# FINANCIAL DETERMINANTS OF MICROFINANCE INSTITUTIONS' OUTREACH IN KENYA

**BY**

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## DECLARATION

I confirm and declare that this research dissertation is my original work and that all sources have been accurately stated and recognized, and that this document has not been previously, in its entirely, submitted at any university.

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This research dissertation has been forwarded to, for examination with my confirmation as university supervisor.

Signed: …… Date……

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# FINANCIAL DETERMINANTS OF MICROFINANCE INSTITUTIONS' OUTREACH IN KENYA


## ABSTRACT

Micro Finance Institutions in Kenya have had increasing recognition since the 1990's for the role they play in providing financial services within the communities, through their participation on poverty mitigation. However, the inconsistency of large number of MFIs in providing financial help to alleviate the high poverty levels has been a major concern. The increase in number of poor people within the society, has contributed negatively to the main idea of MFIs in eradicating poverty. In addition, MFIs should ensure that they have the financial capacity to offer their services to the poor people, families and communities. Therefore, this study purposes to examine the financial determinants of MFIs outreach in Kenya. The objectives of the research are to evaluate the effects of microfinance institution size, liquidity, capital adequacy and operating efficiency on the outreach performance of MFIs in Kenya. The research was directed by transaction cost theory, passive theory, capital adequacy theory and liquidity preference theory. This study implemented a descriptive research design. The target population for this study was 12 Micro Finance Institutions listed with the Association of Micro Finance Institutions (AMFI), and are licensed by CBK and running in Kenya as Deposit Takings Microfinance institutions. The panel data collected was analysed through descriptive and inferable statistics such as multiple regression to determine the influence of dependent variable and independent variables. The panel data analysis was done using STATA software. Diagnostic tests were done and the results were as follows: The research established that the operating efficiency affected outreach negatively and had no significant influence on the MFIs' outreach in Kenya. The study also found that capital adequacy influence was positive however, had no significant outcome on the MFIs' outreach in Kenya. The research also showed that MFIs size had a significant effect on MFIs' outreach in Kenya. MFIs size affected outreach positively. Finally, findings discovered that the effect of liquidity was negative and was significant on MFIs' outreach in Kenya. The study recommended that smaller MFIs should consider merging to bigger MFIs. This is to help the institutions earn from the economies of scale. The microfinance institutions should keep low their debts and maximize their equity. The MFIs should ensure that the equity is maximized to enhance financial capacity to enhance the reaching of the poor efficiently. Lastly, MFIs should consider matching between reducing the transaction costs involved with the outreach goal



**Keywords: Microfinance institutions (MFIs), outreach (breadth of outreach)**

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## DEDICATION

I offer this study first to my God for his spiritual strength and gift of life during this course. I also dedicate this research proposal to my late father, Joseph Ndia, Mother Judy, my fiancé Simon Muhia, my friends (Agnes & Alex), my late brother (James Macharia) and my brothers (John &Steve) for the support they provided me throughout the period as I prepared and worked on this research.

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# LIST OF ACRONYMS AND ABBREVIATION

| | |
|---|---|
| AMFI | Association of Micro Finance Institutions |
| CAR | Capital Adequacy Ratio |
| CBK | Central bank of Kenya |
| DEA | Development Envelop Analysis |
| DTMFIs | Deposit-taking microfinance institutions |
| DTMs | Deposit-taking microfinance institutions |
| KWFT | Kenya Women Microfinance Bank, formerly Kenya Women Finance Trust |
| MFIs | Microfinance Institutions |
| MIX | Microfinance Information eXchange |
| NGO’s | Non-Governmental Organisations |
| OER | Operating Efficiency Ratio |
| SMEs | Small and Medium Enterprises |

## OPERATIONAL DEFINITION OF TERMS

| | |
|---|---|
| **Breadth of outreach:** | Illustrates the number of depositors and borrowers who have benefitted from the services of a microfinance bank. |
| **Capital adequacy:** | "Is the total value of funds obtainable to sustain the microfinance banks operations and acts as a cushion in the event of a negative occurrence (Kahiga, 2014)." |
| **Cost of outreach:** | Funds incurred by the microfinance bank because of availing financial service to clients. |
| **Depositors:** | An institution or an individual who saves money in a Microfinance bank account. |
| **Financial Outreach** | It entails the aim of an organization in attaining enough revenue to cover the overall cost of the financial services offered to the clients. |
| **Licensed DTMFIs** | They are Microfinance units that are allowed by the Central Bank of Kenya to distribute public funds. They help in the reduction and elimination of poverty across the population. |
| **Liquidity** | "Is the capacity of financial corporates to fulfil the requests for funds where necessary and needed or when obligations fall due (Adusei, 2021)." |
| **Microfinance institutions** | **"**These are institutes that are involved in minor monetary dealings using various practises to serve low-income households, micro enterprises, small scale |

| | |
|---|---|
| | farmers, and others who lack access to traditional banking services (Worldbank, 2015)." |
| **Operating efficiency** | "Is the capacity of any organisation platform to offer services with the least expenditures (Adhikary, 2014)." |
| **Operational self-sufficiency** | "It is the extent to which Microfinance Bank covers all operating expenses with its operating revenue. |
| **Outreach** | is classified as determination to distribution of microfinance facilities to the individuals who are excluded by financial organizations (Karanja, 2014)." |
| **Transaction costs** | It entails the direct and indirect costs incurred by DTMFI as it serves its' clients. |

