FINANCIAL LEVERAGE AND PROFITABILITY AMONG DEPOSIT-TAKING MICROFINANCE INSTITUTIONS IN NAIROBI CITY COUNTY, KENYA

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D53/CTY/PT/39155/2017

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (FINANCE OPTION) OF KENYATTA UNIVERSITY

OCTOBER 2020
DECLARATION

I declare this project is my unique work and has not been presented for a degree or other honour in any other University. No piece of this project ought to be duplicated without the permission of the author and of Kenyatta University.

Signature…………………………………………………………Date…………………………

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Registration No. D53/CTY/PT/39155/2017

Declaration by supervisor:

I confirm that the work in this project was done by the candidate under my supervision.

Signature………………………………….. Date…………………………

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DEDICATION

I dedicate this research project to my parents Mr. and Mrs. Okumu, I really thank you for being a great source of encouragement and inspiration in my life and always believing in me.
ACKNOWLEDGEMENT

I take this opportunity to extend my unique appreciation to my supervisor Dr. Ambrose Jagongo for the sacrifice, time and guidance in the project writing. I genuinely value your precious direction and nonstop remarks, remedies and thoughts that made this project successful. Moreover, I take this opportunity to extent my thanks and ardent gratitude to my friend and the entire staff and management of Kenyatta University.
TABLE OF CONTENT

DECLARATION........................................................................................................................................... ii

DEDICATION ............................................................................................................................................... iii

ACKNOWLEDGEMENT .............................................................................................................................. iv

TABLE OF CONTENT ............................................................................................................................... v

LIST OF TABLES ......................................................................................................................................... x

LIST OF FIGURES ....................................................................................................................................... xi

OPERATIONAL DEFINITION OF TERMS ................................................................................................. xii

ABBREVIATION AND ACRONYMS .......................................................................................................... xiv

ABSTRACT ................................................................................................................................................... xv

CHAPTER ONE ............................................................................................................................................. 1

INTRODUCTION .......................................................................................................................................... 1

1.1 Background of the Study ...................................................................................................................... 1

1.1.1 Financial Leverage ......................................................................................................................... 2

1.1.2 Firm Size ........................................................................................................................................ 5

1.1.3 Profitability ..................................................................................................................................... 6

1.1.4 Deposit-Taking Microfinance Institutions ...................................................................................... 7

1.2 Statement of the Problem .................................................................................................................... 9

1.3 Objective of the Study ........................................................................................................................ 10

1.3.1 General Objective .......................................................................................................................... 10

1.3.2 Specific Objectives ........................................................................................................................ 11
1.3.3 Research Questions ................................................................. 11
1.4 Significance of the Study ............................................................. 11
1.5 Scope of the Study ....................................................................... 12
1.6 Limitations of the Study ............................................................... 13
1.7 Organization of the study .............................................................. 13

CHAPTER TWO .................................................................................. 15

LITERATURE REVIEW ...................................................................... 15

2.1 Introduction .................................................................................. 15
2.2 Theoretical Review ........................................................................ 15
2.2.1 Pecking Order Theory .............................................................. 15
2.2.2 Agency Cost Theory ................................................................. 16
2.2.3 Modigliani and Miller theorem ................................................ 18
2.2.4 Growth of the Firm Theory ...................................................... 20
2.2.5 Profit Maximization Theory ...................................................... 21
2.3 Empirical Literature Review ......................................................... 22
2.3.1 Short term debt and profitability .............................................. 22
2.3.2 Long term debt and profitability .............................................. 24
2.3.3 Equity ratio and profitability ................................................... 25
2.3.4 Firm size and profitability ....................................................... 27
2.3.5 Profitability ............................................................................ 28
2.4 Summary of Literature and Research Gaps .................................... 29
2.5: Conceptual Framework ................................................................. 34

CHAPTER THREE .................................................................................. 37

RESEARCH METHODOLOGY ............................................................... 37

3.1 Introduction ................................................................................. 37

3.2 Research Design ......................................................................... 37

3.3 Empirical Model ......................................................................... 38

3.3.1 Operationalization and Measurement of Variables ................. 39

3.4 Target Population ....................................................................... 40

3.5 Sample and Sampling Technique .............................................. 41

3.6 Data Collection Procedure ........................................................... 41

3.7 Data Analysis and Presentation .................................................... 41

3.8 Diagnostic Tests .......................................................................... 42

3.8.1 Normality Tests ....................................................................... 42

3.8.2 Panel Unit Root Test ................................................................. 42

3.8.3 Multicollinearity ...................................................................... 42

3.8.4 Autocorrelation ...................................................................... 43

3.8.5 Heteroscedasticity .................................................................. 43

3.8.6 Test for Fixed or Random Effects ........................................... 44

3.9 Ethical Considerations ................................................................. 45

CHAPTER FOUR .................................................................................. 46

RESEARCH FINDINGS AND DISCUSSION ........................................... 46
4.1 Introduction........................................................................................................................................... 46
4.2 Descriptive Statistics .............................................................................................................................. 46
4.3 Correlation Analysis ............................................................................................................................... 47
4.4 Diagnostics Tests .................................................................................................................................. 49
  4.4.1 Normality Test .................................................................................................................................... 49
  4.4.2 Panel Unit Root Test ......................................................................................................................... 49
  4.4.3 Multicollinearity Test ....................................................................................................................... 50
  4.4.4 Autocorrelation Test ....................................................................................................................... 51
  4.4.5 Heteroscedasticity Test ................................................................................................................... 52
  4.4.6 Hausman Test .................................................................................................................................... 52
4.5 Model Regression Analysis .................................................................................................................... 53
  4.5.2 Moderation Effect of Firm Size on ROA ........................................................................................ 56

CHAPTER FIVE.............................................................................................................................................. 58

SUMMARY, CONCLUSION AND RECOMMENDATION.............................................................................. 58
5.1 Introduction............................................................................................................................................ 58
5.2 Summary................................................................................................................................................ 58
  5.2.1 Short term debt and profitability ...................................................................................................... 58
  5.2.2 Long Term Debt and profitability ................................................................................................... 58
  5.2.3 Equity ratio and profitability .......................................................................................................... 59
  5.2.4 Firm size ........................................................................................................................................... 59
5.3 Conclusions............................................................................................................................................ 60
5.4 Recommendations ................................................................................................. 61

5.5 Areas for further research ..................................................................................... 62

REFERENCES .............................................................................................................. 63

APPENDICES .............................................................................................................. 73

Appendix 1: List of Microfinance Institution ................................................................. 73

Appendix II: Data Collection Form ............................................................................... 74

Appendix III: Graduate School Approval Letter ............................................................ 79

Appendix IV: NACOSTI Research Permit ................................................................. 80
LIST OF TABLES

Table 1.1: Net loss reported by microfinances institutions in Kenya (Million) .................... 9
Table 2.1: Summary of Literature Review and Research Gaps......................... 30
Table 3.1: Operationalization and Measurement of Variables ..................... 40
Table 4.1 Descriptive Statistics ................................................................. 46
Table 4.2 Correlation Analysis ................................................................. 48
Table 4.3 Normality Test........................................................................... 49
Table 4.4: Fisher-type Test of Unit Root ..................................................... 50
Table 4.5: Multicollinearity Test ................................................................. 50
Table 4.6 Autocorrelation Test ................................................................. 51
Table 4.7: Heterescadescasy Test ............................................................... 52
Table 4.8: Hausman Random Test for random and fixed effects ..................... 52
Table 4.9 Panel Regression Analysis before interaction ................................ 53
Table 4.10 Moderation Effect of Firm Size Results on ROA for Financial Firms .... 56
LIST OF FIGURES

Figure 2.1: Conceptual Framework ................................................................. 34
OPERATIONAL DEFINITION OF TERMS

Deposit taking micro finance institutions: A deposit-taking microfinance institution refers to those institutions that are licensed by the government to accept deposits and give loans to the members and the public in general.

Equity Ratio: The equity ratio measures the proportion of the total debts owed to finance the assets in a company. In the study, the equity ratio was found by dividing the shareholders’ equity over total assets.

Financial leverage: Financial leverage is the ratio between the debt and equity which characterizes the connection between the obtained assets and the investors' assets in the capital structure.

Firm size: Firm size alludes how little or huge a firm is estimated in terms of worth, resources, profits and a market capitalization. In the current study, the firm was determined by the natural logarithm of the total assets.

Long term debt: These are obligations owed to lenders for more than one year. In the study, the long term debts were obtained by dividing long term liabilities over total assets.
**Profitability:** Profitability measures the efficiency of the management in the utilization of the available resources in the process of adding value to an organization. The study used the return on assets as a measure of profitability.

**ROA:** ROA is a financial ratio that shows the percentage of profit a company earns concerning its overall resources and it is defined as net income divided by total assets of a firm.

**Shareholders’ equity:** Shareholders equity is defined as the difference between total assets and total liabilities.

**Short term debt:** The short term debts refer to the debts that are payable in less than 120 days. In the current study, the short term debts were defined as the current liabilities divided by the total assets.
ABBREVIATION AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>CBR</td>
<td>Central Bank Rate</td>
</tr>
<tr>
<td>CSR</td>
<td>Corporate social responsibility</td>
</tr>
<tr>
<td>CLRM</td>
<td>Classical Linear Regression Model</td>
</tr>
<tr>
<td>DTM</td>
<td>Deposit Taking microfinance</td>
</tr>
<tr>
<td>FGLS</td>
<td>Feasible Generalized Least Squares</td>
</tr>
<tr>
<td>KREP</td>
<td>Kenya Rural Enterprise Programme</td>
</tr>
<tr>
<td>MFI</td>
<td>Micro-Finance Institutions</td>
</tr>
<tr>
<td>NACOSTI</td>
<td>National Commission for Science, Technology and Innovation</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on Asset</td>
</tr>
<tr>
<td>ROE</td>
<td>Return on Equity</td>
</tr>
<tr>
<td>SACCO</td>
<td>Savings and Credit Cooperative Society</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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ABSTRACT

Very few deposit-taking microfinance institutions in Kenya are profitable. Most of them report loses in every financial year. The making of the losses may be a result of inefficiency in financial leverage, thus formed the foundation of the study that investigated the effect of financial leverage on profitability in deposit-taking microfinance institutions in Nairobi City County, Kenya. The specific objectives of the study were the effect of short term debt, long term debt and the equity ratio on profitability in deposit-taking microfinance institutions in Nairobi City County and also to establish the moderating effect of firm size on the relationship between the financial leverage and profitability in deposit-taking microfinance institutions in Nairobi City County. The study was anchored on four theories, namely pecking order theory, agency cost theory, Modigliani and Miller theorem and growth of the firm theory. Furthermore, the study adopted the positivistic approach and a panel regression model was employed to analyze the effects of financial leverage and profitability in deposit-taking microfinance institutions in Nairobi City. The targeted population was 12 deposit-taking microfinance institutions in Nairobi City County. The data was collected for the period between 2014 and 2018. Moreover, the study was conducted a census of all the 12 deposit-taking microfinance institutions in Kenya and the secondary data was used in the study. The data was analyzed using descriptive and inferential statistics. The descriptive statistics was presented in mean, standard deviation, minimum and maximum while the inferential statistics included the diagnostics tests, correlation and regression models. The findings of the study showed that short term debt ratio and profitability were positively and significantly associated. Long term debt ratio was positively and significantly correlated to profitability. Also, the equity ratio was positively and significantly correlated to profitability. Finally, firm size was positively and significantly associated with profitability. On the regression analysis, it was found that short term debt and equity ratio was positively and significantly related with profitability. Long term debt was negatively and significantly related to the profitability. Firm size moderated the relationship between financial leverage and profitability of deposit taking microfinance institutions in Nairobi. The study concluded that short term debt and equity ratio were positively and significantly related to the profitability while long term debt was negatively and significantly related to profitability. The study recommended for deposit taking microfinance institutions to use short term debt and equity financing to finance their assets since it was found to positively affect the profitability whereas to keep off from the long term debt since it deteriorates their profits.
1.1 Background of the Study

The profitability of the microfinance institutions in Kenya, which is determined by the difference between total revenue and total costs have been dwindling (Abrar & Javaid, 2016). The profitability is influenced by both the internal and external factors (Andrew, 2015). The internal factors are those that are dependent on the decisions that are made by the management and the board of the different institutions (Muchiri, Muturi & Ngumi, 2016). The external factors are beyond the organization's control and include the competition level, government intervention, political interferences, and technological change (Wanyonyi & Bwisa, 2013). Financial leverage has been factored as one of the most components that influence profitability (Amsi, NgareImo & Gachie, 2017). Financial leverage is the ratio between the debt and the equity, which characterizes the connection between the obtained assets and the investors' assets in the capital structure (Chadha & Sharma, 2015). Financial leverage components include short-term debts, long-term debts and equity ratio (Chen, Harford & Kamara, 2019; Rukaria, 2015).

