THE RELATIONSHIP BETWEEN FIRM SIZE AND PROFITABILITY OF MICROFINANCE INSTITUTIONS IN KENYA
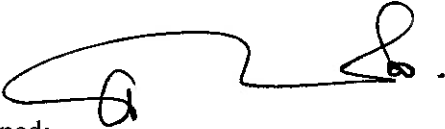
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A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTERS OF BUSINESS ADMINISTRATION OF THE UNIVERSITY OF NAIROBI

AUGUST 2022

DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

Signed: .... Date: 27 | 11 | 2022 .

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This research project has been submitted for examination with my approval as the University Supervisor.

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First and foremost, I thank the Almighty GOD for His Grace and Gift of life during this study period. To my supervisor Dr. Nixon Omoro for his contribution, guidance as well as encouragement that helped me to coordinate my project writing.

DEDICATION

I dedicate this project to my wife Brigid Kilonzo and my sons Dennis Owambo and Declan Owambo. To my parents Mr. Dennis Owambo and Mrs. Colleta Owambo for their prayers and unwavering support.

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LIST OF ABBREVIATIONS

AMFI: Association of Microfinance Institutions

MFI: Microfinance Institutions

ANOVA: Analysis of Variance

CBK: Central Bank of Kenya

CLRM: Classical Linear Regression

LLC: Levi Lechun

NPLs: Non Performing Loans

POT: Pecking Order Theory

ROA: Return on Assets

ROE: Return on Equity

TT: Tradeoff Theory

VIF: Variance Inflation Factors

ABSTRACT

Firm size determines the kind of relationship that a firm enjoys outside and within its operating environs. To determine the link between firm size and profitability of microfinance institutions in Kenya, the research utilized a descriptive research. The population for the study included 27 microfinance institutions, which are licensed and operating in Kenya. The research considered five years (2016-2020). The variables were examined using percentages, mean, as well as standard deviation. A multiple linear regression model was utilized to find out the link between firm size and profitability of microfinance institutions in Kenya. The findings indicated that there is a direct relationship between deposit accounts, loan accounts, branch networks, liquidity and capital adequacy with profitability of microfinance institutions in Kenya. On the other hand, there exists an inverse relationship between asset quality and profitability of microfinance institutions. The research discovers many microfinance institutions are small in size and though most of them have experienced growth over the years in terms of deposit accounts, loan accounts, branch network, liquidity and capital adequacy. The study concluded that deposit accounts, loan accounts, branch network, liquidity and capital adequacy have a positive and significant link with profitability of microfinance institutions. However, asset quality has a negative and significant link with profitability of microfinance institutions. The research recommends that microfinance institutions should identify their geographic market, including any exceptions or specific restrictions. The study recommended that microfinance institutions should make substantial expenditure in undertaking their due diligence before issuing loans. This can be drawn from the fact that large microfinance institutions have a lower ratio of non-performing loans than smaller microfinance institutions. Finally, the study suggested that the microfinance institutions create thorough strategic plans describing how they will deal with NPLs when they emerge in a methodical manner.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Firm size determines the kind of relationship that a firm enjoys outside and within its operating environs. Larger firms appreciate economies of scale benefits and are likely to achieve higher profitability. Growth of multinational firms and conglomerates in today world economy including the local economies where they operate shows the role that size plays in enhancing profitability in the corporate setting. This emphasis has also been made by Kumar et al. (2001) who argues a stimulating feature of a growing economy is that considerable of it is realized via size increase of firms in existence. Rajan and Zingales (1995) examined 43 nations in their study and showed that seventy five percent of industry growth was as a result of increase in size of the existing establishments, but only fifteen percent was a consequence of creation of new businesses.

The theories guiding this study include Growth of the Firm Theory, Tradeoff Theory (TT) and Pecking Order Theory (POT). The anchor theory is Penrose's (1959) Growth of the Firm Theory, which states that growth is mainly driven by managers' perceptions of prospects to exploit under-leveraged assets. By utilizing the available firm assets, the growth of the firm is maximized. The theory hypothesizes a positive link between firm size and profitability. Trade-off Theory maintains that the impact that a financing option have on the general cost of capital ought to be considered with the goal of minimizing the overall cost of capital or maximization of firm value (Jensen & Meckling, 1976). Pecking Order Theory is built on the tenets that the management can easily get the required information about the company compared to the investors. This inequality of information is regarded as asymmetric information (Myers, 2001).

Due to severe competition in the microfinance institutions, most institutions prefer to finance their investments using debt so as to benefit from tax deduction. Smaller companies are extra vulnerable to financial restrictions and this hinders them from accessing credit facilities from other financial institutions. Large and more stable firms might project the future since they have access to information unlike smaller firms. Thus, it is easier for such companies to get loans because they can strategize for it and the future (Njoroge, 2014).

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1.1.1 Firm Size

Reid (2010) bases his definition of firm size on the typical assets possessed by the company. Abel (2008) defines firm size in terms of the scale of operations. In this case, firms with more branches are considered to be large than firms with few branches. Kimani (2014) defines firm size in relation to worker's number. The more the employees in a firm, the bigger it is. Large corporations benefit from economies of scale thus offering more efficient financial services to local organizations. This creates opportunities for employment and income. Because of their vast network of branches, large companies are able to satisfy their clients' financial demands; it seems to have a greater effect on large microfinance institutions than on small microfinance institutions that do not serve these markets (Ramezani & Alan, 2012).

There are several reasons why firm size is hypothesized to affect firm performance: First, a large firm is more stable and might venture in long-term projects that are risky in the process of trying to gain high returns. Secondly, firms that are large in size diversify their investment portfolios and this might prompt them to take more risky investments because if one investment fails the others will not fail. Thirdly, large firms invest in modern technologies which are too expensive; this might expose the firm to risks of fraud, however, if proper controls are put in place, it can accrue many benefits to the firm such as increased efficiency. Fourthly, large firms attract competent and talented staffs who are an invaluable asset to the firm, paying and retaining such employees in the firms can be very expensive for the firm. However, this is risky because the firm is not guaranteed the benefit that will be derived from innovations, financial decisions, efficiency and skills from a competent team of employees who will exceed the cost of remunerating and sustaining such employees.

As per Willison, Dimitris and Hong (2013) efficiencies induced by institution's profit increase depending on the size of the firm, because economies of scale vary based on the institution's activities magnitude. The reasons that might expose a company to risks could be proportional to its size. In fact, it is expected that one common reason for these risks is because large and stable firms engage in risky ventures that are long-term in nature, in so doing these firms might be exposed to liquidity risks leading to financial losses in the short-term. On the contrary, smaller firms avoid long-term investments that are risky hence such firms are profitable and more liquid in the short-term (Kiragu, Gikiri & Iminza, 2015). Under this study, firm size was assessed by determining the number of branches, deposit accounts and loan accounts.

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1.1.2 Concept of Profitability

Profitability, according to Charlene (2005), is the difference between revenues and expenditures of a long-term activity. The profit realization capacity of a company from its activities is referred to as profitability. Profitability is a measure of how effectively a company's management can earn profit by maximizing the use of existing resources (Eljelly, 2004). One can also define profitability as investment capability to make a return from its use of resources (Chakraborty, 2008). Consequently, profitability is perceived as an index of efficiency; it is also regarded as an indicator of efficiency (Davidsson, Steffens, & Fitzsimmons 2009). 'Earnings,' 'income,' as well as 'margin' are other words that have a similar meaning to profitability.

