EFFECT OF CAPITAL STRUCTURE ON FINANCIAL SUSTAINABILITY OF DEPOSIT-TAKING MICROFINANCE INSTITUTIONS IN KENYA

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2018
DECLARATION

I understand that plagiarism is an offence and I therefore declare that this proposal is my original work and has not been presented to any other institution for any other award.

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DEDICATION

To my dad, Joseph Wambua and my sisters. You have continuously been at my side during periods of necessity and your continuous reassurances have made me achieve this far.
# TABLE OF CONTENTS

DECLARATION .......................................................................................................................... ii  
ACKNOWLEDGEMENT ......................................................................................................... iii  
DEDICATION .............................................................................................................................. iv  
LIST OF FIGURES .................................................................................................................... ix  
ABBREVIATIONS AND ACRONYMNS .................................................................................. x  
DEFINITION OF TERMS ....................................................................................................... xi  
ABSTRACT ............................................................................................................................... xii  
CHAPTER ONE ........................................................................................................................ 1  

## 1.0 INTRODUCTION ............................................................................................................. 1  
1.1 Background of the study .................................................................................................. 1  
  1.1.1 Microfinance Institutions Capital Structure .......................................................... 1  
  1.1.2 Financial Sustainability of Deposit-Taking Microfinance Institutions .................. 3  
  1.1.3 Deposit-Taking Microfinance Institutions in Kenya .............................................. 6  
1.2 Statement of the problem ............................................................................................... 7  
1.3 Objectives of the Study ................................................................................................. 8  
  1.3.1 General Objective ................................................................................................. 8  
  1.3.2 Specific Objectives ............................................................................................... 8  
1.4 Research Questions ....................................................................................................... 8  
1.5 Significance of the study .............................................................................................. 9  
1.6 Scope of the study ....................................................................................................... 9  

CHAPTER TWO ..................................................................................................................... 10  

## 2.0 LITERATURE REVIEW ................................................................................................. 10  
2.1 Introduction ................................................................................................................... 10  
2.2 Theoretical Review ...................................................................................................... 10  
  2.2.1 Modigliani-Miller (MM) Theory ........................................................................... 10  
  2.2.2. Pecking Order Theory ....................................................................................... 11  
2.3 Empirical Review ......................................................................................................... 12  
  2.3.1. Debt Capital and Financial Sustainability ......................................................... 12
2.3.2 Retained Earnings and Financial Sustainability ............................................. 14
2.3.3 Ordinary Share Capital and Financial Sustainability .................................. 15
2.3.4 Preferred Share Capital and Financial Sustainability .................................. 17
2.5 Conceptual Framework .............................................................................. 19

CHAPTER THREE ................................................................................................. 20
3.0 METHODOLOGY ......................................................................................... 20
3.1 Introduction .................................................................................................. 20
3.2 Research Design ......................................................................................... 20
3.3 Target Population ....................................................................................... 20
3.4 Sampling Frame ......................................................................................... 20
3.5 Data Collection Instruments and Procedures ............................................ 20
3.6 Data Processing and Analysis .................................................................... 21

CHAPTER FOUR ................................................................................................. 22
4.0 RESULTS .................................................................................................... 22
4.1 Introduction .................................................................................................. 22
4.2 Completeness of Secondary Data ............................................................... 22
4.3 Capital Structure of DTMSs in Kenya ....................................................... 22
4.4 The Data Diagnostic Tests for Multiple Regression .................................... 24
4.4.1: Correlation Analysis .............................................................................. 24
4.4.2 The Normality Test .................................................................................. 25
4.4.2 The Linearity Test ................................................................................... 26
4.4.3 The Homoscedasticity Test ..................................................................... 27
4.4 Multiple Regression Analysis ...................................................................... 28
4.4.3 Model Coefficients for the Multiple Regression Analysis ....................... 29
4.5 The Analysis of Variance (ANOVA) ............................................................ 31

CHAPTER FIVE .................................................................................................... 33
5.0 DISCUSSION ............................................................................................... 33
5.1 Introduction .................................................................................................. 33
5.2 The Impact of Debt on the Financial Sustainability of DTMs in Kenya .... 33
5.3 The Influence of Retained Earnings on the Financial Sustainability of DTMs in Kenya... 34
5.4 The Effect of Ordinary Share Capital on Financial Sustainability of DTMs in Kenya .... 35
5.5 The Impact of Preferred Share Capital on Financial Sustainability of DTMs in Kenya. ... 35

CHAPTER SIX ........................................................................................................................................... 37

6.0 CONCLUSIONS AND RECOMMENDATIONS.............................................................................. 37

6.1 Introduction ...................................................................................................................................... 37

6.2 Conclusion ...................................................................................................................................... 37

6.2.1 The Impact of Debt on the Financial Sustainability of DTMs in Kenya ...................... 37

6.2.2 The Influence of Retained Earnings on the Financial Sustainability of DTMs in Kenya ........................................................................................................................................... 38

6.2.3 The Effect of Ordinary Share Capital on Financial Sustainability of DTMs in Kenya 38

6.2.4 The Impact of Preferred Share Capital on Financial Sustainability of DTMs in Kenya. ................................................................................................................................. 38

6.3 Recommendations .............................................................................................................................. 38

6.3.1 Recommendation for Policy Makers ....................................................................................... 39

6.3.2 Recommendation for practice ................................................................................................. 39

6.3.2 Recommendation to academia ................................................................................................. 39

REFERENCES ......................................................................................................................................... 41

APPENDICES ......................................................................................................................................... 47

Appendix I: List of Licensed Deposit-Taking Microfinance Institutions in Kenya. ................ 47
LIST OF TABLES

Table 4.1: The Summary of the Proportions of the Different Components and Operational Self Sufficiency .................................................................23
Table 4.2: Covariance and Correlation Matrix.........................................................24
Table 4.3: Model Summary..................................................................................29
Table 4.4: Regression Coefficients ........................................................................30
Table 4.5: Analysis of Variance (ANOVA).............................................................31
LIST OF FIGURES

Figure 2.1 Conceptual Framework...............................................................20
Figure 4.1: Normality test.................................................................26
Figure 4.2: Linearity test.................................................................27
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBK</td>
<td>Central Bank of Kenya</td>
</tr>
<tr>
<td>CGAP</td>
<td>Consultative group to assist the poor</td>
</tr>
<tr>
<td>DTM</td>
<td>Deposit-Taking Microfinance Institution</td>
</tr>
<tr>
<td>IAS</td>
<td>International Accounting Standard</td>
</tr>
<tr>
<td>MFI</td>
<td>Microfinance Institution</td>
</tr>
<tr>
<td>MIX</td>
<td>Microfinance information exchange</td>
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<tr>
<td>OSS</td>
<td>Operating Self Sufficiency</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on Assets</td>
</tr>
<tr>
<td>ROE</td>
<td>Return on Equity</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>PSC</td>
<td>Preferred Share Capital</td>
</tr>
<tr>
<td>OSC</td>
<td>Ordinary Share Capital</td>
</tr>
<tr>
<td>RE</td>
<td>Retained Earnings</td>
</tr>
</tbody>
</table>
DEFINITION OF TERMS

Financial Sustainability: Refers to the ability of DTMs to service its expenses using its revenue as well as generating a margin that can be utilized to fund the growth of the DTMs (Ayayi and Sene 2010).

Micro-finance institution: Microfinance institutions are institutions that offer microfinance services to the poor (Mwangi, Muturi and Ombuki 2015).

Sustainability: Refers to the long term continuation of the microfinance programme after the project activities have been discontinued (Ahlin and Lin 2006).

Microfinance: Refers to all types of financial intermediation services; savings, credit funds transfer, insurance, pension remittances, provided to low-income households and enterprises in both urban and rural areas, including employees in the public and private sectors and self-employed (Robinson 2003).

Operating Costs: Refers to the costs of resources used by a firm just to maintain its existence (Ramesh 2006).

Financing Costs: Refers to interest and other costs that an entity incurs in connection with the borrowing of funds (IAS 23).
ABSTRACT

The purpose of this research was to empirically investigate the effect of capital structure on financial sustainability of deposit-taking micro finance institutions (DTMs) in Kenya. The specific objectives were to determine the impact of debt on the financial sustainability of DTMs in Kenya, to assess the influence of retained earnings on the financial sustainability of DTMs in Kenya, to examine the effect of ordinary share capital on the financial sustainability of MFIs in Kenya, and to investigate the impact of preferred share capital on the financial sustainability of DTMs in Kenya. The target population of the study was all the 13 DTMs in Kenya registered with the Central Bank of Kenya. Secondary data was collected on all the DTMs financial data from the Central Bank of Kenya reports. Data was analyzed using multiple regression model using SPSS version 21 as the data analysis tool. Based on the findings 76.9% of the DTMs did not earn enough revenue to cover the actual financing direct costs, which include the total operating costs, loan loss provisions and the financing costs but excluding the cost of capital. The analysis of variance (ANOVA) table indicated that the predictor variables influenced the predictor variable significantly at 5% significance level. Among the four variables; debt and retained earnings were statistically significant variable at 5% significance level with 0.569 and 0.738 coefficient respectfully, whereby the financial sustainability change by 0.569 and 0.738 for every unit change of debt or retained earnings respectfully. Therefore, for the deposit-taking microfinance institutions to remain afloat in the lending business, they should utilize any borrowing opportunity, plough back profits to the business, and low proportion of preferred share capital. Deposit-taking microfinance institutions should avoid usage ordinary share capital as it negatively affected financial sustainability.
CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the study
Microfinance refers to financial services offered to the poor. Robinson (2003) defines microfinance as all financial intermediation services; savings, credit funds transfer, insurance, pension remittances, provided to low-income households and enterprises. A deposit-taking microfinance (DTM) is an institution that is licensed by Central Bank to receive deposits money from the public (Micro finance Act, 2006).

