.3.1 Specific Objectives

The specific objectives of this study were:

i. To determine whether Size of firm influences Microfinance banks Leverage in Kenya.
ii. To assess the influence of Age on Microfinance banks Leverage in Kenya.
iii. To investigate the extent to which Profitability influences Microfinance banks Leverage in Kenya.
iv. To identify whether Asset Tangibility determines Microfinance banks Leverage in Kenya.
v. To determine whether Tax-Shield influences Microfinance banks Leverage in Kenya.
vi. To assess the influence of Business Risks on Microfinance banks Leverage in Kenya.
vii. To determine whether Capital Adequacy influences Microfinance banks Leverage in Kenya.

### 1.4 Research Hypotheses

$H_{01:}$ There is no relationship between firm's Size and microfinance Banks' Leverage.

$H_{02}$: There is no relationship between Age and microfinance Banks' Leverage.

$H_{03}$: There is no relationship between Profitability and microfinance Banks' Leverage.

$H_{04}$: There is no relationship between Asset Tangibility and microfinance Banks' Leverage.

$H_{05}$: There is no relationship between Tax-Shield and microfinance Banks' Leverage.

$H_{06}$: There is no relationship between Business Risk and microfinance Banks' Leverage.

$H_{07}$: There is no relationship between Capital Adequacy and microfinance Banks' Leverage

### 1.5 Significance of the Study

This study synthesized the information for better understanding the link between capital structure decisions and factors influencing them. This study will help identify benchmarks for capital structure decisions bearing in mind influencing factors. This information can be helpful in advisory and technical assistance aspects in Microfinance Banks.

The research will also be useful to scholars, prospective investors, donor partners and Government of Kenya who may wish to understand factors that influence MFBs capital structure decisions in Kenya The research will also give MFBs wholesale lenders insight on MFBs credit facilities products development.

### 1.6 Scope of the Study

The research focused on Microfinance banks licensed by the Central Bank of Kenya, whose audited financial statements for the years 2011-2015 were analysed. Three major MFBs that are licensed to operate nationally and have operated for over five years formed the study sample. The actual study was carried in a period of 3 months.

### 1.7 Limitations and Delimitations of the Study

The limitation encountered was unwillingness of Microfinance bank finance managers to give audited financial reports for fear that the information may be sensitive. However, the researcher assured the concerned parties of confidentiality of information material provided.

### 1.7 Operational Definition of Terms

**Age:** How long in terms of period a firm has been in business continually (Mintesinot, 2010). This study adopted the same meaning.

**Business risks:** uncertainties that microfinance banks face in their course of capitalization. Capital is viewed as a shield against unexpected losses and bankruptcy (Turan *et al.*, 2014). In this study earnings instability denoted business risks.

**Capital Adequacy:** The banks strength and stability as it is the measurement of capital ratio to its assets: loans and investments (Turan *et al.*, 2014). The study adopted this meaning.

**Capital Structure decisions:** refers to the decisions firms have to make regarding the financing mix to employ. The mix usually consists of debt and/ or equity finance. Firms try to maintain an optimal mix of financing (Chen, 2004). The same meaning was used in the study.

**Capital Structure:** is defined as the means by which an organization is financed. It is also a company's proportion of short and long term debt and is considered when analyzing capital structure. It is the mix of debt and equity maintained by a firm (Frank & Goyal, 2009). The study adopted this meaning.

**Asset Tangibility:** refers to the firms' asset composition tangibly (Harris & Raviv, 1991). The study adopted this meaning.

**Firm profitability:** Refers to a company's ability to yield financial returns or gains (Cassar and Holmes, 2003). The same meaning was used in the study

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**Firm:** The firm is a "black box" operated so as to meet the relevant marginal conditions with respect to inputs and outputs, thereby maximizing profits, or more accurately present value (Jensen & Meckling, 1976). The same meaning was used in the study.

**Firm's size:** refers to a company's size in a particular industry at a certain period which results to reduced operating costs per unit of output (Titman and Wessels, 1988). The same meaning was used in the study.

**Leverage ratio**: level of debt in a microfinance banks capital structure (Chen, 2004). The same meaning was used in the study.

**Microfinance institutions:** Financial service providers that focuses on provision of microloans and micro-saving facilities to the unbanked individual and small enterprises who have been excluded by the mainstream financial system (Morduch,1999).

**Tax Charge:** Corporation levy that banks are mandated to pay including tax shields. Changes in the marginal tax rate for any firm should affect financing decisions (Mason, 1990). The same meaning was used in the study.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter presents a review of literature and discusses; theoretical literature, empirical literature, critique of existing literature and study's conceptual framework

## 2.2 Theoretical literature review

The study focused on four important theories used to explain the capital structure decisions. These are the Static Trade-off Theory, Agency Theory, Pecking-Order Theory and Bankruptcy Cost Theory.

### 2.2.1 Pecking order Theory

In the theory of firm's capital structure and financing decisions, the pecking order theory was developed Myers (1984). It states that companies prioritize their sources of financing (from retained earnings to debt to equity) according to the law of least effort or of least resistance, preferring to raise equity as a financing means of resort. Hence, internal funds are used first, and when that is depleted, debt is issued, and when it is not sensible to issue any more debt, equity is issued (Booth *et al*, 2001). This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required. Thus, the form of debt a firm chooses can act as a signal of its need for external finance.

The pecking order theory can be explained from the perspective of asymmetric information and the existence of transaction costs. Asymmetric information costs arise when a firm chooses not to use external financing and therefore pass up a positive NPV investment. Equity is a less preferred means to raise capital because when managers as firm's insiders issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation (Cohen, 2003). Managers will issue securities when the market price of the firm's securities is higher than the real firm value. The deviation between the market price of the firm's securities and real firm value arise, because investors, having inferior information about the value of the firm's assets, can misprice equity (Foong,

2008). In the short run, Myers' (1984) simple pecking order theory suggests that firms increase or decrease their debt ratio if they have a negative free cash flow or positive free cash flow respectively, of the current period. This theory suggests that there exists a negative relationship between firm specific factors (age of the firm, profitability, firm's size) and capital structure, while a positive relationship exists between assets tangibility and capital structure (Rajan & Zingale, 2006; Montesinot, 2010).

### 2.2.2 The Static Trade-off Theory

The tradeoff theory says that the firm will borrow up to the point where the marginal value of tax shields on additional debt is just offset by the increase in the present value of possible cost of financial distress. The value of the firm will decrease because of financial distress (Myers, 2001). According to Myres (2001) financial distress refers to *the* costs of bankruptcy or reorganization, and also to the agency costs that arise when the firm's creditworthiness is in doubt (Myers, 2001). The tradeoff theory weights the benefits of debt that result from shielding cash flows from taxes against the costs of financial distress associated with leverage. The trade-off theory of capital structure lead to the idea that a company chooses how much of debt finance and how much equity finance to use by balancing the costs and benefits. The theory explains the friction between costs of financial distress and tax deductibility of the costs of finance (Chirinko & Singha, 2000). It suggests that firm's trade-off several aspects, including the exposure of the firm to bankruptcy and agency costs against the tax benefits associated with debt usage, offsetting these considerations is the tax benefits encourage debt use by firms (tax deductibility interest) and the final capital structure adopted by a firm will be a trade-off between these tax benefits and costs associated with bankruptcy and agency.

The classical version of the hypothesis goes back to Hamilton, and Fox, (1998) who considered a balance between the dead-weight costs of bankruptcy and the tax saving benefits of debt. Often agency costs are also included in the balance. According to this theory, the total value of a levered firm equals the value of the firm without leverage plus the present value of the tax savings from debt, less the present value of financial distress costs. The trade-off theory remains the dominant theory of corporate capital

structure as taught in the main corporate finance textbooks. Dynamic version of the model generally seem to offer enough flexibility in matching the data so, contrary to Miller's verbal argument, dynamic trade-off models are very hard to reject empirically (Kyereboah-Coleman, 2007). It is shown that suggestion of risky debt financing and growing credit rate near the bankruptcy in opposite to waiting result does not lead to growing of weighted average cost of capital, WACC, which still decreases with leverage (Hazlina, *et al*, 2011). This means the absence of minimum in the dependence of WACC on leverage as well as the absence of maximum in the dependence of company capitalization on leverage. This theory suggests that there exists a positive relationship between firm specific factors (firm's age, profitability, assets tangibility, firm's size, tax shield-for short-term financing) and capital structure, while a negative relationship exists between tax shield-for longterm-term financing and capital structure (Buferna *et al*., 2005; Octavia & Brown, 2008).

### 2.2.3 The Agency Cost Theory

In theory, shareholders of a company are the only owners, and the duty of top management should be solely to ensure that shareholders interests' are met. In other words, the duty of top managers is to manage the company in such a way that returns to shareholders are maximized thereby increasing the profit figures and cash flows (Elliot, 2002). Jensen and Meckling (1976) argued that it is inevitable to avoid agency costs in corporate finance. Agency costs are the costs that arise when there are conflicts of interest between 19 stakeholders and managers and between debt-holders and shareholders (Berk & DeMarzo, 2007). Managers as agents will generally make decisions that increase the value of the firm's equity, because top managers often hold shares in the firm and are hired and retained with the approval of the board of directors, which itself is elected by stakeholders (principals). When a firm has leverage, a conflict of interest will arise if investment decisions will have different consequences for the value of equity and the value of debt (Hall, G., Hutchinson and Michaelas, 2004). This kind of conflict is most likely to occur when the risk of financial distress is high. In some circumstances, managers may take some actions that can benefit shareholders but harm the firm's creditors and also lower the total value of the firm. The share price that shareholders pay reflects such agency costs. So to increase firm value, the agency costs must be reduced (Ramlall, 2009).

Agency theory is very relevant in the microfinance industry since incentives that align the interest of managers with the interests of stakeholders work differently in microfinance since. Put differently, the interests of MFIs management and in particular those of social investors may not be aligned. Some MFIs have continuously received grants and subsidized loans from development agencies to finance the transition into deposit-taking institutions (Ross, Westerfield & Jordan, 2011). Grant money may for example create moral hazard or incentive issues with respect to micro banking operations and subsequently profitability. Donors and social investors have vested goals inclined towards bolstering outreach while MFI management may be profit motivated. Agency costs may be particularly large in microfinance industry because MFIs are by their very nature informational opaque where they hold private information on the borrowers (Kyereboah & Coleman, 2007). Moreover, regulators in the case of MFIs that are formally constituted may set minimums for equity capital in order to deter excessive risk taking which may affect agency costs directly and alter MFIs' financing choice with consequences on profitability . This theory suggests that there exists a positive relationship between firm specific factors (assets tangibility, firm's size,) and capital structure (Buferna *et al.*, 2005; Octavia & Brown, 2008).

### 2.2.4 Bankruptcy Cost Theory

Bankruptcy costs are the costs incurred when the perceived probability that the firm will default on financing is greater than zero. The potential costs of bankruptcy may be both direct and indirect. Examples of direct bankruptcy costs are the legal and administrative costs in the bankruptcy process. Haugen and Senbet (1978) argue that bankruptcy costs must be trivial or nonexistent if one assumes that capital market prices are competitively determined by rational investors. Examples of indirect bankruptcy costs are the loss in profits incurred by the firm as a result of the unwillingness of stakeholders to do business with them. Customer dependency on a firm's goods and services and the high probability of bankruptcy affect the solvency of firms (Titman, 1984). If a business is perceived to be close to bankruptcy, customers may be less willing to buy its goods and services because of the risk that

the firm may not be able to meet its warranty obligations. Also, employees might be less inclined to work for the business or suppliers less likely to extend trade credit.

These behaviors by the stakeholders effectively reduce the value of the firm. Therefore, firms that have high distress cost would have incentives to decrease outside financing so as to lower these costs. Warner (1977) maintains that such bankruptcy costs increase with debt, thus reducing the value of the firm. According to Modigliani and Miller (1963), it is optimal for a firm to be financed by debt in order to benefit from the tax deductibility of debt. The value of the firm can be increased by the use of debt since interest payments can be deducted from taxable corporate income. Increasing debt, results in an increased probability of bankruptcy. Hence, the optimal capital structure represents a level of leverage that balances bankruptcy costs and benefits of debt finance. The greater the probability of bankruptcy a firm faces as the result of increases in the cost of debt, the less debt they use in the issuance of new capital (Pettit and Singer, 1985). Capital structure can be positively related to long term debt and negatively related to short term debts according to hypothesis of ceteris paribus (Turan *et al*, 2014).

### 2.3 Empirical Literature Review

There have been a number of studies investigating into the determinants of capital structure of firms in different businesses such as, joint venture ships, manufacturing sector, electricity and utility companies, the non-profit hospitals and in agricultural firms (Kila & Mansor, 2009).

Raheel *et al* (2013) investigated the impact of capital structure and financial performance evidence from Pakistan. The objective of the study was to determine impact of capital structure on financial performance of listed firms at KSE100 Index. They observed that investors are highly interested in the performance of firms listed in the stock market. Financial ratios were used to study the relationship between capital structure and firm performance in the context of large private companies in Pakistan. A total of 83 companies were selected from KSE 100 index for the analysis. Findings of the study suggested that financial performance of firms is significantly affected by their capital structure decisions and their relationship is negative in nature.