The ultimate goal for any organization that engages in commercial business is to make profit. A firm that is able to make adequate profits is probable to expand as well as long run survival. A profitable firm is able to survive in the long-term since it has excess money to invest in huge and profitable investments which promise high returns in the long-term. The top management should maximize their profitability to realize shareholders wealth which is a key corporate goal of the firm. Operational efficiency is regarded as a crucial determinant of the profitability of a firm. Moreover, there are other factors that affect a firm's profitability besides efficiency (Claeys &Vennet, 2008).

The firm's profitability is measured by examining the firm's expenditures and revenues. Revenue is income earned from the sale of goods and services, whereas expenses are the costs incurred by the company during its activities. Return on Assets (ROA) and Return on Equity (ROE) are two common metrics used by businesses to assess profitability. ROA is a pointer of profitability a firm is in relation to its total assets. It is a representation of management's efficiency in generating income from assets. A proportion of net profit to total assets is used to calculate this metric. ROE is established by division of net profits by the stakeholder equity. This metric uses disclosures to assess a company's profitability by calculating the amount of profit produced in comparison to the shareholder supplied funds (Penman, 2007). The current research utilized ROA as a measure of profitability.

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1.1.3 Firm Size and Profitability

Firm size is thought to be vital in understanding firm profitability, and several researchers have pursued firm size impact on profitability in the following ways: According to Serrasqueiro et al. (2008) no association between firm size and profitability. According to Ezeoha (2012), larger businesses benefit due to economies of scale, which enables them to be more efficient. By setting prices above the competitive market price, they gain control over their manufacturers, distributors, and customers (Fiegenbaum & Karnani, 1991).

Even though a microfinance institution size accrues several advantages, a study by De Haan and Scholtens (2013) found that there is no substantial association between institution size and profitability of firms in Turkey. In contrast, a study by Berger (1997) depicts a linear correlation between the firm size and profitability in Europe. Diversifying their investment portfolio, large firms are able to minimize their risks and ensure stability. Consequently, they can maintain and sustain their level of liquidity to fulfill their financial obligations. Large firms invest in modern technology and innovation thereby enhancing efficiency in business processes and procedures. This minimizes costs and enhances the profitability of the firm (Kouser& Hassan, 2014).

Larger firms are financially stable and mature and hence are able to generate more sales as a result of larger production capacity that will enable them to cut costs due to economies of scale (Banchuenvijit, 2012). Archarungroj and Hoshino (2012) assessed the association between firm size and profitability of Thailand operating firms; the outcomes revealed that firm size was positively correlated to profitability. On the contrary, Goddard and Wilson (2009) concluded that size has no significant impact on profitability particularly if increase in size leads to diseconomies of scale.

1.1.4 Microfinance Institutions in Kenya

The Microfinance Institutions Supervisory and Regulatory Framework in Kenya is outlined in the Microfinance Act of 2006. On May 22nd 2008, Microfinance Act was hypothesized, its key roles being licensing, supervisory and governance provisions needed for the appropriate establishment of microfinance institutions. This Act empowers microfinance institutions to mobilize client deposits and expand credit availability. This makes it simple for microfinance institutions to lend money and earn interest, which is their primary source of income.

Kenyan lending MFIs licensed under the Societies Act are members of AMFI, a member-based organization. Its main responsibility is to increase the Microfinance sector capability in order to improve deposits access for individuals earning low incomes. The need for a binding voice for lobbying the Kenyan government as well as negotiating for enhanced policy making to improve access to information as well as experiences, creating a network locally as well as globally, drove the creation of this institution. AMFI currently has 62 member institutions that provide financial solutions to in excess of 6.5 million middle and low-income families (AMFI, 2014).

Recently, there has been incredible rise especially in Microfinance Institutions in Kenya, due to competition, a move toward contemporary technology and financial innovation, as well as shifting consumer demands, microfinance institutions were compelled to integrate their systems and implement more cost-effective and efficient operational strategies (Mwangi, 2014). The growth of microfinance institutions in Kenya in terms of customer base, number of branches, asset base, deposits among others offers a good context to investigate how the size of a firm influences profitability.

1.2 Research Problem

Large firms are complex and diversified. They have different product lines and integrated services that enable them to be more efficient and to invest in huge investments that are risky and long-term in nature. Such firms benefit from economies of scales as compared to smaller firms because their average production costs are less and while their operational activities are efficient. This gives them a platform to grow and expand (Berger, 1997). In spite of these advantages that accrue from large firms, arguments have been raised on whether firm size contributes towards profitability of the firm. According to Hirtle and Stiroh (2007), larger firms simply obtain loan services from financial institutions since they have a large capital base and they attract more qualified and competent human capital which gives them an opportunity to invest and grow. Small businesses, according to Ezeoha (2008), offer customized services because their roles as well as procedures are less complex than those of bigger companies. This boosts customer trust leading to sales profitability. The debate on firm size effect on profitability is therefore ongoing.

Microfinance institutions in Kenya have experienced rapid growth in the last two decades. The country has experienced an increase in the number of institutions and a significant increase in

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size in terms of asset base, deposits, branches and loan volumes among the existing microfinance institutions. This increase in size of MFIs offers a good context to investigate the hypothesized link between firm size and profitability as the sector comprises of firms in different sizes and their profitability has also been different with some posting increased profitability over the years while others have struggled.

The correlation between a firm's size and its profitability has been a topic of philosophical and empirical debate: Symeou (2012) investigated the association between a firm's size and profitability. The results revealed a statistically substantial connection between the size of a company and its profitability. De Haan and Scholtens (2013) found no statistical significant relationship between growth and financial institution profitability in their research. Mwangi (2016) researched firm size effect on profitability of Kenyan microfinance banks and revealed that size has a positive effect on profitability of the 9 microfinance banks in Kenya. Kimani (2014) examined the link between a firm's size and the profitability of manufacturing firms in Kenya, firm size was discovered to negatively link to profitability. Kithuka (2013) concluded that firm size was not substantial to asset growth of Nairobi Securities Exchange.

From the foregoing, there exists prior studies on firm size and profitability but there exists conceptual, contextual as well as methodological gaps. Conceptually, the previous studies arrived at contradictory findings and this can be explained by the difference in the operationalization method used. Contextually, most of the previous studies were conducted in other contexts and due to differences in economic, social and other contextual differences; the findings cannot be generalized among microfinance institutions in Kenya. Although, Mwangi (2016) focused on microfinance banks in Kenya, the study reveals a methodological gap as it focused on only 9 microfinance banks which might not provide adequate data points for robust regression analysis. This research thus, therefore aimed at closing the existing knowledge gap by attempting to provide an answer to the question: What is the relationship between firm size and profitability of Microfinance Institutions in Kenya?

1.3 Research Objective

To determine the relationship between firm size and profitability of microfinance institutions in Kenya

1.4 Value of the Study

This research will contribute to existing knowledge and theories on firm size and profitability. Students will get a better understanding of how business size affects profitability as well as the theories behind this relationship, as well as how to apply and use these theories. Additionally, the researchers who are concerned in this area of research may utilize the suggestions made for this study to aid in conducting additional research.

The study will also be useful in practice since microfinance institutions will know how firm size affects profitability and what standard to use to gauge a microfinance institution's size and profitability. The microfinance sector will discover how their size affects profitability as well as strategies for boosting performance and cutting costs. Finance professionals will gain a better grasp of firm size, profitability, and the best metrics to measure these factors.

Policy makers like the CBK too will gain from this study as they may utilize the empirical findings of this research to develop strategies which allow Microfinance Institutions to grow and expand their size in order to enhance their performance and competitiveness.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The chapter deliberates the theoretical basis for the study in line with the study objectives, the determinants of financial performance, the empirical studies, conceptual framework and a summary of the chapter.