DTMs have been financially gainful and free from interferences from funding sources, most of which were short-lived, (Ayayi and Sene 2010; Ayayi, 2012). This shows that financial sustainability of DTM s is very important as DTM s are able to meet their operations expenses or continue with their operations even if the donor or government withdraws from funding them. This was supported by Schreiner (2000) who said that unsustainable DTM s would not help the poor in the future because the DTM s will be gone.

Capital structure composition is essential to DTM financial sustainability (Bogan, 2007). This is because better capital structure decisions making in DTM s will reduce risk, maximize financial flexibility, and encourage long term solvency needed to provide sustainable financial services to the poor (CGAP, 2007). Trust from clients is tied around a possibility of long-term existence of a DTM based on its capital composition (Haruna, 2013). A good sustainable capital base also renders a DTM more competitive and hence more beneficial to her clients (Wright and Rippey, 2003). Therefore, assessment of the effect of capital structure on financial sustainability of DTM s was very important.

1.1.1 Microfinance Institutions Capital Structure
Capital structure is how a firm finances its total operations and growth by using different sources of resources. Bhaduri (2002) defined capital structure as the different options used by a firm in financing its assets. The capital structure of DTM s is therefore the mixture of
debt and equity issuing. Huang (2003) found out that a firm has three main capital components. This includes retained earnings, issuing new shares (external equity) and borrowing through debt instruments (debt capital).

Debt refers to borrowed money. It is any contract between a financier and a borrower: notes, certificates, bonds, debentures, mortgages and leases (Modugu, 2013). The amount borrowed, plus interest, is ordinarily paid back to the financiers over a given period of time as set out in the contract. Debt can be short-term or long-term. Short-term debt refers to funds required to finance the day-to-day operations of a firm. These kinds of funds, reimbursement schedules take place in less than a year. Long-term financing is normally acquired when firm purchases properties such as buildings and takes more than a year to pay back the funds (Zietlow, Hankin, & Seidner 2007).

Equity is money put up and owned by the shareholders. Equity enables a firm to get funds without incurring debt (Sibilkov 2009). This means there are no interest charges to be paid at later dates, instead the shareholders expect returns out of future profits in form of dividends or future capital gains. However, if a firm suffers a loss, the shareholders have limited liability, which means that the only loss they face is the amount they invested in the firm (Sibilkov, 2009).

Equity consists of ordinary share capital, preferred share capital and retained earnings. Ordinary shares are the most common/regular type of shares. Preference shares that give more benefits than ordinary shares. Retained earnings is the amount that is ploughed back into the firm (Modugu, 2013). When distributable profit is determined in an income statement, a firm has to decide what share of that profit will be distributed out as dividends to the ordinary shareholders. The balance amount represents the retained earnings and this amount will be taken to the firm's distributable reserves in the balance sheet.

When a firm acquires too much capital through equity issues, it can be taken as an indication to the market that it has no enough reserves or cash flows, and this can result in the undervaluation of the firm's shares (Narayanan, 2008). When investments are financed
with external equity, the share prices of firms sometimes fall. This can suggest that, it is better to build up reserves so that a higher proportion of capital needs can be from internal sources.

A DTM should consider a combination of these different sources of financing. This is because using only debt in the capital structure can be very risky, because the more debt a firm uses, the higher the bankruptcy risk (Huang 2003). During times of high interest rates, it can cause the earnings on an investment to be finished by the high interest payments (Huang 2003). On the other hand, issuing out only shares in effort to raise funds can also be a very risky option. The reason being a firm need to use cash to fund new investments, while shares may not generate cash at the time the firm needs to pay for the new investment (Huang 2003).

Theoretical research to date has showed that firms can influence its value by varying its ratio of debt and equity (Chaplinsky and Niehaus 2003; Rajan and Zingales 1995; Bhaduri, 2002). The main point is that firms need to discover an optimal mixture of debt and equity that will eventually increase the overall value of the firm. Therefore, decisions concerning capital structure can impact on the accomplishment and future prosperity of a firm.

Analysts use debt to equity ratio to compare capital structure. It is calculated by dividing debt by equity. Debt and equity is usually found on the balance sheet. The assets listed on the balance sheet are purchased with this debt and equity. DTM s that use more debt than equity to finance assets have a high leverage ratio and an aggressive capital structure. A DTM that pays for assets with more equity than debt has low leverage ratio and a conservative capital structure. It is the goal of a DTM management to find the optimal combination of debt and equity.

1.1.2 Financial Sustainability of Deposit-Taking Microfinance Institutions.
Financial sustainability is the ability of a DTM to be able to meet its operations expenses or continue with its operations even if the donor or government withdraws from funding it. Ayayi and Sene (2010) defined financial sustainability as the ability of DTM to meet its
expenses using its revenue as well as generating a margin that can be used to fund the growth of the DTM. According to Muriu (2011) financial sustainability is the ability of DTMs to cover all its present costs and the costs incurred in growth, if it expands operations.

There are many relevant measures of financial sustainability. Traditional financial ratios like return on assets (ROA) and return on equity (ROE) are inadequate to measure DTMs financial sustainability. This is because they are based on accounting information, adjusted for subsidies (Yaron, 2007). Realizing the inadequacy of unadjusted traditional financial ratios in measuring DTMs financial sustainability financial self-sufficiency and operating self-sufficiency has been developed to measure financial sustainability (Yaron, 2007).

According to Barres (2006) operating self-sufficiency rather than financial self-sufficiency can easily be related to the standard definition of financial sustainability. He further stated that OSS allowed getting subjective and global picture of the institutions in terms of its financial sustainability. Therefore, OSS was chosen to measure financial sustainability in this study.

Operational Self Sufficiency (OSS) measure for financial sustainability is popular and has been used in numerous studies see (Haruna, 2013; Bogan, 2012; Quayes 2012; Kipesha and Xianzhi 2013). OSS measures how sufficient DTM revenues cover the total costs (operating costs, loan loss provisions and financial costs) disregarding all grants, subsidies and donations. Operational Self-Sufficiency show whether adequate revenue was made to meet the DTM’s direct costs, excluding the cost of capital but including actual financing costs (Nyamsogoro, 2010).

OSS is given as the total of operating revenue divided by the total operating costs, loan loss provisions and, financing costs. An OSS of at least 110% defines a DTM’s ability to cover both operating and financial costs (Bogan, 2012). Therefore, financial sustainability is achieved when the OSS is at least 110%.
Financial sustainability is a key dimension of microfinance sustainability (Kinde, 2012). This is because the world we are in experiences political crisis, wars, competition, and other calamities that have negative impact on the existence of DTMs. The need to be able to absorb all those shocks and be always there for the clients makes financial sustainability a central component requirement. However, a continuing problem facing DTMs is how to reach financial sustainability (Dunford, 2003).

A great number of DTMs still depend on donor subsidies and government funding to meet the high costs i.e. they are not financially sustainable (Hermes and Lensink, 2007). Therefore, given the capital constraints, growth of DTMs has remained a great challenge facing the microfinance industry. Financial sustainability is a major concern (Sandhya, 2016). Bogan (2009) observed that the capital structure of lending institutions has become a progressively big issue in the world of finance, mainly in the wake of the 2008 banking collapse and the ensuing government bailouts and institutional restructuring efforts.

Until 2007 DTMs enjoyed unprecedented growth in emerging markets, but signs of microfinance industry stress were reported among industry players in 2007 (CGAP, 2010). There were many events in the 2008 of global financial meltdown where most financial institutions had to rely on government bailouts in order to remain sustainable in their foreseeable future (Mwangi, Muturi and Ombuki, 2015).

In the year 2007, Morocco MFIs merged due to unsustainable growth (CGAP, 2009). In the year 2013, about thirty MFIs collapsed in Ghana due to an alleged inability to sustain their operations (Boateng, Barnie, Dwumah, Acheampong and Sampene 2016). Later in the year twenty also became insolvent (Boateng, Barnie, Dwumah, Acheampong and Sampene, 2016). In Zimbabwe having gone to a peak of 1600 in 2003, had then gone down to a meagre 130 operational (Mutambanadzo, Bhiri and Makunike 2013). Recently in Kenya in the period 2007-2015 six DTMs collapsed.

