### DETERMINANTS OF CAPITAL STRUCTURE OF

# **MICROFINANCE BANKS IN KENYA**

By

## SUAD AHMED MOHAMUD

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# DECLARATION

This research proposal is my original work and has not been submitted to any other
college, institution or university
Signature Date
Saud Ahmed Mohamud
D63/9671/2018
This research proposal has been submitted for examination with my approval as the
university supervisor
Signature Date
Mr. D. Chirchir
Lecturer, Department of Finance and Accounting
School of Business-University of Nairobi
Signature Date
Mr. J. Barasa
Lecturer, Department of Finance and Accounting
School of Business-University of Nairobi

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# ABBREVIATIONS AND SYNONYMS

- **CBK** Central Bank of Kenya
- **IPO** Initial Public Offer
- MFB Microfinance Banks
- MFI Microfinance institutions
- **POT** Pecking Order Theory
- **ROA** Return on Assets
- SPSS Statistical Package of Social Sciences

#### ABSTRACT

Capital structure of microfinance banking institutions is key to the economy but has limited literature on the topic. There is no clear method on how microfinance should choose their optimal debt to equity financing ratio. In Kenya, microfinance banks have always struggled due to insufficient funds to advance to their members. This cause for this falls on both the lender and the MFBs as well. Despite taking insurance covers to cushion against losses, capital structure is vital in ensuring these institutions continue to operate as going concern. This research aim was to examine determinants of capital structure of microfinance banks in Kenya. It adopted descriptive method which aimed at addressing the current affairs of situation. The data was collected from 13 microfinance banks hence census technique was applied and study collected a five-year period data from 2014 to 2018. Regression and correlation analysis were used to establish correlation linking variable. The study managed to obtain complete data from 9 microfinance banks which had been in operation for the considered study period hence 69.2% response deemed sufficient for research. The study found an existence of a week inverse correlation linking firm age and leverage while correlation linking firm size and leverage is strong and direct. The results established correlation linking profitability to leverage was inverse and insignificant while an inverse correlation between assets tangibility and leverage respectively. The finding further revealed correlation linking liquidity to leverage was negative and significant whereas an inverse correlation linking growth and leverage while correlation linking loan and advances and leverage was negative but respectively. The study colluded that firm size, assets tangibility, liquidity and growth significantly affected capital structure. The study recommended that the management of large microfinance banks should use more debt to finance any investment opportunities as they possess adequate assets which they can use a collateral. The study also recommended that microfinance banks should have adequate liquidity to pay off their debt obligations (principal and interest payments).

#### **CHAPTER ONE: INTRODUCTION**

#### **1.1 Background of the Study**

Capital structure among lenders has become synonymous over the years particularly in times when there are frequent collapse of banks due to global economic crunch which stretched from mid-2008 till early 2014. During this hard-economic time, it becomes a common factor where financial institutions are frequently bailed altering debt to equity ratio of these institutions (Gungor, 2014). The frequently asked question is the level of capital mix which maximizes revenues and at the same time ensure the institutions remains a going concern meaning they continue operating for foreseeable period, especially Microfinance Institutions. This ranks high among the most debated topics in the financial sector. Capital mix is said to be optimal when it doesn't place much burden to the shareholders wealth (Gungor, 2014). For any business organization, debt/equity ratio remains a key factor in decision making (Bhabra & Tirtiroglu, 2008).

Theories on debt equity ratio have advanced ambiguous literature as different scholars provide varying conclusion (Glen & Pinto, 1994). The pioneer was Modigliani & Miller (1958) with platform for other scholars to engage in this topic. There is a notion that high gearing levels can have direct correlation to turnover of MFIs as the managers of these institutions are under high scrutiny to perform (Grossman, Hart & Williams, 1987), there is increased emphasis to perform in order to ensure costs associated to debt financing are repaid on time (Jensen, 1986). The researcher will employ agency theory. Pecking order reiterates that management are more informed on internal business affairs compared to the shareholders. This factor leads to creation of a factor commonly known as information asymmetry implying that it's costly to access information. This pushes the costs of financing operation from external sources up making financing from internal sources more appealing to managers of these institutions.

MFIs are synonymous for advancing finances to citizens from poor backgrounds particularly those in third world countries. They are flexible and more adaptable institutions as they can deliver services inform of nongovernmental institutions, nonbanking institutions as well as banking institutions (Bogan, 2011). To curb the risk of default from their clients who majority are low income earners, they usually charge high rates to recover from defaulters (Dehejia, Montgomery, & Morduch, 2005). Debt financing is common among MFIs which is obtained mainly from commercial banks and categorized as a long-term debt. Some have resulted to seeking finances from offering IPOs with an example of Compartamos in Mexico which in the year 2007, became the pioneer of offering IPO. Other MFIs which followed suit have reported high financing in past particularly those situated in Asian continent. The argument behind offering IPOs is its less risky compared to debt financing and more reliable compare to other methods of financing like depending on donors.

The Kenyan microfinance sector began after the country gained independence with sole aim of advancing loans to low income earners (Microfinance Bulletin, 2015). Overtime, these institutions have grown to become key players in the country's financial sector even some of them becoming banks such as Kenya Women Microfinance Bank (formerly KWFT). These institutions are becoming more common in the county due to the fact that majority of its citizens are low income earners. Microfinance institutions are vital alleviating poverty in a country where the society has no or limited access to financial service provisions (Melkamu, 2012).

#### **1.1.1 Capital Structure**

It refers to proportion of debt to equity used as capital for financing. It also referred to as the proportion used for debts and common shares to firms' financial statement (Van Horne, 1989). Capital is vital to firms as they need it to finance their operations. Hence, capital is needed in coming into conclusion on maximum levels of leverage between debt/equity (Brigham & Ehrhardt, 2005). Generally, it comes down to management decision on financing in their attempt to achieve their rationale which is shareholders wealth maximization. There are numerous sub-divisions in debt financing which ranges from loans from financial institutions, debentures, leases to boost the available equity financing to improve their valuation. Firms have liberty to choose gearing levels with some deciding to use only equity whilst others are highly geared. Firms with no debt are referred to as un-levered whilst those financed through debts are known as levered.

Financing structure decisions are vital in maximizing stakeholder's investment. If stakeholders make poor financing decisions, the firm may find itself paying high interests as these debts are repaid with additional costs which are known as interest rates hence reducing firm valuation as well as shareholders wealth (Gungor, 2014). Over a period of time, this ratio keeps on changing and it's the management responsibility to ensure it always remains at the desired levels. Financing options are determined by length of repayment as well as the specific decisions which are influenced by the levels of urgency of finances. All these decisions are made with the aim of maximizing firms' valuation.

Financing decisions are made each and every time a firm need additional funds from external sources. Every firm is assumed to make decisions aimed at maximizing shareholders wealth. For a decision to be termed optimal, it should ensure finances are accessed at minimal costs and at the same time be able to maximize firm's valuation (Brigham & Ehrhardt, 2005). In practice, it is almost impossible to find an optimal financing decision, as various aspects in the financial sectors are ambiguous.

#### **1.1.2 Determinants of Capital Structure**

Attempts to minimize risks which come with the capital costs reiterating that firms should ensure there is maintenance of given level of capital to overcome such shocks whenever they face them. A capital cost usually arises from information asymmetry in the industry as some individuals have information which is not available to the general public (Myers, 1984). MFIs which use high levels of equity financing do not need to cushion their firms against risks associated with interest costs. Liquidity is a term used to imply the ease with which an asset in this case stocks can be converted to cash (Hennessy & Whited, 2005). Thus, it means the more liquidity the equity the easier it is for the firm to raise capital.