Globally, Siddik, Kabiraj and Joghee (2017) revealed that long term debts influence the profitability of commercial banks in Bangladesh negatively. The long term debts are more costly compared to short term debts. Moreover, Bashir and Asad (2018) showed that board size and board meeting significantly affected the performance of the textile companies in Pakistan Also, Bhardwaj (2018) reported debts had a positive relationship with the financial performance of manufacturing firms in India.

Regionally, Godswill, Ailemen and Osabohien (2018) reported high levels of equity positively affected the financial performance of commercial banks in Nigeria. Additionally,
Kalu, Shieler and Amu (2018) found microfinance organizations in Uganda financed some of their activities using debts as the financing option and the financial performances improved. Furthermore, Lubawa, Shirima and Nandonde (2018) noted equity financing increases the financial performance of micro, small and medium enterprises institutions in rural Tanzania. Further, Abiodun (2017) found that firm size positively influenced commercial banks' leverage ratio in Nigeria.

In Kenya, Muthuri (2018) showed that debts and equity finances being critical in determining the financial stability of commercial banks in Kenya. Additionally, Wambua (2018) established that debt emphatically influenced the financial sustainability of deposit-taking microfinance institutions in Kenya. Moreover, Kajiriwa (2015) indicated the long-term deficit in commercial banks affects the capital structure negatively and the high debts become a burden to the firms and the level of the profits is affected adversely. Additionally, according to Waweru and Wanyoike (2016), equity capital is essential in enhancing the profitability of Micro Finance Institutions and debt capital to have opted as the last financing option for the firms. Furthermore, Amsi, Ngare, Imo and Gachie (2017) showed that value proportion decidedly influenced the monetary exhibition of the Small and Mediums Enterprises business.

1.1.1 Financial Leverage

Financial leverage describes the companies' business structure and reveals the equilibrium between two long term finance sources (Andrew, 2015). When the firms borrow, the difference between directors and creditors increases the control costs, so the firms disclose more information to convince the shareholders and creditors to decrease the control costs (Chesang, 2017). Adams and Ferreira (2016) discovered that large firms have the tendencies of disclosing their information to their shareholders contrasted with the little firms. Most likely it will comprehend the potential favorable circumstances of information exposure, for
example, more prominent attractiveness and more prominent simplicity of financing. Smaller companies may feel that full data revelation may jeopardize their focused position (Barako, Hancock & Izan, 2016).

However, Bhuiyan and Roudaki (2018) found no relationship between the estimated leverage, evaluated as obligation/book estimation of value and the proportion of Corporate social responsibility (CSR) introduction. Leverage was proposed as significant to clarifying varieties in the degree of corporate financial exposure. Alsaeed (2016) contended that organizations with relatively more substantial measures of obligation in their capital structure are slanted to higher office costs. The financial leverage includes: short term debts, long term debts and equity ratio (Watts & Zimmerman, 2018; Harvey & Puri, 2017; Adams & Ferreira, 2016).

Short term debt financing has a maturity time of one year or less and should be repaid within four months. Further, the short-term loans have a low-interest rate and the companies prefer it when looking forward to having short term financing (Yazdanfar & Öhman, 2015). Additionally, according to Mian and Santos (2018), the short-term debts help to address the quick issue for financing without long term responsibility. The cost of changing short term obligation is less load on the association. Short term advances generally offer lower interest charges, and most loan lenders do not charge interest until all credit remittance period is over (Kahl, Shivdasani & Wang, 2015).

Money related choices of transient obligations and liabilities are basic since they set up the money related relentlessness of the firm in the market (Godswill, Ailemen & Osabohien, 2018). Short term debt has been found by various scholars and researchers to affect profitability. Aro and Pennanen (2017) found that firms can make use of short-term financing, which may affect the profitability depending on the cost of the source of the funding. Bendavid, Herer and Yücesan (2017) observed that firms might have a specific
ration of short-term liabilities if its financing structure they feel is optimum in enhancing performance and profitability. Dombret, Gündüz and Rocholl (2019) observed that firms which had high short term debt levels when compared to their long term debt performed better than their competitors.

Kumar and Kaushal (2017) established that the use of short-term liabilities such as trade payables and accruals could have a positive effect to the productivity of the organizations since such sources of financing may be less costly to the business than the longer-term sources of funds. Further, short term sources of funds may have a positive influence on profitability due to the reduced contractual engagements that are involved. Furthermore, Nawaz and Ahmad (2017) claimed that the short maturity of short term debt might be expensive to the firm hence increasing its cost of capital.

Long term debt involves an agreement between the firm and issuers of debt, which is usually associated with high agency and financial distress costs (Chavali & Rosario, 2018). High long-term debt levels in the firm are not conducive for the effective operations of the firm since they increase the risk of bankruptcy and the interests associated with them is high. According to Harford, Kecskés and Mansi (2018) high debt levels increase the number of interest payments that are expected to be paid regularly which may undermine the liquidity levels of the company thus lead the company into financial problems.

Moreover, the examination by Pontoh (2017) found no considerable connection between long term obligation and benefit in the organizations. Long term debts are best and reliable avenues for debt financing in most of the established business (Foyeke, Olusola & Aderemi, 2016). Furthermore, Nunes and Serrasqueiro, (2017) argued that long term debt could be decidedly identified with the development/share/deals adequacy and gross benefit in little and medium-size assembling firms.
The equity ratio is a better indicator of the level of the leverage that is being used in the company. A high equity ratio produces a bad result for the company while a low equity ratio produces best results to the shareholders as much as the company earns a specified rate of returns on the assets and is higher than the interest rates that are being paid to the creditors (Chadha & Sharma, 2015). Equity financing is the financing source a company prefers the least and is only used when the debt capacity has reached to the optimal and the company lacks an alternative method to finance its activities. In the time the company uses this option, the decision-makers in the organization believe that the market valuates the company too high because of the data asymmetry in the company to the external investors (Boadi, Dana, Mertens & Mensah, 2017).

The company will have to use several approaches to raise funds to achieve the necessary capital mix with the adequate sources being held as the retained earnings of the business, debt and the equity (Cole, Yan & Hemley, 2015). Mule and Mukras (2015) established the sources of the capital for firms as being either internally or externally sourced. The internal financing is the one that is coming from the retained earnings while the external gains come from the debts and the issue of the equity. The financial leverage is very critical to any of the organizations since they define the financial stability of the organization. Capital structure decisions are significant as the focal in determining the business entity in choosing between financing alternatives at the maximum costs that yield to the total value of the firm. Moreover, Das and Swain (2018) established that various strategies could be connected by the association to raise the capital with the most fundamental and crucial sources being retained earnings, equity and debt.

1.1.2 Firm Size

Firm size alludes to how little or enormous a firm is through the estimation by capital, the number of employees, markets share resource and the chance to acquire outside financing and
information level influencing the firm for the inclination of financing sources (Tita, 2016). This situation furnishes organizations with a chance to work in higher benefit conditions with less challenge (Nawaiseh, 2015). Smaller firms have high liquid assets and are thought to have more financial capabilities than larger organizations in the short term (Muigai, 2016). Moreover, more significant organizations can minimize information asymmetry in the market and acquire financial resources efficiently. They can also access debt easily when good risk profiles are maintained as opposed to small organizations due to stability (Bongoye, Banafa & Kingi, 2016).

Organization's size is seen by assembling organizations as an asset in acquiring an economic upper hand in terms of benefit and market share of the overall industry (Abbasi & Malik, 2015). Firm size can either be estimated by the level of benefits or greatness of offers. The exchange off theory recommends that more significant firms ought to work at high debt levels because of their capacity to differentiate the hazard and to take advantage of assessment shields on interest installments (Chesang, 2017). Larger firms typically are increasingly broadened and have lower fluctuation in income and consequently can suit high debt ratios. Littler firms then again may discover it generally costlier to join debt in their operation. In this way, more prominent firms will have higher debt levels than littler firms (Pantouvakis, Vlachos & Zervopoulos, 2017).

1.1.3 Profitability

The profitability of microfinance institutions in Kenya has been dwindling over time (Gweji & Karanja 2014). According to Cherotich, Sang, Mutungú and Shisia (2015), the profitability is the difference between the revenue generated and the total cost and expenses used. The profitability determines the survival and the extent to which the organization is capable of advancing to modern technology (Siddik, Kabiraj & Joghee, 2017). The profitability of microfinance institutions is influenced by both internal and external factors (Kiplangat,
2017). The organization has control over internal factors while in the external factors; the company has no control over (Kariu, 2017).

The profitability measures include returns on assets (ROA), return on equity (ROE), and profit margin. ROA is a financial ratio that shows the percentage of profit a company earns concerning its overall resources and it is defined as net income divided by total assets of a firm (Muriu, 2016). ROE measures how well a company uses its equity to generate profits for the shareholders (Sharma, 2018). It is calculated by dividing the net profits with total equity. Lastly, the profit margin is calculated by dividing the net profits by total sales (Muriungi, 2014). Some of the scholars such as Hussein (2018), Kariu (2017), King’ ori, Kioko and Shikumo, (2017) and Matthews (2017) established that ROA is better to measure profitability and forecast trends in market structure. Hence, the study adopted Return on Assets to measure profitability.

The justification of using ROA as a measure of profitability was because other scholars used the same indicator to measure profitability. Some of these scholars include Abubakar 2015, Siddik, Kabiraj and Joghee, 2017, Godswill, Ailemen and Osabohien (2018), Muthuri (2018), Wambua (2018), Maura and Oketch (201), Mwai (2018) Amsi, Ngare, Imo and Gachie (2017). ROA measures the efficiency of using assets to generate profit. The financial leverage is all about managing debts to acquire additional assets and thus, it was essential to examine the efficiency of assets acquired. Therefore, ROA was ideal as a significant indicator of measuring profitability in the current.

1.1.4 Deposit-Taking Microfinance Institutions

There are 13 microfinance banks in the country, but only 12 are found in Nairobi County. They incorporate three-level one microfinance banks (Kenya Women presently Echo Network Africa, Faulu and Rafiki) (Ali, 2015). The three medium microfinance banks had a
share of the overall industry of 6.6 percent (SMEP, Caritas and Sumac) and seven little microfinance banks (Remu, Uwezo, U&I, Century, Daraja, Maisha) had a share of the overall industry of 3.4 percent. The list of the 12 institutions is shown in Appendix 1. The DTMs have added to the extending of money related incorporation by opening branches in numerous parts of Kenya and the district (Belydah & herick, 2017). They have additionally grown new money related items that are request-driven and that are proper to the requirements of the customers.

Microfinance is very critical in the poverty eradication in many states of the World. They are widely known to target the poor and the marginalized groups by use of innovative approaches such as joint lending, progressive lending and regular payment (Wijesiri & Meoli, 2015). The general concept of the microfinance institutions can be traced down from early 1700s through the work of an Irishman, Jonathan Swift, who facilitated the creation of a bank to the poor in rural areas in Ireland (Rade, 2016). In Canada and United States, the microfinance organizations mostly target the less fortunate and marginalized populations who are not in a position to access to the commercial banks and a close of eight percent of the Americans are not banked (Nyaga, 2017).

As an industry, microfinance is another current phenomenon in Kenya and began to gain the momentum to compete with the established financial institutions (Ali, 2015). Difficult to access to the credit was considered to be a significant setback for the entrepreneurial development and thus the Kenya Rural Enterprise Programme (KREP) can be viewed as the pioneer of the Non-Governmental microfinance in Kenya (Wijesiri & Meoli, 2015). Therefore, KREP was designed and mandated as an intermediary NGO in the year 1984 to give credit and specialized help to different NGOs working in Kenya (Ayele, 2015). Numerous establishments, for example, companies, cooperatives societies, trusts, NGOs, informal sectors and the state corporations carry out the microfinance in Kenya. In Kenya,
most of the microfinance institutions have been getting losses. For instance, some of the microfinance that has reported loses are presented in Table 1.1

**Table 1.1: Net loss reported by microfinances institutions in Kenya (Million)**

<table>
<thead>
<tr>
<th>Firm</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
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<tr>
<td>SMEP</td>
<td>1</td>
<td>134</td>
<td>32</td>
<td>22</td>
</tr>
<tr>
<td>REMU</td>
<td>15</td>
<td>12</td>
<td>17</td>
<td>-</td>
</tr>
<tr>
<td>Century</td>
<td>53</td>
<td>41</td>
<td>63</td>
<td>25</td>
</tr>
<tr>
<td>Caritas</td>
<td>60</td>
<td>74</td>
<td>71</td>
<td>22</td>
</tr>
<tr>
<td>Choice</td>
<td>45</td>
<td>35</td>
<td>38</td>
<td>42</td>
</tr>
<tr>
<td>Rafiki</td>
<td>-5</td>
<td>29</td>
<td>329</td>
<td>192</td>
</tr>
<tr>
<td>Daraja</td>
<td>-3</td>
<td>28</td>
<td>47</td>
<td>32</td>
</tr>
<tr>
<td>Uwezo</td>
<td>-5</td>
<td>-4</td>
<td>9</td>
<td>27</td>
</tr>
<tr>
<td>Maisha</td>
<td>-5</td>
<td>-4</td>
<td>42</td>
<td>119</td>
</tr>
<tr>
<td>KWFT</td>
<td>-5</td>
<td>-4</td>
<td>-</td>
<td>827</td>
</tr>
</tbody>
</table>

*Source: Central Bank of Kenya (2018)*

From the results presented in Table 1.1, it is evident that most of the microfinance institutions in Kenya are making losses. The ineffective application of financial leverage may attribute the making of the losses. Therefore, based on this background, the study was conducted to examine the effect of financial leverage on profitability among deposit-taking microfinance institutions in Nairobi City County, Kenya.