The widespread of DTMs failure or collapse prompted this study as it was clear that in future we would have more collapsing or failing. That is why all over the world, financial
sustainability of DTM is one of the matters that has lately taken the attention of many researchers (Kinde, 2012). Financial sustainability of DTM is a necessary condition for institutional existence (Hollis and Sweetman 1998).

It was discussed that unsustainable MFIs would not help the poor in the future because the MFIs will be gone (Schreiner, 2000) indicating how important sustainability of DTM is. Moreover, it has been informed that it may better not have than having unsustainable ones (Nyamsogoro 2010). Ahlin and Jiang (2008) noted that benefits of microfinance institutions can only be achieved as long as the poor continue to be clients of microfinance institutions.

1.1.3 Deposit-Taking Microfinance Institutions in Kenya
The enactment and endorsement of the Microfinance Act 2006 by the parliament gave birth to Deposit-Taking Microfinance Institutions which are permitted to mobilize and intermediate savings from the depositors (Mutua, 2003). The Microfinance Act 2006 of the MFIs Kenya, sought to streamline the operation of the DTM in Kenya, addressed licensing provisions, and set minimum capital requirements and minimum liquid assets, submission of accounts to the Central Bank, supervision by the Central Bank, and limits on loan and credit facilities. The licensed DTM accepts public funds and contributes to poverty alleviation while in compliance with the required financial sector safety and soundness.

The DTM are regulated under the act to offer savings, credit, and other financial services to MSEs and to low-income households in both rural and urban areas. By then, there were 13 licensed DTM in Kenya which included Faulu Kenya MFI Limited, Kenya Women Finance Trust MFI Limited, REMU MFI Limited, SMEP MFI Limited, UWEZO MFI Limited, Century Microfinance, SUMAC MFI Limited, Rafiki MFI Limited, U&I MFI, Choice MFI limited, Daraja MFI limited, Maisha MFI Limited and Caritas Microfinance Limited. All these DTM had their headquarters in Nairobi.

Microfinance rating 2013 annual report on the microfinance sector in Kenya reported that the level of financial sustainability in Kenya dropped significantly in the year 2012; with
OSS, ROA and ROE reported at 107%, 1% and 8% respectively. According to Ali (2015), MFIs in 2011 recorded a negative growth despite the fact that there was an increase in the number of granted DTM licenses. However, the sector mainly funded itself with deposits received from the public, which accounted for 58.9% of total assets. In addition, total equity accounted for 18.2% of total assets, followed by borrowings accounting for 16.6%.

1.2 Statement of the problem

Based on the CGAP, (2010) report, until 2007 DTMs enjoyed unprecedented growth in emerging markets, but signals of microfinance industry strain were stated among industry players in 2007. Available evidence confirms that many DTMs were unsustainable, many collapsed, and others merged while others were non-performing (CGAP, 2009; Mwangi, Muturi and Ombuki, 2015). The collapse and merging of DTMs was experienced in Morocco, Ghana, and Zimbabwe among other many countries. In the period 2007-2015 six DTMs collapsed in Kenya namely: Kenya Finance Corporation, Trade Bank, Euro Bank, Charter Bank, Dubai Bank and Imperial Bank. In 2016 several banks have collapsed in Kenya, with Chase Bank most recent under receivership by the Central Bank of Kenya.

This showed, majority of DTMs in the developing countries, Kenya being one of them, faced a lot of financial sustainability problems.

Financial sustainability of DTMs is a function of connected and interrelated factors, (Kimando, 2012). Kinde (2012) argued that financial sustainability of microfinance institutions is a key dimension of microfinance sustainability. Several studies found that the common factors of financial sustainability are breadth of outreach, capital structure, management inefficiency, competition and deposit mobilization (Quayes, 2012; Hisako 2009; Paxton 2002; Sekabira 2013; Tehulu 2013). Therefore, the study sought to investigate the effect of capital structure on financial sustainability of DTMs in Kenya.

The empirical results on the role of capital structure on financial sustainability were mixed. A number of studies found out that capital structure significantly impacted on financial
sustainability (Bogan 2009; Nyamsogoro 2010). However, Kinde (2012) stated that capital structure insignificantly impacted on financial sustainability of MFIs. Coleman (2007) found that highly leveraged MFIs in Ghana performed better by reaching out to more clientele and enjoyed scale of economies. It was for this reason the study sought to establish the effect of capital structure on financial sustainability of DTM in Kenya.

1.3 Objectives of the Study

1.3.1 General Objective
The general objective of this study was to investigate the effect of capital structure on financial sustainability of DTM in Kenya.

1.3.2 Specific Objectives
This study sought to achieve the following specific objectives:

i. To determine the impact of debt on the financial sustainability of DTM in Kenya.

ii. To assess the influence of retained earnings on the financial sustainability of DTM in Kenya.

iii. To examine the effect of ordinary share capital on financial sustainability of DTM in Kenya.

iv. To investigate the impact of preferred share capital on financial sustainability of DTM in Kenya.

1.4 Research Questions
This study sought to answer the following research questions:

i. What is the impact of debt on the financial sustainability of DTM in Kenya?

ii. What is the influence of retained earnings on the financial sustainability of DTM in Kenya?

iii. What is the effect of ordinary share capital on the financial sustainability of DTM in Kenya?

iv. What is the impact of preferred share capital on the financial sustainability of DTM in Kenya?
1.5 Significance of the study
This study will benefit a number of stakeholders among them managers of DTM s who will use the study to gain an understanding on the effect of capital structure on financial sustainability of DTM s. This will in turn help them to have a capital structure which brings more benefit to the shareholders. The study will enable financial consultants offer prudent services to their clients as to the best capital structure where financing is stable and the firm remains financially sound.

The government will also benefit from the study to formulate appropriate policies which would ensure the DTMs thrive in the economy and in turn contribute to the economic growth. Moreover, microfinance strategists, policy makers, aspiring microfinance researchers, university students pursuing a career in finance are likely to benefit. The results of this study would be of value to scholars and academicians as a source of reference. Scholars interested in carrying out further studies in the same area would find the results of this study useful.

1.6 Scope of the study
The focus of this study was to investigate the effect of capital structure on financial sustainability of DTM s in Kenya. The survey was carried out on all the thirteen (13) licensed DTM s in Kenya (CBK, 2016).
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction
This chapter entails the review of literature on the proposed study topic and is organized in the following sub-headings, theoretical review, empirical review, literature overview and research gaps that need to be filled by the study and the conceptual framework. A number of studies have attempted to develop theoretical and empirical works to understand the effect of capital structure on financial sustainability of deposit-taking microfinance institutions in Kenya.

2.2. Theoretical Review.
A theoretical framework structures the sections of the study that need to be covered. This study was based on Modigliani-Miller (MM) theory and pecking order theory. The idea of the review was to study the existing literature on the topic and relate it to the research problem.

2.2.1 Modigliani-Miller (MM) Theory
The Modigliani–Miller theorem was done by Franco Modigliani and Merton Miller on capital structure in the 1950s. Arguably it formed the basis for modern thinking on capital structure. Modigliani – Miller proposition I without taxes states that in a perfect capital market, the capital structure does not affect a firm’s value. This is because there is no tax shield benefit. Modigliani- Miller proposition II with taxes showed that the value of a firm can be increased by the tax shield benefits associated with interest deduction. This is because the tax shield brings down the cost of debt, as more debt is used.

The theory states that a firm is in a better position if it uses debt rather than using internal capital as it will benefit from debt tax shields. The theory argues that the more debt is, the more a firm’s value increases hence giving the firm to achieve financial sustainability. This has been supported by several studies which found out a positive relationship between
either financial sustainability, or profitability or performance and debt financing (Ayayi and Sene, 2010; Joshua, 2015; Amarjit, Nalim and Neil, 2011).

This theory supports more usage of debt than other internal capital. It is against this theory that the effect of ordinary share capital, preferred share capital and retained earnings on financial sustainability was to be established.

2.2.2. Pecking Order Theory

The pecking order theory was first described by Thorleif Schjelderup-Ebbe in 1921. The pecking order theory states that firms have a particular preference order for capital used to finance their firms (Myers and Majluf, 1984). It further states that asymmetric information influences the choice between internal and external financing and between the issue of debt or equity because managers know more about their firms’ prospects, risks and value than outside investors.

In the presence of asymmetric information, this theory states that a firm will first use retained earnings, but issue debt if retained earnings was exhausted. The issue new equity would be the last alternative. It implies that if a firm finances itself internally, it means it is financially sustainable. If it finances itself through debt it is an indication that the firm is able to meet its commitments. If it finances itself in issuing new stock, it’s normally a negative indication i.e. not financially sustainable, as the firm means its stock is overvalued and it seeks to make money prior to its share price falling.

This implies financially sustainable firms do not necessarily need to depend much on equity. This is evidenced by some studies that have found negative relationship between either financial sustainability or profitability and debt financing (Bushan and Mohinder, 2016; Oke and Afolabi, 2011; Haruna, 2013), and positive relationship between either financial sustainability, profitability, performance and retained earnings (Ajanthan, 2013; Ouma, 2012; Kilonzo, 2003; Mwaka 2006).
This theory supports more usage of retained earnings but if exhausted, issue debt capital. It states that the usage of ordinary share capital and preference share capital should be the last resort, as it indicates a negative signal to a company’s performance. It is against this theory that the effect of debt, retained earnings, ordinary share capital and preference share capital on financial sustainability was to be established.