# CHAPTER ONE

# INTRODUCTION

## 1.0 Introduction

## 1.1 Background of the Study

Microfinance has been acknowledged as an instrument for poverty mitigation and financial inclusion in most of the countries. Recognizing the necessity to bridge the gap in accessing credit services for the excluded masses of people from the formal financial sector where microfinance begun in late 1970s in Bangladesh. Microfinance Institutions are commercialized organisations that offer monetary services like loans, investments, insurance, overseas exchange trades, and money transfer services. MFIs have been perceived as a cure to poverty mitigation in many developing nations. They are also considered as a significant contributor to the strengthening and development of the formal fiscal system (Bitok, 2019). The World Bank defines Micro Finance Institutions (MFIs) as "institutions that engage in relatively small financial transactions using various methodologies to serve low income households, micro enterprises, small scale farmers, and others who lack access to traditional banking services (Worldbank, 2015)." In an additional definition, the Microfinance Act, 2006, defines MFI as "a business receiving money by way of deposits and interest on deposits which is lent to others or used to finance the business; or providing loans or other facilities to micro or small enterprises and low income households; deposit taking and non-deposit taking" (MFI Act, 2006)."

MFIs mostly deal with the deprived in the societies, low- income families, Small, and Micro Enterprises. Generally, MFIs are essential players in the banking segment as they reach out to the lots of prospective customers who lacks access to the main services from the financial institutions. Microfinance organisation is believed to be an operative instrument revealed in 21st era to alleviate countryside poverty in the world (Rai & Rai, 2012). MFIs can

be a substantial and effective mechanism in the fight against poverty, which demonstrates very significant financial intermediation margins as compared to traditional banking (Krauss, & Walter, 2009). Initially, microfinance institutions delivered commercial amenities to low-income consumers; nevertheless, they have nowadays widened their mission to enhance financial inclusion to those excluded from ordinary monetary services. Microfinance institutions (MFIs) have empowered many people in developing countries to access proper fiscal services through microfinance program. Though many potential customers continue to be un-served, the request for financial services faraway surpasses the presently offered supply.

According to Ames (2009), "microfinance organisations thrived in countries with an insufficiency of bank structures, like greatest parts of Asia, Latin America, and Eastern Europe. In these countries, less than 20% of the population ought to have a bank account". In Sub-Saharan Africa, microfinance institutions showed up during the mid-1960s. African microfinance institutions remain in the middle of the most prolific universally, as measured by the sum of borrowers and savers per personnel, and make evident progressive ranks of portfolio quality, with average portfolio risk. Microfinance facilities have been recognized as a device in poverty eradication in the most industrialized countries of the world (Hermes & Meesters, 2010). In these nations, credit hazards in lieu of microfinance institutions were very huge, for the reason that of requirement of clients to improve their livelihood and this was affected by many difficulties throughout this period. Benefactors also organizations evaluates the operations of an MFI whether they understand the deprived society and are at work in the direction of attaining the assignment for which they are established (Ekubay, 2015).

In Kenya, the microfinance segment materialised in the late 1960s by some non-governmental organisations which started trial agendas offering credit services sponsored by donors (AMRI, 2013). Approximately these establishments advanced with time to turn into

commercialized and huge moneymaking bodies for example Kenya Women Microfinance Bank (formerly KWFT). Microfinance business are similarly in current eras turning out to be Kenya is most easy to approach and offer economical financial facility. Microfinance institutes have a remarkable responsibility in lessening poverty in a state whose people have inadequate availability of monetary service supplies (Melkamu , 2012). As a result, for the reason these significant activities, they have fascinated the considerations of various businesses particularly donors who have operations to curb poverty in the world. The microfinance segment in Kenya is rapidly growing, and institutes have improved their activities.

The Kenyan Government and development investors in the private sector, in cooperation, at countrywide and intercontinental level, and researchers reckon that the microfinance sector is an important device in the development of the informal enterprises and poverty lessening. MFIs are perceived to result to the development of Small and Micro-Enterprises (SMEs) in Kenya through the setting up of trainings, micro-credit services, and micro-saving accounts (Osoro & Muturi, 2013). On the results of application of microfinance on poverty reduction, it was deduced that MFIs have a helpful outcome on income levelling and growths in income. The poor masses have profited both economically and socially from microfinance services provision. Setting up of microcredit by the MFIs has contributed to poverty mitigation through providing of reasonably priced loans to the deprived. The poor use the money given by MFIs to start income making activities, access to health and education amenities, and advance their wellbeing in general (Kisaka & Mwewa, 2014).

In spite of the worldwide-recognised role of MFIs in poverty lessening, there have been limited approved standards to rate their performance on outreach. The microfinance sector in Kenya has encountered several constraints that require to be addressed to enable them to advance outreach levels. The main obstacle to the development of microfinances in

Kenya is inadequate formulation and renewal of specific legislature and set of guidelines to monitor the operations of the microfinance sub-sector. There are various limitations the MFIs face in the Kenyan economy such as "diversity in institutional form, inadequate governance and management capacity, limited outreach, unhealthy competition, limited access to funds, unfavourable image and lack of performance standards" (Kahiga, 2014). With existing significant capital constraints, microfinance programs expansion remains a challenge facing the microfinance sector, which affects the outreach as goal for poverty mitigation (Rai & Rai, 2012). Nevertheless, there are uncertainties about MFIs financial capacity to reach the poorest of the poor. This therefore necessitates the need to undertake assessment financial determinants of microfinance institutions' outreach in Kenya.