**1.2 Statement of the Problem**

The profitability of the microfinance institutions in Kenya increases their sustainability and capability in providing financial services to low-income earners (Kathomi, Kimani & Kariuki, 2017). However, most of these microfinance institutions make losses, making their sustainability in jeopardy, as presented in Table 1.1 in the background. Ochieng (2018) found that very few Deposit Taking Microfinance Institutions are profitable in Kenya due to financial constraints. Based on the CBK report of 2018, KWFT reported a loss of 827 million despite having been reporting profits since 2015. Besides, many other microfinance made a net loss: Rafiki made a loss of 192 million, SMEP 22 million, Caritas 22 million, Key

Thus, it can be ascertained that most of the microfinance institutions make losses and thus formed the study's foundation. The making of the losses may be as a result of inefficiency in financial leverage. However, the available information examining the impact of leverage among deposit taking microfinances in Nairobi remains scanty. Previous studies presented a knowledge gap (contextual, conceptual and methodological gap). For instance, Bashir and Asad (2018) presented a conceptual, contextual and geographical gap with the current study.

The study was done in the textile firms in Pakistan to examine the impact of board size on performance.

Additionally, Godswill, Ailemen and Osabohien (2018) presented a contextual gap and conceptual gap. This study was conducted in the banking sector and the with the main objective of examining the effect of working capital management on performance. Further, Wambua (2018) examined the impact of capital structure on the financial supportability of deposit taking microfinance in Kenya and used primary data. The current study used secondary data and thus presented a methodological gap. Therefore, a knowledge gap existed in the reviewed literature and was ascertained by examining the effect of financial leverage on profitability among deposit-taking microfinance institutions in Nairobi City County, Kenya.

1.3 Objective of the Study

1.3.1 General Objective

The general objective of the study was to investigate the effect of financial leverage and profitability among deposit-taking microfinance institutions in Nairobi City County, Kenya.
1.3.2 Specific Objectives

i. To establish the effect of short term debt on profitability among deposit-taking microfinance institutions in Nairobi City County.

ii. To determine the effect of long term debt on profitability among deposit-taking microfinance institutions in Nairobi City County.

iii. To determine the effect of equity ratio on profitability among deposit-taking microfinance institutions in Nairobi City County.

iv. To establish the moderating effect of firm size on the relationship between the financial leverage and profitability among deposit-taking microfinance institutions in Nairobi City County.

1.3.3 Research Questions

i. What is the effect of short term debt on profitability among deposit-taking microfinance institutions in Nairobi City County?

ii. To what extent is the effect of long term debt on profitability among deposit-taking microfinance institutions in Nairobi City County?

iii. How is the effect of equity ratio on profitability among deposit-taking microfinance institutions in Nairobi City County?

iv. To what extent is the moderating effect of firm size on the relationship between the financial leverage and profitability among deposit-taking microfinance institutions in Nairobi City County?

1.4 Significance of the Study

The investigation may be significant in the following ways;
Policymakers are charged with the responsibility with coming up with relevant guidelines on microfinance institutions should follow in their undertakings while the regulator's role is seeing to it that the rules and laws are followed to the letter. This study may provide insight to policymakers on possible weaknesses of financial reporting, which can be amended or extended to curb any future problems in setting up new policies. This research renders invaluable information to analysts whose primary role is to analyze companies’ performance to advise their clients accordingly. The financial sector is vital in stimulating the growth of the economy in an area of concern and analysts may find this study of great help in terms of revealing the essential aspects finance seeking and financial prudence from the microfinance institutions.

The existing and potential investors may learn from the study the importance of the extra information provided by management in their reports and in this manner may be in a position to settle on educated choices about where to invest or withdraw their capital thus reducing their cost of capital. Further, shareholders may get insight on why they should request for additional information about their investment. The study adds to the existing body of knowledge on the firm's financial leverage and profitability in deposit-taking microfinance institutions by bridging the gaps left out by past studies. This study may, therefore, be of benefit to future scholars and academicians where they may review the literature and learn more of the previous studies

1.5 Scope of the Study

The research seeks to establish the effect of financial leverage and profitability in deposit-taking microfinance institutions in Nairobi City County, Kenya. The study focused to develop the impact of short term debt on profitability in deposit-taking microfinance institutions in Nairobi City County, determine the effect of long term debt on profitability in deposit-taking microfinance institutions in Nairobi City County, define the impact of equity ratio on
profitability in deposit-taking microfinance institutions in Nairobi City County and finally, to establish the moderating effect of firm size on the relationship between the financial leverage and profitability in deposit-taking microfinance institutions in Nairobi City County. The targeted population was 12 deposit-taking microfinance institutions in Nairobi City County. Moreover, the study used secondary data from the published financial statements from the microfinance institutions in Kenya for the period 2014-2018.

1.6 Limitations of the Study

The examination researched the impact of leverage on profitability in deposit-taking microfinance institutions in Nairobi City County, Kenya. The study utilized secondary data that was obtained from Microfinance institutions reports. In managing secondary information, the most widely recognized restriction that emerges is the precision of information. In any case, the researcher guaranteed that official information is gathered from the approved bodies. Besides, the information on the Microfinance institutions under bankruptcy was difficult to be obtained.

1.7 Organization of the study

This study was organized into three main chapters. Chapter one comprised of the background of the study, statement of the problem, objectives of the study, research objectives, research questions & hypothesis. Further, the section had significance, the scope of the study and limitations of the study. Chapter two started by the introduction, theoretical review, empirical review of financial leverage and profitability in deposit-taking microfinance institutions and summary of the literature and gaps and conceptual framework. Chapter three consisted of the introduction, target population, sampling frame and sampling technique, data collection procedure, panel diagnostic tests, data analysis and presentation and finally ethical considerations. Chapter four presented the results and the discussion of the study.
Particularly, the study looked at the descriptive statistics, the correlation analysis and the diagnostics results. Also, the panel regression analysis was analyzed before and after the moderation. Finally, chapter five presented summary of the findings in line with the specific objectives of the study, conclusions are drawn and the necessary recommendations made for the study including suggested areas of further study to enrich relevant knowledge under the study.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter comprises of five sections; in the first section, is the introduction. The second elaborated the theoretical framework, the third section is the empirical research studies, and the fourth section is the summary and research gaps. Finally, the last section was the conceptual framework.

2.2 Theoretical Review

The study was informed by four theories, namely; pecking order theory, agency cost theory, Modigliani and Miller theorem and growth of the firm theory.

2.2.1 Pecking Order Theory

This Pecking Order Theory was developed by Myers and Majluf (1984), which proposes that the expense of financing increments with awry information. The theory states that managers of companies follow a specific hierarchy when considering the sources of financing for the company. The firm prioritizes their sources of funding in connection with the rule of the least exertion, which prefers to raise the equity as methods for the final resort. When the companies are faced with no alternative option in the internal financing of the business other than the external funding, then the most priority will borrow through the debt issue since its less risky (Allini, Rakha, McMillan& Caldarelli, 2018).

Moreover, the pecking order theory acknowledges that there is no target Capital structure. The organizations pick the degree of the capitals as per inside account, obligation, and value. The root of pecking order theory is from the enlightening asymmetry where chiefs find out about an associations prospect than the external lenders. The theory proposes that if the value...
of the firm issues offers to back an endeavor, it needs to issue shares at not precisely the
general market cost. This flag the offers are exaggerated and the administration isn't sure to
serve the debt if the task is financed by debt pecking theory is very relevant to many
businesses and allows for the dynamics of most of the firms to find out the best capital
structure at a particular point (Copeland & Weston, 1988). The most profitable business in
the World has a very low debt to value proportion and furthermore, the less beneficial firm in
a similar industry will probably have a high obligation to-value proportion. Pecking order
theory clarifies these watched and detailed administrative activities that are supposed to be
taken seriously to improve in the performance. It additionally discloses securities exchange
responses to use expanding and influence diminishing occasion in the market. (Serrasqueiro
& Caetano, 2015).

However, the pecking order theory does not well illustrate the role of government
intervention in the business. The effects of taxation, the financial shocks, the costs of
issuance of the security and the arrangement of the venture's chances accessible to the
business unit with the actual capital structure (Bhama, Jain, & Yadav, 2016). Moreover, the
theory ignores the challenges that can emerge because of the administrators of the
organizations collecting so much money related to leeway that they become resistant to the
market discipline. In this way, the pecking order theory is offered as a supplement to, instead
of substitution for, the conventional exchange off the model. The theory mostly concentrated
on the advantages of the internal financing of the business as opposed to the external sources
(Allini, Rakha, McMillan, & Caldarelli, 2018). The theory was relevant to the current study
and it informed the variable of equity ratio.

2.2.2 Agency Cost Theory

Agency cost theory was spearheaded out by Jensen and Meckling (1976). The theory
establishes choices affecting the execution of the duties in a company are generally made by
the management. The theory argues that with minimal supervision, the directors may choose to put resources into activities with negative net value (Bosse & Phillips, 2016). Further, more elevated amount of debt expands investors' worth on account of its disciplinary impact on administrator conduct. The agency theory contends that when ownership and control in an organization are separate, the managers may act out of self-interest and are self-centered, thereby, giving less attention to shareholders' interests (Shi, Connelly & Hoskisson, 2017). The separation of power and control in an organization may bring about supervisors seeking after various targets other than that of the firm, for example, perquisites, picking information sources or yields that their inclinations, or otherwise neglecting to amplify firm worth.

Substantially, the agency cost of outside proprietorship equivalent to the lost an incentive from expert supervisors boosting their very own utility, rather than the estimation of the firm (Pouryousefi and Frooman, 2017). More prominent financial leverage may influence directors and diminish agency costs through the risk of liquidation, which makes individual misfortunes administrators of pay rates, notoriety, perquisites and additionally through a strain to produce income to pay interest cost (Dawar, 2016). The agency cost hypothesis contends that exceptionally leveraged firms can diminish the agency cost of outside equity and improves the association's presentation, which adequately builds firm worth. Myers (1977) sees that exceptionally leveraged firms can relieve clashes among investors and supervisors concerning the decision of venture. It places that the determination of capital structure helps in moderating agency costs and thereby impacts fast execution (Parker, Dressel, Chevers and Zeppetella, 2018).

In spite of the agency theory being immensely known to business and immensely being reliable to the organizations, it faces criticism from the scholars. For instance, Eisenhardt (1989), Shleifer and Vishny (1997) and Daily et al. (2003) (Panda and Leepsa, 2017). The theory expects a sound understanding between the head and operator for a restricted or the
boundless future period, and what's to come is unsure. Besides, the theory accepts that contracting can wipe out the agency issue, however for all intents and purposes, it faces numerous deterrents like data asymmetry, rationality, misrepresentation and exchange cost. The enthusiasm of the Investors' in the firm is to extend the benefits; in any case, their activity is obliged in the firm. The responsibilities of managers are just compelled to the administration, and their further job is not unmistakably characterized. The theory considers the administrators as astute and disregards the ability of the directors (Gong, Tang, Liu & Li, 2017).

Much as this theory affects leverage decisions that need to be taken to address agency conflict arising, it also helps in explaining the role played by top managerial staff in checking the specialists (directors) of the firm. The senior administrative staff as a governance mechanism helps in keeping on toes the managers who pursue self-interest at the expense of shareholder's wealth maximization objective. The board of director will effectively provide an oversight authority to guarantee that the interests of investors are not infringed by managers who are internal players in the firm they are serving. Hence the more significant the board sizes, the effective the monitoring role it is having over the agents. This theory supported the variable short-term debt by positing that highly leveraged firms can reduce the agency cost of outside equity and improves the firm's performance, which effectively increases firm value.