2.3 Empirical Review
In this section the researcher reviewed the existing literature surrounding financial sustainability of DTM s in light of capital structure effects.

2.3.1. Debt Capital and Financial Sustainability
Several studies have found that debt has positive, negative or insignificant effect on financial sustainability of DTM s. Ayayi and Sene (2010) tested the effect of selected portfolio at risk, interest rate, good management, productivity ratio, client outreach, age of microfinance on financial sustainability of MFIs in the world. A sample of 217 MFIs with 5 diamond ratings from MIX Market records from 1998 to 2006 was used. The findings were that high quality credit portfolio, together with the application of adequate high interest rates that give a reasonable profit and sound management are influential to the financial sustainability of MFIs.

Amarjit, Nahum and Neil (2011), carried out a study on the effect of capital structure on profitability of American service manufacturing firms. They used correlations and regression analysis. They found out that there is a positive relationship between short-term debt and profitability; between long-term debt and profitability; and between total debt and profitability in the manufacturing industry.

Bhushan and Mohinder (2016) studied on the impact of capital structure on firm's profitability through the sampled cement companies in India. The study was based on five years’ financial statements collected from PROWESS data base of CMIE. The study findings were that there is a significant negative relationship between debt and profitability meaning that companies with higher proportion of debt tend to have low profitability.
Oke and Afolabi (2011) assessed the impact of capital structure on industrial performance in Nigeria. The analysis was for five listed firms within a period of 9 years (1999-2007). Panel data regression model was used. The findings showed a negative relationship between firm's performance and debt financing. The result equally revealed negative relationship between firm's performance and equity financing as well as between firm's performance and debt equity ratio.

Haruna (2013) examined the role of capital structure on the performance of microfinance institution. Panel data from 14 MFIs in Uganda were used and revealed that Debt and grants were negatively correlated to operational and financial sustainability. In addition, he found that grants and debt had a significant damaging effect on MFI performance. He concluded that MFIs should minimize dependence on debts and grants and opt to accumulating share capital for long-term financial sustainability.

Hossain and Azam (2016) study was on financial sustainability of microfinance institutions (MFIs) of Bangladesh. Econometric research approach from 29 MFIs over the period 2008-2012 in Bangladesh was used. Only 4 MFIs have found less than 100% FSS among the 29 MFIs. The study found out that the ratio of capital assets, write-off and operating expense ratio influence greatly the financial sustainability of MFIs in Bangladesh. However, MFI size, Age of MFI, borrower per staff members, ratio of savings to total assets, debt equity ratio, outstanding loan to total assets and percentage of female borrowers had no substantial effect on financial sustainability of MFIs in Bangladesh during the period of study.

Kinde (2012) investigated the factors affecting financial sustainability of MFIs in Ethiopia for 14 MFIs over the period 2002-2010 from mix market. Multivariate regression model called ordinary least square was used in the study. He found out that microfinance breadth of outreach, depth of outreach, dependency ratio and cost per borrower influence substantially but capital structure and staff productivity has insignificant impact on financial sustainability of MFIs in Ethiopia.
The above studies have revealed mixed outcomes on the impact of debt on financial sustainability. They have interchangeably used financial sustainability, profitability and performance indicators.

2.3.2 Retained Earnings and Financial Sustainability

Several studies have found that retained earnings has either strong, weak positive or insignificant effect on financial sustainability of DTM. Khan and Zulfiqar (2012) assessed the dependability of future profitability on distributed and retained earnings. The study collected data of 86 quoted companies of Pakistan for the period from 2004 to 2009. Regression analysis and correlation analysis were used in the study to assess the relationship among the variables. The study findings revealed that retained earnings has a substantial impact on future earnings of firms of Pakistan.

Mulama (2014) study was to examine the factors affecting retained earnings in companies quoted on the Nairobi Stock Exchange. The data collected was for the period from 2009 to 2012 of 41 non-financial companies quoted at Nairobi Stock Exchange. Multiple regression models and SPSS tools were used in the study. The findings revealed that profitability had a weak positive relationship with retained earnings, while a weak negative relationship existed between retained earnings with growth opportunities and company size. Retained earnings had insignificant or no relationship with dividend payout and significant relationship with the tangibility of assets were also revealed. Strong negative relationship between retained earnings and leverage was also showed from the study.

Kilonzo (2003) studied on performance of micro and small enterprise in Nairobi. A sample of 60 SMEs based in Nairobi were selected using the survey method. The observation was that MSE’s financed by retained earnings perform better than those with debt in their financial structure. It was also observed that a relationship existed between financial structure of SMEs and their performance. It was concluded that SMEs with high sales volume posted high profitability and that they used more retained earnings.
Mwaka (2006) examined the relationship between financial structure and growth of SMEs. A sample of 60 SMEs from Central Business District of Nairobi was used. It revealed that the growth of SMEs was associated with their financial structure. In addition, there was a high positive correlation between proportion of capital/debt from MFIs and growth of SMEs in relation to assets. Similarly, a weak positive correlation was found between internal sources of initial capital and growth in terms of sales and employment.

Kanini (2016) studied on the effects of capital structure on financial performance of commercial banks in Kenya. Data was obtained from 2005 to 2014 (ten years). Data analysis was done using SPSS software. The model equation showed that growth in debt would affect financial performance positively leading to increase in profitability. The study also showed similar impact on retained earnings and preference shares on commercial banks’ financial performance. The study indicated that debt and retained earnings are more significant in predicting financial performance than preference shares which have insignificant factor at 95% confidence level. On the other hand, ordinary shares show different effect, that a unit increase would affect financial performance negatively by decreasing performance at a rate of - 1%.

The above studies have shown mixed results on the effect of debt, retained earnings, ordinary share capital and preferred capital on financial sustainability. They have interchangeably used financial sustainability, profitability and performance indicators.

2.3.3 Ordinary Share Capital and Financial Sustainability

Several studies have found that Ordinary Share Capital has positive, negative or insignificant effect on financial sustainability of DTMs. Waweru and Wanyoike (2016) studied on effect of capital structure on profitability of microfinance institutions in Nakuru town, Kenya. The data analysis comprised of both descriptive and inferential statistics. The study found that equity capital did not significantly influence profitability of MFIs. However, debt capital had a significant effect on the said profitability. Moreover, it was revealed that capital structure generally had a substantial effect on profitability of MFIs.
Lislevand (2012) analyzed the effect of capital structure on performance of microfinance institutions. Cross-sectional data from 403 MFIs in 73 countries was used. It was established that most of the surveyed MFIs were less financed through equity. Indeed, it was noted that the institutions used approximately a quarter of debt capital as equity in their capital structure. The study however noted that the proportion of equity to debt in the MFIs was not significant in MFI performance.

Siro (2013) examined the effect of capital structure on financial performance of firms. Longitudinal research design was employed. On focus were the 61 listed firm sat NSE. The study relied on secondary data which was obtained from NSE hand books and company financial statements. It was noted that there was an inverse relationship between capital structure and financial performance of the surveyed firms. Particularly, the study ascertained that higher debt ratio, that is lower equity ratio resulted to less return on equity. The study underlined the need of more equity capital employment in the firm rather than borrowing since the cost of debt financing may be higher.

Kanini (2016) studied on the effects of capital structure on financial performance of commercial banks in Kenya. Data was obtained from 2005 to 2014 (ten-year period). Data analysis was done using SPSS software version 21. The model equation showed that growth in debt would affect financial performance positively leading to increase in profitability. The study also showed similar effect on retained earnings and preference shares on commercial banks’ financial performance. The study indicated that debt and retained earnings are more significant in predicting financial performance than preference shares which have insignificant factor at 95% confidence level. On the other hand, ordinary shares show different effect, that a unit increase would affect financial performance negatively by decreasing performance at a rate of - 1%.

Baraza (2014) carried out a study with the purpose of establishing the relationship between funding structure and financial performance of Microfinance institutions in Kenya. The researcher used a descriptive research design. The target population in the research was 56
in Kenya. The study was from 2009-to-2013 (5 years). SPSS was used to analyze the data and figures and tables were used to present the findings. Multiple correlation analysis was adopted to examine the relationship between the variables under study. The study established that the capital structure used by MFIs affects the financial performance of the firm. Debt to equity ratio has a negative correlation with financial performance meaning the more debt a firm uses in financing its operations the poorer the financial performance it records.

Rotich (2015) examined the relationship between financial structure and financial performance of microfinance banks in Kenya. This study adopted a descriptive research design to illustrate the characteristics of the nine MFBs in Kenya as at 31st December, 2014 and the study covered a five-year period from 2010-2014. Data was analyzed using a regression analysis model with the help of a statistical software, SPSS version 21 and advanced Microsoft Excel 2010. The findings indicated that financial structure (total debt to equity ratio) positively affects the financial performance of the micro finance banks but the relationship was not significant.