### *1.1.1 Outreach of the microfinance institutions*

Kinde, 2012 defined outreach as the ability of microfinance institution to render financial facilities to various customers and it consist of two chief components that is depth and breadth. Outreach is classified as determination to distribution of microfinance facilities to the individuals who are excluded by financial organizations (Karanja, 2014). Natamba, 2013 discussed that outreach level is the effort made by MFIs to intensify their products and services to various clienteles and focusing on the poorest as measured by breadth and depth. Microfinance institutions or banks aim the customers who are living underneath pre-set national poverty mark (Jaffery & Mamoon, 2015). Consequently, microfinance banks should pay attention to their financial capacity to deliver to these clients.

Outreach is elaborated as the communal worth of the yield of a microfinance organization. It is normally defined in terms of gender or paucity levels of debtors, loan agreements terms and conditions, the fee and business deal costs incurred by consumers, the sum of customers, the economic as well as managerial capability of the financier, and the total number of goods provided, as well as deposits. The outlook of outreach is

multidimensional and has six features namely depth, breadth or coverage, and worth to users, the cost to consumers, length, and scope (Karanja, 2014). Depth of outreach denotes to the cost the community confers to the net gain obtained from the usage of a micro credit by a specified debtor. This ratio categorizes the deprived customers because the poor lacks the accessibility of loan from the formal financial institutions since they have inadequate capability to repay their loans. (Ekubay, 2015). Coverage of outreach refers to the sum of customers attended by MFIs to obtain loans and financial amenities with the poor population. The value of outreach to clients is the amount a debtor is ready to recompense for the loan. The loan contract, users' taste buds, limitations and chances determine the price.

The cost of outreach to customers refers to the price of a loan to a borrower. The cost to users involves the price charged together with the transactions costs incurred. Span of outreach is the duration, which a MFI takes to generate and process the loans. The length of outreach quantifies the years of service that is important because the society is concerned of the well-being of the deprived always. (Karanja, 2014) Lacking the length of outreach, a microfinance institution may advance societal well-being in the short run but may have inadequate ability to do so in the end. Scope of outreach is the number of categories of monetary contracts delivered by a microfinance body at the end of a certain period. In conclusion, the features referred above are interconnected because depth is the communal value to customer's minus cost to users.

Client outreach is a significant component for the growth of microfinance institutions as well as to assist several poor people who are economically underprivileged. It is important for MFI's to reach large number of people for long-term sustainability on the other hand to achieve economies of scale (Kinde, 2012). The customer outreach is a challenging job as it leads to more costs incurred which in the long run hurts the efficiency of the MFI's (Chin & Nor, 2016). Customers or the consumers outreach can also be spoken as the matter that

makes MFIs incur extra cost, which in turn creates leverage problems (Hermes, Lensink, & Meesters, 2011). This mentioned, the research seeks to investigate the element that determines the financial capacity of the MFIs to deliver their services to the poor masses in the societies.

On the other hand, it can be seen that MFI's working in a scarcely populated area are not profitable (Alemayehu & Lemma, 2014). Ashta and Fall (2012) discovered that outreach of MFI's is partaking a substantial role in the performance of microfinance institutions. In the same way, it is debated that by increasing outreach of MFI's, many underdeveloped countries have reduced poverty (Alemayehu & Lemma, 2014). However, the poverty levels in Kenya, country have risen compared to the emergence of the MFIs thus the question of outreach capability remains a challenge.

### *1.1.2 Financial determinants of outreach.*

Financial factors are the fiscal features influencing the ability of MFIs in terms of how they reach out to the financially excluded between operational efficiency, capital adequacy, firm size and financial performance of microfinance banks in Kenya. On the other hand, the study also found an insignificant negative relationship between liquidity risk and financial performance of masses. MFIs are instituted with the goal to support the small income wage earners through providing loan services that they surely owe to their obtainability and massive system as in line with commercial banks. MFIs' outreach is measured using the concept of how much they extend financial amenities to the poor and to the degree at which the survival of people who acquire financial facilities are improving compared to ones who have insufficient access. (Melkamu , 2012). Financial factors are used to gauge the performance of the MFIs outreach. The MFI are frequently grounded on how they are spending their resources to deliver their services efficiently (Ekubay, 2015).

A microfinance business with a noble performance is essential in benefiting the steadiness of the micro finance network. Inadequate financial routine weakens the capability of MFIs to captivate adverse waves, which as a result affects solvency (Yenesew, 2014). Improved business operations make financiers to get back the whole price or produce a yield. This helps the emerging institutions to survive on their own for a substantial period with reduced dependency on government subsidies or donor funds. MFIs' financial outreach is grounded on the degree to which service users are alleviated from the high poverty levels in the communities (Adhikary, 2014).

According to the study done by Ngumo and Shikumo, 2017 to determine the financial performance of Microfinance banks in Kenya, the research grounds this study as related below. The finding was a positive and a significant connection between operational efficiency, investment adequacy, firm size and financial performance of microfinance banks in Kenya. On the other hand, the study also found an insignificant negative relationship between liquidity risk and financial performance of MFIs. In this study, the outreach will be the dependent variable. Therefore, the financial determinants of outreach, which are the independent variables, will be considered as microfinance institution size, capital adequacy, operating efficiency and liquidity.