2.2.3 Modigliani and Miller theorem

Modigliani and Miller (1958) first established that there is no relationship between influence and firm worth. Regardless, in 1963, after they took the impact of expense on firm an incentive into consideration, they re-examined this supposition and expressed that issuing debt can build firm esteem (Myers, 2001). The theory depended on the contention that the utilization of debt offers an assessment shield. Because of this declaration, firms could pick
all the obligations as the capital structure. In any case, argued that the MM model is genuine just in theory because and by liquidation costs exist and will even increment when equity is exchanged off for debt (Gómez, Castro & Ortega, 2016). Furthermore, the estimation of the firm would increase the expense of capital to lessen the use of the debts in light of evaluation deductibility of intrigue charges (Ahmeti & Prenaj, 2015). This way, the estimation of the organization can be practiced by boosting the obligation fragment in the capital structure.

Moreover, considering the financial constraints, DeAngelo and Masulis (1980) expressed that the parity of benefits and costs will prompt ideal leverage. The advantages of issuing debt originate from both assessment shield and non-charge shield impacts. The previous is the expense sparing strength of the interest on the debt, while the last is the decline in assessment getting from nondebt related components, for example, deterioration and venture duty credit (Charness & Neugebauer, 2019). The higher an organizations leverage is, the higher the cost, and in this manner loan bosses will charge a higher interest rate. Besides, the hazard for a loan boss is generally high in this circumstance, which will prompt agency issues. At the point when a company's leverage stays at a low level, the assessment shield advantages will outperform the cost, yet as the debt rises, the value will likewise quickly increment.

In spite of the Modigliani-Miller theorems being the establishment of an account, the theory experienced analysis, various researchers. Initially, the approach expected that ideal capital markets don't exist because charges are engaged with the capital markets. Additionally, Brigham and Gapenski (1996) concurred that the MM model is genuine just in theory on the grounds that, by and by, chapter 11 costs exist and will even increment when equity is exchanged off for debt (Gómez, Castro and Ortega, 2016). Besides, the theory accepts that profits don't influence the investor's riches and finally the presumption of vulnerability is unreasonable in reality and therefore the theory experiences a few holes that were not tended
to (Knoll, 2018). This theory informed the variable long-term debt by proposing that debt offers a tax shield.

2.2.4 Growth of the Firm Theory

This theory was initiated by Penrose (1959) who provided trustworthy models regulating the improvement of firms and the rate at which firms can wind up productive and be helpful. Penrose (1959) gives a theory of the fantastic organization of the organization's advantages, advantageous possibilities, and widening system. Specifically, Penrose (1959) provides a useful method of reasoning to unravel causal associations among resources, limits, and high ground, which adds to an advantage-based theory of power. Penrose (1959) gives at any rate three fundamental conflicts concerning linkages among the organization's strengths, advantageous possibilities, and beneficial firm advancement.

Penrose (1959) first keeps up that organizations can profit worth, not due to unimportant responsibility for; in any case, given the ground-breaking and innovative organization of benefits. This exhibits a firm with immense resources is more gainful than a firm with limited resources. Creative resource arrangements of action spur differentiate in beneficial possibilities and cash related execution. Penrose (1959) also gives causal associations among resources and the period of accessible open entryways for improvement and development. Besides, the theory reinforces the variable of firm size by recommending that firm all the more coordinating tremendous resources is for the most part much beneficial than firm telling little resources and can approach gigantic proportion of acknowledge from the moneylenders because of security attached to the organizations. Therefore, the theory informed the variable of firm size in the study.
2.2.5 Profit Maximization Theory

Alfred Marshall founded the profit maximization theory in 1890. The theory is based on the argument that the critical goal of enterprises is the maximization of profits. According to the theory, every person who is part of the organization acts in his or her self-interest to make sure that the earnings of the business are maximized (Young & Makhija, 2014). The theory reveals that organizations ensure their profits are maximized by equating marginal revenue to marginal costs. The survival of any firm is dependent on the profits got from its sources of revenue. The shareholders expect profits and thus, the management has no choice but to conduct business in a way that maximizes the profits (Day, Aigner & Smith, 2001). The theory establishes that the relationship between inputs and outputs should be examined critically since the objective of the organization is to minimize inputs while maximizing output (Keen & Standish, 2006). The theory assumes that the business aims to maximize the profits and all firms have perfect knowledge not only about their costs and revenues but also of other firms (Haron & Ahmad, 2000).

Nonetheless, the theory has some limitations. For instance, the principle of profit maximization assumes that firms are certain about the levels of their maximum profits. But profits are most uncertain for they accrue from the difference between the receipt of revenues and incurring of costs in the future. It is, therefore, not possible for firms to maximize their profits under conditions of uncertainty. Besides, the profit maximization hypothesis is based on the assumption that all firms have perfect knowledge not only about their costs and revenues but also of other firms. But, in reality, firms do not possess sufficient and accurate knowledge about the conditions under which they operate. Further, in real situations, firms do not bother about the calculation of marginal revenue and marginal cost.

The theory was significant to the current study. The theory established that profit is one of the core factors that enhance the sustainability of the institutions. Thus, the companies’
management needs to develop strategies that will enable the company to generate profits. The profitability level differentiates companies in that the most profitable companies continue to expand operation for higher-income, thus creates a competitive advantage. The theory, therefore, informed the dependent variable, profitability in the study.

2.3 Empirical Literature Review

This part examined the past investigations that are significant to the purposes of this research. Moreover, the section covered per objective.

2.3.1 Short term debt and profitability.

Godswill, Ailemen and Osabohien (2018) assessed the working capital management and bank performance in Nigeria. The assessment included ten deposit-taking institutions in Nigeria. The examination reviewed how the benefits of banks can be overhauled through working capital administration. To experimentally do the evaluation, panel data included ten (10) deposits banks in Nigeria covering the period between 2010 and 2016 (2010–2016). The results of the examination displayed that working capital is a necessary measure for bank efficiency and sustainability. The study presented a contextual gap because it was conducted among the commercial banks while the current study was conducted among the microfinance institutions.

Moreover, Kalu, Shieler and Amu (2018) examined credit risk management and financial performance of microfinance institutions in Kampala, Uganda Haruna. The evaluation utilized 60 individuals from three affirmed microfinance establishments in Kampala, Uganda. Moreover, the data was obtained from the books of account between 2011 and 2015. The results showed that credit risks had a positive and significant relationship with the financial performance of MDI. The study presented a conceptual gap because it mainly focused on credit risk management.
Furthermore, Muthuri (2018) examined the impact of monetary stability on the Financial Performance of Commercial Banks in Kenya. The examination found a positive relationship existed between financial execution and performance. The assessment, likewise, established the composition of debts and equity funds are fundamental in deciding the profitability and adjusting the cost of operation of activities and the points of interest related with the financing option gotten by the organizations. The study presented a contextual gap since commercial banks were the unit of analysis.

Moreover, Wambua (2018) investigated the impact of capital structure on the financial sustainability of deposit-taking microfinance institutions in Kenya. The examination utilized an empirical study as the exploration plan. The analysis found that debts positively affected the performance. Borrowing by the organizations increased the accessibility of adequate assets to finance the accessible resources of the organization, which consequently improves in the degree of execution. The study presented a conceptual gap because it mainly focused on capital structure.

Hossain and Azam (2016) conducted a study in Bangladesh on the Financial Sustainability of microfinance institutions. The study relied upon on the primary data and the units of observation were managers. The findings of the study discovered that the proportion of capital resources, discount and working cost proportion impact enormously the money related supportability of microfinance organizations in Bangladesh. Nonetheless, the obligation value proportion and the outstanding credit to add up to resources and the level of borrowers had no huge effect on the money related supportability of MFIs in Bangladesh during the time of the investigation. However, the study presented a methodological gap because the study utilized primary data while the current used secondary data.
2.3.2 Long term debt and profitability

Siddik, Kabiraj and Joghee (2017) examined the effects of capital structure on the performance of banks in Bangladesh. Data were accumulated from 22 banks from 2005 to 2014. Specifically, the assessment hopes to investigate the effects of capital structure on the presentation of Bangladeshi banks spread out by advantage for worth, return on resources and pay per share. The discoveries of the investigation showed that capital structure conversely affected the exhibition of the banks. Besides, the outcomes showed that all out obligation, especially the long-term liabilities adversely affected the profitability and the general performance and consequences of performance were estimated by the utilization of the profits on the value and the earnings on the advantages. Additionally, the debt that was not exhausted and liquidity was likewise found to impact the performance of the firms adversely. The study presented a contextual gap because it was conducted among the banks.

Muchiri, Muturi, and Ngumi (2016) investigated the relationship between financial structure and financial performance of firms at East Africa Securities Exchanges. The data were obtained from 63 firms and the period of the study covered between 2006 and 2014. Data was analyzed using SPSS and STATA. The discoveries of the examination built up that the development of the debt decidedly improve the performance prompting an expansion in the degree of the profit level. The study likewise demonstrated that debt and income are increasingly critical in foreseeing the financial performance of the firms. The study used non-financial institutions in East Africa. Moreover, the study employed an explanatory research design. A methodological, geographical and contextual gap existed.

Kajiriwa (2015) conducted a study on the impact of debts on the fast execution of business banks recorded on the Nairobi Securities Exchange. The examination studied business banks registered on the Nairobi Securities Exchange. The study adopted a longitudinal research design. The discoveries of the investigation found that the long term debt in business banks
influences the capital structure negatively. High debts become a burden to the firms and the level of the profits is affected adversely. The study used commercial banks and adopted a longitudinal research design. A contextual and methodological gap existed.

In another study, Maura and Oketch (2015) investigated the factors that affect the level of profitability of the microfinance institutions in Kenya. The study employed a descriptive research design. Primary data was collected through the using questionnaires. The study used the micro Finance Institutions within the Nairobi Central business district. The findings of the study revealed that the debt collection process in the microfinance positively affected the credit risk management, which in return reduced the profitability of the firms. The study presented a methodological gap because it used primary data while the current use secondary data.

2.3.3 Equity ratio and profitability

Mwai (2018) examined the connection between capital structure and the financial sustainability of business banks in Kenya. The specific objective of the assessment was to review the association between capital essential and the money related display of business banks in Kenya. The population was 43 business banks in Kenya. The examination used panel data amassed from bank supervision and banking money related reports which released on a yearly and quarterly reason by the Central Bank of Kenya and the Commercial Banks. The eventual outcomes of the examination found a positive relationship between capital structure and money related viability. The study used commercial banks, thus a contextual gap existed.

Lubawa, Shirima and Nandonde (2018) investigated the Financing Preference for Micro, Small and Medium Enterprises, in Rural Tanzania. The examination noticed how the capital of the small-scale monetary establishment is organized decided the degree of execution which
like this, characterizes the productivity of the organization. The discoveries additionally uncovered that value financing is a moderately less expensive alternative and all things considered improves the presentation of microfinance organizations. The study presented a contextual gap since it used micro, small and medium enterprises as the unit of analysis.

Additionally, Amsi, Ngare, Imo and Gachie (2017) investigated the Effect of microfinance credit on Small and Mediums Enterprises financial performance in Kenya. This study employed a descriptive survey and a cross-sectional design and data. The results of the study indicated that the equity ratio positively affected the financial performance of the Small and Mediums Enterprises financial institutions. Lenders were more confident to lend out money to big institutions with massive resources as they know they will be repaid on the stipulated. The study employed a descriptive survey and cross-sectional design. Moreover, the study variables used were: credit amount, collateral requirement, credit repayment and the interest rate on performance. A methodological and conceptual gap existed.

Finally, Waweru and Wanyoike (2016) investigated the impact of capital structure on the productivity of microfinance foundations in Nakuru town, Kenya. The investigation embraced a cross-sectional overview research plan. The study concluded that the equity capital ratio in the Microfinance Institutions was on the rise and equity financing was cheaper than other forms of funding in the firm. The study further found that equity capital was necessary for enhancing the profitability of Micro Finance Institutions and the debt capital was the last financing option for the firm. It was further noted that the use of debt capital primarily enhanced profitability in the Micro Finance Institutions. The study adopted a cross-sectional survey research design thus presented a methodological gap.
2.3.4 Firm size and profitability.

Bashir and Asad (2018) revealed board size, board meetings had a significant impact on the textile company's presentation in Pakistan and the directing effect of influence was observed to be critical on the connection between executive gathering and execution of the material, yet irrelevant on the relationship of board size and performance. The size of a firm can impact the company's budgetary exhibition regarding the decision of capital structure blend.

Abiodun (2017) examined the effect of firm size on the organization's gainfulness in Nigeria. In the assessment, the impact of firm size on the efficiency of gathering associations recorded in the Nigerian Stock Trade was bankrupt somewhere near using a piece of board information collected over the period from 2000 to 2015. Productivity was estimated by utilizing Return on Assets, while both comprehensive resources and all-out deals were being used as the intermediaries of firm size. As indicated by the consequences of the investigation, firm size, both as far as all-out resources and as far as the all-out deal decidedly influences the benefits of collecting associations in Nigeria. Additionally, the disclosures of the assessment revealed that the size of the firm affects the influence proportion of the recorded firms in Nigeria. The study presented a contextual gap because it was conducted in Nigeria while the current was conducted in Kenya.