Nyamsogoro (2010) examined on the financial sustainability in rural microfinance institutions in Tanzania. The study noted that how capital of micro financial institution is structured determines the performance of the institution. However, it was noted that different sources of capital do not improve performance. The findings also revealed that equity financing is relatively cheaper option and as such improves the performance of micro finance institutions.

The above studies have shown mixed results on the effect of debt, retained earnings, ordinary share capital and preferred capital on financial sustainability. They have interchangeably used financial sustainability, profitability and performance indicators.

2.3.4 Preferred Share Capital and Financial Sustainability

The literature on preferred stock suggests mixed motives and effects of preferred stock issues. Modigliani and Miller (1966) analyzed the effect of preferred stock on firm value
in electrical utilities companies, and found out that preferred stock is irrelevant to firm value. As dividends are not tax-deductible, the lower cost of preferred stock should be completely offset by the higher return required by common stockholders for assuming a higher degree of financial risk. If this holds, common stockholders should be indifferent to financing with preferred stock. Moreover, the literature suggested that the lack of tax-deductibility of preferred dividends have significant impact on which types of companies that issue preferred stock, and under what circumstances.

Rao and Moyer (1992) examined the common stock reaction of companies calling non-convertible preferred stock. They found out that there was no reaction when a company makes a partial repurchase of preferred stock outstanding. However, there was a positive announcement effect when preferred stock was fully removed from the capital structure. They attributed this to a signaling effect. The full removal of preferred stock signaled positive earnings prospects, as the company is expected to replace preferred stock with debt in order to utilize interest tax shields, which subsequently should increase firm value.

Heinkel and Zechner (1990) examined the impact of preferred stock on a company’s investment decisions. Their model showed that high debt ratios create incentives for underinvestment in accordance with (Myers, 1977), while high equity ratios created incentives for overinvestment, i.e. a free cash flow problem in accordance with (Jensen and Meckling, 1976). Another factor included in Heinkel and Zechner’s model was the dividend flexibility of the preferred stock, which Emanuel (1983) states is a key feature from the common stockholders’ point of view. Heinkel and Zechner (1990) showed that preferred stock enhances a company’s debt capacity, and hence resolve the underinvestment problem, if debt is replaced with preferred stock in the capital structure.

Kanini (2016) studied on the effects of capital structure on financial performance of commercial banks in Kenya. Data was obtained from 2005 to 2014 (ten years). Data analysis was done using SPSS software. The model equation showed that growth in debt would affect financial performance positively leading to increase in profitability. The study
also showed similar impact on retained earnings and preference shares on commercial banks’ financial performance. The study indicated that debt and retained earnings are more significant in predicting financial performance than preference shares which have insignificant factor at 95% confidence level. On the other hand, ordinary shares show different effect, that a unit increase would affect financial performance negatively by decreasing performance at a rate of - 1%.

The above studies have shown mixed results on the effect of debt, retained earnings, ordinary share capital and preferred capital on financial sustainability. They have interchangeably used financial sustainability, profitability and performance indicators.

2.5 Conceptual Framework

A conceptual framework helps a researcher in clarifying the proposed relationships between variables in a given study. It shows a graphical and diagrammatical link between the independent variables and the dependent variable. It also specifies the dependent and independent variables as well as intervening variables. The independent variables have a direct influence on the dependent variable. The dependent variable was financial sustainability of MFIs in terms of operational self-sufficiency ratio while debt, retained earnings, ordinary share capital and preferred share capital were the independent variables.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt</td>
<td>Financial sustainability of MFIs in Kenya</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>• Operational self-sufficiency ratio</td>
</tr>
<tr>
<td>Ordinary share capital</td>
<td></td>
</tr>
<tr>
<td>Preferred share capital</td>
<td></td>
</tr>
</tbody>
</table>

Source (Author, 2017)
CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction
This chapter defines methodology that was used for collecting and analyzing the data in the study. It describes the research design, population, sample and sampling techniques, instruments for data collection and procedures, and data processing as well as data analysis methods suitable to the achievements of the specified objectives.

3.2 Research Design
The study adopted empirical survey. This involved gathering data and analyzing it using multiple linear regression models. The elements and the variables were for a maximum period of 10 years (2006-2015). The association between the independent variables and the dependent variable were determined using correlation and regression methods.

3.3 Target Population
Flick (2009) defines target population as the entire group of people, events or things that the researcher intends to investigate. The target population in the study involved all the 13 deposit-taking microfinance institutions in Kenya (CBK, 2016).

3.4 Sampling Frame
The study covered all the 13 deposit-taking microfinance institutions in Kenya. Since the population number was small, the study used all the 13 registered DTMFs in Kenya. Therefore, there was no sampling of DTMFs to come up with a sample size but census.

3.5 Data Collection Instruments and Procedures
Secondary data was collected from published financial reports of the Central Bank of Kenya and any other necessary reports on the DTMFs financial reports for the years of study. The instruments used were tabulation of parameters. Cooper and Schindler (2003) said that through note taking, a researcher can choose what is relevant in the study. A well-designed table to collect the relevant information was prepared (See appendix II).
3.6 Data Processing and Analysis

Tables and graphs were used to present the research findings. The findings obtained were discussed and formed the basis for the research findings, conclusion and recommendations.

According to Freedman (2005) multiple linear regression analysis is an extension of simple linear regression analysis, used to examine the relationship between two or more independent variables and a single continuous dependent variable. The multiple linear regression equation is as follows:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_p X_p \]

It is on this basis that the following multiple regression model will be applied

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon \]

Whereby \( Y \) = Operational self-sufficiency ratio (Dependent Variable)

\( X_1 \)= Proportion of debt (Independent Variable)

\( X_2 \)= Proportion of retained earnings (Independent Variable)

\( X_3 \)= Proportion of ordinary share capital (Independent Variable)

\( X_4 \)= Proportion of preferred share capital (Independent Variable)

While \( \beta_1, \beta_2, \beta_3 \) and \( \beta_4 \) are coefficients of determination and \( \epsilon \) is the error term.
CHAPTER FOUR

4.0 RESULTS

4.1 Introduction
This chapter focuses on discussing the study finding emanating from the research objective of establishing the effect of capital structure on financial sustainability of DTMs in Kenya. The results are presented in form of tables and figures. The chapter also presents the regression model which was used to make conclusions and recommendations in the subsequent chapters.

4.2 Completeness of Secondary Data
The data for this study was obtained by examining all the micro financing institution in Kenya. Therefore, there was no sampling but census. The data was obtained from the publications made by the individual institution with a written request to the executive managers. Five of the institutions didn’t have the published financial statements in the public domain however the management provided all the necessary information for the study. The five included Maisha Microfinance Bank Limited, Choice Microfinance Bank Limited, Daraja Microfinance Bank Limited, Century Microfinance Bank Limited and Remu Microfinance Bank Limited. Therefore, the response rate was 13 (100%).

4.3 Capital Structure of DTMSs in Kenya
The capital sources under the investigation were ordinary share capital, preferred share capital, retained earnings and debt. All the deposit-taking micro financing institutions under the study utilized the four sources of finance but at varied rates. The average score for each component was computed for the purposes of calculating the proportions.
To determine the proportionate of each capital source per institution, the following equation was used.

\[ S_1 = \frac{S}{V} \]

Whereby;
$S_i$ is the proportion of a capital structure component.

$S$ is the amount of the capital structure component and
$V$ is the sum total of the capital structure components

While for the Operational Self Sufficiency (OSS), the following equation was used.

$$OSS = \frac{\text{Operating Revenue}}{\text{Operating Cost} + \text{Financing Cost} + \text{Loan Loss Provisions}}$$

The summary findings of the different components of capital structure and operational self-sufficiency are summarized in table 4.1, which shows the debt, retained earnings, ordinary share capital and preferred share capital proportions for each deposit-taking microfinance institution.