Liu and Hsu (2006) observed that the major determinants of capital mix are; age, the anticipated economic growth, firm valuation, size of the company, profitability, long term debt, revenues generated in a single financial period and fixed assets. There are numerous

literatures on the topic under study to shed light on the topic and many are currently surfaced.

The years of operation are key to financing mix. The length of period a firm has been operational is key to its ability in accessing capital with those that have been operational for longer period being able to access debts with ease as compared to start ups which find it challenging to access funds. This proves an existence of a direct relation linking firm operational longevity to their ability to access capital. Ellili and Farouk (2011) investigated the correlation between firms expected growth to ability of accessing loans where they indicated an existence of a direct relation in long-run but correlation is inverse in the short-run. They further concluded that firms prefer long-run debts compared to short-run. Firm size is a proxy for risk. Berger et al. (2008) noted large institutions have a tendency of diversifying their assets and at the same time benefit more people which make it more difficult for them to fail. This makes it possible for them to access funds with ease which leads to them being highly geared.

According to many scholars and reports, highly profitable financial institutions can raise funds at minimal efforts. On this note, it's further revealed that firms with high turnover do not need to raise external funds frequently (Degryse et al. 2012). The above statement implies that majority of MFIs with high turnover have high preference for equity than debt financing. Firms with valuable fixed assets are better placed to access finances with ease given that they can be repossessed by lenders in case of default. They are also used during terms negotiations to ensure they can get funds at a lower cost (Almeida & Campello 2007).

#### **1.1.3 Microfinance Banks in Kenya**

These are institutes which specialize in providing finances to low income earners in the society. They are synonymous with dealing with individuals from poor background with aim of eradicating poverty particularly in fewer developing countries. They encourage savings from their members which are usually low and cannot be accepted in commercial banks providing a flexible method of saving. They also charge low bank fees compared to established commercial banks (Ningshen & Boraian, 2014).

The institutions have witnessed enormous changes over time in size, risks associated to them, which gave rise to the enactment of laws microfinance act 2006 to try and regulate them in order to ensure citizens don't end up losing their money (CBK, 2008). These laws gave rise to deposit taking MFIs in the country with pioneers being; Faulu and Kenya Women Finance Trust (KWFT). DTMs were transformed into MFIs to MFBs in Kenya; Faulu, KWFT, SMEP, REMU, Rafiki, Century, SUMAC, Uwezo microfinance bank and U&I Microfinance bank. There is a total of licensed MFBs thirteen (13), eleven (11) being nationwide (Faulu, KWFT, SMEP, REMU, Rafiki, Century, SUMAC, Caritas, Maisha MFB, Uwezo MFB and U&I MFB) and two (2) being community-based MFBs (Daraja MFB and Choice MFB).

#### **1.2 Research Problem**

The capital structure of microfinance banking institutions is key to the economy but has limited literature on the topic. There is no clear method on how microfinance should choose their optimal proportion of debt/equity financing where in majority of microfinance banks is largely determined by asset of these institutions (Diamond & Rajan, 2000). Considering that microfinance banks are there to maximize profits and shareholders wealth, are guided by the Banking Act and one of the requirements is capital adequacy. Microfinance Banks are complex due to their operational characteristics as the risks associated to their business are high compared normal commercial banks (Ningshen & Boraian, 2014).

In Kenya, microfinance banks have always struggled due to insufficient funds to advance to their members. This cause for this falls on both the lender and the MFBs as well. Despite taking insurance covers to cushion against losses, capital structure is vital in ensuring these institutions continue to operate as going concern (Woldeyes, 2012). The MFBs' leverage ratios have been reducing in recent times with many of these institutions reducing their debt financing as evidenced by the decrease from twenty percent 2017 to 18 percent in 2018, but this was higher than the required level of ten percent. Similarly, proportion of total capital to weighted asset risks reduced from 23 percent from 2017 to 19 percent in 2018 which as still above the required level of twelve per cent. The reported decrease in the debt/equity ratio can be attributed to the reduction in core capital which emanated from losses which leads to reduction in capital base (Central Bank of Kenya, 2018).

There are studies carried out by various scholars on the study under research. Amidu (2007) studied the factors affecting capital structure among financial institutions in West Africa where the study results revealed turnover, taxation, economic performance influenced banks' capital structure decision. Gonzalez and Gonzalez (2008) analysed

impact of bank market concentration on debt/equity among selected 40 nations. They found positive correlation linking variables. Gropp and Heider (2009) studied impact of debt/equity proportions on profitability of financial institutions where the findings indicated a positive relation linking the variables.

Kinyua and Muriu (2017) assessed the factors impacting on debt/equity of agricultural firms and established profitability, age and size have huge impact on debt/equity though the study context was agricultural firms and not MFBs. Kamau and Kariuki (2014) assessed factor affecting debt/capital structure in Kenya's manufacturing sector where he established factors such as forecasted economic growth and size have positive impact on the debt/equity proportion though this research focused on firms in manufacturing sector and not MFBs. Kipsang (2014) reiterated that MFBs growth is highly affected by risks they face which emanates from both internal and external sources hence posing threat of collapse of these institutions in long run.

Despite a critical role played by capital structure choices in maximizing returns of Microfinance Banks, there has been scanty empirical studies on this topic in developed nations. Most of studied under this topic are have focused on developed nations crating deficiency of literature on this topic in third world economies where majority of their population are low income earners hence MFBs have a crucial part in their economy. Given the gap under the study topic and its role in economic growth and poverty eradication, the researcher found it necessary to carry out a research on capital structure determinants in Microfinance banks in Kenya as they play a key role in financial inclusion for those excluded from the mainstream financial system (Central Bank of Kenya, 2015). This study therefore seeks to answer the question; what are the determinants of capital structure of microfinance banks in Kenya?

#### **1.3 Research Objective**

#### **1.3.1 General Objective**

To examine the determinants of capital structure of microfinance banks in Kenya.

#### **1.3.2 Specific Objective**

- i. To establish how age of the firm determines capital structure of microfinance banks in Kenya
- To find out how size of the firm determines capital structure of microfinance banks in Kenya
- To determine the effect of profitability on capital structure of microfinance banks in Kenya
- iv. To establish the effect of assets tangibility on capital structure of microfinance banks in Kenya
- **v.** To find out how the growth of the firm determines capital structure of microfinance banks in Kenya
- vi. To evaluate the effect of the loan and advance on capital structure of microfinance banks in Kenya
- vii. To find out how Liquidity of the firm determines capital structure of microfinance banks in Kenya

#### **1.4 Value of the Study**

Research covers microfinance banks and is vital to the longevity of these institutions. Study on this topic is significant to various stakeholders interested in microfinance banks. Management of microfinance banks will gain in solving the challenge of determining the optimal levels of debt/equity financing.

The study may also be significant to policy makers whose mandate is to ensure these institutions are performing at optimal levels through coming up with policies which ensure MFBs are operating in an environment which encourages their growth and ensuring they don't become insolvent.

It will also enrich the existing literature on the topic under study particularly on the microfinance banks in a developing nation which are significant on economic growth and poverty eradication particularly among low income earners.

#### CHAPTER TWO

#### LITERATURE REVIEW

#### **2.1 Introduction**

Chapter two will provide theories pertaining to the topic; Modigliani and Miller, agency and pecking order theories. It also provides empirical literature from other scholars who have carried out study on the topic.

#### **2.2 Theoretical Review**

This section will review theories pertaining to the study topic which is capital structure.