Additionally, Wahome, Memba and Muturi (2015) examined the impacts of firm size and hazard on capital structure choices of the protection business in Kenya. The research study was carried out between 2003 to 2012 using the panel data collection methodology. The panel regression results demonstrated that the size of the firm had a significant influence on the capital structure. More prominent firms pulled in a bigger pool of financing choices when contrasted with the littler firms. Lenders are much certain to loan out assets to organizations that have a more significant market share. More prominent firms get profits by their size and
enhancement since they can obtain a loan at lower costs and endure financial debacles with more versatility than littler firms and in this way, create more profit.

### 2.3.5 Profitability

Abrar and Javaid (2016) led an investigation on the effect of capital structure on the profitability of Microfinance institutions in Pakistan. In particular, the research considered the sources of funding and relative profitability of microfinance institutions. Data from approximately 70 countries around the globe was used. The study found that deposits enhanced the levels of debt and therefore complemented the firms’ overall profitability. The increase in operating costs and risks was noted to reduce profitability.

Furthermore, Mairura and Okatch (2015) examined the variables that influence the profitability of microfinance organizations in Kenya. The targeted population of the study was MFIs in the Nairobi central business district. The results of the examination showed that the debt collection process in the microfinance affected credit risk management, which in turn determined the profitability of the institution. Further, legal policies and credit rating had an impact on the productivity of the MFIs. The investigation summarized up by establishing that MFIs ought to review their loaning approaches to be under the legitimate arrangements to enhance their profitability and compliance with the set laws. The study presented a conceptual gap because it mainly focused on debt collection process and credit risk management.

Additionally, an experimental examination was led by Gudeta (2013) on the determinants of productivity in the case of Ethiopian Microfinance. The target of the investigation was to look at the inside and outer components that affected profitability in microfinance institutions located in Ethiopia. The study adopted the quantitative research method and 13 microfinance institutions were selected and data gathered between 2003 and 2010. The discoveries of the
investigation demonstrated that internal variables that were portfolio quality and efficiency measured by operating expense to gross loan portfolio significantly and negatively influenced profitability. The age or learning effect of MFI positively influenced profitability. Additionally, capital adequacy ratio, firm size and real gross domestic product were insignificant on profitability and the study recommended management of MFIs to develop good credit management policy and reduce operating costs through the use of mobile micro banking and reducing the frequency of installment payments. The study presented a contextual gap because it was conducted in Ethiopia while the current was conducted in Kenya.

2.4 Summary of Literature and Research Gaps

The chapter started with the introduction and then the theoretical review. Four theories were analyzed in theoretical analysis, namely pecking order theory, agency cost theory, Modigliani and Miller theorem and growth of the firm theory. Then the empirical literature review was discussed per variable. The research gaps are also addressed and finally, the conceptual framework.

Table 2.1 Shows various studies that have been conducted previously and identifies the research gaps of financial Leverage on Profitability in Deposit-Taking Microfinance institutions in Nairobi City County, Kenya.
Table 2.1: Summary of Literature Review and Research Gaps

<table>
<thead>
<tr>
<th>Author &amp; context</th>
<th>The objective of the Study</th>
<th>Key Findings</th>
<th>Research Gaps</th>
<th>Addressing the Gaps</th>
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<tbody>
<tr>
<td>Godswill, Ailemen and Osabohien (2018)</td>
<td>Relationship between working capital management and bank performance in Nigeria</td>
<td>The results of the examination displayed that working capital is a necessary measure for bank efficiency and sustainability.</td>
<td>The study presented a contextual gap because it was conducted among the commercial banks</td>
<td>The current study was conducted among the microfinance institutions</td>
</tr>
<tr>
<td>Kalu, Shieler and Amu (2018)</td>
<td>The effect of credit risk management on financial performance of microfinance institutions in Kampala.</td>
<td>Credit risks had a positive and significant relationship with the financial performance of MDI</td>
<td>The study presented a conceptual gap because it mainly focused on credit risk management.</td>
<td>The variables of the current study were short term debts, long term debts and equity ratio</td>
</tr>
<tr>
<td>Maura and Oketch (2015)</td>
<td>The findings of the study revealed that the management, which in return reduced the investigated the factors that affect the level of profitability of the microfinance institutions in Kenya</td>
<td>Debt collection process in the microfinance positively affected the credit risk</td>
<td>The study presented a methodological gap because it used primary data</td>
<td>The current study used secondary data</td>
</tr>
<tr>
<td>Author &amp; context</td>
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<tr>
<td>Siddik, Kabiraj and Joghee (2017)</td>
<td>Effect of capital structure on the performance of banks in Bangladesh</td>
<td>Capital structure conversely affected the exhibition of the banks</td>
<td>The study presented a contextual gap because it was conducted among the banks.</td>
<td>The study was conducted among microfinance institutions</td>
</tr>
<tr>
<td>Wambua (2018)</td>
<td>Impact of capital structure on the financial sustainability of deposit-taking microfinance institutions in Kenya.</td>
<td>The analysis found that debts positively affected the performance.</td>
<td>The study presented a conceptual gap because it mainly focused on capital structure</td>
<td>The variables of the current study were short term debts, long term debts and equity ratio</td>
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<tr>
<td>Amsi, Ngare, Imoan and Gachie, (2017)</td>
<td>Effect of microfinance credit on Small and Mediums Enterprises financial performance in Kenya</td>
<td>Credit from lenders positively affected financial performance.</td>
<td>The study employed a descriptive survey and cross-sectional design. Moreover, the study variables used were: credit amount, collateral requirement, credit repayment and the interest rate on performance. A methodological and conceptual gap existed.</td>
<td>The current study adopted a descriptive research design. The variables under study were short term debts, long term debts and equity ratio on the profitability of deposit-taking microfinance institutions.</td>
</tr>
<tr>
<td>Mwai (2018)</td>
<td>The eventual outcomes of the examination found</td>
<td>A positive relationship existed between capital structure and money related viability.</td>
<td>The study used commercial banks, thus a contextual gap existed.</td>
<td>Micro finance institutions were used</td>
</tr>
<tr>
<td>Hossain and Azam (2016)</td>
<td>Determinants of the financial sustainability of microfinance institutions in Bangladesh.</td>
<td>Financial sustainability positively affected the performance.</td>
<td>The study focused on the capital assets, write-off and operating expense ratio as the study variables. The study thus created a conceptual and geographical gap.</td>
<td>The current study focused on Deposit-Taking Microfinance.</td>
</tr>
<tr>
<td>Muchiri, Muturi and Ngumi (2016)</td>
<td>Relationship between financial structure and monetary</td>
<td>Financial structure and monetary execution</td>
<td>The study used non-financial institutions in</td>
<td>The current study adopted a</td>
</tr>
<tr>
<td>Author &amp; context</td>
<td>The objective of the Study</td>
<td>Key Findings</td>
<td>Research Gaps</td>
<td>Addressing the Gaps</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Waweru and Wanyoike (2016)</td>
<td>The effect of capital structure on profitability of microfinance institutions in Nakuru town, Kenya</td>
<td>use of debt capital primarily enhanced profitability in the Micro Finance Institutions.</td>
<td>The study adopted a cross-sectional survey research design.</td>
<td>The current study used a descriptive research design.</td>
</tr>
<tr>
<td>Kajiriwa (2015)</td>
<td>Impact of debts on the firm execution of business banks recorded on the Nairobi Securities Exchange</td>
<td>High debts become a burden to the firms and the level of the profits is affected negatively.</td>
<td>The study used commercial banks and adopted a longitudinal research design. A contextual and methodological gap existed.</td>
<td>The current study used Deposit-Taking Microfinance and the descriptive research design was utilized.</td>
</tr>
</tbody>
</table>
2.5: Conceptual Framework

A conceptual framework is a diagrammatical portrayal that demonstrates the connection between the variables. The structure helps the reader to see at a glance, the proposed links between the factors in the examination graphically or diagrammatically. Figure 2.1 demonstrates the connection between financial leverage and its components namely short-term debt, long term debt, equity ratio and the firm size was used as a moderating variable between financial leverage and profitability of deposit taking microfinance institutions.

Independent Variables

![Diagram showing connections between variables including short term debt, long term debt, equity ratio, and firm size as independent variables, and profitability as the dependent variable with firm size as a moderating variable.]

Source: Researcher, 2019

Short term debts entail debts paid in less than one year (Godswill, Ailemen & Osabohien, 2018). The short-term debts in the current study were determined by dividing the current liabilities over

---

Figure 2.1: Conceptual Framework

Source: Researcher, 2019

Short term debts entail debts paid in less than one year (Godswill, Ailemen & Osabohien, 2018).

The short-term debts in the current study were determined by dividing the current liabilities over...
total assets. The use of short-term liabilities such as trade payables and accruals could positively affect the productivity of the organizations since such sources of financing may be less costly to the business than the longer-term sources of funds (Muthuri, 2018). Most companies prefer to use short term debts when the internal sources of funding are not adequate (Hossain & Azam, 2016).

Long term debts include those debts that take more than a year to paid (Siddik, Kabiraj & Joghee, 2017). Long term debts are not used mainly for financing and the most preferred is the short term debts. In the study, the long term debts were determined by dividing long term liabilities over total assets. A high long-term debt level is not conducive to the effective operations of the firm since they increase the risk of bankruptcy (Muchiri, Muturi & Ngumi, 2016). High debt levels increase the number of interest payments expected to be paid regularly, which may undermine liquidity levels (Kajiriwa, 2015).

The equity ratio in the study was determined by dividing shareholders’ equity over total assets. A high equity ratio is not a good indicator to the performance of a company (Mertens & Mensah, 2017). Equity financing is the least preferred in an organization since it breaks the ownership to smaller units (Amsi, Ngare, Imo & Gachie, 2017). In the time the company uses this option, the decision-makers in the organization believe that the market valuates the company too high because of the data asymmetry in the company to the external investors (Mwai, 2018).

The study used firm size as the moderating variable. Firm size moderated the relationship between the financial leverage and profitability among deposit-taking microfinance institutions in Nairobi City County. The size of a firm can be measured in several ways. Most companies use total assets, sales revenue and the number of employees to measure the firm size (Wahome, Memba & Muturi, 2015; Abiodun, 2017; Santosa, 2020: Dalci, Tanova, Ozyapici & Bein, 2019). In the current study, the logarithm of the total assets was used to measure the firm size. This is
because internal and investors are more concerned with the value of the organization before investing. Total assets are one of the most measures of the worth of an organization (Bashir & Asad, 2018)

The profitability measures include returns on assets (ROA), return on equity (ROE), and profit margin. The study used ROA to measure profitability. The justification of using ROA as a measure of profitability was because other scholars used the same indicator to measure profitability. Some of these scholars include Muthuri (2018), Wambua (2018), Mwai (2018) Abubakar 2015). ROA measures the efficiency of using assets to generate profit. Therefore, ROA was the most significant indicator of measuring profitability.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This part depicted the method that was used in analyzing the research. The section covered the exploration structure and the empirical model. Issues related to research design, the target population, the type of data to be collected, sampling frame, sample and sampling techniques, data collection instrument, data collection procedure, data analysis and presentation was discussed. Finally, the diagnostics test and ethical consideration were analyzed.

3.2 Research Design

Research design is the plan or framework that is utilized to create answers to examiners issues. This decision of research design depends on the way that the investigation tries to get data that depicts the existing situation by getting some information about financial leverage and profitability among deposit-taking microfinance institutions. The descriptive research design was be utilized to investigate and additionally clarify the current state of affairs about the objectives of the research. The real reason for the descriptive research design is to portray the situation all things considered at the time. Colorafi and Evans (2016) observed that a descriptive design is a procedure of gathering information to respond to questions concerning the flow status of the subjects in the investigation. Therefore, descriptive research includes surveys and fact-finding investigations which enhance a review of intrigue that is happening in the deposit-taking institutions.
3.3 Empirical Model

The study will select a model that has been advocated by other scholars such as Richards & van Staden, 2015; King’ori, Kioko & Shikumo, 2017; Muriu, 2016 and Mutethia, 2017. Thus, the general empirical model to be used in the study is defined as follows:

\[ Y_{it} = \beta_0 + \beta X_{it} + \epsilon_{it} \] \hspace{1cm} \text{3.1}

Where \( Y_{it} \) is the dependent variable denoting profitability in deposit-taking microfinance institutions \( i \) at time \( t \), \( i \) mean the observation (deposit-taking microfinance institutions), \( i = 1, \ldots, 12 \) while \( t \) is the period \( t = 2014, \ldots, 2018 \); \( X_{it} \) denotes a vector of independent variables indicating financial leverage, \( \beta \) are coefficients to be estimated, \( \beta_0 \) is a constant term, and \( \epsilon_{it} \) is composite error term. The study will use a panel data model because it can be used to study more complex data involving several parameters.