The first financial determinant is operating efficiency. Operating efficiency is the capacity of any organisation platform to offer services with the least expenditures (Adhikary, 2014). Operational efficiency is commonly measured by using the Operating Expenses Ratio (OER). Operating efficiency measures the performance, which indicates exactly how MFIs are restructuring their techniques and considers the cost of the input and the value of the output (Ongore & Gemechu, 2013). Proficiency in expenditure supervision must guarantee further effective utilization of the MFIs loanable funds, which improves the outreach levels. With reduced costs, MFIs reach out to more people with an aspect of thriving in the business

world. Lower OER is better higher OER as the lesser one shows that operational expenses are lower than the incomes generated to survive in the business world (Dufera, 2010).

Operating efficiency is the ability of MFIs to offer quality commodities in the market using the most cost-effective method possible. Even though microfinance deals take into account cost-effective mechanisms, MFIs incur expenditures they have to cover without working on subsidies or aids: operating costs (wages, transport, and rents), fiscal expenses and provisions for bad debt, by the product of interests imposed on clients. The bigger the operating efficiency, the more moneymaking a microfinance or any investment is (Kahiga, 2014). This is because the business is capable to create bigger income or yields for the equivalent or lesser cost than a substitute. In commercial markets, operative efficiency takes place when transaction expenses are minimised.

Many MFIs have shown great in outreach, however many people in Kenya still lack access to monetary services. This because many MFIs are financially unsustainable, due to support through donations or subsidies which provide funds to allow them to continue running (Quayes, 2012). MFIs remain subsidized because of their importance to poverty eradication. There is a recognized trade-off between sustainability and outreach. The trade-off takes up that if MFI concentrates on monetary sustainability, their outreach will be diminished since they can opt to raise the interest rates to compensate for higher operating expenses. On the other hand, if MFI pays attention merely on financial inclusion and outreach, they are probably to be unprofitable because they are unable to cover the too much costs of reaching the very poor (Remer & Kattilakoski, 2021).

The second financial determinant is capital adequacy. The ultimate characteristic of the parameter of the financial section is capital prerequisite. Setting capital requirements is a most important policy matter for regulators from corner to corner of the whole world. The concept of capital requirement received more eminence after 2007/2008 financial crises that

contributed to the appraisal of the Basel capital requirements (Kariuki, 2017). Motivated by enhancing stability in the MFIs, which entered to riskier business of deposit taking, CBK gave out the practical guidelines. Deposit Taking Microfinance (DTMs) should provide proof that the companies meet the lowest principal requirement as outlined in the Act and Regulations of at least KSh 20 Million and KSh 60 Million for community and countrywide deposit taking microfinance Institution in that order (CBK 2008).

The theoretical rationalisation of bigger capital base is a dual concept; one, capital adequacy is understood as a tool minimizing excessive risk taking of bank owners with limited liability and, therefore, prompting optimal risk partaking between bank owners and depositors. On the other hand, it is perceived as a cushion against insolvency crises, limiting the expenditures of financial distress by minimising the possibility of liquidation of banks. ( Abdalla & Obeidat, 2013). The overall agreement is that banks with higher capital and liquidity buffers are capable to support business and households in unfavourable times, in the meantime buffers improve the capacity of banks to absorb losses and sustain lending during a depression (Gudmundsson et al., 2013).

On the flipside, better capital might persuade a bank to take up greater risks. If this effect was more important than the buffer effect of capital, very capitalized bank might encounter a higher likelihood of disaster. Such banks are to be expected to lend out less, charge more for loans and compensate less on deposits as part of their arrangements to bring back an acceptable return on the larger capital base (Gudmundsson et al., 2013). This one may as well deter competition since high capital requirement acts as a barrier to entry for the other companies in the firm. In relation to outreach, it is agreeable that expansion in DTMs capital may be enhancing the levels of their outreach since equity acts as a substitute source of financing. This capital requirement concept is also applied to alleviate the dangers of bank failure and the externalities connected with it (Kariuki, 2017).

Capital is the total value of funds obtainable to sustain the microfinance banks operations and acts as a cushion in the event of a negative occurrence (Kahiga, 2014). Capital adequacy ensures liquidness of commercial institutions in their operations. In the incident of damage of assets; advanced capital level in relation to its resources means that the organizations would have adequate reserves to protect the loss, or viability of enough capital necessary to absorb possible losses. (Adhikary, 2014). With reference to this statement, well-financed microfinance banks could show an indication in the market that a better than normal result is anticipated. Capital adequacy is customarily calculated applying the fraction of MFI equity to total assets. This measures the percentage of the total assets that is funded with equity capital. Capital adequacy as a result defines the sufficiency of the amount of equity that can absorb shocks that financial institution may face. It is projected that the higher the Equity to Asset ratio (Njue, 2020), the lower the necessity for external financing and so the higher the profitability of the financial institution therefore the higher outreach levels.

The third financial determinant is liquidity. Akhtar, 2011 argues that failure to pay the business obligations when they fall due may result to bank run that may have a contagion effect on the financial system at large. Liquidity refers to the capability of the financial institution to meet up deposit withdrawals by customers, maturing loan request and liabilities without any obstacle or delay (Akhtar et al., 2011). According to Vento and Ganga (2009), liquidity implies the capacity of a financial institution to keep up all the time a balance between the money inflows and outflows over the entire period. "The main goal of liquidity management is to honour all cash outflow commitments every day and on-going basis, reduce opportunity cost of idle liquidity, satisfy regulatory standards, and also avoid additional cost of emergency borrowing and forced liquidation of assets (Kariuki, 2017)."