Moreover capital structure of a firm was found to be negatively related to its market value and also increased firm's risk level as debt level increased in the capital structure.

Gavin and Scott (2003) carried out a study on capital structure decisions and financing of SMEs in Australian. This study objective was to investigate the determinants of capital structure decision and use of financing for small and medium sized enterprises. The study utilizes hypothesis, static tradeoff and pecking order arguments are empirically examined using a series of firm characteristics including: size, asset structure, profitability, growth and risk. The hypotheses developed are tested using a large Australian nationwide panel survey. The results suggest that asset structure, profitability and growth are important determinants of capital structure and financing. For asset structure the direction of the influence is reliant upon the capital structure or financing measure employed. The results generally support static trade-off and pecking order arguments proposed by theoretical models.

Mat and Wan (2008) tested the determinants of capital structure for the firms listed in the Bursa Malaysia Securities Berhad (BMSB) market during the six year period from 1999- 2005 and financial statements of 17 companies with numbers observations totaling 102 are used. The study used dependent variable as debt ratio while the independent variables are size, growth, liquidity and interest coverage ratio. Applying pooled OLS estimations, the result shows that the size, liquidity and interest coverage ratio is significantly negatively related to total debt. However, the study finds insignificant negative relation between capital structure and growth of the firm, expressed by the annual changes of earnings. The results also reveal that there is significant difference in capital structure among firms that adopt more debt (more than 30 per cent of their total assets) and those which employ less leverage financing.

Sekabira1 (2013) carried out a study on determining influence of Capital structure and its role on performance of microfinance institutions focusing on the Ugandan Case. The objective of the study was to assess the influence of Capital structure and its role on performance of microfinance institutions in Uganda .The limited literature on the impacts of capital structures on MFI performance necessitated the study. Panel data

from 14 MFIs was collected based on availability and accessibility. The sources of data were financial and income statements covering five years. Econometric analysis using STATA software was done following methodologies of Bogan and Rosenberg. The study found that MFIs lent to both individuals and groups and 79% were not regulated by the Central Bank, 86% had their funding sources as loans, grants, excluding deposits/savings and 73% attained operational self-sufficiency. Debt and grants were negatively correlated to operational and financial sustainability. When sustainability was more constricted to financial sustainability, debt and share capital remained noteworthy. Other than grants, debt was paid back on competitive market interest rates most especially debts from money lenders, whereas share capital fetched in revenues to the MFIs at market interest rates from the borrowers. Grants and debt had a substantial damaging consequence on MFI performance. Capital structure was essential in MFIs' sustainability. MFI specific characteristics, like management were also important. Subject to sampling uncertainties, the results indicate that adding to regulation by Central Bank, MFIs must specialize their lending to reduce portfolio at risk. MFIs must reduce dependence on debts and grants and resort to accumulating share capital for long-term sustainability.

Lokong (2010) carried out a study to determine relationship between capital structure decision and profitability of MFIs in Kenya. The objective of the study was to establish whether there was a relationship between capital structure and profitability of MFIs in Kenya. This study used descriptive statistics. Descriptive statistics were used to describe the main features of a collection of data in quantitative terms. One important use of descriptive statistics is to summarize a collection of data in a clear and understandable way. This study used data for registered selected MFIs in Kenya for the period during 2006-2009. Profitability of MFIs was measured using return on assets since MFIs do not have shareholders equity. With multiple regression analysis method it is possible to express the model that will be used in studying the relation between capital structure and profitability and variables we want to examine. From the findings the study found that that most of MFIs in Kenya were using equity and or donations as their main source finances in Kenya. The study further found that there exist a positive relationship between capital structure and profitability of MFIs in Kenya

## 2.4 Critique of Existing Literature

Raheel *et al* (2013) investigated the impact of capital structure and financial performance of firms in Pakistan. The objective of the study was to determine impact of capital structure on financial performance of firms listed at KSE 100 Index. A total of 83 companies were selected from KSE 100 index for the analysis. Findings of the study suggested that financial performance of firms is significantly affected by their capital structure decisions and their relationship is negative in nature. Moreover capital structure of a firm was found to be negatively related to its market value and also increased firm's risk level as debt level increased in the capital structure. The researchers only focused on the capital structure impact on firm's performance and considered only few variables in their study overlooking other factors such as firms' business risks, tax charge. Marque the study did not solely focus on the Microfinance institutions thus generalization of results could not have been valid.

Gavin and Scott (2003) carried out a research on capital structure decisions and financing of SMEs in Australian. This study objective was to investigate the determinants of capital structure decision and use of financing for small and medium sized enterprises. The study utilized hypothesis, static tradeoff and pecking order arguments are empirically examined using a series of firm characteristics including: size, asset structure, profitability, growth and risk. The hypotheses developed are tested using a large Australian nationwide panel survey. The results suggested that asset structure, profitability and growth are important determinants of capital structure and financing. The study did not focus on MFIs and mentioned only few variables.

Mat and Wan (2008) tested the determinants of capital structure for the firms listed in the Bursa Malaysia Securities Berhad (BMSB) market during the six year period from 1999- 2005 and financial statements of 17 companies with numbers observations totaling 102 are used. The study used dependent variable as debt ratio while the independent variables are size, growth, liquidity and interest coverage ratio. Applying pooled OLS estimations, the result shows that the size, liquidity and interest coverage ratio is significantly negatively related to total debt. The results also revealed that there is significant difference in capital structure among firms that adopt more debt (more than 30 per cent of their total assets) and those which employ less leverage

financing. The study however failed to focus on determinants of capital structure for microfinance institutions in Malaysia.

Sekabira1 (2013) investigated influence of capital structure and its role on performance of microfinance institutions focusing on the Ugandan Case. The objective of the study was to assess the influence of Capital structure and its role on performance of microfinance institutions in Uganda. Panel data from 14 MFIs was collected based on availability and accessibility. Econometric analysis using STATA software was done following methodologies of Bogan and Rosenberg. The study found that MFIs lent to both individuals and groups and 79% were not regulated by the Central Bank, 86% had their funding sources as loans, grants, excluding deposits/savings and 73% attained operational self-sufficiency. Debt and grants were negatively correlated to operational and financial sustainability. The study did not mention on factors that influence the firm's choice of the optimum capital structure decision which in turn influences the financial performance of the firm.

Lokong (2010) carried out a study to determine relationship between capital structure decision and profitability of MFIs in Kenya. The objective of the study was to establish whether there was a relationship between capital structure and profitability of MFIs in Kenya. This study used descriptive statistics. This study used data for registered selected MFIs in Kenya for the period during 2006-2009. Profitability of MFIs was measured using return on assets since MFIs do not have shareholders equity. With multiple regression analysis method it is possible to express the model that will be used in studying the relation between capital structure and profitability and variables we want to examine. From the findings the study found that that most of MFIs in Kenya were using equity and or donations as their main source finances in Kenya. The study further found that there exist a positive relationship between capital structure and profitability of MFIs in Kenya. However, this study overlooked other factors that influence capital structure of the firm such as the asset tangibility of the firm and business risks.

## 2.5 Determinants of Microfinance Banks' Capital structure

In this study, to identify the determinant factors and which of the capital structure theories is applicable in the Kenyan Microfinance banks context, the researcher have concentrated on seven key variables as identified in studies by Titman and Wessels (1988) in USA, Ashenafi (2005) in Ethiopia, Buferna et al (2005) in Libya, Rajan and Zingales (2006) in G7 countries.

### 2.5.1 Capital Structure (Leverage)

The objective of an optimal financing choice for any firm is therefore to have a mix of debt, preferred stock, and common equity that will maximize shareholders wealth. For example, changes in financial leverage affect firm value. A higher debt ratio can enhance the rate of return on equity capital during good economic times. On the contrary, a higher debt ratio increases the riskiness of the firm's earnings stream (Ahlin & Townsend, 2007).

### 2.5.2 Age of the Firm

Age of the firm is a standard measure of reputation in capital structure models. As a firm continues longer in business, it establishes itself as an ongoing business and therefore increases its capacity to take on more debt; hence age is positively related to debt (Fisseha, 2010) Before granting a loan, banks tend to evaluate the creditworthiness of entrepreneurs as these are generally believed to pin high hopes on very risky projects promising high profitability rates. If the investment is profitable, shareholders will collect a significant share of the earnings, but if the project fails, then the creditors have to bear the consequences (Myers, 1977). To overcome problems associated with the evaluation of creditworthiness, Diamond (1989) suggests the use of firm reputation. He takes reputation to mean the good name a firm has built up over the years; the name is recognized by the market, which has observed the firm's ability to meet its obligations in a timely manner. Directors concerned with a firm's reputation tend to act more prudently and avoid riskier projects in favor of safer projects, even when the latter have not been approved by shareholders, thus reducing debt agency costs. Generally, according to Mintesinot (2010), as firms became aged, the long years of track record will enable them to easily convince creditors and also will expertise in finding alternative credit source cost effectively or in favorable terms while going for debt capital.

### 2.5.3 Firm size

Size has been viewed as a determinant of a firm's capital structure. Two point of view conflict on the relationship between size and leverage of a firm. The first point says that large firms do not consider the direct bankruptcy costs as an active variable in deciding the level of leverage because these costs are fixed by constitution and constitute a smaller proportion of the total firm's value. And also, larger firms being more diversified have lesser chances of bankruptcy (Titman & Wessels, 1988). Following this, one may expect a positive relationship between size and leverage of a firm. Second, contrary to first view, Rajan and Zingales (1995) argue that there is less asymmetrical information about the larger firms. This reduces the chances of undervaluation of the new equity issue and thus encourages the large firms to use equity financing. This means that there is negative relationship between size and leverage of a firm. Empirical evidence on the relationship between size and capital structure supports a positive relationship. Several works show a positive relationship between firm size and leverage (see Barclay and Smith, 1996; Al-Sakran, 2001,). Their results suggest that smaller firms are more likely to use equity finance, while larger firms are more likely to issue debt rather than stock. In a Ghanaian study, Aryeetey *et al.* (1994) found that smaller enterprises have greater problems with credit than larger firms do. Their results showed that the rate at which large firms apply for bank loans was higher than that of smaller firms. In a study of six African countries, Bigsten *et al.* (2000) also showed that about 64% of micro firms, 42% of small firms and 21 % of medium firms appear constrained, while this is only 10% for the large firms. Cassar and Holmes (2003), and Esperanca *et al.* (2003) found a positive association between firm size and long-term debt ratio, but a negative relationship between size and short-term debt ratio.

Some studies also support a negative relationship between firm size and short-term debt ratio (Chittenden *et al.,* 1996; Michaelas *et al.,* 1999). According to Titman and Wessels (1988), small firms seem to use more short-term finance than their larger counterparts because smaller firms have higher transaction costs when they issue longterm debt or equity. They further add that such behaviour may cause a "small firm risk effect", by borrowing more short term. These types of firms will be more sensitive to temporary economic downturns than larger, longer geared firms. A

positive relationship is therefore expected between size and leverage. Larger firms tend to be more diversified and are therefore able to absorb risk (Rajan & Zingales, 1995). In addition, they tend to have easy access to credit and have more diluted ownership, leading to less control over managerial decisions. Friend and Lang (1988) found that, though, managers may influence debt ratios in order to protect their personal investment in a company, a firm's debt maturity choice is less dependent on size.For the Static trade-off approach, the larger the firm, the greater is the possibility that it can issue debt there by resulting in an existence of a positive relationship between debt and size. One of the reasons for this is that the larger the firm the lower is the risk of bankruptcy (Titman and Wessels, 1988). With respect to the Pecking order theory, Rajan and Zingales (1995) argued that this relationship could be negative. There is less asymmetrical information about the larger firms, reducing the chances of undervaluation of the new equity issue, encouraging large firms to use equity financing. This means that there is a negative relationship between size and leverage of the firm.

### 2.5.4 Profitability

Concerning profitability, Jensen's (1986) theory of the agency cost of financial structure considers debt as a disciplining device which compels managers to increase shareholders' wealth rather than building empires. Therefore, studies on the links between capital structure and firm profitability have shown that there is an inverse relationship between capital structure and profitability (Friend & Lang, 1988; Rajan & Zingales, 1995; Wald, 1999; Chen, 2004). Given the pecking order hypothesis firms tend to use internally generated funds first and then resort to external financing. This implies that profitable firms will have less amount of leverage, thus profitable firms that have access to retained profits can rely on them as opposed to depending on outside sources (debt) (Myers & Majluf 1984). Murinde *et at.* (2004) observe that retentions are a principal source of finance. Titman and Wessels (1988) and Barton *et al.* (1989) agree that firms with high profit rates would maintain relatively lower debt ratios since they can generate such funds from internal sources. Empirical evidence from previous studies seems to be consistent with the pecking order theory. Most studies found a negative relationship between profitability and capital structure Barton et al., (1989); and Cassar and Holmes (2003), also suggest negative relationships

between profitability and both long-term debt and short-term debt ratios. Petersen and Rajan (1994), however, found a significantly positive association between profitability and debt ratio. Also consistent with the pecking order theory, work of Titman and Wessels (1988), Rajan and Zingales (1995), in developed countries all find a negative relationship between leverage ratios and profitability.