Regression model without interaction

\[ Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \epsilon \] \hspace{1cm} \text{3.2}

Where:

\( Y_{it} = \text{Profitability for firm } i \text{ at time } t \)

\( X_{1it} = \text{Short term debt for firm } i \text{ at time } t \)

\( X_{2it} = \text{Long term debt for firm } i \text{ at time } t \)

\( X_{3it} = \text{Equity ratio for firm } i \text{ at time } t \)

\( X_{4it} = \text{Firm size for firm } i \text{ at time } t \)

\( \beta_0 = \text{Constant, } \beta_1, \ldots, \beta_4 = \text{Coefficient of the variables} \)

\( \epsilon = \text{Error term} \)

Regression Model with interaction
The study used firm size as the moderating variable. Firm size was used to examine whether it influenced the relationship between the financial leverage and profitability among deposit-taking microfinance institutions in Nairobi City County. This was done by interacting firm size with each of the independent variable (short term debt, long term debt and equity ratio). The moderating effect of firm size was determined by comparing the R Square and regression coefficients of short term debt, long term debt and equity ratio when interacted with firm size with the R Square and regression coefficients of short term debt, long term debt and equity ratio without the interaction. A conclusion was made concerning whether the firm size moderated the relationship between financial leverage and profitability based on R Square and the regression coefficients. The regression model with interaction is presented in equation 3.3

\[ Y_{it}=\beta_0 + \beta_1 X_{1it} \ast M + \beta_2 X_{2it} \ast M + \beta_3 X_{3it} \ast M + \varepsilon \] ..........................3.3

Where;

\( Y_{it} \) = Profitability for firm \( i \) at time \( t \)

\( X_{1it} \) = Short term debt for firm \( i \) at time \( t \)

\( X_{2it} \) = Long term debt for firm \( i \) at time \( t \)

\( X_{3it} \) = Equity ratio for firm \( i \) at time \( t \)

\( M \) = Firm size for firm \( i \) at time \( t \)

\( \beta_0 \) = Constant, \( \beta_1...4 \) = Coefficient of the variables

\( \varepsilon \) = Error term

### 3.3.1 Operationalization and Measurement of Variables

Table 3.1 shows the Operationalization and Measurement of Variables.
### Table 3.1: Operationalization and Measurement of Variables

<table>
<thead>
<tr>
<th>Type of Variable</th>
<th>Variable</th>
<th>Measurement</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variables</td>
<td>Short term debt</td>
<td>• Current liabilities / Total Assets</td>
<td>Ratio</td>
</tr>
<tr>
<td></td>
<td>Long term debt</td>
<td>• Long Term liabilities / Total Assets</td>
<td>Ratio</td>
</tr>
<tr>
<td></td>
<td>Equity Ratio</td>
<td>• Shareholders’ equity / Total Assets</td>
<td>Ratio</td>
</tr>
<tr>
<td>Moderating variable</td>
<td>Firm size</td>
<td>• Log Total assets</td>
<td>Ratio</td>
</tr>
<tr>
<td>Dependent Variable</td>
<td>Profitability</td>
<td>Net Profit / Total Assets</td>
<td>Ratio</td>
</tr>
</tbody>
</table>

**Source:** Researcher (2018)

### 3.4 Target Population

According to Sekaran and Bougie (2016), the targeted population alludes to a whole gathering of individuals or things of premium that research wishes to research and make inferences. Moreover, Rubin and Babbie (2015) established that the population involves the conglomeration of components from which the sample is chosen. In our study, the targeted population was 12 deposit-taking microfinance institutions in Nairobi City County. The list of deposit-taking MFIs is attached as an appendix I. The data was collected for the period between 2014 and 2018. The period between 2014 and 2018 was chosen so that the researcher can get the most current information concerning the microfinance institutions. Also, the period was selected so that the data obtained will be adequate in making comparisons.
3.5 Sample and Sampling Technique

Sampling is the way toward choosing units (individuals, associations) from the susceptible population to reasonably sum up results to the objective population (Malterud, Siersma & Guassora, 2016). The current study will conduct a census of 12 institutions. The justification for conducting a census was because the populations (12 MFIs) were few and manageable. A census can be conducted when the target population is less than 30 (Stenger & Gabler, 2005; Apuke, 2017). Census approach increase confidence interval. Additionally, conducting a census often results in having a high degree of statistical confidence in the results. Data collection through census method gives the opportunity to the researcher to have an intensive study about a problem. There is a higher degree of accuracy.

3.6 Data Collection Procedure

Secondary data for analysis was gotten from the financial reports of the 12 establishments. The justification for using secondary data is based on the nature of the information to be gathered, which is quantitative. The secondary data will encompass panel data. A blend of time series with cross-sections upgrades the quality and amount of information to levels that would make some way or another be difficult to accomplish with just one of the two measurements (Levine, Pastor, Krizhevsky, Ibarz & Quillen, 2018). The cross-sectional data comprises of the firms while the time series data were the years between 2014 and 2018. This is because the data for the periods are current data and easily available. The information for every one of the factors in the examination was acquired from the yearly related reports of the deposit taking microfinance institutions covering the years 2014 - 2018.

3.7 Data Analysis and Presentation

The data was analyzed using descriptive and inferential statistics. The descriptive statistics was exhibited in mean, median, standard deviation and frequencies while the inferential statistics will
incorporate the diagnostics, correlation and regression (Parente & Silva, 2016). The panel regression model was utilized to quantify the connection between the independent and the dependent variable that is explained in the model. ANOVA examination will quantify the best fit and will further choose if the general model is factually noteworthy.

3.8 Diagnostic Tests

3.8.1 Normality Tests

The normality assumption \( \mu_t \sim N(0, \sigma^2) \) was required to direct single or joint hypothesis tests about the model parameters. Normality test was tested using skewness and Kurtosis test. The test statistic was that if the p value > 0.05, the study conclude that the data is normal.

3.8.2 Panel Unit Root Test

A unit root test was conducted using Fisher-Type Test to establish whether the variables were stationary or non-stationary. The purpose of this was to avoid spurious regression results being obtained by using non-stationary series. The null hypothesis of this test was that all panels had unit root. The alternative hypothesis is that at least one panel did not have unit roots or some panels did not have unit root (Choi, 2001). If any of the variables has unit root, the researcher would difference it and run the equations using the differenced variable.

3.8.3 Multicollinearity

Multicollinearity was examined in the research using the variance inflation factor (VIF) whereby the cut-off point for extreme multicollinearity is 10 (Katrutsa & Strijov, 2017). Faultless multicollinearity results into dubious relapse coefficients and vast standard errors while the nearness of inadequate multicollinearity results into tremendous standard errors. Colossal standard errors impact the precision and accuracy for expulsion or failure to reject the null hypothesis.
3.8.4 Autocorrelation

Since the data will consolidate both cross-section and time-arrangement, it will raise the uncertainty of the sequential connection. The accessibility of the sequential connection shows that the elements in the model will harm the presumptions of the regression (Setyawati, Suroso, Suryanto & Nurjannah, 2017). To analyze for a sequential relationship, the Woodridge test for autocorrelation was used. The sequential connection is a common issue experienced in board information examination and must be spoken to achieve the precise model detail. As demonstrated by Conceptual and Breitung (2016), the failure to perceive and represent the sequential connection in the exceptional misstep term in a board model will bring about one-sided standard mistakes and wasteful parameter gauges. The invalid theory of this test was that the information has no sequential relationship. On the off chance that the sequential relationship is perceived in the board information, by then, the Feasible Generalized Least Squares (FGLS) estimation was used.

3.8.5 Heteroscedasticity

Since the information for this assessment was a cross-section of firms, this will raise stresses over the nearness of heteroscedasticity. The Classical Linear Regression Model (CLRM) acknowledge mistake term is homoscedastic; that is, it has predictable fluctuation. If the mistake fluctuation isn't enduring, by then, there is heteroscedasticity in the information. Running a relapse model without involving the heteroscedasticity will provoke fair parameter measures. To test for heteroscedasticity, the Breusch-Pagan/Godfrey test was used. The invalid theory of this examination is that the mistake difference is homoscedastic. If the invalid speculation is rejected and the ends made that heteroscedasticity is accessible in the board information, by then, this was spoken to by running an FGLS model.
3.8.6 Test for Fixed or Random Effects

When performing panel data analysis, the investigation will decide if to run a fixed-effects model or a random-effects model. Whereas the fixed impact model assumes firm characteristics catches and captures the impacts of those factors that are explicit to each firm and steady after some time, the random impact model may understand that there was a solitary standard block and may be varied from firm to firm in an arbitrary manner (McNeish & Stapleton, 2016). Therefore, for estimating the models, first, it is essential to decide if there exists a connection between the independent variables, a fixed impact model will give steady outcomes generally random impact model was proficient estimators. To figure out which of these two models was appropriate, both fixed and random effects were estimated. Hausman's specification test (1978) was used to choose if the fixed or arbitrary effect was to be utilized. If the null hypothesis that is $E(\mu_i/xit) = 0$ is accepted, at that point random impact is a productive estimator generally in case of dismissal of the null hypothesis, fixed impact estimation gives a better or effective estimate of betas. If the Hausman test rejects the null hypothesis, therefore choice was taken to utilize a fixed impact model. STATA was used to estimate the above models.

On the off chance that the Hausman test recognizes the fixed impacts model as proper, by then, the analyst will test for thought of time-fixed impacts in the assessment estimation. The time fixed impacts tested if the dummies for all years are comparable to zero and in the event that they are, at that point there was no requirement for time fixed impacts in the detail of the model to be assessed. To test whether the dummies for all years was equivalent to zero, F-test was used as proposed by Daly, Dekker and Hess, (2016). Then again, if the Hausman test picked the arbitrary impacts model as the more appropriate one by then, there will need to test whether the board impacts to choose if to run a straightforward Ordinary Least Square (OLS) lose the faith or the irregular effects model. Breusch-Pagan multiplier test proposed by Breusch and Pagan (1980) was utilized to pick between the clear Ordinary Least Square (OLS) apostatize and the self-
assertive effects model. The null hypothesis of this test was that change over the substances is zero; that is, there were no board impacts.

### 3.9 Ethical Considerations

Research morals is the utilization of professional rules, regulations and code of conducts in collections, analysis, reporting and publication of the findings (Greenwood, 2016). The researcher was ardent on ensuring that ethical research practices are observed while doing data collection, analysis and interpretation. The researcher will also seek authority from the approved bodies before conducting the examination.
CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This section presented the results and the discussion of the study. Particularly, the study looked at the descriptive statistics, the correlation analysis and the diagnostics results. Also, the panel regression analysis was analyzed before and after the moderation.

4.2 Descriptive Statistics

This part displays the clear outcomes for the factors. Clear measurements utilized were mean, minimum, maximum and standard deviation. The outcomes are displayed in Table 4.1

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>60</td>
<td>0.293768</td>
<td>0.260614</td>
<td>0.0103</td>
<td>0.8887</td>
</tr>
<tr>
<td>Short term debt ratio</td>
<td>60</td>
<td>0.293593</td>
<td>0.189429</td>
<td>0.0278</td>
<td>1.0000</td>
</tr>
<tr>
<td>Long term debt ratio</td>
<td>60</td>
<td>0.166582</td>
<td>0.185557</td>
<td>0.0089</td>
<td>1.0000</td>
</tr>
<tr>
<td>Equity Ratio</td>
<td>60</td>
<td>0.25979</td>
<td>0.187533</td>
<td>0.0050</td>
<td>1.0000</td>
</tr>
<tr>
<td>Log of Total Assets</td>
<td>60</td>
<td>1.742608</td>
<td>1.053743</td>
<td>0.1257</td>
<td>3.5072</td>
</tr>
</tbody>
</table>

The results from Table 4.1 shows that the mean of profitability of the deposit microfinance institutions predicted using ROA was 0.293768 which shows that the general performance of the deposit taking micro finance institution. The minimum and the maximum of return on assets were 0.0103 and 0.8887 respectively. Its standard deviation (SD) was 0.260614 which showed that profitability changed during the period. The outcome is consistent with the findings of Bashir and Asad (2018) who found that size of a firm has the potential to influence the firm's
financial performance in terms of the choice of capital structure mix and the profitability changes over time depending on the capital structure employed. Moreover; short term debt ratio had a mean of 0.293593. The maximum and the minimum of short term debt ratio was 0.0278 and 1.0000 respectively. The standard deviation was 0.189429. This means that short debt ratio keep on changing during the time of study.