**Table 4.1: The Summary of the Proportions of the Different Components and Operational Self Sufficiency**

<table>
<thead>
<tr>
<th>Bank</th>
<th>DEBT</th>
<th>RE</th>
<th>OSC</th>
<th>PSC</th>
<th>OSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UWEZO Limited</td>
<td>0.503</td>
<td>0.237</td>
<td>0.176</td>
<td>0.083</td>
<td>1.889</td>
</tr>
<tr>
<td>Kenya women Finance trust</td>
<td>0.676</td>
<td>0.103</td>
<td>0.173</td>
<td>0.048</td>
<td>1.080</td>
</tr>
<tr>
<td>Faulu Kenya Limited</td>
<td>0.600</td>
<td>0.040</td>
<td>0.266</td>
<td>0.093</td>
<td>1.024</td>
</tr>
<tr>
<td>SmeP Limited</td>
<td>0.252</td>
<td>0.430</td>
<td>0.202</td>
<td>0.117</td>
<td>0.955</td>
</tr>
<tr>
<td>REMU Limited</td>
<td>0.784</td>
<td>0.024</td>
<td>0.095</td>
<td>0.097</td>
<td>0.934</td>
</tr>
<tr>
<td>Maisha Limited</td>
<td>0.219</td>
<td>0.186</td>
<td>0.305</td>
<td>0.290</td>
<td>0.779</td>
</tr>
<tr>
<td>Century Limited</td>
<td>0.255</td>
<td>0.280</td>
<td>0.302</td>
<td>0.163</td>
<td>0.765</td>
</tr>
<tr>
<td>Daraja Limited</td>
<td>0.368</td>
<td>(0.028)</td>
<td>0.292</td>
<td>0.340</td>
<td>0.737</td>
</tr>
<tr>
<td>Rafiki Limited</td>
<td>0.442</td>
<td>(0.078)</td>
<td>0.368</td>
<td>0.190</td>
<td>0.574</td>
</tr>
<tr>
<td>SUMAC Limited</td>
<td>0.211</td>
<td>0.069</td>
<td>0.587</td>
<td>0.134</td>
<td>0.564</td>
</tr>
<tr>
<td>U &amp; I Limited</td>
<td>0.149</td>
<td>0.069</td>
<td>0.587</td>
<td>0.196</td>
<td>0.429</td>
</tr>
<tr>
<td>Caritas Limited</td>
<td>0.435</td>
<td>(0.185)</td>
<td>0.402</td>
<td>0.163</td>
<td>0.263</td>
</tr>
<tr>
<td>Choice Limited</td>
<td>0.352</td>
<td>(0.164)</td>
<td>0.390</td>
<td>0.257</td>
<td>0.071</td>
</tr>
</tbody>
</table>
Based on the findings and summary in table 4.1 it was observed that 76.9% of the DTMs had not earned enough revenue to cover the actual financing direct costs, which include the total operating costs, loan loss provisions and the financing costs but excluding the cost of capital. Only a quarter of the DTMs could service their direct costs, these were Faulu Kenya limited, Kenya Women Finance Trust and Uwezo limited.

4.4 The Data Diagnostic Tests for Multiple Regression

These were various aspects of the data distribution of the predicted response variable score and the nature of the underlying relationship among the variables. They include the correlation, normality, linearity and homoscedasticity tests. The violation of any of these assumptions implies the impropriations of using multiple regressions in analyzing the data.

4.4.1: Correlation Analysis

Correlation is defined as the relationship between two or more variables. A positive or strong correlation indicates the extent to which those variables increase or decrease in parallel. Negative or weak correlation indicate the extent to which one variable increase as the other decrease. The value of +1.00 indicate a perfect positive correlation while a value of -1.00 indicate a perfect negative correlation. A value of 0.00 means that there is no relation between the variables being tested (Orodho, 2003). The study used Pearson R correlation coefficient to determine how the variables associate.

**Table 4.2 Covariance and Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>OSS</th>
<th>DEBT</th>
<th>RE</th>
<th>OSC</th>
<th>PSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSS</td>
<td>1</td>
<td>0.431</td>
<td>0.626</td>
<td>-0.285</td>
<td>-0.442</td>
</tr>
<tr>
<td>DEBT</td>
<td>0.431</td>
<td>1</td>
<td>-0.177</td>
<td>-0.443</td>
<td>-0.731</td>
</tr>
<tr>
<td>RE</td>
<td>0.626</td>
<td>-0.177</td>
<td>1</td>
<td>0.054</td>
<td>-0.094</td>
</tr>
<tr>
<td>OSC</td>
<td>-0.285</td>
<td>-0.443</td>
<td>0.054</td>
<td>1</td>
<td>0.226</td>
</tr>
<tr>
<td>PSC</td>
<td>-0.442</td>
<td>-0.731</td>
<td>-0.094</td>
<td>0.226</td>
<td>1</td>
</tr>
</tbody>
</table>
Pearson Correlation which ranges between -1 and +1, reflects the degree of linear relationships between the variables. Using Pearson correlation coefficient (r) and p-value analysis, a correlation is considered significant when the probability value is below 0.05.

The results in table 4.2 gave out the summary of the variables relationship by showing the magnitudes and the direction of the relationship. There was a strong positive correlation (r=0.626) between the operational self-sufficiency and the retained earnings, which was statistically significant at α=5%, with a P-value of 0.011. The debt was the second variable with a positive correlation with operational self-sufficiency (r=0.431) however not statistically significant at α=5%. There was a negative correlation between the operational self-sufficiency and both the ordinary share capital and preferred share capital with r=−0.285 and r=−0.442 respectively.

4.4.2 The Normality Test

The test was done to find out if the response variable was normally distributed. The symmetric and bell shape distribution of the dependent variable is an indication and evidence that the normality assumption is realized.

The test was carried out using the statistical package for social sciences (SPSS) and its outcome is summarized in figure 4.2

<table>
<thead>
<tr>
<th></th>
<th>OSS</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td>0.071</td>
<td>0.011</td>
<td>0.173</td>
<td>0.065</td>
</tr>
<tr>
<td>DEBT</td>
<td>0.071</td>
<td>.</td>
<td>0.281</td>
<td>0.065</td>
<td>0.002</td>
</tr>
<tr>
<td>RE</td>
<td>0.011</td>
<td>0.281</td>
<td>.</td>
<td>0.431</td>
<td>0.380</td>
</tr>
<tr>
<td>OSC</td>
<td>0.173</td>
<td>0.065</td>
<td>0.431</td>
<td>.</td>
<td>0.229</td>
</tr>
<tr>
<td>PSC</td>
<td>0.065</td>
<td>0.002</td>
<td>0.380</td>
<td>0.229</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>
Figure 4.1: Normality test

The test for normality indicated the response variable was fairly normally distributed and hence it was aptly to use the regression analysis. The residuals should be normally distributed about the predicted dependent variables.

4.4.2 The Linearity Test

The linearity is a multiple regression assumption done to check the relationship between the residues and the predicted dependent variable. The residuals should have a straight line relationship with the predicted dependent variable scores. The test outcome is summarized in figure 4.3.
Figure 4.2: Linearity test

The residuals straight line relationship with the predicted dependent variable score confirmed the linearity.

4.4.3 The Homoscedasticity Test
The variance of the residuals about predicted dependent variables scores were the same for all predicted scores.

Therefore, the assumptions of multiple regressions which include normality, homoscedasticity, independence of residuals and predictor variables were tested and satisfied.
4.4 Multiple Regression Analysis

The essence of model testing is to inform how much of the variance of the dependent variable is explained by the independent variables (model). The results of multiple regression analysis are shown in the subsequent sections.

4.4.1: Model Summary/Coefficient of Determination

The value of the adjusted R Square was applied and table 4.3 gives the summary of the findings

Table 4.3: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.839</td>
<td>.704</td>
<td>.556</td>
<td>.2989</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PSC, RE, OSC, Debt

b. Dependent Variable: OSS

The correlation coefficient (R) shows the relationship between the study variables. From the table 4.3 shown above there was a positive relationship between the variables as indicated by 0.839. The coefficient of determination ($R^2$) tells how much of the variance of the dependent variable (financial sustainability) was explained by the model (which included the proportionate application of debt, retained earnings, OSC and Preferred share capital as the source of financing). The $R^2$ of 0.704 means there will be a variation of 70.4% in OSS due to changes in the independent variables.

The intent of the study was to find out how different structures of the capital influence the Microfinance Institution financial stability and sustainability. The institution could raise its capital from the retained earnings, ordinary shares, preferred shares, or debt. Therefore, the dependent variable was the microfinance financial stability measured through Operating Self Sufficiency (OSS) whereby the value of 1.1 indicated a financial stability. The independent variables were the different capital sources. Model summary indicated that 55.6% of the chosen factors could explain the financial sustainability variation.
4.4.3 Model Coefficients for the Multiple Regression Analysis
Regression model was used to establish the relationship between the independent variables and the dependent variables. Coefficient of determination explains the extent to which changes in the dependent variables can be explained by the change in the independent variables or the percentage of variation in the dependent variable (OSS) that is explained by all the four independent variables (Debt, retained earnings, ordinary share capital and preferred share capital).

The standardized coefficients are the estimates which result from regression analysis that have been standardized so that the variations in the dependent and the dependent variables are one. Unstandardized coefficients represent the amount by which dependent variable changes if the independent variable is changed by one unit keeping other independent variables constant.

This section explains the effect of the predictor variables on the response variable when tested at the same time. The multiple regression equation of DTM’s financial sustainability as predicted by the retained earnings, ordinary share capital, preference share capital and borrowing all put together was run in SPSS version 21 statistical software.
Table 4.4: Regression coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>.154</td>
<td>.643</td>
<td>.239</td>
<td>.817</td>
</tr>
<tr>
<td>Debt</td>
<td>1.265</td>
<td>.740</td>
<td>.569</td>
<td>1.709</td>
</tr>
<tr>
<td>RE</td>
<td>1.630</td>
<td>.459</td>
<td>.738</td>
<td>3.547</td>
</tr>
<tr>
<td>OSC</td>
<td>-.263</td>
<td>.660</td>
<td>-.087</td>
<td>-.398</td>
</tr>
<tr>
<td>PSC</td>
<td>.341</td>
<td>1.647</td>
<td>.063</td>
<td>.207</td>
</tr>
</tbody>
</table>

a. Dependent variable: Operational Self-Sufficiency

According to the findings, debt ($X_1$, $B=0.569$, P-value=$0.026$), Retained Earnings ($X_2$, $B=0.738$, P-value=$0.008$), Ordinary share capital ($X_3$, $B=-0.087$, P-value=$0.701$), and Preferred share capital ($X_4$, $B=0.063$, P-value=$0.841$). Debt and Retained earnings were the only one significant since the p-value was less than 0.05. The other two variables (ordinary share capital and preferred share capital) were insignificant as their p-values were more than 0.05.