Myers (1984) cites evidence from Donaldson (1961) and Brealey and Myers (1984) that suggests that firms prefer raising capital, first from retained earnings, second from debt, and third from issuing new equity. He suggests that this behavior may be due to the costs of issuing new equity. These can be the costs discussed in Myers and Majluf (1984) that arise because of asymmetric information, or they can be transaction costs. In either case, the past profitability of a firm, and hence the amount of earnings available to be retained, should be an important determinant of its current capital structure. Profitability is a strong point of dissent between the two theories of capital structure i.e. Pecking order theory and Static trade-off Theory. For the Static trade-off theory, the higher the profitability of the firm, the more are the reasons it will have to issue debt, reducing its tax burden. On the other hand, Pecking order theory assumes that larger earnings lead to the increase of the main source of capital firms choose to cover their financial deficit: retained earnings (Fisseha, 2010). Therefore, the Static trade-off theory expects a positive relationship between profitability and leverage, whereas the pecking order theory expects exactly the opposite.

### 2.5.5 Asset Tangibility

A firm with large amount of fixed asset can borrow at relatively lower rate of interest if it provides the security of these assets to creditors. Since it has the incentive of getting debt at lower interest rate, a firm with higher percentage of fixed asset is expected to borrow more as compared to a firm whose cost of borrowing is higher because of having less fixed assets (Shah & Khan, 2007). Degree to which the firm's assets are tangible should result in the firm having greater liquidation value Titman and Wessels, 1988; Harris and Raviv, (1991). Bradley et al. (1984) assert that firms that invest heavily in tangible assets also have higher financial leverage since they borrow at lower interest rates if their debt is secured with such assets. It is believed that debt may be available for use when there are durable assets to serve as collateral

Wedig *et al.,* (1988). It is further suggested that bank financing will depend upon whether the lending can be secured by tangible assets Storey (1994). Empirical results show a positive relationship consistent with theoretical argument between asset structure and leverage for the firms Bradley et al. (1984); Rajan and Zingales. Kim and Sorensen (1986), however, found a significant and negative coefficient between depreciation expense as a percentage of total assets and financial leverage. Other studies specifically suggest a positive relationship between asset structure and long-term debt, and a negative relationship between asset structure and short-term debt Van der Wijst and Thurik, (1993); Hall *et al.,* (2004). Esperanca *et al.* (2003) found positive relationships between asset structure and both long-term and short-term debt. Marsh (1982) also maintains that firms with few fixed assets are more likely to issue equity. In a similar work, MacKie-Mason (1990) concluded that a high fraction of plant and equipment (tangible assets) in the asset base makes the debt choice more likely. Booth *et al.* (2001) document a positive correlation between tangible fixed assets and debt financing; they link this to the maturity structure of the debt. From the foregoing, a positive significant relationship is predicted between tangibility of assets and leverage. Lenders normally use tangible assets as security consistent with trade-off theory. Jensen and Meckling (1976) show that collateral serves to protect lenders from the moral hazard problem associated with shareholder-lender conflict. Also, Williamson (1988) points out that capital project financing is essentially dependent on asset tangibility. Similarly, Titman and Wessels (1988), Rajan and Zingales (1995) and Chen (2004) show that significant positive relationships exist between asset tangibility and firm debt. Findings by Rajan and Zingales (1995) are consistent with the Static trade-off theory saying that tangible assets are appropriate for the purpose of raising debt since it act as good collateral. It also seems to reduce the cost of financial distress. Concluding this, firms with large ratios of tangible assets would be expected to raise more debt. On the other hand, the pecking order theory stretch that firms with few tangible assets faces larger asymmetric information problems and will therefore tend to raise more debt over time and become more levered (Frank & Goyal, 2003).

### 2.5.6 Tax Charge

Numerous empirical studies have explored the impact of taxation on corporate financing decisions in the major industrial countries. Some are concerned directly with tax policy, for example, MacKie-Mason (1990), Shum (1996) and Graham (1999). MacKie-Mason (1990) studied the tax effect on corporate financing decisions and provided evidence of substantial tax effect on the choice between debt and equity. He concluded that changes in the marginal tax rate for any firm should affect financing decisions. When already exhausted (with loss carry forwards) or with a high probability of facing a zero tax rate, a firm with high tax shield is less likely to finance with debt. The reason is that tax shields lower the effective marginal tax rate on interest deduction. Graham (1999) concluded that in general, taxes do affect corporate financial decisions, but the magnitude of the effect is mostly "not large". On the other hand, DeAngelo and Masulis (1980) show that there are other alternative tax shields such as depreciation, research and development expenses, investment deductions, etc., that could substitute the fiscal role of debt.

Empirically, this substitution effect is difficult to measure, as finding an accurate proxy for tax reduction that excludes the effect of economic depreciation and expenses is tedious (Titman & Wessels, 1988). Dammon and Senbet (1988) argue that there is also an income effect when investment decisions are made simultaneously with financing decisions. They suggest that increases in allowable investment-related tax shields due to changes in the corporate tax code are not necessarily associated with reduction in leverage at the individual firm level when investment is allowed to adjust optimally. They explain that the effect of such an increase depends critically on the trade-off between the "substitution effect" advanced by DeAngelo and Masulis (1980) and the "income effect" associated with an increase in optimal investment. The tax incentive of debt contributes to its presence in the capital structure, as the interests payments on debt is tax-deductible, hence reducing company's tax burden (Dzolkamaini, 2005). Therefore, by taking more debt in their capital structure, firms benefit from the 'interest tax-shield'. This benefit of debt is promoted mainly by the Static trade-off theory which predicts that the more the tax amount a firm has to pay, the greater is the debt it will have in its capital structure.

### 2.5.7 Business Risks

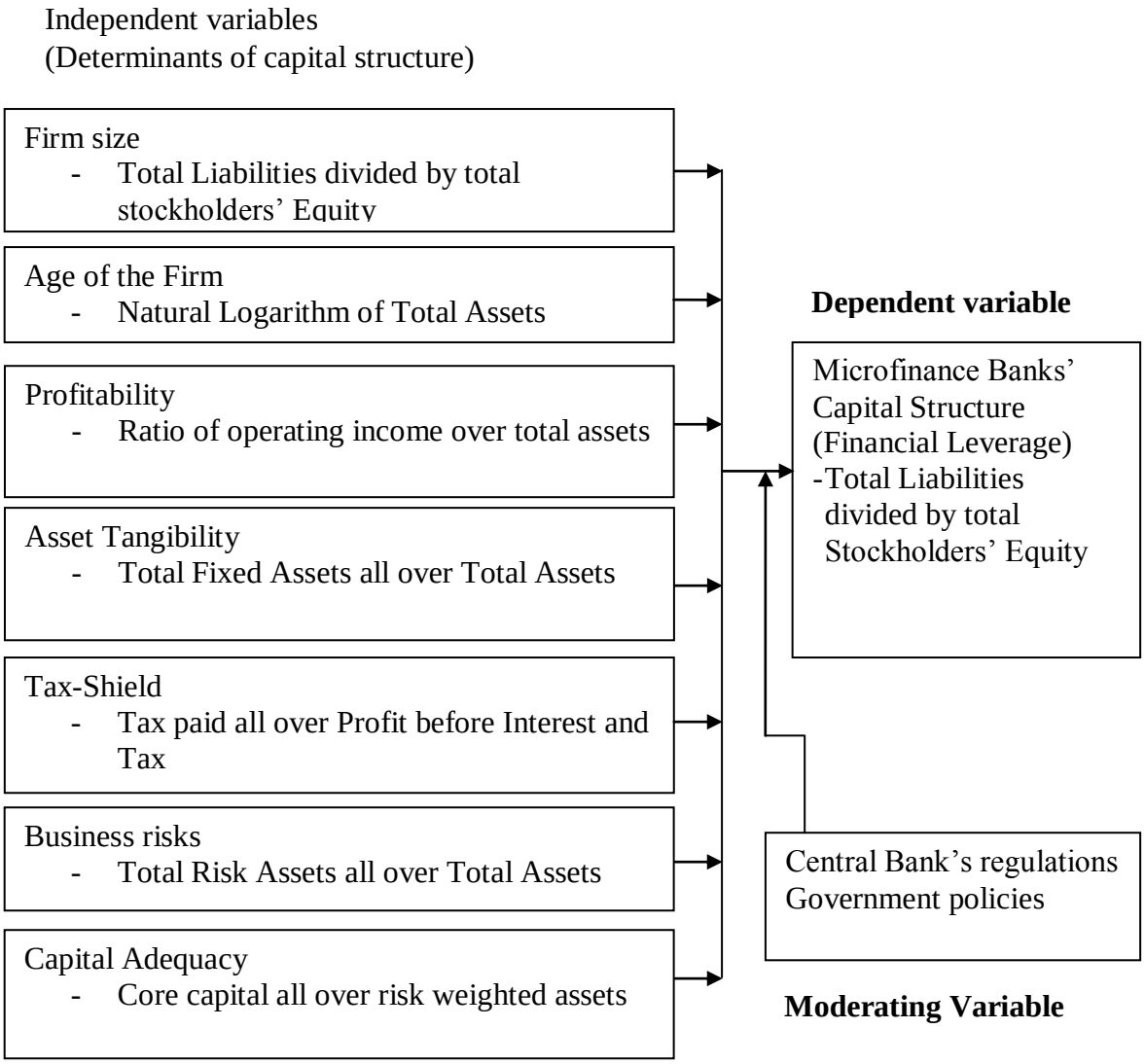
In banking, one of the most important determinants of capital is related to the risk that banks have taken. Legal regulations relate the level of capital that banks must maintain with the level of risks that they carry. The main reason of this is that capital is viewed as a shield against unexpected losses and bankruptcy (Ayanda, *et al.*, 2013). Both agency and bankruptcy cost theories suggest the negative relation between the capital structure and business risk. The bankruptcy cost theory contends that the less stable earnings of the enterprises, the greater is the chance of business failure and the greater will be the weight of bankruptcy costs on enterprise financing decisions. Similarly, as the probability of bankruptcy increases, the agency problems related to debt become more aggravating. Thus, this theory suggests that as business risk increases, the debt level in capital structure of the enterprises should decrease (Taggart, 1985). Studies carried out in western countries during 1980s show the contradictory evidence in this regard (Martin *et al.,* 1988). The studies carried out in India and Nepal also show the contradictory evidence on the relation between the risk and debt level. Sharma (1983) and Chamoli (1985) show the evidence against, and Garg (1988) and Paudel (1994) do for the relation consistent with the bankruptcy and agency cost theories.

### 2.5.8 Capital Adequacy

The capital adequacy is generally the banks strength and stability as it is the measurement of capital ratio to its assets: loans and investments. So the increasing in capital increases the risk of earnings variations in the future. Therefore the most concerning problem of the managers, are the control of the firms and the concern of creditors to limit default risk. Capital structure can be positively related to long term debt and negatively related to short term debts according to hypothesis of ceteris paribus (Turan *et al,* 2014).

### 2.5.9 Conceptual Framework

A conceptual framework is a hypothesised model that graphically portrays the relationships (Mugenda &Mugenda, 2003).




Source: (Author, 2016)

**Figure 2. 1 Conceptual Framework Determinants of capital structure**

Figure 2.1 above presents the relationship between determinants of capital structure which will be tested to determine their effect on the Microfinance Banks Leverage ratio. Size, Age, profitability, Asset tangibility, tax charge, business risks and capital adequacy are used as independent variables, while leverage ratio is the dependent variable

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter provides an explanation on how data was gathered and analyzed. It details the research design adopted, target population, sample size and sampling procedures, data sources, testing validity and reliability ,data analysis and ethical considerations.

## 3.2 Research Design

The research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data. The research problem determines the type of design one can use (Sekaran, 2006). This study employed descriptive research design whereby capital structure determinants in Kenyan microfinance banks were analysed using audited financial statements.

## 3.3 Target population

Oso and Onen (2008) explain population as a larger group of items or objects from which samples are taken. Black (2008) indicates that a target population comprises of institutions and entities that are object of investigation. The target population of this study was Twelve (12) Microfinance Banks licensed by the registered Central Bank of Kenya.

## 3.4 Sample Size and Sampling Technique

Sample size refers to the number of items to be selected for observations in order to obtain accurate information on the universe (Oso & Onen, 2008). Sampling Technique is a process of selecting sufficient number of elements from a population for the purpose of determining their properties or characteristics and generalizing the findings of the whole population (Sekaran, 2006). Sampling is a selection of a few items (a sample) from a bigger group (population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group (Cooper & Schinder 2003). Mugenda and Mugenda (2003)

recommend a sample percentage of 30% of an entire population as appropriate population representation.

30%*N=n

30%*12=3.6

Where;

N=Target population

n=sample size

Therefore the study sampled three microfinance banks

Purposive sampling was employed to determine the final sample size. Only those Microfinance Banks which have been in existence for over five years and above and have been licensed to operate nationally were included in the study sample. The researcher assumed that a five-year period is enough time for capital structures of any organization to have stabilized thus warranting an empirical investigation of those factors that are important over the capital structure and their significance over microfinance banks leverage. The sample size comprised three microfinance banks licensed to operate nationally as shown in the sample schedule below;

*Table 3.1: sample size*

| **Microfinance Bank** | **Licensing year by Central Bank of Kenya** | **Number of branches** |
|---|---|---|
| Faulu Microfinance Bank | 2009 | 32 |
| Kenya Women Microfinance Bank | 2010 | 29 |
| SMEP Microfinance Bank | 2010 | 37 |

Source: (Research data, 2016)

### 3.5 Data sources

The study used secondary data for the period 2011 to 2015 that was obtained from audited financial reports of respective Microfinance banks in Kenya.