Also, long term debt ratio had a mean of 0.166582. The maximum and the minimum were 0.0089 and 1.000 respectively. The standard deviation was 0.185557. This implied that the long term debt ratio kept on changing during the period under study. The results concur with the findings of Muchiri, Muturi, and Ngumi (2016) that established growth of the debt positively improve the performance leading to an increase in the level of the profit level. The study also indicated that debt and retained earnings are more significant in predicting the financial performance of the firms and they keep changing over time.

The mean for equity ratio was 0.25979. Further the maximum and minimum of equity ratio was 0.0050 and 1.0000 respectively. Its Standard deviation was 0.187533 indicating that equity ratio changes over the period of the study. Finally, log of the total assets (firm size) has a mean of 1.742608. The maximum and the minimum of the log of total assets was 0.1257 and 3.5072. Additionally, the standard deviation was 0.1257. This implied that the sizes of the firms changed during the period that was used to conduct the study. The results concur with the findings of Abiodun (2017) that revealed size of the firm has a positive influence on the leverage ratio of the listed firms in Nigeria.

4.3 Correlation Analysis

Correlation analysis predicts the association between research variables. Correlation table was employed to establish the association between variables. Table 4.2 shows the findings of the correlation matrix.
The results from Table 4.2 show that short term debt and profitability are positively and significantly associated ($r=0.698$, $p=0.000$). Long term debt and profitability was positively and significantly associated ($r=0.578$, $p=0.000$). Also, Equity ratio was positively and significantly correlated to profitability ($r=0.588$, $p=0.000$). Finally, firm size was positively and significantly associated with profitability ($r=0.547$, $p=0.000$). The findings of the results concur with the results of Wambua (2018) that found that debt had a positive and significant association on the financial sustainability of Deposit Taking Microfinance in Kenya and thus the financial sustainability would increase with a proportionate increase in debt when all other factors affecting the profitability of the organizations are held constant. Also, Amsi, Ngare, Imo and
Gachie (2017) indicated that the equity ratio positively and significantly associated with the financial performance the financial performance of the Small and Mediums Enterprises.

4.4 Diagnostics Tests

4.4.1 Normality Test

Normality test was tested using skewness and Kurtosis test. The study tested the null hypothesis that the disturbances are not normally distributed. If the p-value was less than 0.05, the null of normality at the 5% level was rejected. The normality test is presented in Table 4.3

Table 4.3 Normality Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Pr(Skewness)</th>
<th>Pr(Kurtosis)</th>
<th>adj chi2(2)</th>
<th>Prob&gt;chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>60</td>
<td>0.0062</td>
<td>0.5498</td>
<td>7.08</td>
<td>0.1289</td>
</tr>
<tr>
<td>Short term debt ratio</td>
<td>60</td>
<td>0.0676</td>
<td>0.7518</td>
<td>3.61</td>
<td>0.1643</td>
</tr>
<tr>
<td>Long term debt ratio</td>
<td>60</td>
<td>0.0023</td>
<td>0.7335</td>
<td>8.21</td>
<td>0.3165</td>
</tr>
<tr>
<td>Equity Ratio</td>
<td>60</td>
<td>0.1148</td>
<td>0.8503</td>
<td>2.64</td>
<td>0.2671</td>
</tr>
<tr>
<td>Log of Total Assets</td>
<td>60</td>
<td>0.0206</td>
<td>0.0533</td>
<td>7.99</td>
<td>0.1184</td>
</tr>
</tbody>
</table>

The results from Table 4.3 shows that the data was normally distributed as the respective p values for all variables were greater than 0.05.

4.4.2 Panel Unit Root Test

Since panel data have both cross-sections and time series dimensions, there is need to test for stationarity of the time series because the estimation of the times series assumes that the variables are stationary. The study employed Fisher-type test in testing the stationarity of the data. Stationarity results are presented in Table 4.4. The hypotheses to be tested were;

Ho: All panels contain unit roots

Ha: At least one panel is stationary
Table 4.4: Fisher-type Test of Unit Root

<table>
<thead>
<tr>
<th>Variable</th>
<th>Inverse chi-squared (70)</th>
<th>Inverse normal (Z)</th>
<th>Inverse logit t (179)</th>
<th>Modified inv. chi-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin Q test statistic</td>
<td>156.5581</td>
<td>-4.4626</td>
<td>-5.2497</td>
<td>7.3155</td>
</tr>
<tr>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Short term debts test statistic</td>
<td>262.3455</td>
<td>-9.4799</td>
<td>-11.4299</td>
<td>16.2562</td>
</tr>
<tr>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Long term debts test statistic</td>
<td>151.084</td>
<td>-2.3529</td>
<td>-4.1277</td>
<td>6.8528</td>
</tr>
<tr>
<td>p-value</td>
<td>0.000</td>
<td>0.009</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Equity ratio test statistic</td>
<td>191.339</td>
<td>-2.574</td>
<td>-5.232</td>
<td>10.255</td>
</tr>
<tr>
<td>p-value</td>
<td>0.000</td>
<td>0.005</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Firm size test statistic</td>
<td>188.7776</td>
<td>-5.6015</td>
<td>-7.33</td>
<td>10.0385</td>
</tr>
<tr>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>p-value</td>
<td>0.0000</td>
<td>0.0227</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

The Stationarity results test for unit root revealed that, at level Tobin Q, short term debts long term debts, equity ratio and firm size were stationary since p-value was less than 0.05. Estimating models without considering the non-stationary nature of the data would lead to unauthentic results (Gujarati, 2009).

4.4.3 Multicollinearity Test

Multicollinearity was assessed in this study using the variance inflation factors (VIF). According to Katrutsa and Strijov (2017) VIF values in excess of 10 is an indication of the presence of Multicollinearity. Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors. Table 4.4 presents the multicollinearity results.

Table 4.5: Multicollinearity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short term debts ratio</td>
<td>1.44</td>
</tr>
</tbody>
</table>
Long term debts ratio 1.22
Equity Ratio 2.5
Log of Total Assets 2.21
Mean VIF 1.84

The results in Table 4.5 indicated absence of multicollinearity since the VIF of all the variables were less than 10.

4.4.4 Autocorrelation Test

The study employed the Wooldridge test for autocorrelation to detect the existence of autocorrelation in the data, that is, whether or not the residual are serially correlated over time and the results are shown in Table 4.6

<table>
<thead>
<tr>
<th>Table 4.6 Autocorrelation Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wooldridge test for autocorrelation in panel data</strong></td>
</tr>
<tr>
<td>H0: no first-order autocorrelation</td>
</tr>
<tr>
<td>F(1, 11) = 83.640</td>
</tr>
<tr>
<td>Prob&gt; F = 0.1000</td>
</tr>
</tbody>
</table>

The null hypothesis of this test was that there is no first order serial/autocorrelation existed in the data. From the results in Table 4.6, the test statistic reported is F-test with one and eleven degrees of freedom and a value of 83.640. The P-value of the F-test is 0.1000 indicating that the F-test is not statistically significant at 5% level. Hence, the null hypothesis of no autocorrelation is supported and the study concludes that residuals are not auto correlated.
4.4.5 Heteroscedasticity Test

The research tested for panel level heteroskedasticity employing the Likelihood Ratio (LR) as shown in Table 4.7. The null hypothesis was that the error variance was homoscedastic.

Table 4.7: Heteroscedasticity Test

<table>
<thead>
<tr>
<th>Breusch-Pagan / Cook-Weisberg test for heteroskedasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho: Constant variance</td>
</tr>
<tr>
<td>Variables: fitted values of ROA</td>
</tr>
<tr>
<td>chi2(1) = 156.94</td>
</tr>
<tr>
<td>Prob&gt; chi2 = 0.074</td>
</tr>
</tbody>
</table>

From the results in Table 4.7 the likelihood-ratio test generated a chi-square value of 156.94 with a p-value of 0.074. The chi-square figure was statistically insignificant at 5% level and so the null hypothesis of constant variance was accepted justifying the absence of heteroskedasticity in the data as indicated by Poi and Wiggins (2001).

4.4.6 Hausman Test

When performing panel data analysis, one has to determine whether to run a random effects model or a fixed effects model (Daly, Dekker & Hess, 2016). In order to make a decision on the most suitable model to use, both random and fixed effects estimate coefficients. The study used the Hausman’s specification test (1978) to choose between fixed and random effect models. In order to select between fixed and random effects model, the Hausman approach was employed as shown in 4.8

Table 4.8: Hausman Random Test for random and fixed effects

<table>
<thead>
<tr>
<th>Column1</th>
<th>(b)</th>
<th>(B)</th>
<th>(b-B)</th>
</tr>
</thead>
</table>

52
### Table 4.9 Panel Regression Analysis before interaction

| ROA                        | Coef. | Std. Err. | z     | P>|z| |
|----------------------------|-------|-----------|-------|-----|
| Short term debt ratio      | 0.860034 | 0.166894  | 5.15  | 0.000 |
| Long term debt ratio       | -0.12477 | 0.14115   | -0.88 | 0.037 |
| Equity Ratio               | 0.138056 | 0.220155  | 3.81  | 0.000 |
| _constant                  | -0.13693 | 0.078697  | -1.74 | 0.082 |

The null hypothesis of the Hausman test was that the random effects model was appropriate compared to fixed. The results from Table 4.8 shows that Hausman test indicated $\lambda=0.26$ with a p-value of $0.065>0.05$. The study failed to reject the null hypothesis that random effects model was preferred to fixed model as suggested by Daly, Dekker and Hess (2016). Therefore, random effect model was the appropriate one.

### 4.5 Model Regression Analysis

The study sought to carry out panel regression analysis to establish the statistical significance relationship between the independents variables, short term debt, and long term debt and equity ratio on the dependent variable, profitability measured on return on assets. According to McNeish and Stapleton (2016) regression analysis is a statistical process of estimating the relationship among variables. It includes many techniques for modeling and analyzing several variables when the focus is on the relationship between a dependent and one or more independent. Table 4.9 presents the panel regression analysis.
According to the outcome from table 4.6, the predicted equation is:

\[ Y = -0.13693 + 0.860034X_1 - 0.12477 + 0.138056X_3 \]

Where:

- \( Y \) = Profitability (ROA)
- \( X_1 \) = Short term debts
- \( X_2 \) = Long term debts
- \( X_3 \) = Equity ratio

As presented in the table 4.8, the regression results found that short term debt ratio, long term debt ratio and equity ratio were established to be satisfactory in predicting the profitability of deposit taking microfinance institutions in Nairobi County. The coefficient of determination R Square was 0.7142. The model indicates that short term debt ratio, long term debt ratio and equity ratio explained 71.42% of the variation in ROA. This means 71.42% of the variations in ROA are influenced by financial leverage. The results are in agreement with Ongaki (2012) MFI's institutional manageability is highly determined by its financial performance.

Moreover, the F value results in Table 4.9 showed that the model was statistically significant. The findings signify that short term debt ratio, long term debt ratio and equity ratio are good predictors of profitability of deposit taking microfinance institutions in Nairobi County. This was supported by F statistics of 111.92 and a P of 0.000 < 0.05 level of significance. The results concur with the findings of Rai (2012) who found that performance of financials of microfinance
establishments is most likely the key measurement of microfinance manageability and financial Sustainability.

Regression of coefficients findings in Table 4.9 also showed that short term debt was positively and significantly related with profitability of the deposit taking microfinance in Nairobi (β=0.860034, p=0.000). This means that an increase of the short term debts by one unit leads to an increment of the profitability by 0.860034 units holding other factors constant. The results concur with the findings of Wambua (2018) who found that short term debt and long term debt had a positive and significant association on the financial sustainability of Deposit taking microfinance in Kenya and thus the financial sustainability would increase with a proportionate increase in debt when all other factors affecting the profitability of the organizations are held constant.

Moreover, the results shows that long term debt was negatively and significantly related to the profitability of the deposit taking microfinances in Nairobi (β-0.12477, p=0.037). This implied that an increase of the long term deposits will lead to a decrease of the profits of the deposit taking microfinances with 0.12477 units holding other factors constant. The results relate with the findings of Kajiriwa (2015) who found that the long-term debt in commercial banks affects the capital structure negatively. High debts become a burden to the firms and the level of the profits is affected negatively.

Additionally, equity ratio was found to be positively and significantly related to the profitability of the deposit taking microfinances in Nairobi County (β=0.138056, p=0.000). The results obtained implied that when the level of the equity increased in the institutions, the profitability of the institutions is going to increase by 0.138056 units holding other factors constant. The results agreed with the findings of Lubawa, Shirima and Nandonde (2018) revealed that equity
financing is a relatively cheaper option and as such improves the performance of microfinance institutions.