#### 2.2.1 Modigliani and Miller Capital Structure Theory

Miller and Modigliani (1958) were proponents of the theory. This theory assumes a perfect market and states firm valuation is independent of debt/equity proportion. This denotes firm financing doesn't have any effect on their valuation therefore making capital structure insignificant on the firms' decision making. The theory is founded on hypothesis of exemptions from tax agencies, free transactional costs, equal capital costs for both the investors and companies such that they can access capital at same interest rates implying there is no informational asymmetry as they both have equal access to information.

The theory further states firm valuation is based on the risks associated to its assets and more so by the firm's revenue generation. Therefore, firm's valuation does not depend on the firm finances its investment activities and pays out dividends (Oghenekohwo, Nkeiruka & Nnenna, 2015). The other concept that the theory raised is brought about trade-off paradigm that incorporates bankruptcy costs. The authors argued that debt financing enjoy taxation benefits associated to them and there were also the capital costs they termed the bankruptcy cost of debt. Under the new proposition otherwise called trade-off theory, it was argued that there exists an inverse correlation linking both marginal benefits to costing. As such, the firm that maximized its valuation would consider trade-off linking equity/ debt. The assumptions of the first proposition of the Miller-Modigliani theorem doesn't apply in reality and has spurred the development of other theories such pecking order and agency theories that address the shortcomings of Miller-Modigliani theorem.

#### 2.2.2 Agency Theory

This theory surfaced in early 1970's by a scholar known as Ross, (1973) and Jensen and Meckling, (1976). It was founded on correlation linking agents to their principals. This conflict arises from the interests of stakeholders differing from those of the people entrusting in running day to day activities of these institutions that is management. The management of these institutions may decide to satisfy their own needs by awarding themselves huge chucks of packages and allowances which reduces the earning of shareholders. Many firms opt for debt financing in order to avoid this kind of conflicts.

Debt financing comes with huge financial burden which reduces the available cash for the management to misuse as these debts are to be repaid with interest rates which starves them cash to reward themselves huge amount of salaries and allowances (Jensen, 1986). It also places management in situations where they have to work extra harder or put their jobs at risk in case their firms have failed to repay their outstanding balances, they owe the lenders. Due to the constraints these debts come with, management of some of the institutions have opted to reduce financing in order to avoid the situations stated in the above sentences hence contradicting their aim which is to maximize shareholders wealth. This calls for the development of strong governance to curb the challenges posed by the Agency problem (Fama & Jensen, 1983).

#### 2.2.3 Pecking Order Theory

It's founded on paradigm that companies have high preferences on internal financing over external methods (Myers & Majluf, 1984). Firms opt for external methods of financing when internal methods are not enough to finance their intended investment options (Myers & Majluf, 1984). Management of many firms have high preference for internal financing unless they are not enough to finance their operations. The firms in many instances opt for internal sources of accessing capital usually from issuing common stocks (Graham and Harvey, 2001). However, the theory has received contradicting acknowledgements from various scholars (Graham & Harvey, 2001).

The theory provides ambiguity between focusing on firm's long-term growth and level of debt financing. It's typical for firms to fund their activities through debt financing as its easily accessible as it plays important factor in the firms' long-term growth but it comes with its own downside which is financial burden which in many cases has led to solvency of majority of firms particularly the startups (Myers, 2001).

#### **2.3 Determinants of Capital Structure**

The independent variables which will be considered for this study are: age of firm, firm size, and profitability, tangibility of assets, liquidity, Growth, loan and advances.

#### 2.3.1 Age of the Firm

This is used by many investors to access the ability of a firm to repay debts. The longer the firm has been operational, the more many see it as a going concern which gives it the ability to access loans with ease hence firms age is directly correlated to its ability to access debts from external sources (Fisseha, 2010). Many lenders analyse firm reputation to decide whether to grant them loans or not. They look at previous loan repayments to categorize the firms into categories of risky borrowers or safe ones. The older firms can access finances with ease as compared to startups and at the same time access them at lower interest rates.

Bhaird and Lucey (2010) reiterated that firm age has direct correlation to firm retained earnings. Some scholars argue firms which have been operating over long have high chances of accessing debts it has accumulated hence it hinders it from accessing additional financing from external sources. The aging of firms' helps firms in funding their activities from internal sources as the period they have been operational they have accumulated funds inform of retained earnings (Chadha & Sharma 2015; Kayo & Kimura 2011).

#### 2.3.2 Firm Size

This is directly correlated to its ability to access financing. Big firm are less likely for it to become bankrupt as overtime they diversify their operations as compared to small firms which have their assets concentrated under one market (Bogan, 2012). Small firms' debt approval takes long as lending institutions have to screen them thoroughly to establish whether they will be able to repay the debts. These sentiments were echoed by Tchuigoua, (2014), who reiterated that firm size is directly proportional to its ability to access external financing.

Many scholars concur with the notion that firm size is important in providing diversify their investments as well as granting advantage of accessing funds at lower costs (Titman and Wessels 1988). There is high probability of firm becoming insolvent, it becomes difficult it is to access external financing. Research carried out by Martin et al., (2012), revealed there exists a direct relation linking firm size to its capital mix (Martin et al., 2012).

#### **2.3.3 Profitability**

Profitability equates to firm's ability to access funds from external sources with various scholars indicating there exists a positive correlation linking the two variables. Firms with high turnovers are assumed less likely to default on the debts as the have ability to repay their outstanding loans with ease.

Pecking order theory reiterated there exists an inverse relation linking study variables. This is due to the fact that man firms prefer financing their operations from internal sources mainly through issuing additional shares. The firms result to financing their activities through external sources only when the internal funds are insufficient to finance their intended expansion or investments in long-term debts (Myers 1984).

#### 2.3.4 Asset Tangibility

There exists a contrasting interest between the firm investors and the debt owners as reiterated by (Jensen & Mekling, 1976). Many debts have to be backed by the borrowers' assets during default to recover amount by repossessing the assets placed as collateral Harris and Raviv (1990). More liquid assets are more preferred by the debt providers as they are easily disposed. There are some firms whose operations need high financing increasing their appetite for debt financing (Myers, 1977). Many commercial banks loans have to be backed by assets as stipulated in the loan agreement they can recover their funds (Storey, 1994; Berger & Udell, 1998).

#### 2.3.5 Liquidity

It's the ability to dispose assets when faced with urgent need for cash. Ahmed et al. (2010) noted that equity financing is more desired for firm long-term growth as opposed to debts which put a lot of financial burden on firm hence hindering its growth in the long run. Sbeiti (2010) firms with high liquidity are associated with low chances of attempting to fund their short-term activities through the use of debts.

There are two components of capital structure with one explaining the impact of transactional costs through offering common stocks while the other focusing on the choices which are founded on the trade-off theories. The research carried out by Lipson and Mortal (2009) revealed an existence of an inverse correlation linking liquidity of firms and capital mix among firms sampled in North America over a time period of 10 years. They further revealed that firm liquidity determines the ease with which the firm can access financing from external sources. Frieder and Martell (2006) revealed existence of an inverse correlation linking the study variables among firms sampled from South American continent over 8 year period. There are several literature claiming more liquid assets have the ability to access loans at lower interests' rates (Chang et al., 2010).

#### **2.3.6 Growth**

Company growth is linked to its ability to be able to access debts. Despite this, various scholars' studies have revealed varying results due to different proxies used for finding growth (Couto & Ferreira 2010; Rebelo 2006), Sbeiti (2010) carried a study to establish correlation linking growth to firm's ability to access external funds and established there exists a positive correlation among the study variables.

Sharma (2015) study established a positive relation exists lining the study variable while a study carried out by Nunko and Boateng (2010) reiterated that there exists a negative correlation lining study variable. Karadeniz et al. (2009) on a research to analyse link between growth and accessibility of debt financing where the author concluded that there exists an inverse correlation among the study variables.