2.1 Theoretical Framework

Various theories have been founded by scholars to clarify the nexus between size of the firm and financial leverage. However, the theories that the researcher used in guiding this study include Growth of the Firm Theory, Trade-off Theory (TT) and Pecking Order Theory (POT), this have been discussed in line with the research objective.

2.1.1 Growth of the Firm Theory

Penrose (1959) developed the theory of the firm's growth. The theory of firm growth served as an example of internal motivations to grow independent of outside circumstances. More precisely, Penrose argued that while she accepted the importance of outside forces like demand, growth is primarily driven by managers' perceptions of how best to use their underutilized resources. Penrose has highlighted the variety of resources amongst organizations by focusing on the internal drivers of growth.

Additionally, it is asserted that the heterogeneity of these businesses leads to the pursuit of diverse expansion prospects by various businesses. According to Penrose (1959) and Garnsey, Stam, and Heffernan (2006), different activities called for different kinds and quantities of resources. Penrose (1959) thought that firms' voluntary decisions to seize expansion opportunities—which required additional resources—were the basis of growth. Corporate acquisitions could be used to get these resources for growth and expansion. In essence, Penrose thought that a business should either seize an expanding opportunity on its own or pass it up completely.

Penrose (1959) noted that the firm's statement of aim contains an underlying reference to growth as an intrinsic process. The assumption is that the company is constantly changing in

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order to optimize value. This thus inspires the desire to grow through increasing assets such as branch network, deposit accounts, loan accounts among others. As such, this theory has been used to hypothesize the link between firm size and profitability of Microfinance Institutions.

2.1.2 Trade-off Theory

Kraus and Litzenberger, (1973) first coined trade-off theory, it holds that optimal financing mix of the firm is influenced by the balancing losses and gains from financing debt. The theory was derived from Modigliani and Miller's (1963) work, which was subsequently criticized by critics of their irrelevance theory due to perfect market assumptions. Through accepting the fact that arbitrage activities lack sustainability, the authors depict that capital structure has an impact on the corporate market value.

Fama and French, (2002) assert that through taking into account corporate taxes impact, holding the arbitrage assumption on the existence, it can be reasoned that interest on debt that is tax deductible offers extra cash flows to a leveraged firm in interest tax savings system. This improves the firm's market value. The theory argues that in cases of permanent debt, constant marginal tax rate and costs of debt, levered firms have high market values as compared to unlevered firms. This is as a result of present value of interest tax shield related to debt funding. Jensen and Meckling (1976) first introduced agency costs by indicating that debt accrues the firm to several advantages. It also enhances the linked agency costs. Agency costs originate from the principal-agent conflict that is present between debt-holders, shareholders and managers. It was argued that managers might not entirely focus on maximizing the wealth of the shareholder however; they might cater for their own interests; which might result into depletion of free cash flow through gains.

The importance of this theory to the research is that it explains how debt financing boosts firm value via the tax-deductibility feature that is linked with borrowing. Moreover, the theory presents the costs of agency and financial distress cost, the concept of capital structure and how it impacts negatively on the firm through increasing the costs of agency related to borrowing.

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2.1.3 Pecking Order Theory

The information asymmetry feature of Donaldson's (1961) pecking order theory was adopted by (Myers & Majluf, 1984). According to the theory, information asymmetries between capital providers and the company cause variation in the costs of funding from various sources. For example, an internal source of funding in which the company provides the funds has more information about the company than external financiers like equity and debt investors, so outsiders would expect a high return rate on their investments. This means that obtaining external capital would cost the company more money than using internal financing.

Another way to explain the information asymmetry impact on funding is, in normal conditions, insiders, such as executive management, have more information about the business than outsiders about the firm's earnings potential. Assuming that the management represents stakeholder interests, they might opt to decline issuing shares which are undervalued unless transfer of value from existing to new stakeholders is higher as compared to the growth opportunity net present value. Equity issue by the firm could be seen as a sign of overpricing by investors. If external funding is unavoidable, a company may choose secured debt over unsecured debt, and as a last resort, companies may issue ordinary shares.

The existence of a simple financing hierarchy without a well-defined goal ratio, as shown by the trade-off theory, is the theoretical importance of pecking order theory. Internal funds are preferred over external funds in this principle, which consolidates debt and equity in an effort to preserve the firm's stability and value. This has the effect of increasing external sources of capital use, like debt and equity, which has a negative effect on the firm's value while increasing the risk of financial distress.

2.2 Determinants of Microfinance Institution Profitability

A discussion on the determinants of a Microfinance Institution's profitability is provided in this section which was discussed in conformity to the study objective which sought to bring out an understanding of how these determinants affect profitability of Microfinance Institutions.

2.2.1 Firm Size

Firm size determines amount of debt that a firm gets to finance its projects. Larger firms enjoy economies of scale and an average production cost. Large firms are efficient in their operations since they can afford advanced technology. Gonenc (2005) argues that larger firms easily access debt as compared to smaller firms since they have a good corporate reputation from their stakeholders.

Smaller firms are unstable and hence most financial institutions are reluctant to provide them with debt. Smaller firms exhibit a high rate of growth; these firms require debt to finance their growth and expansion strategies as opposed to large firms that are established and stable. A lot of money and resources is invested in research and development to attract customers and boost their sales. Firm size was evaluated with the help of natural logarithm of total assets (Petersen & Kumar, 2010).

2.2.2 Asset Quality

This indicates a Microfinance Institution's asset risk and stability. It estimates the asset quality magnitude among the characteristics that impact Microfinance Institution health. The value of assets under the control of Microfinance Institution is heavily dependent on credit risk, and the quality of the assets owned by the Microfinance Institution heavily relies on specific risks, level of NPLs, and debtors cost to the microfinance. This ratio should be at the lowest level. If lending is susceptible to risk in a well-functioning Microfinance Institution, the indicator in this case would be the applied interest margins. A low ratio shows an insufficient risk cover by the margins (Mehrjardi, 2014).

Microfinance Institution's assets primarily consist of a loan portfolio, current as well as fixed assets, and other investments. The quality of assets mostly improves with the age and Microfinance Institution size (Mehrjardi, 2014). The primary assets that generate income for Microfinance Institutions are loans. The loan portfolio quality hence determines Microfinance Institution performance. Good quality assets reduce losses arising from NPLs, and this subsequently impacts performance (Gatete, 2015).

2.2.3 Liquidity

Eljelly (2004) explains liquidity as the firm's capability to trade an asset, such as stock or bond at its market price. Raheman and Mohamed (2007) posit that financial institutions can be assessed according to their liquidity position. Liquidity is defined as the capacity of a firm to satisfy its financial compulsions without sustaining substantial losses. Liquidity management is exertion by managers to minimize exposure to liquidity risk.

Large firms are more liquid when comparing them to smaller firms since they can easily access debt from financial institutions. Smaller firms invest most of their finances and resources to growth and expansion of their business. Liquidity was measured using financial ratios known as liquidity ratios. This set of ratios will examine the firm's ability to fulfill its financial obligations (Liabilities). This ratio includes current ratios which were calculated through division of current assets with the current liabilities (Raheman & Mohamed, 2007).

2.2.4 Capital Adequacy

Also called the capitalization ratio, the adequacy ratio shows how equity and total assets are related. It shows the ability of a firm to remain solvent by regulating risks. Berger and DeYoung (2010) in an investigation showed a negative relation between capital adequacy and performance in imperfect capital markets, firms with sufficient capital ought to reduce borrowing to back a specific asset class, hence lowering the predicted bankruptcy costs hence incur less financing costs.

A firm with sufficient capital signals the market that a superior performance is to be anticipated. The results of Mehrjardi (2014) revealed that capital holdings are positively related to firm's profitability. In addition, Berger and DeYoung (2010) showed a positive causality between capital contributions and profitability.