According to Barad, 2013 the term liquidity denotes to the company's ability to fulfil the expected or even more or less of unanticipated cash needs. Liquidity has a fundamental

role in proper operation and running of any organization. A microfinance institution is for that reason made-up to make sure it will not suffer from among others, having surplus cash or lack of money overall so that business's short term cash obligations are fulfilled. Panigrahi (2013) noted that if there is inappropriate management of money, cash will be tied or just remain idle which detriments a microfinance institution. This reduces the liquidity of the company and at the same time, the generation of income will decrease which affects the outreach of the MFIs.

The important role of DTMFIs to transform deposits into long term loans subjects them to liquidity risk. According to Iqbal, 2012 liquidity risk is defined "… as the risk of being unable either to meet the obligations of the depositors or to finance increases in assets as they fall due without incurring costs or losses. Liquidity risk is one sort of financial risk encountered by a financial intermediary." This may in the long run create contagion consequences such as insolvency risks, bail out risk and more predominantly reputation risk (Anam, Hasan, Huda, & Uddin, 2012). Liquidness risks arise when an institution is incapable of attaining its money requests or expense obligations (Ongore & Gemechu, 2013).

The relationship between liquidity and outreach may be expected to be positive sine more liquid DTMFIs are in a better position to provide further loans as demanded by members immediately compared to illiquid DTMFIs. DTMFIs with scarce liquidity might be less resistant towards forthcoming uncertainties, untimely interruption of refinancing, disturbance on attaining the development forecasts as well as bigger portfolio hazard thus affecting the outreach as a goal. The current assets to current liabilities ratio is in general applied to evaluate the liquidity levels of MFIs, which illustrates the proportion of total assets, utilized to deliver the loan (Adhikary, 2014).

The fourth financial determinant is Microfinance institutions' Size. An institution's size plays a substantial role in defining the type of relationship the business has internally and

with its external working surroundings. The modern intermediation theory forecasts efficiency gains related fiscal institution size, in relation to economies of scale (Kahiga, 2014). MFIs of smaller size, in specific, are at a shortcoming, stressed to pay for the business's high operating costs and lack of diversification of their products. Besides, large MFIs are more differentiated than emerging ones and have better market power, and may have comparatively more structural slack during good times. The size of MFIs takes into account the economies or a diseconomy of scale of an organization and frequently the natural logarithm of total asset of MFIs is applied as a substitution of size.

The following control variables on the independent variables for this study will be incorporated that preceding studies propose to affect the MFIs performance. In particular, the research will include the natural log of total possessions to control the MFI size. It will include the ratio of MFI Equity to total assets to capture the capital adequacy (Bibi, Balli, & Tripe, 2018). The study will also include the ratio of operating expenses to total assets to capture the operating efficiency. Seek to incorporate the ratio of total current assets to total current liabilities to explain the liquidity. The control variables for the dependent variable will be Natural log of number of active borrowers to capture the Breadth of outreach.

### *1.1.3 Microfinance sector in Kenya*

Microfinance in Kenya comprises of microfinance amenities and guidelines, which has been developing since the mid-1990s. The legislation was accepted in 2006 with the microfinance Act that became active in 2008 (The Microfinance Act 2006, Ammendents upto year 2014). "The core objective of the Microfinance Act is to control the establishment, business and operations of microfinance institutions in Kenya through licensing and supervision (CBK C., 2015)." The Microfinance sector in Kenya has grown over the years and now is made up of several competing institutions. "The microfinance business is categorized in various systems ranging from deposit taking, non-deposit taking, those registered as Non-governmental

organizations, Church -based, Merry go round (Chama's), Rotating Savings and Credit Associations (ROSCAs), accumulative savings and credit associations (ASCAS), and investments groups (CBK C., 2015)."

The Central bank of Kenya (CBK) describes a microfinance institution as a body that provides financial services such as loans, savings, insurance and money transfer facilities to the poor, low income families, and Small and Medium Enterprises (SMEs) (CBK, BANK SUPERVISION ANNUAL REPORT, 2012). These parties do not meet the requirements and as a result have limited access to old financial institutes. CBK generally breaks down the microfinance institutions into deposit taking and non- deposit microfinance institutions.

The Association for Microfinance institutions (AMFI) is a member-based organization that was initiated and registered in the year 1999 under the societies Act, with an objective to form the capacity of the Kenyan Microfinance Industry. In the 21 years of presence, AMFI's membership has improved from the original 5 founder members to the present 54 fully paid up members in 2020 (AMFI-K, 2020). "As at the 31st December 2020, AMFI-K membership comprised of 54 members categorized as 2 commercial banks, 12 Microfinance Banks (MFBs), 34 Credit Only Microfinance Institutions (COMFIs), 1 Sacco, 3 Wholesale Microfinance Institutions (WMFIs) and 2 Developmental Institutions. However, this report is restricted to 27 Institutions who shared the data. 10 MFBs, 14 COMFIs and 3 WMFIs shared the data (AMFI-K, 2020)." Due to the different nature of business, the data was analysed in their respective categories (AMFI-K, 2020).

AMFI has a role in the microfinance sector in regulating its guidelines. AMFI-K support the development for an enabling environment for MFIs to work and improve their growth and outreach to continue expanding the financial inclusion to all Kenyans. AMFI-K conduct an assessment of MFIs capacity building needs and organizes demand driven training, workshops and seminars on thematic areas. It also develops content specifically

tailored to respond to MFIs needs. AMFI-K participates in microfinance mediums that provide a platform for peer-to-peer learning and improve information sharing and dissemination among the MFIs. A resource centre is well raised at AMFI-K to make sure the info on the microfinance sector is systematically generated, kept, analysed, and distributed to assist in making rational decisions. AMFI-K also helps the microfinance sector to attain both financial and operational sustainability of its association of members (AMFI-K, 2020).