#### 2.3.7 Loans and Advances

It is noted that most microfinance institutions obtain funds inform of grants, equity, deposits and various forms of debt from different investors (Bogan, 2012). It is therefore the duty of microfinance institution to ensure the best mix of the funds in its capital structure that brings forth maximum returns. According to Ngo (2012), different funding sources of microfinance institutions in Vietnam have their associated costs which impact of the performance of the institutions. It is noted that large microfinance institutions rely more on debts and are therefore highly leveraged which enables them to be more efficient, improve their turnover, as compared to smaller institutions which presumably have no access to large debts.

Kyreboah-Coleman (2014), studied the impact of debt/equity ratio on turnover of MFIs. The study consisted a 300 MFIs from 61 nations across the world. The study noted that most microfinance institutions employed more debt financing to enable the institutions gain customers and enjoy greater economies of scale. Further, it was noted that equity/debt financing adversely and significantly influenced firm profitability. It was therefore suggested that profitable MFIs incline to external finances.

#### **2.4 Empirical Review**

M'ng et al. (2017) varied research on factors impacting on the capital structure among firms in Middle East. The research investigated how various economic factors like the level of inflation, economic growth, prevailing market lending rates impacted on study variables among the sampled firms. Results revealed firm turnover ratio has an inverse correlation to their financing structure among many sampled firms but revealed there exists no correlation among some of the sampled firms. The study further revealed that economic growth rate affects financing structure among all firms across the firms in the sample.

Acaravci (2015) carried out research to analyse factors affecting capital structures among firms in Eastern Europe using descriptive method to analyse the study. The study was carried out for 10 years starting in 1991 to 2001 sampling 80 firms in pharmaceutical industry. It analysed firm size as the main factor for the sampled firms. Results of the findings revealed there exists a direct correlation linking firm size to its ability in accessing debts and funds from external sources.

Ahmed Sheikh and Wang (2011) analysed various factors impacting on capital structure among companies operating in textile sector in Southern Asia. Research sampled 50 firms that were listed in the country's securities exchange and covered 5 years 2004-2009. The researcher's findings revealed that firm's turnover ratio had a direct correlation debt financing among the sampled firms. The study results are in line with theories used in this research.

Titman and Wessels (2015) studied the impact of debt financing on concept of going concern. It covered a twenty-year period 1990-2010 where study results indicated there exists a direct correlation among the study variables. However, those of Kinyua (2005) on the same topic which sampled SMEs operating in Kenya for a period covering 1999 to

2003. The study employed cross sectional method for analysis. The researcher established that there exists no correlation among the study variables.

Turere (2012) set out to study the factors affecting debt financing among firms operating banking sector where results established the age of company has an inverse correlation to the firm debt financing. He however, revealed company size had significant effect on the equity/debt ratio. Muema (2013) on factors affecting debt financing among quoted at NSE. The factors which were analysed in the study included; firm size as well as liquidity. The results obtained from the tests indicate that in Agricultural segment, the main factor affecting debt financing is turnover. The Commercial and Services sector had firm size as the only factor affecting financing structure, while profitability was the only factor in manufacturing segment having positive link to debt financing. In summary, all the results from the separate regressions and the combined run do indicate that the results are ambiguous.

#### 2.5 Summary of Literature Review and Research Gap

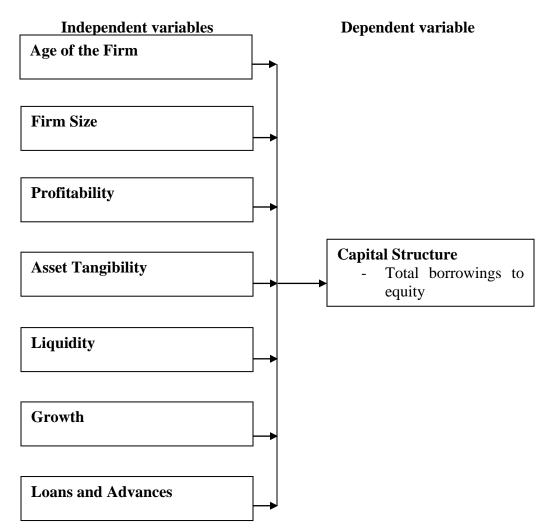
Studies undertaken by various researchers found ambiguous results on determinants of capital structure. M'ng et al. (2017) carried out a research on factors impacting on the capital structure among firms in Middle East; Acaravci (2015) carried out a research on factors affecting capital structures on firms in Eastern Europe; Ahmed Sheikh and Wang (2011) analysed the factors impacting on capital structure among firms in textile industry of Pakistan; Titman and Wessels (2015) studied the impact of debt financing on the concept of going concern; Turere (2012) set out to study the factors affecting debt financing among firms in the banking sector while Muema (2013) conducted research on

the factors affecting debt financing among quoted at NSE. Few studies have dealt with microfinance banks. From the above studies, it's evident that there is presence of a gap under the study topic as many of them were carried out in other developed countries and also none focused on the MFIs. Therefore, this study was carried out to fill in the study gap existing among microfinance banks in Kenya.

#### **2.6 Conceptual Framework**

This is a blueprint to guide the researcher on the variables under study and how they link with one another (Kothari, 2004). It guides the researchers the paths to follow in order to find answers to the study objectives. It also enables the researcher to reveal the correlation existing among the study variables under the study objectives intending to achieve. The study independent variables are; age of the firm, firm size, profitability, asset tangibility, liquidity and growth. The dependent variable will be leverage ratio.





#### **CHAPTER THREE**

#### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Research design, population, data collection and collection procedure and data analysis procedures are represented in this chapter. This will help in building conclusion on the study objectives.

#### 3.2 Research design

It's a way a research is arranged in a sequential manner in an attempt to attain study objective (Sekaran & Bougie, 2010). Descriptive methods which aimed at addressing the current affairs of situation were adopted for the study (Saunders et al, 2009), and this is significant in establishing the determinants of equity/debt ratio among microfinance banks. Descriptive method was preferred in this study as it explained the correlation among the study variables. This method was also preferred because it could analyse both quantitative and qualitative data (Sekaran & Bougie, 2010).

#### 3.3 Population

The population comprised all microfinance banks in Kenya. In December 2018, there were fifteen Microfinance Banks, with twelve of them operating across the nation while only two of them were community based. Given the number was not so large, no sampling was made. Data was collected from 13 microfinance banks hence census technique was applied.

#### 3.4 Data Collection

Secondary data was collected from various historical sources which was significant in minimizing costs incurred in collecting data like travelling and saving on time. It was also to avoid the situation of incomplete data as some of the questionnaires are either returned incomplete or totally not returned. It's also preferred in collecting high volume of data in limited span of time. This study collected a five-year period data 2014 to 2018 was sourced from the 13 microfinance banks websites and the Central Bank manuals.

#### **3.5 Diagnostic Tests**

A number of diagnostic tests were carried out among them multicollinearity test, homoscedasticity test, autocorrelation test, normality test and stationarity test. Multicollinearity indicates that at least two explanatory variables are interrelated (Baltagi, 2008). Variance inflation factors (VIF) was used for assessing Multicollinearity and the correlation matrix. To assess for homoscedasticity the Breusch-Pagan test for heteroscedasticity was used where a significant P value was an indication of heteroscedasticity. The study used the Durbin Watson (DW) test to assess for autocorrelation where a DW statistic, which lied between 1.5 and 2.5, was an indication of absence of autocorrelation. Normality in this study was assessed using the Shapiro Wilk test. Further, since the study data was time series in nature a stationarity test was conducted using the Augmented Dickey Fuller.