### 3.6 Validity and reliability of Instruments

#### 3.6.1 Validity of Instruments

According to Kothari (2009), validity is the critical criteria that indicate the degree to which an instrument measures what is supposed to measure. To ensure validity, the financial statements used, had been prepared according to the international financial reporting standards (IFRS) and the generally acceptable accounting principles (GAAPs) as they had been audited by reputable international audit firms.

#### 3.6.2 Reliability of Instruments

Mugenda and Mugenda (2003) asserted that, the accuracy of data to be collected largely depended on the data collection instruments in terms of validity and reliability. Reliability refers to how consistent a research instrument is (Sakaran, 2006). Orodho (2005) says that one way to test reliability is to give the same people the same test more than one occasion and then compare each person's performance on both occasions. Cronbach's Alpha was used to test reliability of instruments. Kombo and Tromp (2009) indicates that an alpha range of 0.6 to 0.7 is commonly accepted rule of thumb that indicates good reliability. An overall alpha of 0.786 was reported which was taken as reliable.

### 3.7 Data Processing and analysis

Sekaran (2006) states that data analysis seeks to fulfill objectives and answer research questions. Descriptive statistics such as means and standard deviations and inferential statistical tables were used to present the data and also show comparison. Inferential statistics were used to show the relationships between variables, where leverage was regressed against, bank size, bank age, profitability, asset tangibility, tax charge, business risks and capital adequacy. STATA was used to analyse the data collected from microfinance banks' financial reports for the years 2011-2015 A multivariate regression model was used to analyze the data collected from the financial statements of microfinance banks operating in Kenya for over five years. Based on the regression outputs, test of the data used and hypotheses; and analysis of the result were made. The analyses were presented by using descriptive approach.This time series model was adapted from Gajurel (2005) and Korajezcyk and Levy (2002) and it states;

$$LEVERAGE_{i,t} = \beta 0 + \beta 1(SIZE_{i,t}) + \beta 2(AGE_{i,t}) + \beta 3(PR0F_{i,t}) + \beta 4(TANG_{i,t}) + \beta 5(TAX_{i,t}) + \beta 6(RISK_{i,t}) + \beta 7(CAPADEQ_{i,t}) + \varepsilon_i$$

**LEVERAGE** = Debt to Equity ratio is computed as Total Liabilities divided by total Stockholders' Equity (DER)

**SIZE=** Natural Logarithm of Total Assets (SIZE)

**AGE=** number of years of stay in business operation (AGE)

**PROFITABILITY=**Ratio of operating income over total assets (PROF)

**TANGIBILITY=**Total Fixed Assets all over Total Assets (TANG)

**TAX SHIELD =** Tax paid all over Profit before Interest and Tax (TAX)

**BUSINESS RISK=**Total Risk Assets all over Total Assets (RISK)

**CAPITAL ADEQUACY=**Bank's core capital allover risk weighted assets

**β0** = Coefficient of Intercept (Constant)

$\beta_1$= Coefficient of Size

$\beta_2$= Coefficient of Growth

$\beta_3$= Coefficient of Profitability

$\beta_4$ = Coefficient of Asset Tangibility

$\beta_5$= Coefficient of Tax Shield

$\beta_6$= Coefficient of Business risks

$\beta_7$= Capital Adequacy

$\varepsilon_i$=Stochastic Error Term representing all other variables not captured

**t=**Represents time periods of the observations i.e. 2011 - 2015

**I=**Represents observations of each Microfinance Bank at the point in time

### 3. 8 Ethical Considerations

According to (Trochim 2006) researchers should observe ethics in research work. Confidentiality on audited reports content was ensured throughout the study (Trochim 2006) as well as through literature review for authors' acknowledgement. The researcher also explained the purpose of the study and how the information obtained was to be used.

# CHAPTER FOUR

# RESULTS AND DISCUSSIONS

## 4.1 Introduction

This Chapter presents the results of the regression model and their corresponding discussions. Prior to the analysis of regression model, test of CLRM assumptions have been made followed by the correlation and descriptive analysis. It also presents the analysis of the collected empirical data, portrays the results, and explains the determinants of capital structure in the cased microfinance banks in Kenya.

## 4.2 Descriptive Statistics

Table 4.1 demonstrates the summary of descriptive statistics for the variable values used in the sample. The summary of descriptive statistics includes the mean, standard deviation, minimum and maximum of one dependent variable (DER) and seven explanatory variables (CAPADEQ, SIZ, PRO, TANG, TAX, RISK, and AGE) (from year 2011 – 2015. The data contains ample of three Microfinance banks in Kenya for the past five years (2011 – 2015).

*Table 4.1: Summary of Descriptive Statistics*

| variable | Obs | Mean | Std. Dev | Min | Max |
|---|---|---|---|---|---|
| **Der** | 15 | .8370987 | .0607106 | .75115 | .93584 |
| **Capadeq** | 15 | 18.18323 | 7.092268 | 5.29818 | 31.38496 |
| **Siz** | 15 | 15.76127 | 1.471819 | 12.18983 | 17.2769 |
| **Pro** | 15 | .2259207 | 0.303291 | .17194 | .27765 |
| **Tang** | 15 | .097658 | .0284464 | .05869 | .15489 |
| **Tax** | 15 | 0.2449785 | .1422175 | 0 | .47135 |
| **Risk** | 15 | .7002219 | .0809078 | .5844238 | .81642 |
| **Age** | 15 | 6.333333 | .48795 | 6 | 7 |

**Source:** *Researcher's own computation based on the financial statements (2016)*

The descriptive statistics summarized in Table 4.1 are a collection of measurements of two things: location and variability. Location tells one the central value of the variables (the mean is the most common measure of this). Variability refers to the spread of the data from the center value (i.e. standard deviation). The mean is the sum of the observations divided by the total number of observations. The median is the middle value of the total observation. The standard deviation is the squared root of the variance and indicates how close the data is to the mean (Madalla, 2005). The average

(mean) debt to equity ratio (DER) of Kenyan microfinance banks is found to be 8.4 and this indicates microfinance banks are financed (leveraged) with debt at approximately eight times greater than equity option. That is the microfinance banks financing decision is inclining to deposit mobilization than to the equity financing. Even the standard deviation show that the microfinance banks have, in the past five years, focused more on debt financing than on equity financing. The average annual profitability of the banks under investigation is found to be 2.3 percent. Since profitability was measured by the ratio of operating income to total assets, the maximum attained average profitability rate is 2.8 percent whereas the lowest recorded average profitability rate is 1.7 percent.The mean of asset composition is found to be 1.0 percent indicating that the microfinance banks fixed assets represent only 1.0 percent of the total assets. Due to the nature of the business microfinance banks have high current assets. Tangibility of the microfinance banks operating in Kenya, as measured by the ratio of fixed assets to total assets, ranges from 0.6 percent to 1.5 percent.

The Microfinance banks' total assets have an average growth rate of 15.8 percent for the five years of study period. The firms' size ranges approximately from 12.2 percent to 17.2 percent. The mean age of microfinance banks was found to be 6 years. The age of these microfinance banks vary from 6 years to 7 years with the older being Faulu microfinance banks while Kenya women and SMEP microfinance both aged 6 years. During the five years of the study period, the tax-shield variable values show that the microfinance banks have been taking an advantage of tax-shield from the interest payments on debt on behalf of equity shareholders at an average value of Kenya shillings 7,002,219 every year. As for business risks it was found that the average probable business risks as a result of unstable earnings among the microfinance banks in Kenya was 7.0 percent with the minimal level of risks being 5.8 percent and the maximum being 8.2 percent. This means that less stable earnings within the microfinance bank sector increased business risks with an average of 7.0 percent thus decreasing use of debt in capital structure with the same margin as chance of business failure may be greater as a result of weight of bankruptcy costs on microfinance banks' financing decisions. On microfinance banks' capital adequacy requirements, it was found that microfinance banks average capital adequacy is at

18.1 percent with the highest maintaining a capital adequacy at 31.4 percent and the lowest 5.3 percent.

### 4.2.1 Correlation Analysis

Correlation and regression analyses are related in the sense that both deal with relationships among variables. The correlation coefficient is a measure of linear association between two variables (Kibron Fisseha, 2010).Values of the correlation coefficient are always between -1 and +1. A correlation coefficient of +1 indicates that two variables are perfectly related in a positive linear sense; while a correlation coefficient of -1 indicates that two variables are perfectly related in a negative linear sense. A correlation coefficient of 0, on the other hand, indicates that there is no linear relationship between the two variables. For simple linear regression, the sample correlation coefficient is the square root of the coefficient of determination. The correlation coefficient measures only the degree of linear association between two variables (Gujarati, 2003). The analysis of the relationship between dependent variable (DER) and independent variables (CAPADEQ, SIZ, PRO, TANG, TAX, RISK, and AGE) is detailed in Table 4.2 as follows using the correlation matrices.

*Table 4.2: Correlation Matrix and their Significance Level of Correlation for Dependent Variable and Independent Variables*

| | **der** | **capadeq** | **siz** | **Pro** | **Tang** | **Tax** | **risk** | **Age** |
|---|---|---|---|---|---|---|---|---|
| **Der** | 1.0000 | | | | | | | |
| **Capadq** | -0.8631 | 1.0000 | | | | | | |
| | 0.0000* | | | | | | | |
| **Siz** | 0.6353 | -0.3288 | 1.0000 | | | | | |
| | 0.0109** | 0.2315 | | | | | | |
| **Pro** | -0.0532 | 0.3163 | -0.1029 | 1.0000 | | | | |
| | 0.8505 | 0.2507 | 0.7152 | | | | | |
| **Tang** | -0.4072 | 0.4595 | -0.4972 | 0.5283 | 1.0000 | | | |
| | 0.1319 | 0.0849*** | 0.0593*** | 0.429 | | | | |
| **Tax** | 0.7480 | -0.6282 | 0.7333 | -0.1891 | -0.6176 | 1.0000 | | |
| | 0.0013* | 0.0122** | 0.0019** | 0.4996 | 0.0141** | | | |
| **Risk** | 0.2342 | -0.2041 | 0.6211 | -0.0603 | -0.5221 | -0.4602 | 1.0000 | |
| | 0.4009 | 0.4655 | 0.0135** | 0.8311 | 0.0459** | 0.0843*** | | |
| **Age** | 0.4955 | -0.4726 | 0.2691 | -0.5463 | -0.3034 | -0.4312 | -0.2222 | 1.0000 |
| | 0.0604*** | 0.0752*** | 0.3322 | 0.0351** | 0.1085 | 0.1085 | 0.4261 | |

(*, **, *** indicates Levels of Significance at 1%, 5% and 10% respectively)

**Source:** *Researcher's own computation based on the financial statements (2016)*

The correlation matrix in Table 4.2 shows that the Debt Ratio (dependent variable) is correlated at -0.8631 with capital adequacy at 1 percent significance level, at 0.6353 with size at 5 percent significance level, at -0.0532 profitability at insignificance level, at -0.4072 with Tangibility at insignificance level, at 0.7480 with Tax at 1 percent significance level, at 0.2342 with risk at insignificance level and at 0.4955 with age at 10 percent significance level. From the correlation output, it can be said that the independent variables have a relatively higher correlation negatively or positively with dependent variable of the selected microfinance banks. Capital adequacy is found highly negatively correlated with leverage at 86.3 percent meaning that as microfinance banks become capital adequate their level of level of gearing ratio goes down. As the microfinance size increases Debt level also increases as whole sale lenders have confidence in the firm and are willing to lend to microfinance banks. Moreover as profitability increases Debt ratio decreases as microfinance banks would prefer to use retained earnings set aside from huge profit margin to finance their capital structure. The correlation matrix also shows that as tangible asset increases Debt ratio decreases as many microfinance banks may prefer to use either directors guarantees in securing loan capital or even may prefer equity finance in finding their capital structure. In relation to tax shield the results show that as tax incentive increases, microfinance banks increase their Debt ratio as they take advantage of the tax incentives. According to Dzolkamaini (2005) tax incentive of debt contributes to its presence in the capital structure, as the interests payments on debt is tax-deductible, hence reducing company's tax burden. As microfinance banks less stable earnings increases, this increases the chances of banks failure and thus to they tend to borrow more using debt from whole sale lenders to cushion themselves. There is a positive correlation between age and debt, meaning that as microfinance banks age increase, their debt level increases as they are able to borrow more from whole sale lenders who have confidence on aged microfinance and they are willing to provide loan capital to these microfinance banks.

The results also show that profitability and tangibility are positively correlated to capital adequacy, while size, tax shield, business risks and age have a negative correlation with capital adequacy. This implies that as microfinance banks report more profits, they tend to set aside part of these earnings to increase their capital base

moreover microfinance banks with tangible assets also tend to increase their capital base as these assets can be used as security against borrowed amount by these banks to boost their capital requirements. As concluding analysis, the selected explanatory variables are found to have either positive or negative correlation with the dependent variable. Therefore, the selected independent variables can explain the dependent variable with a considerable degree.