The Microfinance subdivision in Kenya is the greatest in Sub-Saharan Africa. This one comprises of variety of established systems and equitably large branch setup to work for the deprived. The microfinance gained recognition in the late 1980s after the downfall of Kenyan industries and retrenchment of employees, the sector carries on to thrive year after the other (AMFI, 2018). The absence of comprehensive controlling structure makes it easy to undertake business and hence better monetary knowledge and financial inclusion.

Provision of the microfinance goods and amenities involves distinct systems such as group loaning, individual, commercial, and non-formal lending. Wide use of telecommunication facilities has improved loaning to the demoted regions, which are characterised by less literacy, impoverished infrastructure and vicious cycle of poverty. The accomplishment and assistances to both communal and pecuniary parts have made the sector to turn out to be an icon in the Kenyan economy therefore the strong attention from the regime and intercontinental financiers (AMFI, 2018). The Financial column of Kenya's Vision 2030 of aim of improving deposit deployment, growing savings levels, and raising the overall value of life for every citizen, has made the government educate on guidelines using the Microfinance act 2006 and the continuous modification to make sure the business achieves their objectives of serving the poor.

#### *1.1.3.1 Deposit taking microfinance institutions (DTMFIs)*

Trough the founding of the microfinance Act on 2nd May 2008, a number of existing micro-finance institutions applied for licenses to permit them to take deposits from members and the general public. "In association with the Financial Sector Deepening (FSD), Kenya Women Funds Trust (KWFT) and Faulu Kenya engaged with a procedure which prompted the sanctioning as the first DTMs in Kenya."(CBK2018). The changes were without a doubt fertile and have assisted both companies to uphold their key positioning in the DTM market. The Microfinance Act, (2006) (amended in 2013) by the parliament fashioned DTMFIs which purposes to streamline the running procedures of the MFIs, monitoring on licensing distributions, minimum capital requirements, least possible liquid assets, compliance of accounts to the Central Bank, regulation by the Central Bank, and limits on loan and credit facilities (Ali, 2015).

The 2013 amendment Bill make wider several financial services that DTMFIs are supposed to deliver. In addition, a clear discrete is made for controlled microfinance bodies and un-regulated microfinance lenders. These guiding principles have enhanced investor's confidence. The policy state that DTM initials should be added in the names of regulated MFIs (CBK2008).The deposit-taking microfinance (DTMs) are certified and controlled by the CBK and are allowed to assemble and loan out the received deposits from the public. On the other hand, not like commercial banks (Ali, 2015), DTMs can merely engage in some degree of variety of merchandises. DTMs are not permitted to capitalize on trade capital such as carrying out wholesale or retail trade, underwrite place of securities and acquisition. Contrarily, Non-Deposit taking microfinance organizations are controlled by the Ministry of finance and are not permitted to mobilize public funds. Consequently, they only lend out their personal funds or loaned out funds.

The licensed DTMFIs work with communal funds and this contributes to poverty lessening upon compliance with the obligatory financial segment procedures and guidelines. The controlled DTMFIs (licensed DTMFIs) as per the Microfinance Bill have the mandate to conduct third party checks, run current accounts, operating foreign trade (Mutua, Jagongo, & Simiyu, 2020). Kenyan microfinance governance has improved the DTMs to microfinace banks which has relieved them from over depedence on high-priced loans from local and international banks. AMFI-K (2012) realised that the growth of the DTMFIs had negative trend but, number of licenses granted to DTMFI increased. On the other hand, customer deposits continued to be the main source of funding for microfinance banks but not even.

As the DTM market expanded, there was a realisation that the decline in deposit funding was compensated by increasing their borrowings from year 2014 to 2016 ( CBK 2015). AMFI (2013) ponited out that the MFI segment had a less performing Operational Self-sufficiency ( OSS), excluding the banks.Regardless of being operationally self-sufficient overall, still donations or aids were relied on with 73.3% provided by International partners and 26.7 % from local entities and bodies. CBK (2015) discussed the two types of Microfinance Banks: the nationwide microfinance institution (authorized to operate in any part of Kenya) and a community microfinance institution (limited to operate within one Government Administrative District, Division or any other specified region as directed by CBK). As at the time of the study year 2020, there were twelve licensed deposit taking microfinance institutions in Kenya which focused and framed this study refer to Appendix II.

**1.2 Statement of the Problem.**

Microfinance sector is very fundamental in the Kenyan finance industry due to the part it plays of financial inclusion. Microfinance bodies in Kenya have gained wide acknowledgement since 1990’s for the part they take in the society by offering monetary facilities to the low earners families and their participation to poorness mitigation.

Microfinance Institutions (MFIs) in Kenya provide working capital loans in short loan cycles. They also have an aim to reduce the poorness levels through advanced methods that include crowd lending, progressive loaning, steady payment schedules, and security alternatives. Whereas attaining on this poverty-lessening objective, MFIs should also be financially sustainable (Melkamu , 2012).

Inadequate access to loan services by the lowest earners has been acknowledged as one of the issues increasing poverty levels if the issue of financial inclusion to low earners is not addressed (Ali, 2015). MFIs therefore, have an objective of outspreading financial services to clients who are unable to access them easily from the formal commercial banks and such actions are described as outreach. Even though there have been intensive efforts by several MFIs in Kenya, outreach is still low despite the huge demand. The Central Bank of Kenya yearly report of 2012 showed that merely 2.4% of the public had access to micro credit with only 0.5M loan accounts.