#### **3.6 Data Analysis**

The study focused on quantitative data and apply both descriptive and inferential statistics. Frequencies such as mean, standard deviation were applied for the data analysis

as they provided the understanding of the data by just looking at the trend of the presentations. Regression and correlation analysis was be used to determine the relationship between variable. Data was analysed using statistical software SPSS version 22.

#### **3.6.1 Analytical Model**

The study adopted the regression model. The estimated model was:

 $LG = \beta 0 + \beta_1 AG + \beta_2 FS + \beta_3 PROF + \beta_4 AT + \beta_5 LQ + \beta 6GT + \epsilon$ 

Where;

LG = Leverage, as given by; which is computed as the ratio between total borrowings to total assets

Ag= Age, as given by; the period an enterprise has been operational

FS= Firm Size, natural log of assets

Prof= Profitability; net income divided by total assets

AT= Asset tangibility, ratio of total fixed assets to total assets

LQ= Liquidity ratio

GT= Growth, percentage of changes in Total Assets

LA-Loans and Advances; as given by the natural log of loan and advances

 $\beta 1 - \beta 6$  =Regression coefficients

### **3.6.2 Test of Significance**

To assess the significance of the regression equation the study used the F test statistics and analysis of variance (ANOVA). Similarly, to test the independent variables the t-test statistics was used with a significance t value being an indication that variable is significant.

# **CHAPTER FOUR**

# DATA ANALYSIS, RESULTS AND INTERPRETATION

### **4.1 Introduction**

Chapter four present the summary statistics results, diagnostic tests results, correlation, regression and finally an interpretation of findings.

# **4.2 Descriptive Statistics**

The targeted population was 13 microfinance bank but managed to obtain complete data from 9 microfinance banks which had been in operation for the considered study period hence 69.2% response rate which is sufficient for the research. Descriptive statistics was undertaken to summarize collected data using the mean, standard deviation among others.

 Table 4.1: Descriptive Statistics

	Ν	Minimum	Maximum	Mean	Std.	Skewness	Kurtosis
					Dev		
Leverage	45	.000	.410	.14020	.111136	.305	815
Age	45	2	10	5.98	2.179	.126	766
Firm size	45	4.38	10.38	7.2317	1.97204	.455	-1.304
Profitability	45	338	.065	0274	.085351	-1.471	2.062
Assets	45	.792	.991	.9435	.048634	-1.233	.807
tangibility							
Liquidity	45	.090	2.170	.3876	.329849	1.981	1.659
Growth	45	628	3.013	.2494	.687021	1.536	2.882
Loan and	45	3.584	10.007	6.6500	2.09597	.443	-1.318
advances							

Source: Researcher

The table above reveals leverage mean value at 0.14020 with minimum 0.000 and maximum 0.410 thus an indication average debt level among MFBs was 14.02% and while the mean age for the firms was 5.98 with minimum of 2 and 10. Results further indicated average value of the firms was 7.2317 with minimum and maximum of 4.38 and 10.38 whereas profitability had mean vale of -0.0274 with minimum and maximum of -0.338 and 0.065 correspondingly. Negative mean for profitability indicates that the overall profitability of the microfinances was negative. The results for assets tangibility indicate that the mean value was 0.9435 with minimum and maximum at 0.792 and 0.991 correspondingly. It further indicate the average vale for liquidity was 0.3876 with minimum and maximum at 0.628 and 3.013 whereas the average of 0.2494 with minimum and maximum at 0.628 and 3.013 whereas the average value for loan and advances was 6.65 with minimum and maximum of 3.584 and 10.007 respectively. The table further shows that all the skewness and kurtosis ranging between -2 and +2 which indicates that the data is normally distributed.

### **4.3 Diagnostic Tests**

Diagnostic tests among them multicollinearity test, homoscedasticity test, autocorrelation test, normality and stationarity tests.

## **4.3.1 Multicollinearity Test**

Multicollinearity was assessed by use of variance inflation factors (VIF). The results are as follows

**Table 4.2: Multicollinearity Test** 

Variable	Tolerance	VIF
Age	.358	2.790
Firm size	.530	1.887
Profitability	.702	1.425
Assets tangibility	.687	1.455
Liquidity	.817	1.224
Growth	.896	1.117
Loan and advances	.620	1.613

### Source: Researcher

The table above indicates all the VIF values for the variables have values under the recommended levels of 10 hence an indication of absence of multicollinearity.

# 4.3.2 Homoscedasticity Test

To assess for homoscedasticity the Breusch-Pagan test for heteroscedasticity was used.

The results were as follows

### Table 4.3: Homoscedasticity Test

Breusch-Pagan test for heteroscedasticity -					
Null hypothesis:         heteroscedasticity not present					
Test statistic:	LM = 8.82858				
with p-value = $P(Chi-square(7) > 8.82858) = 0.265199$					

#### Source: Researcher

Table 4.3 indicates that the data is homoscedastic and there is no heteroscedasticity as revealed by test statistic value of 8.82858 and a p 0.265199>0.05.

## 4.3.3 Autocorrelation Test

The study used the Durbin Watson (DW) test to assess for autocorrelation where a DW statistic, which lied between 1.5 and 2.5, was an indication of absence of autocorrelation. The results was as follows

#### **Table 4.4: Autocorrelation Test**

Model	Durbin-Watson
1	1.984

### **Source: Researcher**

The results represented on table above indicates DW statistic is 1.984, which lies between the recommended threshold of 1.5 and 2.5, thus an indication of absence of autocorrelation.

# **4.3.4 Normality Test**

Normality in this study was assessed using the Kolmogorov-Smirnov and Shapiro Wilk tests of standardized residuals as indicated in the table below.

#### **Table 4.5: Normality Test**

	Kolmogoro	ov-Smirn	lov <sup>a</sup>	Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Standardized Residual	.078	45	$.200^{*}$	.988	45	.914

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

#### **Source: Researcher**

Table 4.5 above indicates p values of standardized residuals are 0.200 and 0.914>0.05 hence and indication that the variables were normally distributed.

# 4.3.5 Stationarity Test.

Further, since the study data was time series in nature a stationarity test was conducted using the Augmented Dickey Fuller.

Variable	Test statistic	P-value
Leverage	-3.72498	0.03095
Age	-9.25195	0.00000
Size	-8.04864	0.00000
Profitability	-3.34771	0.03854
Asset tangibility	-4.63761	0.002926
Liquidity	-5.12831	0.0001
Growth	-7.59181	0.00000
Loan and advances	-7.19556	0.00000

#### Table 4.6: Stationarity Test.

### Source: Researcher

The table above revealed all the study variables were stationarity at the first level as indicated by all the P values which significant. That is all the p values were less than 0.05 hence an indication of stationarity.

# **4.4 Correlation Analysis**

Correlation analysis was used in assessing strength and degree of relation among the study variables.

	Leverage	Age	Firm	Profitability	Assets	Liquidity	Growth	Loan
			size		tangibility			and
								advances
Leverage	1							
Age	.393**	1						
Firm size	.594**	.600**	1					
Profitability	.173	.236	.310*	1				
Assets	035	.256	.293	305*	1			
tangibility								
Liquidity	280	219	297*	.035	187	1		
Growth	.020	.087	.133	.094	.213	209	1	
Loan and	.521**	.577**	.466**	.312*	.245	227	.109	1
advances								

#### **Table 4.7: Correlation Analysis**

**Source: Researcher** 

The correlation results on table above reveal the correlation linking age, profitability, growth and leverage was weak and directed as revealed by correlation values of 0.393, 0.173 and 0.20. The results also indicate direct correlation linking leverage, firm size, loans and advances as revealed by values of 0.594 and 0.521 respectively. Further, the results indicate correlations between assets tangibility, liquidity and leverage were weak and positive as revealed by correlation values of -0.035 and 0.280 correspondingly. From the results all correlations are less than 0.70 hence revealing there is no multicollinearity.