2.3 Empirical Studies

Abdussalam (2010) tested the link between profitability and the structure of the firm. An explorative form of research was implemented to detect the link between study parameters. The study considered key traits like firm size, firm age, debt ratio and ownership structure of forty eight industrial companies in Jordan in the Amman Stock Exchange. The study covered a decade (1995-2009). This study applied two model specifications to carry out a hypothesis

test. Profitability was measured using ROE and ROI. The empirical results depicted that the structure of the firm was a key factor in influencing profitability. The conclusions revealed a positive association between firm size and profitability.

Symeou (2013) pursued the link between a firm's size and profitability of German service firms. The study adopted an exploratory approach to establish the link between firm size and profitability. The research utilized panel data for fifteen years duration. Data was analysed via ordinary least square and the results established a statistically significant correlation between firm size and profitability.

Kithuka (2013) scrutinized the nexus between firm size and investment in financial innovation of NSE listed firms. The research made use of a descriptive survey research design by sampling 40 firms which were chosen with the help of a stratified random sampling technique. A regression equation was chosen for carrying out analysis and the outcomes revealed existence of a positive correlation on financial innovation and firm size.

Mahfoudh (2013) investigated the firm characteristics impact on the financial performance of publicly traded agricultural firms. To determine the link between the variables, a descriptive survey was used. The research was performed on a total of 25 sampled firms using a regression equation. The conclusion discovered a positive link between financial performance and firm characteristics (size, age, as well as growth).

Shehzad, De Haan and Scholtens (2013) assessed the link between size and profitability of the bank. The research implemented a longitudinal research design in establishing relationships between size and profitability. The research utilized panel data for a duration of fifteen years. The conclusions revealed that changes in profitability are linked to the rise in the size of the firm. Consequently, the volatility of banks' profit is depended on its size and profitability.

Pagano (2014) assessed the link between firm size distribution and profitability in European Countries. The study examined the industry level and size structure. Panel data was used for fifteen years. An exploratory research design was used, and a positive and robust relationship was established between the average size of a firm and its profitability. The results indicate that larger size fosters productivity and firm profitability.

A descriptive research design was used in all of the listed firms at the NSE in Marete's (2015) investigation into the relation between firm size and financial leverage of listed firms in Kenya. Over the course of five years, data from published sources was used (2010-2014). The data was analyzed using inferential statistics, and the conclusions revealed that firm size and financial leverage were statistically substantial. The link between firm size and financial leverage was discovered to be substantial and positive.

Tale (2014) evaluated the contribution that capital structure had on financial performance of listed non-financial firms at NSE in Kenya with firm size as a control variable. A descriptive survey design was implemented in a population of 40 non-financial firms. Published data sources were derived from Capital Markets Authority. Analysis performed via a regression equation and conclusions depicted that size of the firm was negatively connected to financial performance.

Kinuthia (2015) studied the association between size and financial performance of Kenyan commercial banks. The researcher utilized descriptive research design to determine the connection between size and financial performance of banks. The research population involved a sample of 35 Kenyan commercial banks. The conclusions discovered a positive link between profitability of banks with the client base, deposits, liabilities, branches number and market share.

Mwangi (2016) tested the firm size contribution on microfinance banks profitability in Kenya. A census survey was conducted involving a total of 9 microfinance banks. This study was covered in duration between 2011 and 2015 (5 years). A regression equation was chosen to find out the nexus between firm size and profitability. Firm size and operating efficiency were all discovered have a substantial and positive impact on profitability of microfinance institutions in Kenya.

2.4 Conceptual Model

It is hypothesized that profitability and firm size are significantly correlated. Further, the control variables: Liquidity, asset quality and capital adequacy were also anticipated to possess a substantial link with profitability. This was also supported by theories anchoring this study that predicts a significant link of the size of the firm on profitability.

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Independent variables   **Dependent variable**

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┌─────────────────────────────┐           ┌─────────────────────────────┐
│ Firm size                   │           │ Profitability               │
│  • Branch network           │  ─────→   │  • Return on Assets (ROA)   │
│  • Deposit accounts         │           │                             │
│  • Loan accounts            │           │                             │
└─────────────────────────────┘           └─────────────────────────────┘

            ┌─────────────────────────────────────────┐
            │ Control Variables                        │
            │ Asset quality                            │
            │  • NPL to total loans                    │
            │ Liquidity                                │
            │  • Liquid assets to total assets ratio   │
            │                                          │
            │ Capital adequacy                         │
            │  • Core capital to risk weighted assets  │
            └─────────────────────────────────────────┘
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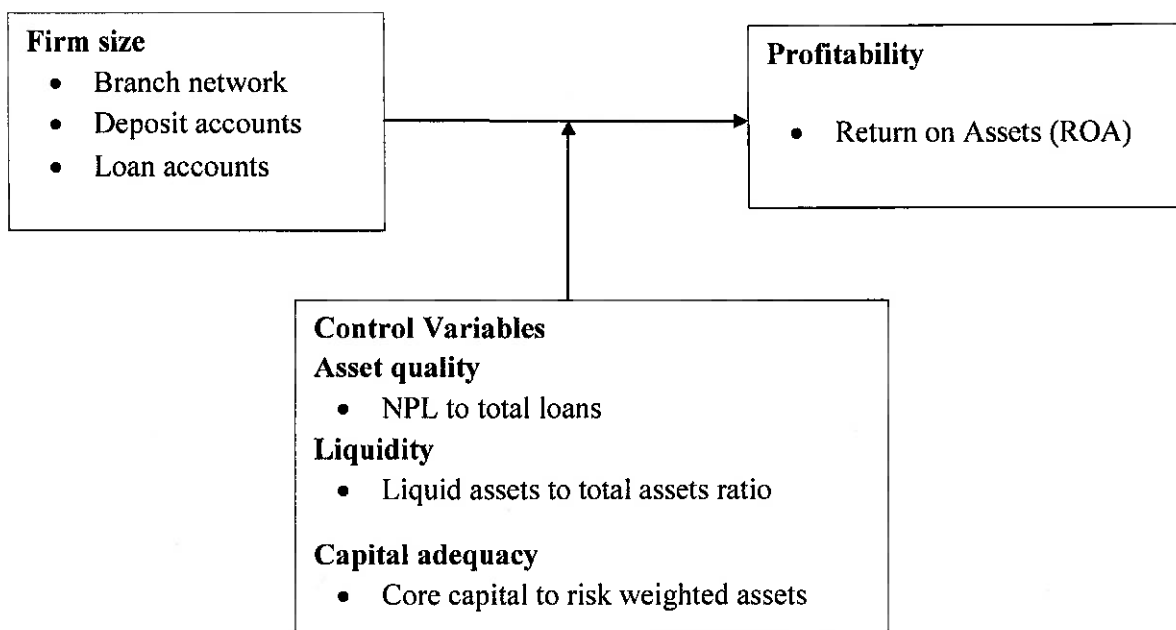
Figure 2.1: Conceptual Model

Source: Researcher (2022)

2.5 Summary of the Literature Review

From the reviewed literature, it can be deduced that firm size influence profitability. Large firms gain from deductions in tax and reputation and this attracts investors to invest in such a firm. Larger firms are stable and have the capacity of diversifying their assets or investments and increase their capacity to access debt, in so doing; they are capable to minimize risks.