Therefore, the multiple regression analysis becomes:

$$Y = 0.154 + 0.569X_1 + 0.738X_2 - 0.087X_3 + 0.063X_4 + \epsilon$$

Where $Y$ is the Operational Self Sufficiency, $X_1$ is the Debt, $X_2$ is the Retained earnings, $X_3$ is the Ordinary share capital and $X_4$ is the Preferred share capital while $\epsilon$ is the error term.
The model revealed a positive relationship between debt and financial sustainability by a factor of 0.569. A unit change in debt led to a change in financial sustainability by a factor of 0.569. This is the variable which took the second lion share.

There was also a positive relationship between retained earnings and financial sustainability by a factor of 0.738 in the model. A unit change in retained earnings led to a change in financial sustainability by a factor of 0.738. This is the variable which took the lion share.

There was a negative relationship between ordinary share capital and financial sustainability by a factor of 0.087. Therefore, a unit change in ordinary share capital would lead to a change in financial sustainability by a factor of 0.087

The model revealed a positive relationship between preferred share capital and financial sustainability by a factor of 0.063. Thus, a unit change in preferred share capital would lead to a change in financial sustainability by a factor of 0.063.

Based on the regression model financial sustainability level was 0.154 in the absence of the independent variables in the model. The financial sustainability increased by 0.569 for each unit increase of the debt. It increased by 0.738 for each unit increase of the retained earnings, but decreased by 0.087 for each unit increase of the ordinary share capital and finally it increased by 0.063 for each unit increase of the preferred shares as a source of finance. Therefore, the debt and the retained earnings had the highest impact on financial sustainability of the microfinance institutions in Kenya by the time of this study.

4.5 The Analysis of Variance (ANOVA)

One way analysis of variance was contacted to compare the variability in scores (financial sustainability of the deposit-taking microfinance institutions) due to different source of funding composition.
The F ratio test which represents the variance between the groups, divided by the variance within the groups, a significant F test indicates that there is more variability between the groups; that is the independent variables, in this study the different financing components.

### Table 4.5: Analysis of Variance (ANOVA)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>1.702</td>
<td>4</td>
<td>.425</td>
<td>4.761</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>.715</td>
<td>8</td>
<td>.089</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.416</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PSC, RE, OSC, Debt  
b. Dependent Variable: OSS

The ANOVA table indicated that the independent variables influenced the dependent variable significantly since the tabled F-test value was 3.84 with the computed $f_{(0.025,4,8)}(12) = 4.76$, with a p-value of 0.029 which is less than the critical value ($\alpha = 0.05$). Therefore, the observed variance among the funding sources can’t be attributed to chance.
CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction
This chapter presents the summary of findings after the analysis of the research and conclusion. Different deposit-taking microfinance institutions deployed different proportions of capital structures resulting to different levels of financial sustainability. The sources of capital under the study were; debt, retained earnings, ordinary share capital and preferred share capital. The multiple regression analysis method was used to test the effect of capital structure on financial sustainability of the deposit taking microfinance institutions in Kenya. Model summary indicated that 55.6% of the chosen factors could explain the financial sustainability variation.

All the multiple assumptions were tested and observed. Both R and SPSS statistical software were used to manage and analyze the data. The multiple regression was contacted and the findings were as discussed below as per each specific objective.

5.2 The Impact of Debt on the Financial Sustainability of DTMsh in Kenya
The first specific objective was to determine the impact of debt on the financial sustainability of the deposit taking microfinance institutions. On the multiple regression model debt posted a positive effect on financial sustainability.

This was in agreement with Modigliani–Miller theorem done by Franco Modigliani and Merton Miller on capital structure which argued that a firm has an advantage in using debt rather than using internal capital as they can benefit from debt tax shields. This meant the micro finance should never shy away from utilizing debt in financing the institutions’ operational.

Amarjit, Nahum and Neil (2011), carried out a study on the effect of capital structure on profitability of American service manufacturing firms. They used correlations and regression analysis. The study found out that there was a positive relationship between
short-term debt and profitability; between long-term debt and profitability; and between total debt and profitability in the manufacturing industry. The findings of the current study support their conclusion that there is positive relationship between debt and financial sustainability.

Bhushan and Mohinder (2016) studied on the impact of capital structure on firm's profitability through the sampled cement companies in India. The study findings were that there was a significant negative relationship between debt and profitability meaning that companies with higher proportion of debt tend to have low profitability. This was in disagreement with the current study.

5.3 The Influence of Retained Earnings on the Financial Sustainability of DTMs in Kenya

The second specific objective of this study was to assess the influence of retained earnings on the financial sustainability of deposit taking microfinance institutions in Kenya. Based on multiple regression analysis, the retained earnings had the highest positive impact on the financial sustainability.

The findings were also in line with the pecking order theory first described by Thorleif Schjelderup-Ebbe (1921). According to this theory in the presence of asymmetric information, a firm will prefer internal finance through retained earnings, but would issue debt if internal finance was exhausted in financing her operations. This also concurred with Khan and Zulfiqar (2012) study whose findings revealed that retained earnings has a significant and strong impact on future earnings of firms of Pakistan. This meant the microfinance institutions should nurture the culture of ploughing back the profits into business capital to have a cutting edge in financial sustainability.

Mulama (2014) study was to examine the factors affecting retained earnings in companies quoted on the Nairobi Stock Exchange. The findings revealed that profitability had a weak positive relationship with retained earnings, while a weak negative relationship existed between retained earnings with growth opportunities and company size. Retained earnings
had insignificant or no relationship with dividend payout and significant relationship with the tangibility of assets were also revealed. Strong negative relationship between retained earnings and leverage was also showed from the study. The current study did not support Mulama’s argument.

5.4 The Effect of Ordinary Share Capital on Financial Sustainability of DTM$s in Kenya

The third specific objective of this study was to examine the impact of ordinary share capital on financial sustainability of deposit-taking microfinance institutions. The ordinary share capital had an inverse relationship with finances sustainability.

The findings were also in line with the pecking order theory first described by Thorleif Schjelderup-Ebbe (1921). According to this theory in the presence of asymmetric information, a firm will prefer internal finance through retained earnings, but would issue debt if internal finance was exhausted in financing her operations.

These results were in tandem with Waweru and Wanyoike (2016) research findings that equity capital did not significantly influence profitability of MFIs. However, debt capital had a significant effect on the said profitability. This meant that in the presence of other sources of capital, the ordinary share capital should be avoided as a source of finance.

Siro (2013) examined the effect of capital structure on financial performance of firms. Longitudinal research design was employed. The study ascertained that higher debt ratio, that is lower equity ratio resulted to less return on equity. The study underlined the need of more equity capital employment in the firm rather than borrowing since the cost of debt financing may be higher. This did not concur with the current study.

5.5 The Impact of Preferred Share Capital on Financial Sustainability of DTM$s in Kenya.

The forth specific objective of this study was to investigate the impact of preferred share capital on financial sustainability of deposit-taking microfinance institutions in Kenya. On the multiple regression model it had a positive effect with financial sustainability.
The findings were also in line with the pecking order theory first described by Thorleif Schjelderup-Ebbe (1921). According to this theory in the presence of asymmetric information, a firm will prefer internal finance through retained earnings, but would issue debt if internal finance was exhausted in financing her operations.

These findings were in line with Ayayi and Sene (2010) findings that a high quality credit portfolio, coupled with the application of sufficiently high interest rates that allow a reasonable profit and sound management were instrumental to the financial sustainability of MFIs. According to Haruna (2013). MFIs must reduce dependence on debts and grants and resort to accumulating share capital for long-term financial sustainability. Generally, it was revealed that capital structure generally had a significant effect on profitability of DTMs.

Kanini (2016) studied on the effects of capital structure on financial performance of commercial banks in Kenya. The study indicated that debt and retained earnings are more significant in predicting financial performance than preference shares which have insignificant factor at 95% confidence level. On the other hand, ordinary shares show different effect, that a unit increase would affect financial performance negatively by decreasing performance at a rate of -1%. This did not concur with the current study.