# 4.5 Regression Analysis

This analysis was used to determine the correlation linking the variables as presented under the model summary, ANOVA and regression coefficients.

### 4.5.1 Model Summary

#### **Table 4.8: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.700 <sup>a</sup>	.490	.394	.086523

a. Predictors: (Constant), Loan and advances, Growth, Liquidity, Assets tangibility, Profitability, Age, Firm size

b. Dependent Variable: Leverage

#### **Source: Researcher**

The table above reveals r square value is 0.490 an indication 49% of deviations are caused by variables (loan and advances, growth, liquidity, assets tangibility, profitability, age, firm size). Thus, 51% of the variation is due to other factors outside this model as well as the error term. The overall correlation of 0.700 reveals high correlation among the study variables.

### 4.5.2 Analysis of Variance

#### **Table 4.9: Analysis of Variance**

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	.266	7	.038	5.085	.000 <sup>b</sup>
1	Residual	.277	37	.007		
	Total	.543	44			

a. Dependent Variable: Leverage

b. Predictors: (Constant), Loan and advances, Growth, Liquidity, Assets tangibility, Profitability, Age, Firm size

### Source: Researcher

The ANOVA results on table above indicates F value of 5.085 is significant as shown by p=0.000<0.05 an indication regression model is fit and significant to carry out the analysis.

### **4.5.3 Regression Coefficients**

Model	Model		ized	Standardized	t	Sig.
		Coefficients		Coefficients		
		B Std. Erro		Beta		
	(Constant)	.469	.289		1.624	.113
	Age	002	.002	199	-1.013	.317
	Firm size	.095	.029	1.691	3.305	.002
1	Profitability	170	.182	131	934	.356
1	Assets tangibility	729	.324	319	-2.252	.030
	Liquidity	025	.004	075	-6.250	.000
	Growth	105	.020	029	-5.250	.000
	Loan and advances	045	.025	852	-1.813	.078

**Table 4.10: Regression Coefficients** 

a. Dependent Variable: Leverage

#### **Source: Researcher**

Table above indicates negative (B=-0.002) and insignificant P=0.317>0.05 correlation linking firm age to leverage while correlation linking firm size to leverage is positive (B=0.095) and (P=0.002<0.05). The results further indicate correlation linking profitability to leverage was negative (B = -0.170) and insignificant (p value = 0.356>0.05) while the correlation linking assets tangibility and leverage (-0.729) and significant (p= 0.030<0.05) respectively. It also show that the correlation linking liquidity to leverage was negative (B=-0.025) and significant (P=0.000<0.05) whereas correlation linking growth to leverage (B=-0.105) and significant (P=0.000<0.05) while the relationship between loan and advances and leverage was (B=-0.045) but insignificant (P= 0.078>0.05) respectively.

### **4.6 Interpretation of the Findings**

Study results indicated negative insignificant correlation linking firm age to leverage hence an indication of an insignificant correlation linking firm age to profitability and a unit change in the age of the firm did not affect leverage. A study by Turere (2012) established the age of company has an inverse correlation to the firm debt financing. Bhaird and Lucey (2010) reiterated that firm age has direct correlation to firm retained earnings.

The study established a direct and significant correlation linking firm size to leverage. This indicates that firm size significantly affects leverage thus a unit change in firm size positively affect firms leverage. A study by Acaravci (2015) revealed there exists a direct correlation linking firm size to its ability in accessing debts and funds from external sources. Turere (2012) also revealed company size had significant impact on capital structure. Martin et al., (2012), indicated there exists a direct relation between firm size to its capital mix.

The research further established an existence of a week inverse correlation linking profitability to leverage. This indicates that leverage is not significantly affected by the firms profitability hence a unit change in profitability does not affect the firms leverage levels. Ahmed Sheikh and Wang (2011) research revealed profitability had a direct correlation debt financing among the sampled firms. Muema (2013) also revealed that profitability was a factor in manufacturing segment having positive link to debt financing. Amidu (2007) found turnover, taxation, economic performance and size influenced banks' capital structure.

The research found that correlation linking assets tangibility to leverage was negative and significant. The finding therefore means that assets tangibility significantly affects the firms' debt levels hence a unit change in assets tangibility significantly affects firm debt level. A study by M'ng et al. (2017) revealed assets turnover ratio has an inverse correlation to their financing structure among many sampled firms but revealed there exists no correlation among some of the sampled firms. Kamau and Kariuki (2014) and found that growth opportunities, firm size and tangibility significantly affect debt/equity.

The finding of the study revealed the correlation linking liquidity to leverage was week and inverse. This reveals liquidity significantly affects a firms debt levels hence a unit change in liquidity affect the firms debt levels. A study by Liu and Hsu (2006) observed that main factors in capital mix are; liquidity, the anticipated economic growth, firm valuation, long term debt, revenues generated in a single financial period and fixed assets. Frieder and Martell (2006) revealed existence of an inverse correlation linking the liquidity among firms sampled from South American continent over 8 year period. There are several literature claiming liquid assets have the ability to access loans at lower interests' rates.

The study also established week and inverse correlation linking growth to leverage. This reveals an existence of strong correlation linking firm growth to leverage thus a unit change in firm growth significantly affects the firms debt levels. A study by M'ng et al. (2017) revealed that firm growth rate affects financing structure among all firms across the firms in the sample. Karadeniz et al. (2009) on a research to analyse link between growth and accessibility of debt financing where the author concluded that there exists an inverse correlation among the study variables.

The findings finally revealed week inverse correlation linking loan and advances and leverage. This means that the amount of loans and advances granted by microfinance banks does not affect their debt levels. Berger et al. (2008) noted large institutions have a tendency of diversifying their loan assets and at the same time benefit more people which make it more difficult for them to fail. This makes it possible for them to access funds with ease which leads to them being highly geared

### **CHAPTER FIVE**

#### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### **5.1 Introduction**

Chapter five contains study summary, conclusions of the research as per the findings and recommendations. The chapter finally indicates the limitation of study and recommendation.

### **5.2 Summary**

This research aimed at examining determinants of capital mix of microfinance banks in Kenya. Descriptive method was preferred for the study which aimed at addressing the current affairs of situation. Data was collected data from 13 MFBs hence census technique was applied and study collected a five-year period data from 2014 to 2018. The study managed to obtain complete data from 9 microfinance banks which had been in operation for the considered study period hence 69.2% response was deemed sufficient for research.

The descriptive results established mean for leverage was 0.14020 with while the mean age for the firms was 5.98. The average value of the firms was 7.2317 whereas profitability had a mean vale of -0.0274 respectively. The results for assets tangibility indicated that the mean value was 0.9435 the average value for liquidity was 0.3876 whereas growth had an average value of 0.2494 whereas the average value for loan and advances was 6.65 respectively.

The correlation results established positive correlation linking age, profitability, growth and leverage. Findings also established significant direct correlation linking leverage to firm size, loans and advances. The findings also revealed correlation linking assets tangibility, liquidity and leverage were weak and positive respectively.

Regression results revealed a week inverse correlation exists between firm age and leverage while correlation linking firm size and leverage is strong and direct. The results established the correlation linking profitability and leverage was inverse and week while the correlation linking assets tangibility and leverage was strong and inverse. The finding further revealed that the correlation linking liquidity and leverage was negative and significant whereas the correlation linking growth and leverage was also inverse and significant while correlation linking loan and advances and leverage was negative but respectively.