Though research have been investigated on the association between firm size and profitability in developed countries, conceptual, contextual as well as methodological gaps exist. Conceptually, the previous studies have arrived at contradictory findings and this can be explained by the difference in the operationalization method used. Contextually, most of the previous studies were conducted in other contexts and due to differences in economic, social and other contextual differences; the findings cannot be generalized among microfinance institutions in Kenya. Although, Mwangi (2016) focused on microfinance banks in Kenya, the study reveals a methodological gap as it focused on only 9 microfinance banks which might not provide adequate data points for robust regression analysis.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes the approaches utilized in accomplishing the study objective. In particular, the topic highlights the; the design, data collection, and analysis.

3.2 Research design

A research design is a comprehensive plan that outlines how research was carried out. It permits the scholar to evaluate the link between variables without interfering with them (Kothari, 2006). The research made use of descriptive research design and hypothesis testing to determine the nature of the relation between firm size and profitability in microfinance institutions. Mwangi (2014) used a descriptive research design to investigate the connection between bank size and financial performance in Kenyan commercial banks. Since the research revealed hypothetical association between the variables, it used a descriptive research design (Firm size and profitability).

3.3 Study Population

According to Kothari (2006), a population is a group of items with similar qualities within a specific population. 27 microfinance institutions with operational licenses in Kenya made up the study's population.

3.4 Data Collection

It is the systematic collection and measurement of data on specific variables that will enable the researcher to address research questions and evaluate results. Due to the study's quantitative nature, secondary sources of data were used. The research considered five years (2016-2020), and the data was gathered from CBK's website's annual reports.

3.5 Data Analysis

It is the method of analyzing data using analytical as well as logical reasoning to analyze each portion of the information provided (Frankfort-Nachmias et al, 2008). STATA software was used to conduct data analysis. Data analysis also utilized inferential statistics. According to

Cooper et al. (2007), inferential statistics is a type of statistics enabling the researcher to evaluate the results for reliability. The variables were examined using mean, standard deviation, maximum and minimum values. A linear regression model was used to find out the link between firm size and profitability of microfinance institutions in Kenya.

3.5.1 Analytical Model

There were six independent variables in the regression model used in this research (Microfinance branches, customer deposits, loan accounts, asset quality, liquidity and capital adequacy) that affects the Microfinance Institutions profitability. The dependent variable was profitability which is measured via operating expenses division by total income. The regression model looked like this:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Where:

Y = Profitability which was measured using ROA which was computed by dividing net income by total assets.

X_1 = Branch network which was measured using the total number of branches per microfinance

X_2 = Deposit accounts which was measured using the total number of deposit accounts per microfinance

X_3 = Loan accounts which was measured using the total number of loan accounts per microfinance

X_4 = Asset quality which was assessed through division of the NPL total number by total gross loans and advances.

X_5 = Liquidity evaluated by division of liquid assets by total assets.

X_6 = Capital adequacy which was assessed by utilizing the core capital to risk weighted assets ratio

α = Regression constant

ε = Standard error term (distributed about the mean of zero).

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3.5.2 Tests of Significance

This study used the Analysis of Variance (ANOVA) to establish if the model was a good predictor by setting the degree of statistical significance of the results at 95%. If either the f-test or t-test results were less than 5%, it was determined that the study's variables were statistically significant and the ANOVA was used to analyze the study's significance.

3.6 Diagnostic Tests

As per Mutandwa, Gala, and Grebner (2016) before estimating the model, the acquired data must first be evaluated. Any data that deviates from the panel regression's assumptions will result in erroneous results, hence tests must be performed to see if the data has been consistent with regression models. In this work, the data gathered prior to the actual analysis were evaluated using serial correlation tests, heteroscedasticity tests, and multicollinearity tests.

3.6.1 Serial Correlation Test

Seasonal effects and the non-stationarity of the data inputs in panel regressions are the main causes of serial correlation. By using Stata's panel data unit root tests, stationarity was examined. Standard panel regressions were substituted with instrumental variable (IV) regressions if it was determined that there might be endogeneity problems in the link between the dependent and independent variables. To determine whether the data gathered exhibits a serial autocorrelation, the study used the Breusch Godfrey test. The absence of serial correlation in the data is the null hypothesis for this test.

3.6.2 Heteroscedasticity Test

The error term difference or variance is supposed to be constant among variables in regression models. When this premise is broken, the random variable is referred to as heteroscedastic. The assertion is incorrect if heteroscedasticity is present in the control model. Williams (2016) argues that heteroscedasticity gives all data identical weight, discriminates standard errors, and, as a result, leads to an inaccurate conclusion when testing the hypothesis. The Breusch-Pagan test was employed in this investigation to determine whether the data were heteroscedastic. The error variance being homoscedastic is the study's null hypothesis.

3.6.3 Multicollinearity Test

In relation to Iacobucci et al. (2017) multicollinearity is a test that assesses if two or more variations in a regression analysis are closely connected. It is believed that the relationship between the variables has an intensity between 1 and -1. A coefficient that is close to zero indicates a weak correlation between the variables, where 1 reflects a perfect positive link, -1 shows a perfect negative connection, and so forth. When the correlation between the explanatory factors is above 0.75, multicollinearity issues occur (Malhotra, 2007). Gujarati (2004) contends that the magnitude of the multicollinearity, not its existence or absence, is what counts greatly. The research therefore indicated any combinations that are higher than 0.9 for exclusion and followed Field's (2009) advice that variables above 0.9 must be disregarded. Furthermore, the Variance Inflation Factors (VIF) test was employed to check for multicollinearity.

3.6.4 Normality Assumptions

The normality assumption, as per Kothari (2004), is the likelihood that the residuals/error term was uniformly distributed over the sampled population. According to Brooks (2008), normality tests are carried out in order to determine if the data set is well characterized by a normal distribution. The error term is assumed by linear regression models to be normally distributed with a mean of zero and a constant variance. To determine whether the data adheres to the normality assumption, normality assumptions were performed. The study employed the Jacque Bera test to determine whether the data were normal, with the null hypothesis being that they were not.

3.6.5 Unit Root Tests- Stationary Test

The Levi-Lechun (LLC) test was used to run unit root tests to determine if the variables are stationary or not. This is done to prevent the use of non-stationary series from producing erroneous regression findings. All panels have a unit root, which is the test's null hypothesis. The researcher might run the equations using the differenced variable and difference any variables that had unit roots.

3.6.6 Durbin – Wu –Hausman Test

The test, also known as the Hausman specification test, is used to determine whether an estimate is consistent when contrasted to a different, less effective estimator. According to Green (2008), it's crucial to perform a Hausman specification test with random effects as the null hypothesis before choosing between them. In order to choose between the fixed effects and the random effects models for the most suited estimating model, the study ran a Hausman specification test on the data. The assumption that random effect is an effective estimator of the model is the null hypothesis.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This segment provides an overview of data analysis and conclusions in accordance with the study's objective, which was to ascertain the correlation between firm size and microfinance institution profitability in Kenya.

4.2 Descriptive Statistics

The variables under consideration are summarized by the descriptive statistics. It provides the trend's mean, standard deviation, highest and lowest values over a five-year duration (2016-2020). The outcomes from Table 4.1 are depicted in the table below.