### 4.3 Multivariate Regression Analysis

Prior empirical studies have traditionally used different estimation methods based on the types of data to investigate the determinants of firm's capital structure. The most common method is pooled cross-sectional data analysis. Therefore, it is worth to investigate the extent to which obtained results are sensitive to the changes in the estimation method. The empirical data of the value of the variables are computed for five consecutive years (2011 - 2015), using audited financial statements of the selected microfinance banks. Therefore, pooled cross sectional data computed by multivariate ordinary least square (OLS) regression is carried out to provide a comprehensive analysis about the determinants of capital structure of microfinance banks in Kenya.

#### 4.3.1 Hausman Specification Test

Durbin-Wu-Hausman test was carried out in order to determine whether the estimates of the coefficients, taken as a group, are significantly different in the two regressions; Fixed Effect Model (FEM) and Random Effect Model (REM) and select the one to be adopted using the two methods. Random Effect Model (REM) was adopted since the results Hausman test gave a very high probability value of 99.85% which is greater than 5% as shown in the tables below. Thus according to Hausman test REM is the best model to represent the data. This means that null hypothesis could not be rejected rather accepted. The Hausman Test hypotheses are;

$H_o$: Random Effect Model is the appropriate

$H_a$: Fixed Effect Model is the appropriate

Thus Random Effect GLS regression model was used

*Table 4.3: Hausman Test*

| | --Coefficients-- (b) Fixed | (B) random | (b-B) Difference | Sqrt(diag(v_b-v_B) |
|---|---|---|---|---|
| **capadeq** | -.0072338 | -.0067787 | -.0004551 | .0007043 |
| **Siz** | .0248273 | .0215527 | .0032745 | .0050368 |
| **Pro** | .6869953 | .6672141 | .0197812 | .0499269 |
| **Tang** | -.1446849 | -.1656225 | .0209376 | .0563399 |
| **Tax** | -.0258798 | -.0316938 | .005814 | .0144241 |
| **Risk** | -.1360839 | -.1581835 | .0220997 | .0376114 |
| Chi2(6)=**0.44** | Prob>chi2=**0.9985** | | | |

*Table 4.4: Random Effect GLS Regression Result of DER and the Explanatory Variables*

| **der** | **Coef.** | **Std. Err** | **Z** | **p>(z)** |
|---|---|---|---|---|
| **Capadeq** | -.0067787 | .0005382 | -12.59 | 0.000 |
| **Siz** | .0215527 | .0033704 | 6.39 | 0.000 |
| **Pro** | .6672141 | .1357444 | 4.92 | 0.000 |
| **Tang** | -.1656225 | .1582078 | -1.05 | 0.295 |
| **Tax** | -.0316938 | .0388344 | -0.82 | 0.414 |
| **Risk** | -.1581835 | .059124 | -2.68 | 0.007 |
| **Age** | .0154592 | .009781 | 1.58 | 0.114 |
| **_cons** | .506715 | . 0954627 | . 5.31 | 0.000 |
| Number of obs =**15** | | Prob>chi2=**0.0000** | | |
| Wald hi2(7)=**495.25** | | R-sq:=**0.9511** | | |
| Multicollinearity =2.51 | | Ramesy test = Prob>F =0.6226 | | |
| Heteroskedasticity = Prob>Chi2 =0.5927 | | | | |

**Source:** *Researcher's own computation based on the financial statements (2016)*

Table 4.4 presents the regression results of determinants of debt to equity ratio (DER) of Microfinance banks in Kenya between 2011 and 2015.

The overall $R^2$= 0.9511 which indicates that about 95.11 percent of the variability of debt to equity ratio is explained by the selected firm-specific factors (Size, Age, Profitability, Tangibility, Tax-shield, Business risks and Capital Adequacy). In other words, about 95.11 percent of the change in the dependent variable is explained by the independent variables that are included in the model. The data was also made 100 percent free from heteroskedasticity problem using the "robust" command of STATA in order to make the model fully unbiased. In Table 4.7, the probability value (Pro>chi2=0.000) is significant, meaning that the model is good and nicely fitted, and the coefficients of the model are not equal to zero. This shows that the regression as whole is significant, thus there is a significant relationship between the capital structure (leverage) measured in terms DER and the determinant explanatory variables measured in terms of SIZE, AGE, PROF, TANG, TAX , RISK and CAPADEQ.

The z-statistics show that the explanatory variables such as capital adequacy, size, profitability and business risks appear to be significant. Capital adequacy, size and profitability are significant at 1 percent significance level while business risk is significant at 1 percent significance level. Asset Tangibility, Tax-shield, Business risks and Capital adequacy are negatively related to debt to equity ratio as indicated by their respective coefficients of -0.166, -0.317, -0.158 and -0.007. However, size, age and profitability proved positively related with the leverage ratio and are expressed by their coefficients of 0.216, 0.015 and 0.667 respectively.

### 4.4 Diagnostic Data Tests

The five most critical assumptions related to CLRM of pooled-cross sectional data are tested in the following sub-sections. Normality, multicollinearity, heteroskedasticity, outliers' detection and model specification tests have been made to make the data available give reliable result and make the model fit the data. These assumptions were required to be tested because the estimation technique, Multivariate Ordinary Least Squares (OLS), has a number of desirable properties. Hence, the hypothesis testing regarding the coefficient estimates could validly be conducted.

### 4.4.1 Test of Normality

Normality test of data is applied to determine whether a data is well-modeled by a normal distribution or not, and to compute how likely an underlying random variable is to be normally distributed. Skewness/ kurtosis) tests of normality were used to test normality.

Table 4.5 shows the result of skewness/kurtosis test for normality. According to Kibrom (2010), theoretically, if the test is not significant, then the data are normal, so any value above 0.05 indicates normality. On the other hand, if the test is less than 0.05 which proves significance, then the data are non-normal.

*Table 4.5: Skewness/ Kurtosis Tests for Normality*

| Skewness/Kurtosis tests for Normality | | | | | |
|---|---|---|---|---|---|
| ------- joint ------ | | | | | |
| Variable | Pr(Skewness) | Pr(Kurtosis) | adj | chi2(2) | Prob>chi2 |
| der | 0.971 | 0.136 | 2.58 | 0.2752 | |

**Source:** *Researcher's own computation based on the financial statements (2016)*

Practically, in this study Skewness/ Kurtosis test shown in Table 4.5, *p*-value is found to be 0.2752 (greater than 0.05) accepting the null hypothesis that indicates the residual values are normally distributed.

### 4.4.2 Test of Multicollinearity

Multicollinearity means that there is linear relationship between explanatory variables which may cause the regression model biased (Gujarati, 2003). In order to examine the possible degree of multicollinearity among the explanatory variables, pair-wise correlation matrixes of the selected variables are shown in Table 4.6. Variable Inflation Factor (VIF) technique is also employed to detect the multicollinearity problem and strengthen our analysis.

*Table 4.6: Pair-Wise Correlation Matrix between Explanatory Variables*

| | Capadeq | siz | Pro | Tang | tax | Risk | Age |
|---|---|---|---|---|---|---|---|
| **Capadeq** | 1.0000 | | | | | | |
| **Siz** | -0.3288<br>0.2315 | 1.0000 | | | | | |
| **Pro** | 0.3163<br>0.2507 | -0.1029<br>0.7152 | 1.0000 | | | | |
| **Tang** | 0.4595<br>0.0849*** | -0.4972<br>0.0593*** | 0.5283<br>0.429 | 1.0000 | | | |
| **Tax** | -0.6282<br>0.0122** | 0.7333<br>0.0019** | -0.1891<br>0.4996 | -0.617<br>0.0141** | 1.0000 | | |
| **Risk** | -0.2041<br>0.4655 | 0.6211<br>0.0135** | -0.0603<br>0.8311 | -0.5221<br>0.0459** | 0.4602<br>0.0843*** | 1.0000 | |
| **Age** | -0.4726<br>0.0752*** | 0.2691<br>0.3322 | -0.5463<br>0.0351** | -0.3034<br>0.1085 | 0.4312<br>0.1085 | -0.2222<br>0.4261 | 1.0000 |

(*, **, *** indicates Levels of Significance at 1%, 5% and 10% respectively)

**Source:** *Researcher's own computation based on the financial statements (2016)*

In Table 4.6, it can be seen that there is no strong pair-wise correlation between the explanatory variables (CAPADEQ, SIZ, PRO, TANG, TAX, RISK and AGE) except for age and tax- shield, size & age, and size & tax-shield. As a rule of thumb, inter-correlation among the independents above 0.80 signals a possible multicollinearity problem (Gujarati, 2003). In this study therefore, all variables have low correlation power and this implies no multicollinearity problem in the explanatory variables selected to determine capital structure of microfinance banks in Kenya. Multicollinearity was also identified by the Variance Inflation factor (VIF) technique, which is a statistic calculated for each variable in the model. Theoretically, a VIF greater than 10 may suggest that the concerned variable is multi-collinear with others in the model and may need to be excluded from the model ( Fisseha, 2010). Hence, the VIF result in Table 4.7, as none of the VIFs is excessively high, suggests that there is no perfect or strong collinearity between the explanatory variables

*Table 4.7: Variable Inflation Factor (VIF) Technique to Detect Multicollinearity*

| Variable | VIF | 1/VIF |
|---|---|---|
| Tax | 3.91 | 0.255518 |
| Siz | 2.93 | 0.340752 |
| Tang | 2.77 | 0.361474 |
| Risk | 1.96 | 0.510108 |
| Capadeq | 1.88 | 0.531191 |
| Pro | 1.63 | 0.614564 |
| Mean VIF | 2.51 | |

**Source:** *Researcher's own computation based on the financial statements (2016)*

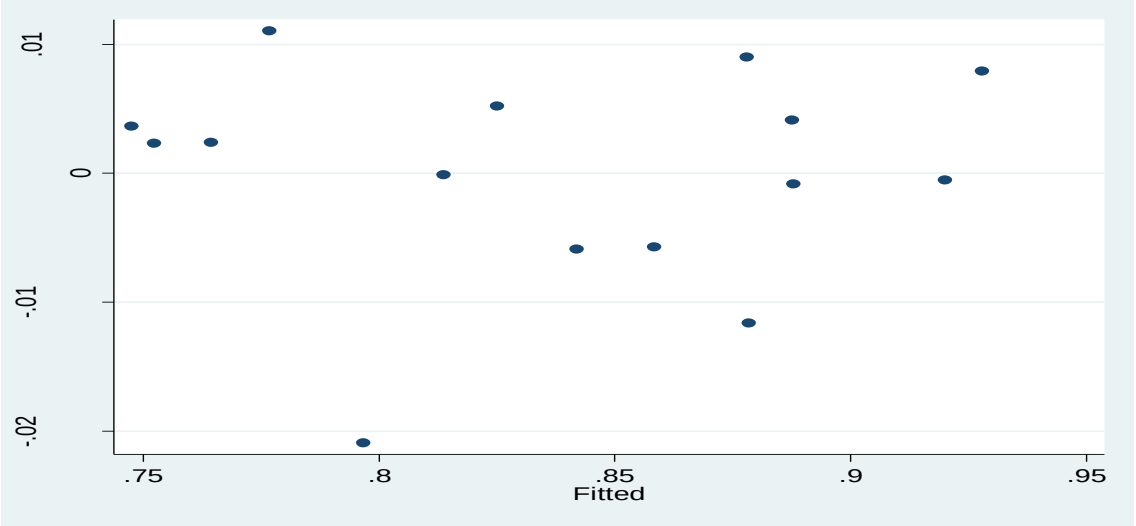
### 4.4.3 Test of Heteroskedasticity

Heteroskedasticity is a systematic pattern in the errors where the variances of the errors are not constant (Gujarati, 2003 p387). Heteroskedasticity makes ordinary least square estimators not efficient because the estimated variances and covariance of the coefficients (βi) are biased and inconsistent and thus, the tests of hypotheses are no longer valid. In this study, the non-graphical method of Breusch-Pagan/Cook-Weisberg Test of testing heteroskedasticity was used. The insignificant result from the Breusch-Pagan/ Cook-Weisburg test indicates that the regression of the residuals on the predicted values reveals the results do not suffer from heteroskedasticity (Chi2 (1) =0.29, Prob>chi2 =0.5927).

### 4.4.4 Outliers' Detection

Heteroskedasticity can also arise as a result of the presence of outliers (Gujarati, 2003)**.** Outliers are extreme values as compared to the rest of the data and are defined by the size of the residual in an OLS regression where all of the observations are used Outlier detection involves the determination whether the residual value (error = predicted – actual) is an extreme negative or positive value The OLS estimates are influenced by one or several residuals. Plotting the residual versus the fitted values can determine which errors are large, after running the regression (Fisseha, 2010). Here, Graph 4.1 shows the plot of residual versus the fitted values in the study.

*Graph 4.1: Graph of Residuals verses Fitted Values*




**Source:** *Researcher's own computation based on the financial statements (2016)*

Looking at the plot, residual versus the fitted values graph, it can be concluded that there are no significant outliers that means the residual values do not have extreme negative or positive values.

### 4.4.5 Test of Model Specification

A typical specification error occurs when the estimated model does not include the correct set of explanatory variables. This specification error takes two forms omitting one or more relevant explanatory variables or including one or more irrelevant explanatory variables. (Gujarati,2003) Either form of specification error results in problems with OLS estimates. Therefore, the model is tested whether it is specified correctly or not, and then after, to estimate the regression model properly ( Fisseha, 2010) In this study Ramesy RESET was used to test whether there are omitted variables in the estimated model.