### **5.3 Conclusions**

The study results revealed that firm age had inverse and week relationship with leverage. The study results made conclusion there exists week correlation linking firm age and leverage hence a unit change in the age of the firm did not affect leverage. The study established a strong direct relation linking firm size to leverage. The study thus concludes that firm size significantly affects leverage hence a unit change in firm size positively affect firms leverage.

The findings revealed that profitability had an inverse and insignificant correlation with leverage. The study thus concludes that leverage is not significantly affected by the firms profitability hence a unit change in profitability has no impact on firm leverage. The study also established a strong inverse correlation linking assets tangibility to leverage. The study based on this observation concludes that assets tangibility significantly affects the firms' debt levels hence a unit change in assets tangibility significantly affects firm level of debt.

The findings further established significant inverse relation among liquidity and leverage. From the finding, the study concludes that liquidity significantly affects a firms debt levels hence a unit change in liquidity affect the firms debt levels. The research further established inverse relation among growth to leverage was negative and significant hence the conclusion that significant correlation linking firm growth to leverage hence a unit change in firm growth significantly affects the firm's debt levels. Finally, the study revealed that the correlation linking loan and advances and leverage was negative but week hence the conclusion that the amount of loans and advances granted by microfinance banks does not affect their debt levels.

### **5.4 Recommendations**

The research concluded there was no significant link on firm age and leverage hence a unit change in the age of the firm did not affect leverage. The study made recommendations the board of aged microfinance banks should also use debt finance to finance any projects with positive net present value to growth their firms.

According to the study, firm size significantly affects leverage hence a unit change in firm size positively affect firms leverage. Hence, the study recommends board of large microfinance banks should use more debt to finance any investment opportunities as they possess adequate assets which they can use a collateral.

The study observed that leverage is not significantly affected by the firms profitability hence a unit change in profitability does not affect the firms leverage levels. However, the study makes recommendations for board of profitable microfinance banks should not avoid using debt for financing investment but they should use debt if they have adequate profits to pay off back the interest and principal amounts.

According to the findings, assets tangibility significantly affects the firms' debt levels hence a unit change in assets tangibility significantly affects firm level of debt. The study recommended board of microfinance banks should use debt financing is they have adequate assets which they can use as collateral to obtaining additional debt.

The study made a conclusion that liquidity significantly affects a firm's debt levels hence a unit change in liquidity affect the firms' debt levels. The study based on this observation recommends that microfinance banks should have adequate liquidity to pay off their debt obligations (principal and interest payments) when they fall due.

The study observed an existence of correlation linking firm growth to leverage hence a unit change in firm growth significantly affects the firm's debt levels. The study thus makes recommendations for the board of microfinance banks should use debt financing to growth their firms since growth affects the firms leverage levels.

The study concluded amount of loans and advances granted by microfinance banks does not affect their debt levels. However, the makes recommendation for board of microfinance banks should focus on growing their loan book since such would increase their interest income and profitability which could be used to pay off any debt obligations.

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#### **5.5 Limitations of the Study**

Secondary data was preferred to measure the study constructs. It's historical and does not consider the qualitative aspects, which influence stock returns of listed firms. Secondary data may also do not explain the current performance in an organization. In addition, secondary data does not consider other qualitative factors, which affects microfinance banks capital structure.

The context of this study was microfinance banks in Kenya. The findings can only be generalized to the sampled microfinance banks. In addition, the study focused on loan and advances, growth, liquidity, assets tangibility, profitability, age and firm size. However, there exists other measures of the variables which may give different results hence the study is based on the adopted measures. The study used secondary data, which covered 5 years from 2014 to 2018 hence the findings, are generalized with the study period as additional data may give different results and output.

#### **5.6 Suggestions for Further Research**

The model summary revealed that 49% of the variation in leverage was attributed to loan and advances, growth, liquidity, assets tangibility, profitability, age, firm size. This indicates that 51% of the variation attributed to other factors which were not factored in by the study. The study therefore recommends a similar study but using other factors which may affect leverage.

The study also used quantitative factors measured using historical data and ratios which leaves out qualitative factors, which affects microfinance banks capital structure. The study therefore recommends a similar study which shall adopt the use of qualitative factors like management risk attitude, management experience among other to assess whether they affect leverage levels.

#### REFERENCES

- Acaravci, S. K. (2015). The determinants of capital structure: Evidence from the Turkish manufacturing sector. *International Journal of Economics and Financial Issues*, 5(1), 158-171.
- Ahmed Sheikh, N., & Wang, Z. (2011). Determinants of capital structure: An empirical study of firms in manufacturing industry of Pakistan. *Managerial Finance*, 37(2), 117-133.
- Ahmed, N., Ahmed, Z. & Ahmed, I., (2010), 'Determinants of capital structure: A case of life insurance sector of Pakistan', *European Journal of Economics, Finance and Administrative Sciences* 24, 7-12.
- Almeida H, & Campello M. (2007). Financial constraints, asset tangibility, and corporate investment. *Review Finance Studies*, 20:1429–1460.
- Aremu, M. A., Ekpo, I. C. and Mustapha, A. A, (2013): Determinants of banks' profitability in a developing economy: Evidence from Nigerian banking Industry, *Interdisciplinary Journal of Contemporary Research in Business*, 4 (9): 155 181. Published by Institute of Interdisciplinary Business Research, Canterbury, Kent, United Kingdom.
- Berger, A.N, Black LK.(2011) Bank size, lending technologies, and small business finance. *J Bank Finance* 35:724–735.
- 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.

- Bogan, M. (2012).Capital structure and sustainability: An empirical study of Microfinance institutions. *The Review of Economics and Statistics*, 94(4), 1045– 1058.
- Bogan, V. (2012). Capital structure and sustainability: An empirical study of microfinance institutions. *The Review of Economics and Statistics*, 94 (4), 1045-1058.
- Chang, Y.Y., Faff, R., & Hwang, C.Y. (2010). Liquidity and stock returns in Japan: New evidence. *Pacific-Basin Finance Journal*, *18*(1), 90–115.
- Degryse H.A, de Goeij P.C, & Kappert P (2012). The impact of firm and industry characteristics on small firms capital structure'. *Small business Economy*, 38:431–447.
- Fama, E, & Jensen, M (1983). Separation of ownership and control. *Journal of Law Economics*, 26, 301–325.
- Frieder, L., & Martell, R. (2006). On capital structure and the liquidity of a firm's stock. Working paper, Purdue University.
- Glen, J. & Pinto, B. (1994). Debt or equity? How firms in developing countries choose, discussion paper, International Financial Corporation, Washington, DC.
- Gropp R. & Heider F (2010). The determinants of bank capital structure. Finance Revenue 14:587–622.
- Gungor. T., & Saida, H. (2014). Determinants of Capital Structure: Evidence from Banking sector in Albania; *Mediterranean Journal of Social Sciences, MCSER Publishing, Rome-Ital 5(13).*

- Jensen, M & Meckling, W. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*. 3 (4), 305-360.
- Jensen, M, C. (1986). Agency cost of free cash flow, corporate finance and takeovers. *American Economic Review*, 76 (1), 323-339.
- Jensen, M. & Meckling, W. (1976). Theory of the firm: managerial behaviour, agency cost and ownership structure. *Journal of Financial Economics*, 43, 271-81.
- Kamau, G. C., & Kariuki, S. N. (2014). Determinants of corporate capital structure among private manufacturing firms in Kenya: A survey of food and beverage manufacturing firms. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4(3), 49–62
- Kinyua, J. B., & Muriu, P. W. (2017). Determinants of Capital Structure of Agricultural Firms in Kenya. *European Scientific Journal*, 13(7), 277-299
- Kinyua, J. M. (2005). An empirical investigation of capital structure determinants for small and medium-sized enterprises in Kenya. Unpublished MBA research project, University of Nairobi.
- Kipsang, Y. W. (2014). The relationship between credit risk management and the financial performance of microfinance institutions in Kenya. Unpublished MBA Project, University of Nairobi
- Kisaka & Simiyu (2014). Credit risk management techniques used by microfinance institutions in Kenya.
- Kyereboah-Coleman, A. (2014). The impact of capital structure on the performance of microfinance institutions *.Journal of Risk Finance*, 8(1), 56-71.