Table 4.1 Descriptive Statistics

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Profitability (ROA)	135	1.40	0.531	-0.15	3.60
Deposit accounts	135	104,256	953	1,168	994,701
Loan accounts	135	58,022	137	1,013	144,718
Branches	135	5.00	2	2.00	37.00
Asset Quality	135	7.56	7.56	5.00	9.99
Liquidity	135	26.35	0.54	1.00	138
Capital Adequacy	135	16.60	1.71	8.18	26.00

According to Table 4.1's data, the majority of microfinance institutions achieved 1% of their financial performance. This indicates that the income from assets was not very high. Nevertheless, the income level generated from assets varied over time with a margin of 0.53%. Deposit accounts had a 104,256 mean with 953 standard deviation. The minimum was 1,168 deposit accounts while the maximum was 994,701 deposit accounts. This suggests that consumer deposits have increased significantly over time (2016-2020). Deposits rose because of more people using alternative delivery methods and customers choosing deposits as a way to save money. Adoption and utilization of contemporary technologies as well as financial inclusion may be responsible for this. Loan accounts had 58,022 mean with 137 standard

deviation. The minimum was 1,013 loan accounts while the maximum was 144,718 loan accounts, which depicted an increase. The improvement in marketing among MSMEs, who are vying for larger percentages of the MSME market sector, is largely responsible for the increase.

Branches had a 5 mean with a minimum was 2 branches and a maximum was 37 branches. The branch network for the microfinance industry decreased in the year of study, with 120 branches. During the time period under investigation, Kenya Women MFB closed four (4) branches. The sector opened two marketing offices during the period under study, while closing 32 others, reducing the number of marketing offices from 119 in 2019 to 89 in 2020. According to the findings of asset quality, nonperforming loans ratio to all loans had a 7.56 percent mean and a 1.487 standard deviation. This showed that the microfinance institutions' average asset quality was below the Central Bank's maximum rate of 12 percent. Liquidity had a 26.35 mean with 0.54 standard deviation. The minimum ratio was 1 while the maximum ratio was 138. The microfinance institutions liquidity ratio was above the statutory minimum of 20 percent. Capital adequacy had a 16.6 mean with 1.71 standard deviation. The minimum ratio was 8.18 while the maximum ratio was 26. Capital adequacy was also above the statutory minimum 14.5% capital adequacy ratio. However, some microfinance institutions did not meet that requirement. The trend for the Microfinance profitability is as Figure 4.1 depicts.
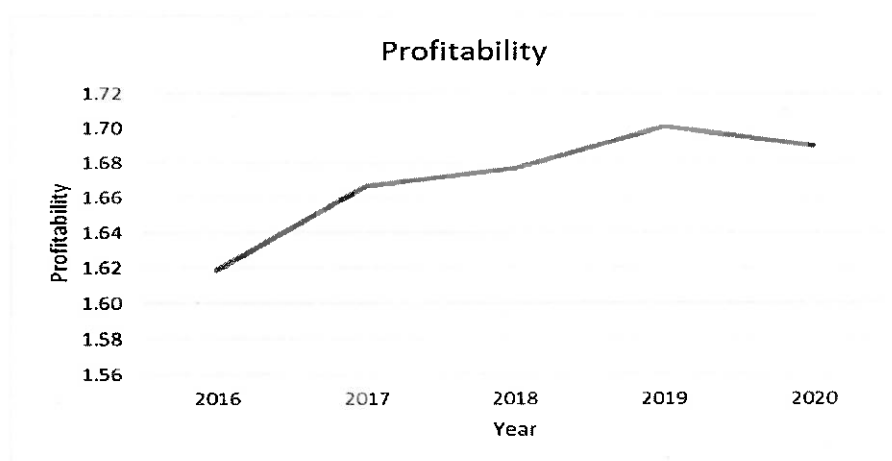
Figure 4.1: Trend for profitability

The trend analysis shows that the profitability of the microfinance institutions had a sharp increase trend 2016 to 2017 where it became steady. The trend increased towards 2019 where the maximum was recorded. There was a drop in 2020. This implies that there was a general increase in profitability. However, this was not the case for all the microfinance institutions.

4.3 Pearson Correlation

A number between +1 and -1 inclusive, whereby 1 is total positive correlation, 0 is no correlation, and -1 is whole negative correlation, was obtained from the study's application of the Pearson correlation coefficient to quantify the linear correlation between two variables, X and Y. The outcomes of the correlation are shown in Table 4.2.

Table 4.2 Pearson's Correlation Coefficient

	Profitability (ROA)	Deposit accounts	Loan accounts	Branches	Asset Quality	Liqu idity	Capital Adequacy
Profitability (ROA)	1.000						
Deposit accounts	.751**	1.000					
	0.000						
Loan accounts	.750**	.445**	1.000				
	0.000	0.000					
Branches	.753**	.419**	.352**	1.000			
	0.000	0.000	0.000				
Asset Quality	-.719**	-.467**	-.445**	-.367**	1.000		
	0.000	0.000	0.000	0.000			
Liquidity	.633**	.487**	.457**	.471**	-.411**	1.000	
	0.000	0.000	0.000	0.000	0.000		
Capital Adequacy	.732**	.494**	.329**	.382**	-.418**	.429**	1.000
	0.000	0.000	0.000	0.000	0.000	0.000	

The outcomes in Table 4.6 show that deposit accounts (r= 0.751, p=0.000) had a positive and significant association with profitability of microfinance institutions. Loan accounts (r=0.750, p=0.000) had a positive and a significant link with profitability. Further, the results indicated that microfinance institution branches (r=0.753, p=0.000) had a positive and a significant association with profitability. Asset quality (r= -0.719, p= 0.000) had a negative and significant connotation with profitability. Liquidity (r=0.633, p=0.000) had a positive and a significant correlation with profitability. Lastly, capital adequacy (r= 0.732, p=0.000) had a positive as well as significant link with profitability.

The positive association of deposit accounts, loan accounts, branches, liquidity and capital adequacy implied that an increase leads to an increase on profitability of microfinance institutions. However, the negative coefficient of asset quality implied that an increase leads to

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a decrease on profitability of microfinance institutions. The results also indicated a high association between the independent and the dependent variables.

4.4 Diagnostics

In order to ensure that the postulates of the Classical Linear Regression Model (CLRM) are not broken and to choose the right models for inquiry in the case that they are, the study carried out a variety of diagnostic tests. These diagnostic tests were also conducted to avoid spurious regression results. Consequently, pre-estimation and diagnostic tests were performed prior to running the regression model. The Wooldridge Test for Serial Correlation, the Normality Test, the Multicollinearity Test, the Test for Fixed or Random Effects, and the Heteroscedasticity Test were used as diagnostic tests in this case.

4.4.1 Test for Multicollinearity

The variance inflation factors (VIF) were used in this research to evaluate multicollinearity. Field (2009) states that multicollinearity is present when VIF values are more than 10. Table 4.3 provides an illustration of the outcomes.

Table 4.3: Multicollinearity

Variable	VIF	1/VIF
Loan accounts	3.23	0.309
Deposit accounts	2.93	0.341
Branches	2.92	0.342
Capital Adequacy	2.89	0.346
Asset Quality	2.46	0.406
Liquidity	1.38	0.725

The results indicate that the variables had a VIF value of less than 10 and thus there was no multicollineraity.

4.4.2 Test for Autocorrelation

To ascertain whether the data violated the characteristics of the Ordinary Least Square (OLS), which leads to incorrect results in hypothesis testing, the autocorrelation test was carried out. To determine if the data obtained had a serial autocorrelation, the research used the Wooldridge Test for Serial Correlation.

Table 4.4: Serial Correlation Tests

Wooldridge test for autocorrelation in panel data
Ho: no first-order autocorrelation
F(1, 6) = 2.64
Prob > F = 0.6102

The Wooldridge test for autocorrelation yielded a value of 2.64 for the F-test and a P-value of 0.6102, suggesting that the test is not statistically significant at the level of 5%. As a result, the study's conclusion that residuals are not automatically connected is validated.

4.4.3 Normality Test

The study used the Jaque Bera test method to assess normality. The Jarque-Bera test measures how well sample data fit a normal distribution in terms of skewness and kurtosis. The residuals of a model were examined for normality since the unexplainable variance of a model is subject to the same assumptions. The data was thought to have a normal distribution. The outcomes are presented in Table 4.5.