#### 4.4.5.1 Ramsey RESET Test for Omitted Variables

This test is made on the basis of null hypothesis that says "model has no omitted variables". The Ramsey RESET results F(3,4)= 0.65, Prob>F = 0.6226) fails to reject the null hypothesis of no omitted variables, indicating that there is no model specification error since the probability value of 0.6225 is higher than 0.05which is the significance level. Thus this proves there are no omitted variables in the model.

### 4.5 Hypothesis Testing

Test of the research hypotheses were made based on the relationship of dependant variable and the explanatory variables. Table 4.8 presents the summary of the regression model results for Kenyan microfinance banks leverage using the determinants of capital structure as explanatory variables. Hypotheses formulated were tested followed by discussion of the results. Results obtained from analysis, expressed in terms of statistical significance of the coefficients for the selected seven independent variables, are presented in Tables 4.8

*Table 4.8: Factors Determining Microfinance Banks' Capital Structure*

| Independent Variables | Coefficients values | Dependent Variable ( DER) z-statistics | P-values | Significance level |
|---|---|---|---|---|
| Size ( SIZE) | 0.215527 | 6.39 | 0.000 | Significant at 1% |
| Age (AGE) | 0.0154592 | 1.58 | 0.114 | Insignificant |
| Profitability (PROF) | 0.6672141 | 4.92 | 0.000 | Significant at 1% |
| Tangibility (TANG) | -0.1656225 | -1.05 | 0.295 | Insignificant |
| Tax-Shield (TAX) | -0.316938 | -0.82 | 0.414 | Insignificant |
| Business Risks (RISK) | -0.1581835 | -2.68 | 0.007 | Significant at 1% |
| Capital Adequacy (CAPADEQ) | -0.0067787 | -12.59 | 0.000 | Significant at 1% |
| Number of observations = **15** | | Prob > Chi2 = **0.0000** | | $R^2$ = **0.9511(95.11%)** |

**Source:** *Researcher's own computation based on the financial statements (2016)*

#### 4.5.1 Leverage with Firm Size

Research hypothesis one was formulated to estimate the relationship between size and leverage based on static trade-off theory. The result of beta coefficient linked with

size (SIZE) rejected the first null hypothesis and proved that there exists a positive relationship between leverage and size of microfinance banks.

This study found size to be highly statistically significant at the 1 percent level and have positive impact on the microfinance bank's leverage. This suggests that larger microfinance banks in Kenya tend to have higher leverage ratios and borrow more capital than smaller microfinance banks do. To express it numerically, assuming other determining factors constant, for 1 unit increase in size, there is a 0.216 unit positive increase in debt to equity ratio. The observed result is consistent with the result of static trade-off theory .Major empirical studies also found a positive relationship between size and leverage. For instance: Titman and Wessels, (1988), Rajan and Zingales, (1995), and Booth *et al.*, (2001) provided the evidence of significant and direct relationship between size and capital structure measure. Since the result of size variable indicated a significant statistics, it is estimated that size does have significant role in making debt ratio and determining the capital structure of Kenyan microfinance banks.

### 4.5.2 Leverage with Firm Age

Research hypothesis two formulated to estimate the relationship between age and leverage based on static trade-off theory. The result of beta coefficient linked to age variable rejected the second null hypothesis and proved there exists a positive relationship between capital structure and age of microfinance banks in Kenya. This positive relationship is however not statistically significant. Numerically, the 0.015 coefficient of age variable implies that every additional 1 year increases the leverage measure (DER) by 0.015. According to Mintesinot (2010), as firms become aged, the long years of track record will enable them to easily convince creditors and also will expertise in finding alternative credit source cost effectively or in favorable terms while going for debt capital. Thus it is probable that the relationship between age and leverage of microfinance banks in Kenya could prove statistically significant as these firms ages. The observed results are consistent with the result of static trade-off theory .Major empirical studies also found a positive relationship between age and leverage. For instance: Titman and Wessels, (1988), and Haris and Ravive (1991).

### 4.5.3 leverage with Profitability

Research hypothesis three was formulated for the assessment of the relationship between Leverage and profitability based on pecking order theory. Beta coefficient associated with Profitability (PROF) rejected the third null hypothesis.

In this study, profitability is estimated to be positively related with microfinance bank's leverage ratio and this relationship was found to be statistically significant at 1 percent significance level. To express it in figure, assuming other determining factors constant, for one shilling increase in profitability, there is a 0.667 increase in debt to equity ratio. It implies that profitable microfinance banks in Kenya maintain high debt to equity ratio. This result is inconsistent with predictions of Pecking order theory which states that firms prefer to finance first with internal funds before raising external financing but consistent with Static Trade of theory that firms would prefer external financing as opposed to internal financing. Further this positive relationship between profitability and financial leverage is also consistent with the most previous studies (Titman & Wessels, 1988; Rajan and Zingales, 1995; and Booth *et al.*, 2001).Hence based on these results of statistically significance and positive relationship between profitability and financial leverage, it can be concluded that highly profitable microfinance banks in Kenya maintain low debt to equity ratio and they utilize more equity financing compared to debt financing in their capital structure.

### 4.5.4 leverage with Tangibility

Research hypothesis four was formulated to estimate the relationship between tangibility and leverage based on static trade-off theory. Beta coefficient associated with Tangibility (TANG) rejected the second null hypothesis and proved that there exist a negative relationship between tangibility and capital structure of microfinance banks in Kenya. However this negative relationship is not statistically significant. These results of tangibility being insignificant variable, contradicts with various previous research findings by Hall et al., (2004), Esperanca et al. (2003) where the relationship between asset tangibility and financial leverage was found to be positively related. However, the findings are not consistence with Static tradeoff theory, pecking order theory and agency cost theory which theorize a positive relationship between leverage and tangibility. This results as observed means that

microfinance banks in Kenya tends to use short term debt capital to finance their operations thus the negative relationship between asset tangibility and financial leverage. Numerically, the 0.166 coefficient of asset tangibility variable implies that every additional 1 asset decreases the leverage measure (DER) by 0.166. This is inverse relationship is supported by research findings by Hutchinson and Hunter (1995) that Tangible assets by impacting on financial leverage augments risk through the increase of operating leverage.

### 4.5.5 Leverage with Tax-Shield

The last research hypothesis five was developed to assess the relationship between leverage and tax-shield. The result of beta coefficient associated with tax-shield variable rejected the fifth null hypothesis and proved that there exists a negative relationship between capital structure and tax-shield of microfinance banks in Kenya. In this study, Tax shield is found to have a negative relationship with leverage and is statistically Insignificant. Numerically, the 0.317 coefficient of tax shield variable implies that every additional one shilling increase in tax shield decreases the leverage measure (DER) by 0.317. These results are consistent with Static trade-off theory for longterm term loan, but contradict with shorterm term loan. Based on these findings it may be concluded that Kenyan microfinance use long-term financing to finance their operations including lending. Therefore result are consistency only with Static Trade off Theory for longterm term financing because banks are having more advantage from the tax-shields by using more interest paying debts. Thus, Tax shield does have a negative relationship significant on capital structure of microfinance banks in Kenya. These findings are also consistent with the work of Dzolkamaini, (2005) who held that as tax incentive of debt contributes to its presence in the capital structure, the interest payments on debt is tax-deductible, hence reducing company's tax burden.

### 4.5.6 Leverage with Business Risks

The last research hypothesis six was developed to assess the relationship between leverage and business risks. The result of beta coefficient associated with business risks variable rejected the sixth null hypothesis and proved that there exists a negative relationship between capital structure and business risks of microfinance banks in Kenya. In this study, business risks are found to have a negative relationship with leverage and are statistically significant at 1 percent. Numerically, the 0.158

coefficient of business variable implies that every additional increase in business risks as a result of less stable earnings decreases the leverage measure (DER) by 0.158. These results are consistent with agency and bankruptcy cost theories which suggests that the greater the chance of a business failure, the greater will be the weight of bankruptcy costs on enterprise financing decisions and as the probability of bankruptcy increases, the agency problems related to debt become more aggravating. Thus, this theory suggests that as business risk increases, the debt level in capital structure of the enterprises should decrease. The findings are also consistent with the works of Garg (1988) and Paudel (1994) whose research findings were also consistent with the bankruptcy and agency cost theories.

### 4.5.7 Leverage with Capital Adequacy

The last research hypothesis seven was developed to assess the relationship between leverage and capital adequacy. The result of beta coefficient associated with capital adequacy variable rejected the seventh null hypothesis and proved that there exists a negative relationship between capital structure and capital adequacy of microfinance banks in Kenya which was found to be statistically significant at 1 percent . Numerically, the 0.007 coefficient of capital adequacy variable implies that a shilling increase in capital adequacy decrease the leverage measure (DER) by 0.007. This implies that microfinance banks are required by the law under the microfinance act to main a minimum capital requirements through the regulator who is the Central Bank of Kenya. Thus as they strive to meet these requirements and enhance their capital base, an increases in capital adequacy requirements means microfinance banks would prefer equity finance more as opposed to debt thus the inverse relationship between capital adequacy and financial leverage. This finding are consistent with those of Gungor and Saida ( 2014) who reported negative relationship between capital adequacy and leverage ratio.

# CHAPTER FIVE

# CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter comprises summaries and conclusions extracted from research findings along with the recommendations that the researcher has developed.

## 5.2 Summary

The purpose of the study was to find out the determinants of capital structure in Kenyan microfinance banks. The study intended to establish if assets size, assets tangibility, firm age, business risks, profitability, tax shields and capital adequacy influences capital structure. The study utilised secondary data for the period 2011 to 2015 that was obtained from audited financial reports of respective Microfinance banks in Kenya. Descriptive statistics such as means and standard deviations and inferential statistical tables were used to present the data and also show comparison. Inferential statistics were used to show the relationships between variables, where leverage was regressed against, bank size, bank age, profitability, asset tangibility, tax charge, business risks and capital adequacy.

### 5.2.1 Leverage with Firm Size

Microfinance banks' total assets were found to have an average growth rate of 15.8 percent for the five years of study period. The firms' size ranged approximately from 12.2 percent to 17.2 percent. Microfinance banks size was found to be highly positively correlated with leverage ratio (r=0.6353). The study found size to be highly statistically significant with a positive impact on the microfinance bank's leverage ($\beta$ =0.216; $p<0.001$). This suggests that larger microfinance banks in Kenya tend to have higher leverage ratios and borrow more capital than smaller microfinance banks.

### 5.2.2 Leverage with Firm Age

The mean age of microfinance banks was found to be 6 years. The age of these microfinance banks varied from 6 years to 7 years. There was a positive correlation between age and debt, meaning that as microfinance banks age increase, their debt level increases (r=0.4955). The findings proved there exist a positive relationship between capital structure and age of microfinance banks in Kenya. This positive relationship is however not statistically significant ($\beta$ =0.015; $p>0.001$, $p>0.005$,

p>0.1), meaning as firms become aged, the long years of track record will enable them to easily convince creditors and also will expertise in finding alternative credit source cost effectively or in favorable terms while going for debt capital.

### 5.2.3 Leverage with Profitability

Profitability was negatively correlated with leverage (r=-0.0532), meaning as profitability increases Debt ratio decreases as microfinance banks prefer to use retained earnings set aside from huge profit margin to finance their capital structure. The average annual profitability of the banks under investigation was found to be 2.3 percent while the maximum attained average profitability rate was 2.8 percent whereas the lowest recorded average profitability rate was 1.7 percent. Profitability was positively related with microfinance bank's leverage ratio and this relationship was found to be statistically significant ($\beta$ =0.667; p<0.001).

### 5.2.4 Leverage with Tangibility

The mean of asset composition was found to be 1.0 percent indicating that the microfinance banks fixed assets represent only 1.0 percent of the total assets. Due to the nature of the business microfinance banks have high current assets. Tangibility of the microfinance banks operating in Kenya, as measured by the ratio of fixed assets to total assets, ranges from 0.6 percent to 1.5 percent. Asset tangibility was negatively correlated with leverage (r=-0.4072), while there exist a statistically insignificant negative relationship between tangibility and capital structure of microfinance banks in Kenya ($\beta$ =-0.166; p>0.001, p>0.005, p>0.1), showing that microfinance banks in Kenya tends to use short term debt capital to finance their operations thus the negative relationship between asset tangibility and financial leverage.

### 5.2.5 Leverage with Tax-Shield

During the five years of the study period, the tax-shield variable values showed that microfinance banks have been taking an advantage of tax-shield from the interest payments on debt on behalf of equity shareholders at an average value of Kenya shillings 7,002,219 every year. Tax shield was positively correlated with leverage (r=0.7480), showing that as tax shield as tax increase microfinance banks increase their Debt ratio as they take advantage of the tax incentives. The study found that there exist a statistically insignificant negative relationship between capital structure

and tax-shield of microfinance banks in Kenya (β =-0.317; p>0.001, p>0.005, p>0.1), this means that these results are consistent with Static trade-off theory for long-term term loan, but contradict with shorterm term loan. Based on these findings it may be concluded that Kenyan microfinance use long-term financing to finance their operations.