- Lipson, M. L., & Mortal, S. (2009). Liquidity and capital structure. *Journal of Financial Markets*, *12*(4), 611–644.
- M'ng, J. C. P., Rahman, M., & Sannacy, S. (2017). The determinants of capital structure: Evidence from public listed companies in Malaysia, Singapore and Thailand. *Cogent Economics & Finance*, 5(1), 1418609.
- Martin, John D. (2012). The theory of finance: Evidence and application. *Chicago: The Dryden Press*.
- Melkamu (2012). Determinants of operational and financial self-sufficiency: An empirical evidence of Ethiopian microfinance institutions. Thesis.
- Modigliani, F. and Miller, M. (1958), "The cost of capital, corporate finance and the theory of investment. *American Economic Review*, 48, (261)
- Muema, A. K. (2013). The determinants of capital structures of firms listed under the various market segments in the Nairobi Securities Exchange. Unpublished Master's Projects, University of Nairobi, Kenya.
- Munene, K.H., (2006). Impact of profitability on capital structure of companies listed at NSE. *Unpublished MBA Project*, University of Nairobi, Nairobi.
- Myers SC (1984) The capital structure puzzle. Journal of Finance 39:575–592.
- Oghenekohwo, A.G., Nkeiruka, E.T., &Nnenna, U.A. (2015).Effect of capital structure on retained earnings in the oil and gas sector –Evidence from Nigeria. *Issues in Business Management and Economics*, 3(10), 120-132.
- Remmers, L. Stonehill, A. Wright, R. & Beekhuisen, T. (1974). Industry and Size as debt ratio determinants in manufacturing internationally. *Financial Management, Summer: 24-32*.

- Sbeiti, W., (2010). The determinants of capital structure: Evidence from the GCC countries', *International Research Journal of Finance and Economics* 47, 56-82.
- Tchuigoua, H T. (2014). Institutional framework and capital structure of microfinance institutions. *Journal of Business Research*, 67, 2185-2197.
- Titman, S. and Wessels, R. (1988). The Determinants of Capital Structure Choice. Journal of Finance, 43, pp. 1-19.
- Titman, S., & Wessels, R. (2015). The determinants of capital structure choice. *The Journal of finance*, *43*(1), 1-19.
- Turere, S. P. (2012). The Determinants of capital structure in the energy and petroleum companies listed in the Nairobi securities. Unpublished MBA research project, University of Nairobi.
- Udomsirikul, P., Jumreornvong, S., & Jiraporn, P. (2011). Liquidity and capital structure: The case of Thailand. *Journal of Multinational Financial Management*, 21(2), 106–117.

# **Appendix I: Licensed Microfinance Banks**

- 1. Caritas Microfinance Bank Limited
- 2. Century Microfinance Bank Limited
- 3. Choice Microfinance Bank Limited
- 4. Daraja Microfinance Bank Limited
- 5. Faulu Microfinance Bank Limited
- 6. Kenya Women Microfinance Bank Limited
- 7. Rafiki Microfinance Bank Limited
- 8. Remu Microfinance Bank Limited
- 9. SMEP Microfinance Bank Limited
- 10. Sumac Microfinance Bank Limited
- 11. U & I Microfinance Bank Limited
- 12. Uwezo Microfinance Bank Ltd
- 13. Maisha Microfinance Bank Limited

MFB	Year	Net income	Total assets	Age	Fixed assets	Loan and advances	Borrowings
MFB1	2018	108.91	27,224.94	10	25,861.94	16,934.90	4,430.52
	2017	104.22	25,330.88	9	24,376.88	16,958.00	3,571.77
	2016	49.14	27,403.03	8	26,074.03	17,954.98	4,387.00
	2015	120.66	25,229.55	7	24,058.55	16,583.68	2,671.00
	2014	298.95	20,319.96	6	19,248.96	14,488.00	1,339.00
MFB2	2018	(769.61)	29,697.14	10	29,262.34	19,997.09	8,087.99
	2017	(11.92)	29,079.19	9	28,730.19	19,374.00	6,773.85
	2016	240.10	32,319.51	8	31,820.51	22,189.00	9,074.00
	2015	396.23	31,867.48	7	31,514.48	22,094.00	8,206.00
	2014	500.70	26,997.74	6	26,744.74	18,854.00	4,216.00
MFB3	2018	(329.00)	6,727.00	7	5,851.00	2,856.00	1,954.00
	2017	(297.55)	7,326.82	6	7,082.82	3,661.00	2,011.00
	2016	29.46	7,728.52	4	7,517.52	4,270.00	1,544.00
	2015	21.00	3,679.00	5	3,317.00	3,418.00	958.00
	2014	9.00	1,838.00	4	1,650.00	1,166.00	754.00
MFB4	2018	(120.00)	2,734.00	9	2,642.00	1,677.00	579.00
	2017	(134.00)	2,659.00	8	2,598.00	1,677.00	624.00
	2016	(1.00)	2,592.00	7	2,567.00	1,728.00	576.00
	2015	(97.00)	2,975.00	5	2,930.00	1,635.00	396.00
	2014	48.00	2,490.00	4	2,419.00	1,799.00	511.00
MFB5	2018	(25.00)	1,137.00	10	973.00	218.00	395.00
	2017	(12.00)	803.00	9	712.00	244.00	227.00
	2016	(15.00)	608.00	8	527.00	257.00	144.00
	2015	3.00	390.00	7	378.00	184.00	68.00
	2014	(6.00)	307.00	6	287.00	161.00	8.00
MFB6	2018	(12.00)	354.00	7	337.00	126.00	52.00
	2017	4.00	362.00	6	354.00	151.00	67.00
	2016	0.20	397.00	5	384.00	97.00	40.00
	2015	1.00	378.00	4	364.00	125.00	5.00
	2014	(2.00)	337.00	3	327.00	73.00	16.00
MFB7	2018	(63.00)	406.00	6	388.00	103.00	39.00
	2017	(41.00)	351.00	5	348.00	107.00	19.00
	2016	(53.00)	184.00	4	182.00	79.00	18.00
	2015	(39.00)	137.00	3	135.00	107.00	0.00
	2014	(27.00)	80.00	2	78.00	62.00	0.00
MFB8	2018	10.00	212.00	6	206.00	126.00	0.00
	2017	14.00	214.00	5	182.00	538.00	0.00
	2016	7.00	226.00	4	196.00	433.00	0.00
	2015	4.00	390.00	3	384.00	289.00	11.00
	2014	(11.00)	107.00	2	101.00	204.00	0.00
MFB9	2018	16.00	288.00	7	258.00	103.00	0.00
	2017	7.00	225.00	6	196.00	271.00	19.00
	2016	7.00	197.00	5	156.00	142.00	22.00
	2015	2.00	231.00	4	217.00	84.00	0.00
	2014	1.00	164.00	3	148.00	36.00	0.00

# **Appendix II: Data Collection sheet**