The main problem encountered by the microfinance sector is in what way to offer financial and non-financial facilities to the marginalized population without depressing sustainability equally. MFIs should also ensure achieving financial sustainability without deflating the outreach of the poor. Additionally, several MFIs have prioritized financial sustainability through raising the interest rates and huge loans to cover transaction costs, which lower administrative costs (Bitok, 2019). Consequently, the MFIs that charge high interests may lead to exclusion of the poorest in the communities (Dehejia, Montgomery, & Morduch, 2012).

Several research studies have focused on the traditional factors that affect the financial sustainability of MFIs (Wambugu & Ngugi, 2012) but there is limited research on the financial factors that influence the outreach in Kenya. Shue and Oney (2014) did a study, which shows MFIs in Cameroon are more focused on making profits, instead of reaching out

to the poorest of the poor in the communities. Henock (2019) did a study, which concluded that most of these institutions had a moderate level on their outreach level. Wijesiri et al (2017) did a study, which showed that most of the established MFIs in Asia, Latin America, Africa, and Eastern Europe are incompetent in accomplishing their outreach goals.

The low outreach combined with a high defection level is attributed to managerial inability to execute credit policies in fulfilling client needs (Wambugu & Ngugi, 2012). There is limited wide exploitation on the outreach financial capacity determinants (capital adequacy, size of the MFI, operating efficiency and liquidity) in Kenya. Therefore, there exists a knowledge gap on this research. The study hence purposes to bridge this knowledge gap by adding to the empirical knowledge by assessing the financial determinants of MFI outreach Kenya. Thus, this research proposal aims to examine the financial determinants of MFI outreach in Kenya.

## 1.3 Objectives of the Study

### *1.3.1 General objective*

To examine the financial determinants of outreach of microfinance institutions in Kenya

### *1.3.2 Specific objectives*

1. To assess the effects of Microfinance size on the outreach of Microfinance Institutions in Kenya.
2. To determine the effect of operating efficiency on the outreach of Microfinance Institutions in Kenya.
3. To evaluate the effects of the liquidity position on the outreach of Microfinance Institutions in Kenya.
4. To examine the relationship between Capital Adequacy and MFI outreach of Microfinance Institutions in Kenya.

### *1.3.3 Research hypotheses*

*$H_{01:}$ The size has no significant effect on the outreach of Microfinance Institutions in Kenya.*

*$H_{02}$: The Operating Efficiency has no significant effect on the outreach of Microfinance Institutions in Kenya.*

*$H_{03}$: The Liquidity position has no significant influence on the outreach of Microfinance Institutions in Kenya.*

*$H_{04}$: The Capital Adequacy has no significant effect on the outreach of Microfinance Institutions in Kenya.*

## 1.4 Significance of the Study

### *1.4.1 Microfinance sector*

The study is meaningful to the microfinance institutions managers, to achieve understanding in the designs of the monetary capacity to reach out to the poor masses. It is also advantageous to the number of participants in the Kenyan microfinance ground, which will lead to the knowledge of outreach to the poor (Kahiga, 2014). By concentrating on accomplishing reaching out to the poor by the supervisory body and specialists of microfinance bodies in Kenya, the understanding will facilitate indigenous organisations to build for monetary capability. This also enhances expanding and extending in locally established societies.The proprietors of the businesses will recognize their assistances concerning the achievement of the microfinance institutions outreach aims, which are significant to their procedures.

### *1.4.2 Academicians research.*

Academicians, the study will progress the literature on microfinance and is a base for extra research; few studies have been done evaluating the outreach of MFIs in Kenya. The study will help the researchers as it is increasing the knowledge on the outreach. The study will offer a reference for further learning on microfinance institutions outreach. It will too turn out to be a basis of literature for scholars in the field of finance.

### *1.4.3 Government of Kenya*

Government Findings for this study will also help the Government of Kenya enact policies that pertain to the running of Microfinance on how to reach the poor. The government of Kenya has an objective to eradicate poverty; the research paper can add knowledge on accomplishing the mentioned objective. The Kenyan population is characterised by a number of low earning families who requires financial inclusion, hence rely on MFIs as helpers in accessing the finances. Subsequently the reading pursues to scrutinize financial determinants of MFIs outreach; the knowledge will be useful to the government.

## 1.5 Scope of the study

The study's coverage will be conducted to determine the financial factors influencing the outreach of the Micro finance institutions. The study will concentrate more on Deposit taking microfinance institutions. The study will involve a sample of 12 microfinance banks in Kenya. The research will consider the data from the year 2011 to year 2020. The researcher will limit this study to the outreach as an aspect affecting the growth of MFIs.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This section deliberates on the theoretical review, empirical review, conceptual framework and operationalization.

## 2.2 Theoretical Review

Theories are outlined to expound, predict, and understand occurrences and, in many circumstances, to challenge and extend prevailing information, contained by the limitations of the analytical related assumptions. The theoretic background must establish the knowledge of concepts and ideas applicable to the area of study that recount to the wider domains of knowledge in the study. The choice of a theory must be determined by its correctness, simplicity of use, and descriptive influence. The theoretical framework links the researcher to the existing knowledge.