### 5.2.6 Leverage with Business Risks

It was found that the average probable business risks as a result of unstable earnings among the microfinance banks in Kenya was 7.0 percent with the minimal level of risks being 5.8 percent and the maximum being 8.2 percent. This means that less stable earnings within the microfinance bank sector increased business risks with an average of 7.0 percent thus decreasing use of debt in capital structure with the same margin as chance of business failure may be greater as a result of weight of bankruptcy costs on microfinance banks' financing decisions. Business risks were positively correlated with leverage (r=0.2342), showing that as microfinance banks Debt ratio, business risks increases while there exists statistically significant negative relationship between capital structure and business risks of microfinance banks in Kenya (β =-0.158; p<0.001).

### 5.2.7 Leverage with Capital Adequacy

It was found that microfinance banks average capital adequacy is at 18.1 percent with the highest maintaining a capital adequacy at 31.4 percent and the lowest 5.3 percent. Capital adequacy was negatively correlated with leverage (r=-.8631), showing that as microfinance banks Debt ratio, capital adequacy decreases While a statistically significant negative relationship between capital structure and capital adequacy of microfinance banks in Kenya (β =-0.007; p<0.001) exist. Implying as microfinance banks strive to meet these requirements and enhance their capital base, an increases in capital adequacy requirements they prefer equity finance more as opposed to debt.

## 5.3 Conclusions

The regression results of the capital structure model verified that 95.11 percent of the change in the dependent variable is explained by the independent variables that are selected and included in the model. This implies that the leverage ratio of microfinance banks in Kenya is highly explained by the selected firm specific

variables. The result also showed profitability, capital adequacy, size and business risks variables are the significant firm-specific factors of capital structure in Kenya microfinance banks

The study found that the four variables (capital adequacy, business risks, asset tangibility and tax shield) established negative relationship and the remaining three variables (size, age and profitability) showed positive relationship with capital structure.

Profitability variable attained a positive relationship with capital structure that supports Static trade-off theory but oppose pecking order theory. This suggests that highly profitable microfinance banks in Kenya maintain high debt to equity ratio and they utilize more debt in their capital structure that is (deposits mobilized) as compared equity to financing their capital structure. Tangibility variable had a negative relationship with financial leverage but it was statistically insignificance. This means that tangibility variable does not have much influence on microfinance banks' financing decisions. This relationship is inconsistent with Static trade off theory; pecking order theory Agency cost theory that supports a positive relationship between asset tangibility and capital structure.

Size variable displayed a significant positive relationship with financial leverage. This means that larger microfinance banks in Kenya maintain high leverage ratios. Therefore, size's relationship with financial leverage supports Static trade-off theory and Agency cost theory but contradicts with Pecking order theory. Positive insignificant relationship between age and leverage was reported and this strongly supports the Static trade-off theory but inconsistent with Pecking order theory, meaning that as microfinance banks ages they tend to use more debt capital as opposed to equity financing. Tax shield variable displayed a negative relationship with financial leverage. This negative relation verifies that banks with high tax-shield use less of debt than equity. This evidence is consistent with Static trade-off theory for only Long term debts.

Capital adequacy variable displayed a significant negative relation with financial leverage. This means that as microfinance banks strive to meet these requirements and

enhance their capital base, an increases in capital adequacy need means microfinance banks would prefer to equity finance more as opposed to debt thus the inverse relationship between capital adequacy and financial leverage. Business risks are found to have a negative relationship with leverage and are statistically significant. These results are consistent with agency and bankruptcy cost theories which suggests that the greater the chance of a business failure, the greater will be the weight of bankruptcy costs on enterprise financing decisions and as the probability of bankruptcy increases, the agency problems related to debt become more aggravating. Thus, this theory suggests that as business risk increases, the debt level in capital structure of the enterprises should decrease. In conclusion this study found that profitability, size, age, tax shield, business risks, asset tangibility and capital adequacy are some among the firm-specific factors that determine Kenyan microfinance banks'. However, capital structure decisions are also influenced by other factors such as corporate governance, legal framework among other pertinent factors such as macroeconomic variables within external environment.

### 5.3 Recommendations

Based on findings of the study, the study recommended the following measures on the objectives that were being investigated:

Microfinance banks should try to maintain an optimum mix financing between short-term and long term debt capital since the findings revealed that microfinance banks in Kenya tends to use short term debt capital to finance their operations as opposed to long term debt capital. Microfinance banks were found to rely on debt financing than equity financing. They should diversify in their capital financing strategy by considering equity financing also through selling stocks to members of the public or through private placement to institutional investors so as to maintain an optimum capital structure. The findings show that shows that microfinance banks in Kenya are not benefiting from tax advantage of interest expenses, thus finance managers should focus their on tax-shield variable.

## 5.4 Suggestions for Further Research

The study recommends a further research on the following areas.

Macroeconomic variables such as inflation, GDP interest rate, corporate governance, should be investigated to determine their influence on capital structure of microfinance banks. Studies should be carried out in other sectors using audited financial statements for firms in these sectors

## REFERENCES


Ahlin, C. and Townsend, R. (2007). Using repayment data to test across models of joint liability lending *economic Journal, vol* 117,pp. F11-F51

Bartholdy, J. & Mateus, C. (2008). Taxes and corporate debt policy: *Evidence for unlisted firms of sixteen European countries*, SSRN 25

Beck, T., Demiguc-Kunt, A. & Maksimovic, V. (2008). Financing patterns around the world: re small firms different?, *Journal of Financial Economics* 89,pp. 467-487

Berger, A.N. & di Patti, E.B (2002). Capital structure and firm performance: a new approach to testing agency theory and an application to the banking industry." *Federal Reserve System and Wharton Financial institutions Centre*, pp 1- 37.

Berk, J &Demarzo, P. (200). Corporate Finance *(Pearson International Ed.)* Greg Tobin

Bhabra, H.S., Lui, T. & Tirtiroglu, D. (2008). Capital structure choice in a nascent market: Evidence from listed firms in Chin. *Journal of Financial Management*, 37 (2) , pp. 341–364

Bhaird, C. M. A. (2010). The Modigliani-Miller Proposition after Fifty Years and Its Relation to Entrepreneurial Finance. *Strategic Change: Briefings in Entrepreneurial Finance*, 19.

Bichsel, G. & Blum N. (2005), Capital structure and financing of SMEs: Australian evidence, *Accounting and Finance*, Vol. 43 pp.123-47.

Black, K. (2008). Business statistics for contemporary decision making. (5th Ed.*) Hoboken: John Wiley and Son Inc.*

Booth, L, & Aivazian, V. (2001). Capital structures in developing countries, *the Journal of Finance* 56, pp.87-130.

Borgatti, S., Molina, J.(2005). *Toward ethical guidelines for network research in Organisations, Social Networks* (2), pp.107-117

Bradley, M., Jarell, G. & Kim, H. (1984). *On the Existence of an Optimal Capital Structure:Theory and Evidence*. Journal of Finance, 39, 857- 880.

Brealey, R. & Myers, C. (1991). *Principles of Corporate Finance*. 4th ed. New York: McGraw-Hill, U.S.A.

Cassar, Gavin, and Scott Holmes, 2003, Capital structure and financing of SMEs: Australian evidence, *Accounting and Finance* 43,pp. 123-147

Central Bank of Kenya, (2016). *List of licensed microfinance banks in Kenya,* Retrieved from http//www.cbk.co.ke/14/5/2016.

Chen, J. J. (2004) .Determinants of capital structure of Chinese-listed companies, *Journal of Business Research*, 57 (2004), pp. 1341–2135

Chittenden, F., Hall, G. and Hutchinson, P. (1996), "Small firm growth, access to capital markets and financial structure: review of issues and an empirical investigation*", Small Business Economics, Vol. 8, pp. 59-67.*

Cohen, R. D. (2003). The Optimal Capital Structure of Depository Institutions." *WILMOTT Magazine*, pp.38-49.

Cooper, D. R. & Schindler P. S. (2008). *International Edition: Business Research Methods.* (8th ed.); New Delhi; MacGraw-Hill.

Counts, A. (2005). *The Future for Microfinance Investment*. (Microfinance and Capital Markets Spreakers Series - Grameen Foundation USA and SAIS)

Daley-Harris, S., (2007). State of the Microcredit Summit Campaign Report 2007. *Microcredit Summit Campaign*: Washington

Daskalakis, N. & Psillaki, M. (2008). Do country or firm factors explain capital structure? Evidence from SMEs in France and Greece, *Applied Financial Economics* 18,pp. 87-97

De Angelo, H. & Masulis, R. (1980). *Optimal capital structure under corporate and personal taxation.* Journal of Financial Economics, 8, 3 –29.

Diamond, D. & Rajan, R. (2000). *A theory of bank capital*. Journal of Finance, 55, 2431- 2465.

Elliot, B. and Elliot, J (2002). Financial Accounting and Reporting. 12th ed. *London: Prentice Hall/Financial Times*

Fan, J., Titman, S. & Twite, G. (2006). An international comparison of capital structure and debt maturity choices, *under third round review at the Journal of Finance.*

Farrington, T., & Abrams, J. (2012). The Evolving Capital Structure of Microfinance Institutions. Micro-Enterprise Development Review, Washington *D.C.* (Inter-American *Development Bank Working Paper*

Ferri, M. G., Jones, W. H. (2009), "Determinants of Financial Structure: A New Methodological Approach", *Journal of Finance*, Vol. 34 No.3, pp.631–644.

Fisseha K.M. (2010). *Determinants of Capital Structure, Evidence from Ethiopian Commercial Banks*. Research Paper, Submitted to College of Business and Economics, Mekelle University, Ethiopia.

Frank, M.Z., & Goyal, V.K. (2009). Capital structure decisions: Which factors are reliably important? *Financial Management*, 38(1),pp. 1-37

Friend, Irwin and Joel Hasbrouck, 1988, Determinants of capital structure, in Andy Chen ed.: Research in Finance, Volume 7, *(JAI Press Inc., New York),* pp. 1-19

Getzmann, A., Lang, S., & Spremann, K. (2010). *Determinants of the target capital structure and adjustment speed, Evidence from Asian capital markets*. In European Financial Management Symposium. Beijing.

Gujarati, D. N. (2003). *Basic Econometrics.* 4th Edition, Boston: McGraw-Hill

Gungor. T., and Saida,H.(2014. Determinants of Capital Structure: Evidence from Banking sector in Albania; *Mediterranean Journal of Social Sciences, MCSER Publishing, Rome-Italy Vol 5 No 13*

Hamilton, R. & Fox, M. (1998). The financing preferences of small firm owners, *International Journal of Entrepreneurial Behaviour and Research* 4(3), 239-248.

Harris, M., and Raviv, A., (1991). The theory of capital structure. *Journal of Finance.* 46, pp.297-355.

Haz Haugen, R. and Senbet, L. (1978). The Insignificance of Bankruptcy Costs to the Theory of Optimal Capital Structure. *Journal of Finance, 33(2): 383–93.*

lina, A.l ., Kadir, R.& Masinaei, N. R. (2011) Long-Term Effects of Bank Consolidation Program in a Developing Economy : *Journal of Asia Pacific Business Innovation and Technology Management*., 1 (1) , pp. 20–30

Huang, S, and Song, F., (2002). The determinants of capital structure: Evidence from China, *Working paper*, The University of Hong Kong

Hüttenrauch, H., & Schneider, C., (2009). *New Partnerships for Innovation in Microfinance* Springer Berlin Heidelberg, ISBN 978-3-540-93898-9

Jensen, M. (1986). The agency costs of free cash flow, corporate finance and takeovers, *American Economic Review* 76,pp. 323-329.

Joetta, G. (2007), *Bank Management*: Text and Cases. 4th Edition. John Wiley and Son Inc.

Kombo, D., & Tromp,L.(2009). *Research Methods:* Nairobi Kenya;Kenyatta University

Kothari,C.R.(2009).Research Methodology; Methods and techniques(2nd Ed.) New Delhi. *New Age International Limited Publishers*.

Kyereboah, A. C. (2007). The impact of capital structure on the performance of microfinance institutions. *The Journal of Risk Finance, 8*(1), pp.56-71.

Lokong, K. (2010) Determine Impact of Capital Structure on profitability of Microfinance institutions in Kenya. *Unpublished MBA project* , University of Nairobi.

Long, Michael and Ileen Malitz, 1985, The investment-financing nexus: Some empirical evidence, *Midland Corporate Finance Journal* 3, pp.53-59.

MacKie-Mason, J.K. (1990). Do Taxes Affect Corporate Financing Decisions? *The Journal of Finance, 45: 1471–93.*

Maddalla, G. S. (2005). *Introduction to Econometrics.* 3rd Edition, *John* Wiley & Sons(Asia), Neekunji Print Process, New Delhi, India.

Marsh, Paul, 1982, The choice between equity and debt: An empirical study, *Journal of Finance* 37, pp.121-144

Mat Kila Suhaila and Wan Mansor Wan Mahmood (2008) Capital Structure and Firm Characteristics: Some Evidence from Malaysian Companies. *MPRA Paper No.* 14616, posted 13. April 2009 05:01 UTC

Mintesinot, A. (2010). *Determinants of Capital Structure, Evidence from Selected Manufacturing Private Limited Companies of Tigray Region*. Research Paper, Submitted to College of Business and Economics, Mekelle University, Ethiopia.

Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporate Finance and the Theory of Investment. *The American Economic Review, 48* (3), pp.261-297.

Morduch, J. (1999). The Microfinance Promise." *Journal of Economic Literature, 37* (4), pp.1569- 1614.

Mori, N., & Randoy, T. (2011). *Determinants of Board Structure in Microfinance Institutions:* Evidence from East Africa. University of Agder, Kristiansand, Norway

Mugenda, A (2008): *Research Methods; Quantitative and Qualitative approaches;* Nairobi, African center for technology studies.

Mugenda, O. M. And Mugenda, A. G. (2003), *Research Method Quantitative & Qualitative Approaches*: Nairobi Kenya: acts Press.

Myers, S. & Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics*, pp.187-221.

Myers, S. (1977). Determinants of corporate borrowing, *Journal of Financial Economics* 5, pp.147-175.

Orodho, J.A. (2005). *Techniques of writing Research proposals Report*. Kenyatta University; Kanezja HP Publishers.

Oso, W., &Onen, D.(2008). A Genearal Guide to Writing Research Proposals and Report. Handbook for beginning Research (2nd ). Uganda, Kampala ; Makerere University.

Pandy, I. M. (2005). *Financial Mangemnt*. 9th Edition, Vikas Publishing House Pvt. Ltd., India.

Pettit, R. and Singer, R. (1985). Small Business Finance: A Research Agenda. *Financial Management, 14(3): 47–60.*

Raheel, M., Shahnaz,G, Rauf, A. &Ahmed, B. (2013) capital structure and financial performance evidence from Pakistan, *International Research Journal of Finance and Economics,* (1), pp.24-25.

Rajan, R. & Zingales, L.(2008). Financial dependence and growth, *American Economic Review* 88, pp.559-587.

Rajan, R. & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data, *the Journal of Finance* 1, pp.1421-1460

Ramlall, I. (2009). Determinants of Capital Structure Among Non-Quoted Mauritian Firms Under Specificity of Leverage: Looking for a Modified Pecking Order Theory. *International Research Journal of Finance and Economics,* (31), pp.84-92.

Rosenberg, R. (2009). *Measuring Results of Microfinance Institutions, Minimum Indicators That Donors and Investors Should Track.* Consultative Group to Assist the Poor (CGAP), Washington, DC, USA.

Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2011). *Essentials of Corporate Finance* (7th ed.). New York: McGraw-Hill Irwin.

Sekabira1, H. (2013) *Capital structure and its role on performance of microfinance institutions:* The Ugandan Case.

Sekaran, U.(2006). Research Methods for Business: A skill building approach New Delhi India: John and Sons

Sibilkov, V. (2009). Asset Liquidity and Capital Structure. *Journal of Financial and Quantitative Analysis, 44*(5), pp. 1173-1196.

Smith, Clifford and Jerold Warner, (1979). On financial contracting, *Journal of Financial Economics* 7, PP.117-161.

Strand, W. A., Kjøllesdal, K., & Sitter, N. (2010). Assessing Microfinance: The Bosnia and Herzegovina Case. *Managing Global Transitions, 8*(2), pp.145-166.

Stulz & Herb Johnson, (1985). An analysis of secured debt, *Journal of Financial Economics* 14,pp.501 -521.

Taggart, R.A. (1985). Secular Patterns in the Financing of U.S. Corporations. In Corporate Capital Structure in the United States, ed. B.M Friedman. *Chicago: The University of Chicago Press: 13-80.*

Titman, S. & Roberto Wessels, R. (1988).The determinants of capital structure choice, *Journal of Finance* 43, pp.1-19.

Trochim, M.K & William, (2002). *Research Methods Knowledge Base*. Retrieved from http//www.anatomyfacts.com/ResearchmethodsknowledgeBase.pdf (18-9-2015)

Valadez, M. R., & Buskirk, B. (2012). From Microcredit to Microfinance: a business perspective. *Journal of Finance and Accountancy*, pp.1-17.

Van de Wijst, N. and Thurik, R. (1993), "Determinants of small firm debt ratios: an analysis of retail panel data", *Small Business Economics,* Vol. 5 No. 1, pp. 55-65

Warner, J.B. (1977). Bankruptcy Costs: Some Evidence. *The Journal of Finance, XXXII(2): 337–47.*

Williamson, Oliver (1988). Corporate finance and corporate governance, *Journal of Finance* 43, pp.567-591

Zeller, M., (2011). Solidarity groups: reaching poor clients with high repayment rates", *Focal Point for Microfinance*, Vol. 2 No.1, pp.4-6.

## APPENDICES

## APPPENDIX I: LIST OF LICENSED MICROFINANCE BANKS

| | Microfinance Bank | Date licensed | No. of Branches |
|---|---|---|---|
| 1. | Kenya Women Microfinance Bank limited | 2010 | 29 |
| 2. | Rafiki Microfinance Bank Limited | 2011 | 17 |
| 3. | Faulu Microfinance Bank Limited | 2009 | 32 |
| 4. | SMEP Microfinance Limited | 2010 | 37 |
| 5. | Remu Microfinance Bank Limited | 2010 | 3 |
| 6. | Uwezo Microfinance Bank Limited | 2010 | 2 |
| 7. | Century Microfinance Bank Limited | 2012 | 1 |
| 8. | Sumac Microfinance Bank Limited | 2012 | 3 |
| 9. | U &I Microfinance Bank Limited | 2013 | 2 |
| 10. | Choice Microfinance Bank Limited | 2015 | 1 |
| 11. | Caritas Microfinance Bank Limited | 2015 | 1 |
| 12. | Daraja Microfinance Bank Limited | 2015 | 1 |

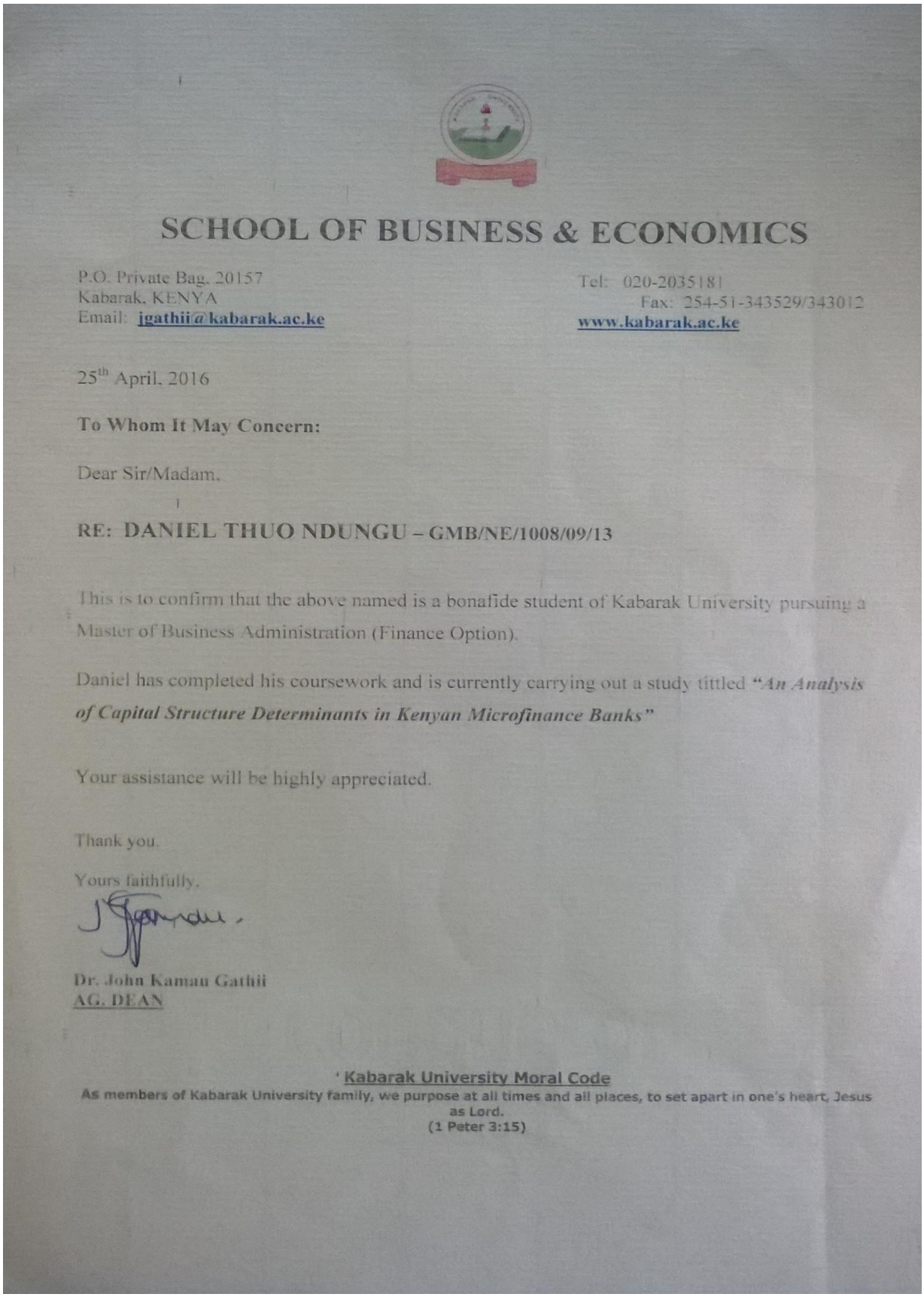
Source: Central Bank of Kenya (2016)

**APPPENDIX II: DATA USED FOR ANALYSIS FROM THE MAJOR THREE MICROFINANCE BANKS IN KENYA**

| Bank | ID | Year | DER | CAPADEQ | SIZ | PRO | TANG | TAX | RISK | Age |
|---|---|---|---|---|---|---|---|---|---|---|
| **KWMB** | 1 | 2015 | 0.85273 | 18.67637 | 17.27690 | 0.21821 | 0.08362 | 0.30758 | 0.73520 | 6 |
| **KWMB** | 1 | 2014 | 0.83605 | 19.79046 | 17.11079 | 0.23124 | 0.09126 | 0.36693 | 0.78116 | 6 |
| **KWMB** | 1 | 2013 | 0.86680 | 15.18246 | 16.89522 | 0.26395 | 0.09955 | 0.35270 | 0.81642 | 6 |
| **KWMB** | 1 | 2012 | 0.88702 | 13.32085 | 16.83028 | 0.24175 | 0.08730 | 0.25019 | 0.78555 | 6 |
| **KWMB** | 1 | 2011 | 0.88702 | 13.29496 | 16.65083 | 0.23960 | 0.07657 | 0.35080 | 0.80664 | 6 |
| **Faulu** | 2 | 2015 | 0.83022 | 19.59931 | 17.04725 | 0.17194 | 0.06019 | 0.36869 | 0.72868 | 7 |
| **Faulu** | 2 | 2014 | 0.81361 | 20.87010 | 16.82711 | 0.19081 | 0.06721 | 0.30731 | 0.76410 | 7 |
| **Faulu** | 2 | 2013 | 0.93584 | 5.29818 | 16.33598 | 0.18929 | 0.05869 | 0.30270 | 0.68691 | 7 |
| **Faulu** | 2 | 2012 | 0.91953 | 8.71333 | 15.84860 | 0.21989 | 0.09719 | 0.47135 | 0.59814 | 7 |
| **Faulu** | 2 | 2011 | 0.89178 | 13.53592 | 15.45267 | 0.24448 | 0.14584 | 0.19377 | 0.60049 | 7 |
| **SMEP** | 3 | 2015 | 0.75115 | 26.82572 | 14.76779 | 0.21195 | 0.15489 | 0.00000 | 0.67232 | 6 |
| **SMEP** | 3 | 2014 | 0.76671 | 31.38496 | 14.68183 | 0.26675 | 0.11407 | 0.00000 | 0.60541 | 6 |
| **SMEP** | 3 | 2013 | 0.78771 | 28.36496 | 14.64109 | 0.27765 | 0.12640 | 0.207776 | 0.644504 | 6 |
| **SMEP** | 3 | 2012 | 0.77570 | 20.44568 | 13.86281 | 0.21468 | 0.10604 | 0.107574 | 0.584424 | 6 |
| **SMEP** | 3 | 2011 | 0.75461 | 17.44523 | 12.18983 | 0.20662 | 0.09605 | 0.087308 | 0.693381 | 6 |

**Source:** *Researcher's own computation based on the financial statements for years 2011-2015*

## APPENDIX III: AUTHORIZATION LETTER



# SCHOOL OF BUSINESS & ECONOMICS

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25th April, 2016

**To Whom It May Concern:**

Dear Sir/Madam,

**RE: DANIEL THUO NDUNGU – GMB/NE/1008/09/13**

This is to confirm that the above named is a bonafide student of Kabarak University pursuing a Master of Business Administration (Finance Option).

Daniel has completed his coursework and is currently carrying out a study tittled ***"An Analysis of Capital Structure Determinants in Kenyan Microfinance Banks"***

Your assistance will be highly appreciated.

Thank you.

Yours faithfully,

**Dr. John Kamau Gathii**
**AG. DEAN**

**Kabarak University Moral Code**
**As members of Kabarak University family, we purpose at all times and all places, to set apart in one's heart, Jesus as Lord.**
**(1 Peter 3:15)**