4.5.2 Moderation Effect of Firm Size on ROA

The objective was to establish the moderating effect of firm size on the relationship between leverage and profitability of deposit taking institutions in Nairobi. Each of the independent variables was moderated by the variable firm size. Results after the moderation were presented in Table 4.10

| ROA                        | Coef.   | Std. Err. | z      | P>|z| |
|----------------------------|---------|-----------|--------|-----|
| Short term debts\* log total asset | 0.213783 | 0.059417  | 3.6    | 0.000 |
| Long term debts\* log total asset   | -0.105436 | 0.046042  | -2.29  | 0.019 |
| Equity ratio\* log total asset      | 0.157025  | 0.076191  | 2.06   | 0.039 |
| _constant                           | 0.002217  | 0.075621  | 0.03   | 0.977 |

R Squared=0.7662
F statistics= 132.73
P value=0.000

The model after moderation

\[ Y = 0.002217 + 0.213783X_1 * M -0.105436* M + 0.157025X_3*M \]

Where: \( Y \) = ROA (Return on Asset)

\( X_1 = \) Short term debts

\( X_2 = \) Long term debts

\( X_3 = \) Equity ratio

\( M = \) Firm Size (Moderator)
The result from Table 4.10 shows that $R^2$ before moderation was 71.42% but after moderation, the $R^2$ increased significantly to 76.62%. This implied that firm size moderate the relationship between financial leverage and profitability of deposit taking microfinance institutions in Nairobi. The results revealed that the interaction term between short term debt and firm size is positively and significantly related to profitability ($\beta = 0.213783$, $p=0.000$). This was supported by a calculated t-statistic of 3.6 that is larger than the critical t-statistic of 1.96. Also results revealed that the interaction term between long term debt and firm size is negatively and significantly related to ROA ($\beta = -0.105436$, $p=0.019$). This was supported by a calculated t-statistic of 2.29 that is larger than the critical t-statistic of 1.96. Likewise, the outcome revealed that the interaction term between equity ratio and firm size is positively and significantly related to ROA ($\beta = 0.157025$, $p=0.039$). This was supported by a calculated t-statistic of 2.06 that is larger than the critical t-statistic of 1.96.

The results corroborate with the results of Bashir and Asad (2018) who showed that firm size of a firm has the potential to influence the firm's financial performance in terms of the choice of capital structure mix and the profitability changes over time depending on the capital structure employed.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter gives a summary of the findings in line with the specific objectives of the study, conclusions are drawn and the necessary recommendations made for the study including suggested areas of further study to enrich relevant knowledge under the study.

5.2 Summary

This section presented the summary based on the findings of the study

5.2.1 Short term debt and profitability

The first objective of the study sought to establish the effect of short term debt on profitability in deposit-taking microfinance institutions in Nairobi City County. The correlation results showed that short term debt and profitability were positively and significantly associated. The regression results showed that short term debt had a positive and significant cause effect relationship with profitability. The results concurred with the findings of Godswill, Ailemen and Osabohien (2018) who showed that working capital management has a positive and significant relationship on the profitability of the selected banks and that return on asset is a better measure for bank profitability.

5.2.2 Long Term Debt and profitability

The second objective of the study was to determine the effect of long term debt on profitability in deposit-taking microfinance institutions in Nairobi City County. The correlation results showed that long term debt and profitability was positively and significantly associated. The
regression results established that long term debts had a negative and significant cause effect relationship with profitability. The results relate to the findings of Kajiriwa (2015), who found that the long-term debt in commercial banks affects the capital structure negatively. High debts become a burden to the firms and the level of the profits is affected negatively. Also, Siddik, Kabiraj and Joghee (2017) indicated that total debt, particularly the long-term debt, negatively influenced the profitability and the overall performance of the banks in India.

5.2.3 Equity ratio and profitability

The third objective of the study determined the effect of equity ratio on profitability in deposit-taking microfinance institutions in Nairobi City County. The correlation results showed that equity ratio was positively and significantly correlated to profitability. The regression results showed that the equity ratio had positive and significant cause effect relationship with profitability of the deposit-taking micro finances in Nairobi County. The results agreed with the findings of Lubawa, Shirima and Nandonde (2018) that revealed equity financing is a relatively cheaper option and as such, improves the performance of microfinance institutions. Waweru and Wanyoike (2016) also reported that equity capital ratio in the microfinance institutions in Kenya was on the rise and equity financing was cheaper than other forms of financing in the firm despite it been the last financing option.

5.2.4 Firm size

The fourth objective was to establish the moderating effect of firm size on the relationship between the financial leverage and profitability in deposit-taking microfinance institutions in Nairobi City County. Firm size was found to moderate the relationship between financial leverage and profitability of deposit taking microfinance institutions in Nairobi. The results concurred with the findings of Abiodun (2017), who reported that the size of the firm has a positive influence on the leverage ratio of the listed firms in Nigeria. Further, Wahome, Memba
and Muturi (2015) revealed that larger firms obtain benefits from their size and diversification because they can borrow with lower costs and survive economic disasters with more resilience than smaller firms.

5.3 Conclusions

From the findings of the study, the study concludes that short term debt had a positive and significant association on the profitability of the deposit-taking microfinance in Nairobi County. The study also concludes that short term debt has a positive and significant relationship on the profitability of the deposit-taking microfinance in Nairobi County. This means that profitability would increase with a proportionate increase in in the level of the short term debt when all other factors affecting the profitability of the organizations are held constant. The study showed that when the company borrows, availability of sufficient funds to finance the available assets of the company, which in return improves in the level of performance, increases.

The study also concludes that long term debt had a positive and significant correlation on the profitability of the deposit-taking microfinance institutions in Nairobi County. The study further finds that long term debt had a negative and positive relationship on the profitability of the deposit-taking microfinance institutions in Nairobi County. The study showed that long term debt is not favorable to the companies as it attracts higher interest rates that in return, reduce the profitability of the firms.

The study further concludes that equity ratio was positively and significantly correlated to the profitability. Moreover, the equity ratio relates positively and considerably with the profitability level. However, despite the equity capital been important in enhancing the profitability of the deposit-taking microfinance institutions, it is the last financing option for the firms.

Finally, it can be concluded that firm size moderates the relationship between financial leverage and profitability among deposit-taking microfinance institutions in Nairobi city county, Kenya.
The size of a firm can influence the firm's financial performance in terms of the choice of capital structure mix and the profitability changes over time depending on the capital structure employed.

5.4 Recommendations

Based on the coefficients of determination, the study recommends that policymakers in the microfinance institutions should use short term debt for the financing of the activities. The cost of the short term debts is minimal and generally offers lower interest charges, and most lenders do not charge interest until all credit allowance period is breached and therefore becomes useful for companies.

Also, with reference to the coefficients of determination, the study recommends that policymakers and other potential investors should not rely much on long term debts. Long term debt is not conducive for the financing activities in the process of generation of profits. High levels of the long term debt increase the number of interest payments that are expected to be paid regularly, thus lowering the sustainability of the companies. The microfinance institutions should only use long term debts if other financing options are not available such as the short term debts.

Additionally, as per the coefficients of determination, the study recommends that policymakers in the microfinance institutions should discourage financing the operations using equity. A high equity ratio is not suitable for companies. Equity financing positively affects the profitability; nevertheless, it is preferred only when the financing option through short term debts have reached optimal and the company lacks an alternative method to finance its activities.

Finally, with reference to the coefficients of determination, the study recommends that deposit-taking institutions increase the number of branches of the institutions. Lenders and other potential investors are much confident to lend out funds to companies that have a larger market share. Larger firms obtain benefits from their size and diversification because they can borrow
with lower costs and survive economic disasters with more resilience than smaller firms and thus generate more profit.

5.5 Areas for further research

Based on the findings of the study, the study recommend that apart from short term debt, long term debt, equity ratio liquidity, other indicators are influencing the profitability of the deposit-taking microfinance institutions in Nairobi County. These factors may include regulatory environment, management efficiency and investment growth. Future research should include these variables. The study also relied on ROA as a measure of profitability. The future research should involve measuring profitability using both and Return on Equity (ROE). ROE is an accurate bottom-line profitability metric, comparing the profit available to shareholders to the capital provided or owned by shareholders.
REFERENCES


Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: guided by information power. Qualitative health research, 26(13), 1753-1760


APPENDICES

Appendix 1: List of Microfinance Institution

<table>
<thead>
<tr>
<th>No</th>
<th>Microfinance Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Caritas Microfinance Bank Limited</td>
</tr>
<tr>
<td>2.</td>
<td>Century Microfinance Bank Limited</td>
</tr>
<tr>
<td>3.</td>
<td>Daraja Microfinance Bank Limited</td>
</tr>
<tr>
<td>4.</td>
<td>Faulu Microfinance Bank Limited</td>
</tr>
<tr>
<td>5.</td>
<td>Kenya Women Microfinance Bank Limited</td>
</tr>
<tr>
<td>6.</td>
<td>Maisha Microfinance Bank Limited</td>
</tr>
<tr>
<td>7.</td>
<td>Rafiki Microfinance Bank Limited</td>
</tr>
<tr>
<td>8.</td>
<td>Remu Microfinance Bank Limited</td>
</tr>
<tr>
<td>9.</td>
<td>SMEP Microfinance Bank Limited</td>
</tr>
<tr>
<td>10.</td>
<td>SUMAC Microfinance Bank Limited</td>
</tr>
<tr>
<td>11.</td>
<td>U &amp; I Microfinance Bank Limited</td>
</tr>
<tr>
<td>12.</td>
<td>UWEZO Microfinance Bank Limited</td>
</tr>
</tbody>
</table>
## Appendix II: Data Collection Form

<table>
<thead>
<tr>
<th>Company</th>
<th>Year</th>
<th>Net Profit million</th>
<th>Short term debts million</th>
<th>Long Term debts million</th>
<th>Total Assets 'Million' million</th>
<th>Shareholders' equity million</th>
<th>Equity Ratio</th>
<th>Log of Total Assets</th>
<th>ROA</th>
<th>Short term debt ratio</th>
<th>Long term debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caritas Microfinance Bank Limited</td>
<td>2014</td>
<td>32</td>
<td>47</td>
<td>2</td>
<td>321</td>
<td>75</td>
<td>0.2336</td>
<td>2.5065</td>
<td>0.0997</td>
<td>0.1464</td>
<td>0.0062</td>
</tr>
<tr>
<td>Caritas Microfinance Bank Limited</td>
<td>2015</td>
<td>65</td>
<td>98</td>
<td>5</td>
<td>424</td>
<td>88</td>
<td>0.2075</td>
<td>2.6274</td>
<td>0.1533</td>
<td>0.2311</td>
<td>0.0118</td>
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<td>Caritas Microfinance Bank Limited</td>
<td>2016</td>
<td>74</td>
<td>303</td>
<td>11</td>
<td>574</td>
<td>271</td>
<td>0.4721</td>
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<td>2017</td>
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<td>585</td>
<td>20</td>
<td>879</td>
<td>273</td>
<td>0.3106</td>
<td>2.9440</td>
<td>0.0808</td>
<td>0.6655</td>
<td>0.0228</td>
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<td>12</td>
<td>604</td>
<td>25</td>
<td>903</td>
<td>286</td>
<td>0.3167</td>
<td>2.9557</td>
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<td>76</td>
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<td>28</td>
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<td>22</td>
<td>197</td>
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<td>2.2945</td>
<td>0.1421</td>
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<td>Bank Name</td>
<td>Year</td>
<td>Total Loans</td>
<td>Number of Loans</td>
<td>Total Sanctioned Loan Amount (Ksh)</td>
<td>Average Loan Size (Ksh)</td>
<td>Average Collateral (Ksh)</td>
<td>Average Collateral Coverage Ratio</td>
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<tr>
<td>---------------------------------</td>
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<td>152</td>
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<td>4,485</td>
<td>0.1771</td>
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<td></td>
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<td>3474</td>
<td>26432</td>
<td>4,673</td>
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Appendix III: Graduate School Approval Letter

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School
TO: Christine M. Okumu
C/o Accounting and Finance Dept.

DATE: 14th October, 2019
REF: D53/CTY/PT/39155/2017

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 2nd October, 2019 approved your Research Project Proposal for the M.B.A Degree Entitled, “Financial leverage and profitability among deposit taking microfinance institutions in Nairobi City County, Kenya”.

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

ELIJAH MUTUA
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Accounting & Finance Department
Supervisors:

1. Dr. Ambrose Jagongo
C/o Department of Accounting and Finance
Kenyatta University

EM/Š

79
Appendix IV: NACOSTI Research Permit

Ref No: 388027

Date of Issue: 07/November/2019

Research License

This is to certify that Mrs. CHRISTINE OKUMU of Kenyatta University, has been licensed to conduct research in Nairobi on the topic: FINANCIAL LEVERAGE AND PROFITABILITY AMONG DEPOSIT-TAKING MICROFINANCE INSTITUTIONS IN NAIROBI CITY COUNTY, KENYA for the period ending: 07/November/2020.

License No: NACOSTI/P/19/2514

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

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