Table 4.5: Normality Test

JB residuals		
Jarque-Bera	normality test: 24.98 Chi(2)	0.063
Jarque-Bera	test for Ho: normality:	

According to Table 4.5's findings, the P-value was 0.063, which was greater than 0.05, and the Chi-square value was 24.98. Because the p-value was higher than the threshold of 0.05, we therefore came to the conclusion that the data was normal.

4.4.4 Heteroscedasticity Test

The error term difference or variance is supposed to be constant across observations in regression models. When this premise is broken, the random variable is referred to as heteroscedastic. The analysis is flawed if heteroscedasticity is present in the control model. In this research, the data were collected on the assumption that they were homoscedastic, and the Breusch-Pagan test was used to determine whether there was heteroscedasticity in the data.

Table 4.6: Heteroscedasticity Test Results

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
Variables: fitted values of Profitability
chi2(1)   =   3.32
Prob > chi2 =   0.5744

The reported value for the chi2 (1) was 3.32 with a 0.5744 p-value , that was greater than the standard 0.05, and as a result, the hypothesis was not rejected at the critical p value of 0.05. As a result, there was no statistically significant heteroscedasticity in the data.

4.4.5 Hausman Specifications Test

The Hausman specification test was used to determine whether the estimator was consistent when compared to a different, less effective estimator. According to Green (2008), a Hausman specification test should be conducted using random effects as the null hypothesis in order to distinguish between them and fixed effects. The data were subjected to the Durbin-Wu-Hausman test in order to choose between the fixed effects and random effects models as the most suitable estimation model. The outcomes are as stated in Table 4.7. The hypothesis was that random effect is preferred to fixed effect.

Table 4.7: Hausman Test

	(b) fixed	(B) random	(b-B) Difference	Sqrt (diag (V_b-V_B)) S.E.
Deposit account	0.039	0.0343	0.00480	0.055
Loan accounts	0.073	0.0825	-0.00955	0.065
Branches	0.226	0.1945	0.03123	0.065
Asset Quality	-0.521	-0.5232	0.00238	0.062
Liquidity	0.281	0.3855	-0.10474	0.090
Capital Adequacy	0.262	0.1359	0.12590	0.086
chi2(4)	5.83			
Prob>chi2	0.071			

The Hausman test resulted in a chi-square of 5.83 with a 0.071 p-value, suggesting that the result is statistically insignificant at the 5% level. As a result, the researcher selected the random model rather than rejecting the claim that random effects models are preferable to fixed models.

4.5 Hypothesis Testing

In order to ascertain the link between the research variables, a linear regression model was applied. This was done in order to support the study's hypothesis, which stated that there was a correlation between firm size and the profitability of microfinance institutions in Kenya. The results are displayed in Table 4.8.

Table 4.8: Model Coefficients

Profitability	Coef.	Std. Err.	T	P>|t|
Deposit accounts	0.041	0.01900	2.14	0.034
Loan accounts	0.066	0.03240	2.04	0.043
Branches	0.239	0.09612	2.49	0.014
Asset Quality	-0.513	0.18483	-2.78	0.006
Liquidity	0.254	0.04727	5.37	0.000
Capital Adequacy	0.313	0.15576	2.01	0.047
_cons	9.850	3.70024	2.66	0.009
Wald chi2(6) 72.555				
Prob>chi2 0.000				
Rsquared =0.773				

The fitted model was;

$$Y = 9.850 + 0.0408X_1 + 0.0660X_2 + 0.2390X_3 - 0.5130X_4 + 0.2540X_5 + 0.3130X_6$$

The findings indicated that the coefficient of determination (R2) explaining 77.3% variance in the dependent variable that is profitability (ROA). This proves the model's accuracy as a prediction. The ANOVA probability value was 0.000; this shows that the regression model is effective in forecasting the association between firm size and microfinance institution profitability in Kenya. To determine the direction of the variables under inquiry, the study assessed the model coefficients.

From the regression model obtained, the constant of 9.850 showed that when deposit accounts, loan accounts, branches, asset quality, liquidity and capital adequacy are held constant, on profitability will remain at 9.850 units. The regression results indicate a positive and significant relationship between deposit accounts and profitability (β= 0.0408, p=0.034). Loan accounts

had a positive and significant link with profitability (β= 0.0660, p=0.043). Microfinance institution branches had a positive and significant link with profitability (β= 0.2390, p=0.014). Asset quality had a negative and significant link with profitability (β= -0.5130, p=0.006). Liquidity had a positive and significant link with profitability (β= 0.2540, p=0.000). Capital adequacy had a positive and significant link with profitability (β= 0.3130, p=0.047).

This is an indication that there is a direct relationship between deposit accounts, loan accounts, branches, liquidity and capital adequacy with profitability of microfinance institutions in Kenya. On the other hand, there is presence of a contrary link between asset quality and profitability of microfinance institutions. A 5% significance threshold was used for the regression analysis. The matching probability value produced and α=0.05 were compared to determine the predictor variables significance in the model. The predictor variable was important if the probability value was smaller than α. From the analysis it was discovered that the deposit accounts, loan accounts, branches, liquidity and capital adequacy were statistically substantial since their p-values were below 5%. Therefore, the entire null hypothesis was rejected.

4.6 Discussion of findings

The objective of this research was to establish the link between firm size and profitability of microfinance institutions in Kenya. The independent variables were deposit accounts, loan accounts, branches, asset quality, liquidity and capital adequacy. Profitability of microfinance institutions was the dependent variable.

Under deposit accounts, correlation conclusions specified that deposit accounts had a positive and significant correlation with profitability of microfinance institutions. Regression results indicated that a positive and significant link between deposit accounts and profitability. The regression coefficients implied that holding all the other factors constant, a unit increase in deposit accounts will lead to a unit increase in profitability by 0.0408. The null hypothesis was rejected that deposit accounts has no significant relationship on profitability of microfinance institutions in Kenya. The conclusions concur with Abdussalam (2010) findings revealed a positive association between firm size and profitability. The study by Symeou (2013) established a statistically significant correlation between firm size and profitability. Kithuka (2013) results revealed existence of a positive correlation on financial innovation and firm size.

Under loan accounts, correlation outcomes exhibited that loan accounts had a positive and significant association with profitability of microfinance institutions. Regression results showed that a positive as well as significant link between loan accounts and profitability. The regression coefficients implied that holding all the other factors constant, a unit rise in loan accounts will lead to a unit increase in profitability by 0.0660. The null hypothesis was rejected that loan accounts has no significant relationship on profitability of microfinance institutions in Kenya. The conclusions concur with Mahfoudh (2013) who discovered a positive link between financial performance and firm characteristics (size, age, as well as growth). Shehzad, De Haan and Scholtens (2013) findings revealed that changes in profitability are exposed to rise in the size of the firm. Consequently, the volatility of banks' profit depends on its size and profitability.

Under branches, correlation results indicated that branches had a positive and significant connection with profitability of microfinance institutions. Regression results indicated that a positive and significant link between branches and profitability. The regression coefficients implied that holding all the other factors constant, a unit rise in branches will result in a unit rise in profitability by 0.2390. The null hypothesis was rejected that branches have no significant relationship on profitability of microfinance institutions in Kenya. Pagano (2014) established a positive and robust relationship was established between the average size of a firm and its profitability. The results indicate that larger size fosters productivity and firm profitability. Mwangi (2016) established that firm size and operating efficiency were all found to have a substantial and positive effect on profitability of microfinance banks in Kenya.