An OSS of at least 110% defines a MFI’s ability to meet both operating and financial costs. Based on the study findings 76.9% of the deposit taking microfinance institutions had not earned enough revenue to cover the actual financing direct costs, which included the total operating costs, loan loss provisions and the financing costs but excluding the cost of capital. Only a quarter of the institutions could service their direct costs, these were Faulu Kenya limited, Kenya women finance trust and Uwezo limited. The microfinance institutions that posted dismal performance were U &I limited, Caritas limited and choice limited.
CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction
This chapter presents conclusions derived from the findings of the study, recommendations and areas for further study. Based on the study findings all the chosen capital components affected the financial sustainability of the deposit-taking microfinance institution. However, at varied magnitude and direction. Both the debt and retained earnings significantly and positively affected the financial sustainability of the deposit-taking microfinance institutions in Kenya. Preferred share capital insignificantly and positively affected the financial sustainability of the DTMs, while the ordinary share capital affected the financial sustainability negatively but was statistically insignificant at $\alpha=5\%$.

6.2 Conclusion
The study examined the four components of capital structure (debt, retained earnings, ordinary share capital and preferred share capital) affecting the financial sustainability of deposit-taking microfinance institutions in Kenya. Based on the findings the study made conclusions as discussed in the following subsequent sections.

6.2.1 The Impact of Debt on the Financial Sustainability of DTMs in Kenya
From the discussions, the study concluded that debt had substantial impact on the financial sustainability of DTMs in Kenya. The study therefore recommended that managers should consider usage of a higher proportion of debt in the capital structure. This will enable the DTMs to enjoy tax shield benefits which normally reduces the cost of capital. The multiple regression model used posted the second highest effect on the financial sustainability. This meant that the financial sustainability would increase with a proportionate increase in debt when all other factors are held constant.
6.2.2 The Influence of Retained Earnings on the Financial Sustainability of DTMs in Kenya

The study concluded that retained earnings was the most influential factor when regressed holding other factors constant. In addition, the study concluded that retained earnings combined with debt brought out huge financial sustainability synergy in a multiple regression model and also that they were the three key factors that could predict the deposit taking microfinance financial sustainability without loss of generality of the full model. Therefore, the DTMs should embrace the culture of ploughing back the profits into the business capital to have a cutting edge in financial sustainability.

6.2.3 The Effect of Ordinary Share Capital on Financial Sustainability of DTMs in Kenya

The study observed that ordinary share capital posted a negative impact on financial sustainability under multiple regression analysis. The study discouraged the usage of ordinary share capital. This is because there a unit increase in ordinary share capital would lead to a decrease in financial sustainability.

6.2.4 The Impact of Preferred Share Capital on Financial Sustainability of DTMs in Kenya.

From the discussions, the study concluded that preferred share capital had a positive impact on the financial sustainability of DTMs in Kenya. The multiple regression model used posted the third highest effect on the financial sustainability. The study therefore recommended that preferred share capital can be used when retained earnings and debt are fully exhausted.

6.3 Recommendations

The study aimed at making recommendations for policy makers, i.e government and Central Bank of Kenya, recommendation for practice by managers in the deposit taking microfinance institutions and recommendations for academia on contribution to theory and empirical orientation. Based on the findings and conclusions, the study made the following
proposals on how deposit-taking microfinance institutions can successfully achieve financial sustainability and suggestions for further study.

6.3.1 Recommendation for Policy Makers

Based on the findings of the study, the researcher recommends that the government through the Central Bank of Kenya should set minimum debt usage in every deposit-taking microfinance institution. In addition, the Central Bank of Kenya should consider capping the cost of borrowing further to enable more institutions borrow and stay afloat. This will ensure more DTMs use a larger proportion of debt in their capital structure hence have a positive impact on financial sustainability.

6.3.2 Recommendation for practice

The results of the study reveal the preferred order for capital use in the DTMs. The researcher recommends to the managers of Deposit-Taking Microfinance Institutions to consider ploughing back the profits realized back to the business to maintain more liquidity ratio for lending as the best and popular practice. If retained earnings are exhausted, they should consider usage of debt capital after which preferred share capital should be the third option. In addition, the study recommends that the managers should combine varied proportion of debt, retained earnings and preferred share capital as it can bring out the best synergetic capital components combination for predictable positive results. In addition, it is recommended that DTMs maintain low proportion of ordinary share capital which proved to be antagonistic to financial sustainability.

6.3.2 Recommendation to academia

The conclusions of the study were made within the framework of its scope. However, the study established that the model summary indicated that, out of the chosen factors only 55.6% could explain the financial sustainability variation. This means that there were more factors that influenced the financial sustainability of the deposit-taking microfinance institutions. To improve on DTM’s financial sustainability, and based on the findings of the study, the researcher suggests that the same study be carried out but explore other
factors that may influence the DTM’s financial sustainability given the fact that the chosen variables could explain 55.6% variation of the financial variability.
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Mulama L.W (2014) The determinants of retained earnings in companies listed at Nairobi Securities exchange. A research project, University of Nairobi


APPENDICES

Appendix I: List of Licensed Deposit-Taking Microfinance Institutions in Kenya.

1. Faulu Microfinance Bank Limited
Postal Address: P. O. Box 60240 – 00200, Nairobi
Telephone: +254-020-3877290/3/7, 38721883/4
Website: www.faulukenya.com
Physical Address: Faulu Kenya House, Ngong Lane, Off Ngong Road
Date Licensed: 21st May 2009
Branches: 39

2. Kenya Women Microfinance Bank Limited
Postal Address: P. O. Box 4179-00506, Nairobi
Telephone: +254-020-2470272-5, 2715334/5, 2755340/42
Website: www.kwftMFI.com
Physical Address: Akira House, Kiambere Road, Upper Hill, Nairobi
Date Licensed: 31st March 2010
Branches: 31

3. SMEP Microfinance Bank Limited
Postal Address: P. O. Box 64063-00620 Nairobi
Telephone: 020-3572799 / 26733127 / 3870162 / 3861972 / 2055761
Website: www.smep.co.ke
Physical Address: SMEP Building - Kirichwa Road, Off Argwings Kodhek Road, Nairobi.
Date Licensed: 14th December 2010
Branches: 7

4. Remu Microfinance Bank Limited
Postal Address: P. O. Box 20833-00100, Nairobi
Telephone: 2214483/2215384/ 2215387/8/9, 0733-554555
Physical Address: Finance House, 14th Floor, Loita Street, Nairobi
Date Licensed: 31st December 2010
Branches: 3

5. Rafiki Microfinance Bank Limited
Postal Address: 12755-00400, Nairobi
Telephone: 020-216 6401
Website: www.rafiki.co.ke
Physical Address: Rafiki House, Biashara Street, Nairobi
Date Licensed: 14th June 2011
Branches: 17

6. Uwezo Microfinance Bank Limited
Postal Address: 1654-00100, Nairobi
Telephone: 2212919
Website: www.uwezoMFI.com
Physical Address: Rehani House, 11th Floor, Koinange Street, Nairobi
Date Licensed: 8th November 2010
Branches: 2

7. Century Microfinance Bank Limited
Postal Address: P. O. Box 38319 – 00623, Nairobi
Telephone: +254-020-2664282
Physical Address: K.K. Plaza 1st Floor, New Pumwani Road- Gikomba, Nairobi
Date Licensed: 17th September 2012
Branches: 2

8. Sumac Microfinance Bank Limited
Postal Address: P. O. Box 11687-00100, Nairobi
Telephone: (254)-020 -2212587
Website: www.sumacmicrofinancebank.co.ke
Physical Address: Consolidated Bank House 2nd Floor, Koinange Street, Nairobi
Date Licensed: 29th October 2012
Branches: 4

9. U&I Microfinance Bank Limited
Postal Address: P.O. Box 15825 – 00100, Nairobi
Telephone: (254) -020- 2367288, Mobile: 0713 112 791
Website: www.uni-microfinance.co.ke
Physical Address: Asili Complex, 1st Floor, River Road, Nairobi
Date Licensed: 8th April 2013
Branches: 2

10. Daraja Microfinance Bank Limited
Postal Address: P.O. Box 100854 – 00101, Nairobi
Telephone: (254) -020 -3879995, Mobile: 0733 988888
Website: www.darajabank.co.ke
Physical Address: Karandini Road, off Naivasha Road, Nairobi
Date Licensed: 12th January 2015
Branches: 1

11. Choice Microfinance Bank Limited
Postal Address: P.O. Box 18263 – 00100, Nairobi
Telephone: (254) 020 3882206, Mobile: 0724 308 000
Website: www.choicemfb.com
Physical Address: Siron Place, Ongata Rongai, Magadi Road, Nairobi
Date Licensed: 13th May 2015
Branches: 1

12. Caritas Microfinance Bank Limited
Postal Address: P.O. Box 15352 – 00100, Nairobi
Telephone: (254) 020 5151500
Website: www.caritas-mfb.co.ke
Physical Address: Cardinal Maurice Otunga Plaza, Ground Floor, Kaunda Street, Nairobi
Date Licensed: 2\textsuperscript{nd} June, 2015
Branches: 1

13. Maisha Microfinance Bank Limited
Postal Address: P.O. Box 49316 – 00100, GPO Nairobi
Telephone: (254) 020 2220648, Mobile: 0792 002 300
Physical Address: 2\textsuperscript{nd} Floor, Chester House-Commercial Wing, Koinange Street, Nairobi
Date Licensed: 21\textsuperscript{st} May 2016
Branches: 1