Under asset quality, correlation results designated asset quality had a negative as well as significant association with profitability of microfinance institutions. Regression results indicated that a negative and significant link between asset quality and profitability. The regression coefficients implied that holding all the other factors constant, a unit increase in asset quality will lead to a corresponding decrease in profitability by -0.5130 units. The null hypothesis rejection since asset quality possess no significant relationship on profitability of microfinance institutions in Kenya. These results concur with Tale (2014), who looked at how capital structure and financial performance of non-financial enterprises listed on Kenya's Nairobi Securities Exchange relate to one another. The study found that the financial performance of listed companies was inversely correlated with asset quality.

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Under liquidity, correlation results indicated that liquidity had a positive and significant link with profitability of microfinance institutions. Regression results indicated that a positive and significant link between liquidity and profitability. The regression coefficients implied that holding all the other factors constant, a unit rise in liquidity will lead to a unit increase in profitability by 0.2540. The null hypothesis was rejected that liquidity possess no significant relationship on profitability of microfinance institutions in Kenya. Marete's (2015) findings revealed that firm size and financial leverage were statistically significant. The relationship between firm size and financial leverage was discovered to be substantial and positive.

Lastly, correlation results indicated that capital adequacy had a positive and significant association with profitability of microfinance institutions. Regression results indicated that a positive as well as significant connection between capital adequacy and profitability. The regression coefficients implied that holding all the other factors constant, a unit rise in capital adequacy will yield a unit rise in profitability by 0.3130. The null hypothesis rejecting that capital adequacy has no significant relationship on profitability of microfinance institutions in Kenya. Kinuthia (2015) findings revealed a positive correlation between profitability of banks with the customer base, deposits, liabilities, number of branches, and market share. However, Tale (2014) size of the firm was negatively connected to financial performance.

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CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings in accordance with the study's objective based on the numerous analyses that were conducted, including regression analysis, descriptive statistics, and Pearson's correlation. The chapter includes an overview of the findings, a conclusion, a recommendation, limitations, and further study areas.

5.2 Summary of Findings

The majority of microfinance organizations reached 1% of their financial performance. This indicates that the amount of income from assets was not particularly high. Additionally, asset quality revealed that most microfinance institutions had higher gross loan and advance levels, which in turn contributed to greater levels of non-performing loans. There was an increase in customer deposits attributed to improved utilization of alternative delivery channels and clients' choice of deposits as a savings technique. Loan accounts, which depicted an increase was attributable largely to enhanced marketing among MSMEs as they compete for greater shares of the MSMEs market segment. Capital adequacy was also above the statutory minimum capital adequacy ratio of 14.5%. However, some microfinance institutions did not meet that requirement.

Pearson correlation indicated a positive association between deposit accounts, loan accounts, branches, liquidity and capital adequacy on profitability. The positive association of deposit accounts, loan accounts, branches, liquidity and capital adequacy implied that an increase leads to an increase on profitability of microfinance institutions. However, the negative coefficient of asset quality implied that an increase leads to a decrease on profitability of microfinance institutions. The results also indicated a high association between the independent and the dependent variables.

The regression findings indicated that there is a direct relationship between deposit accounts, loan accounts, branches, liquidity and capital adequacy with profitability of microfinance institutions in Kenya. On the other hand, there exists an inverse relationship between asset quality and profitability of microfinance institutions. A 5% significance threshold was used for

the regression analysis. The corresponding probability figure gotten and $\alpha=0.05$ were used as the criteria for assessing if the predictor variables in the model were significant. If the probability value was below α, then the predictor variable was significant. From the analysis it was discovered that the deposit accounts, loan accounts, branches, liquidity and capital adequacy were statistically significant since their p-values were less than 5%.

5.3 Conclusion

The research concluded most microfinance institutions are small in size and though most of them have experienced growth over the years in terms of deposit accounts, loan accounts, branches, liquidity and capital adequacy. This may be due to increased financial performance and an increase in asset base over the study duration. The study concludes that deposit accounts, loan accounts, microfinance institution branches, liquidity and capital adequacy have a positive and significant link with profitability of microfinance institutions. However, asset quality has a negative and significant link with profitability. Therefore, the study concludes that deposit accounts, loan accounts, microfinance institutions branches, liquidity and capital adequacy have a direct relationship with profitability of microfinance institutions in Kenya. However, asset quality has an inverse relationship with profitability of microfinance institutions.

Additionally, the majority of microfinance organizations reached 1% of their financial performance. There was an increase in customer deposits attributed to increased alternative delivery channels utilization and clients' choice of deposits as a savings technique. Additionally, capital adequacy was higher than the required capital adequacy ratio of 14.5 percent.

5.4 Recommendations

The study recommends that microfinance institutions should identify their geographic market, including any exceptions or specific restrictions. Limitations on geography are consistent with the goal of meeting the credit demands of the microfinance sector. Additionally, they support the lending team's ability to successfully manage the loan portfolio. This kind of oversight is crucial, especially for new microfinance firms.

The study recommends that microfinance institutions should make substantial expenditure in undertaking their due diligence before issuing loans. This can be drawn from the fact that large institutions have a lower ratio of non-performing loans than smaller institutions. This indicates

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that the large microfinance institutions are able to decrease their non-performing loans to total loans proportion. The most practical explanation for such a result would be the big institutions are able to employ advanced technology and more resources in scrutinizing their clients before issuing loans.

The study recommends on balancing of the liquidity for the microfinance institutions above the statutory level. Liquidity and capital adequacy are vital factor in microfinance institutions. Failure to pay short-term obligations may have an impact on business and, in many circumstances, reputation. Deficiency of adequate cash or liquid assets on hand may lead to low loan disbursements.

The study also suggests that microfinance institutions create thorough strategic plans that outline their approach to dealing with NPLs when they arise. The plan must be customized for each loan product and realistically and practically possible by developing long-term workable solutions that are both capital- and money-efficient.

5.5 Limitations of the Study

The research intended to establish the link between firm size and profitability of microfinance institutions in Kenya. The study was limited to deposit accounts, loan accounts, microfinance branches, asset quality, liquidity and capital adequacy as the study variables. The study was also limited to the 27 microfinance institutions licensed in Kenya with a 5 year period from 2016 to 2020. Time was limited and resources were not enough. The study focused on Kenyan sector and the results of this research are applicable, primarily in Kenya and for the span covered.

5.6 Areas for Further Study

If the study's scope is increased to include a larger period of time, the conclusions could be strengthened. It is possible to conduct additional research on the same subject utilizing data collected over a longer time frame. This is on the premise that data collected over a longer period of time would yield outcomes that were superior to those of the data used in this study. The potential for greater objectivity that emerges from the sample period may be resolved over a longer time frame. The study can also be broadened to include additional East African microfinance institutions within the East African community in order to produce data that are valuable in that context, given that Kenya is a major actor in the region.

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APPENDICES

Appendix I: Data Collection Schedule

Year	Deposit accounts	Loan accounts	Branc hes	Total loans	NI	NPL	Liquid assets	Core capit al	Risk weighted assets	Total assets
2016										
2017										
2018										
2019										
2020										

Appendix II: Similarity Index

THE RELATIONSHIP BETWEEN FIRM SIZE AND PROFITABILITY
OF MICROFINANCE INSTITUTIONS IN KENYA

15%	11%	3%	9%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to KCA University	4%
2	pdfs.semanticscholar.org	4%
3	ir.jkuat.ac.ke	1%
4	erepository.uonbi.ac.ke	1%
5	Submitted to Kenyatta University	1%
6	erepository.uonbi.ac.ke:8080	1%
7	Submitted to Universidad Francisco de Paula Santander	<1%
8	Submitted to Saint Paul University	<1%