### *2.2.1 Transaction cost theory*

Transaction cost theory of the firm was formed by Ronald (1937) in his article "The Problem of Social Cost" (Karanja, 2014). In order to carry out a market transaction it is essential to discover who it is that one wishes to contract with, to conduct negotiations leading up to a bargain, to draw up the contract, to agree to the review needed to make sure that the terms of the contract are being observed. Additionally, business costs are: exploration and statistics costs, negotiating and decision costs, and controlling and administration costs. The operation costs can be speculated as a non-financial expenses earned in loan provision by the debtor and the financier throughout the process of the disbursing of lend.

The expenses incurred by the creditor comprise of; cost of probing for monies to loan, price of conniving loan agreements, rate of scrutinizing borrowers, evaluating project feasibility, price of probing loan application, price of offering credit teaching to staff and

borrowers, and the cost of observing and executing the credit contracts (Karanja, 2014). Bhatt and Shui-Yan, 1998 argues "the small scale borrowers for this scenario might incur expenses such as charge related to screening group member (group borrowing) (Da & Bernstein, 2014). This comprises of fee of creating a group, price of negotiations with the lender, cost of filling paper work, transport to and from the financial body, cost of time spent on project appraisal and cost of attending meetings". The characters present in a mission will decide the transaction cost rate whose one and only duty is to reduce the hazard they might encounter.

Transaction costs theory is understood as substitute approaches of organizing transactions that reduces costs (Williamson, 1979). Transaction cost theory suggests that the optimal organizational structure is one that attains economic efficiency by reducing the costs of exchange. The theory advocates that for each category of transaction, it produces coordination expenses of monitoring, regulating and handling transactions (Young, 2013). Williamson has well-defined transaction costs in general as the costs incurred of running the economic system of microfinance institutions. He has argued that such costs are to be differentiated from production costs. Transaction cost theory has been disapproved for presenting an under socialized opinion of social nature, for perplexing cause and effect, where necessary and needed.

This study makes effort to relate the implication of the transaction cost theory by contradicting with the criticizers and applying its empirical evidence on contracting and economic models guiding the MFIs. The implication of this theory shows the relationship between transaction costs incurred by the MFIs and the outreach goals. For MFIs to reach the poor they must consider using minimised costs at all levels. In addition, MFIs must incur costs when reaching out to the poor masses in the society. MFIs are unlikely to achieve their objectives where there are high operating costs allocated to reaching the population with low income could. This research uses the transaction cost theory to describe operating efficiency

as a financial determinant of outreach. Transaction costs are characteristically form the most discussions on mission drift. Discoveries further point out that MFIs are incurring high transaction expenses to attend to more clients (Muriu, 2012). Incapacity of MFIs to capitalize on outreach could be connected to the costs involved, the interest rate established under costs recovery levels, high law-breaking rates, poor management and ineffective distribution of resources. These are the few causes often cited as being responsible for the unsatisfactory outreach (Natamba, & Nakabuye , 2013).

### *2.2.2 Liquidity preference theory*

The idea was initially established by Keynes in 1936. Keynes affirmed that the "request for money is shown as a function of level of income and interest rate using the formulae MD= (Y, r) where: MD = money demanded: Y =Level of income r = interest rate." This theory holds that the interest rate is determined by the interaction of supply and demand of money stock. The liquidity preference methodology sights interest rates from the supply and demand of cash stock in the fiscal scheme. According to Keynes (1936) money is needed mainly for the following motives; transaction, precautionary and speculative motive. Keynes additionally indicated that investors will at all times have a preference on short term securities to long term securities. This theory suggests that a depositor should claim greater interest amount or premium on securities with long-term lifespan which is associated with greater risk because, all other factors held constant, investors prefer cash or other very liquid assets. Thus, the investors will demand a premium for investing in non-liquid assets such as stocks and real estate. The theory proposes that the premium necessitated for parting with cash increases as the term for getting the cash back increases.

Pandey, 2010 reinforced this theory and proposed that the necessity for cash to run the day-to-day operations of the institutions cannot be disregarded (Njeru & Munene, 2019). MFIs should for that reason invest suitable available resources in the current assets for the

success of its operations and the goal of outreach accomplishment. The theory highlights why diverse approaches are implemented in handling cash. This therefore empowers the study to establish how the various MFIs have utilized the three motives and its outcome on financial sustainability and outreach. Different savers have different perception in liquidity where some may desire illiquid assets. The more liquid an asset is the more the interest rate.

Other authors such as (Rothbard, 2016) criticized argument by Keynes. (Njeru & Munene, 2019) Argued that, "interest rate is influenced by other factors not liquidity preference only as Keynes recommended." The theory does not define the optimal amount of cash that can be held at specified time or a model that can be used to come to optimum amount. Keynesian theory was applicable to this study as it puts into consideration short- term intrust with no details on long run interest.

The study seeks to find out "the foundation of the liquidity preference theory on the relationship between the money supply in form of loans by MFIs and the demand from the borrowers (Njeru & Munene, 2019)." This is executed in times of increasing and dropping lending rate and the sustainability of the creditor. The microfinance interest rates on loaning are higher than commercial banks' lending rates, but much lower than interest dominant in the informal money marketplace. Basically, savings mobilization of the MFIs will reinforce their sustainability (Hearth, 2018). Savings will increase the financial foundation and the MFIs can spread out services to more customers therefore increasing the outreach levels in the societies. MFIs also invest in commercial banks and earn more profits. The increase of savings creates more liquidity for the MFIs thus increase the financial capacity to reach out to more customers.

### *2.2.3 Passive learning theory*

According to Passive Learning Theory Jovanic 1982 cited in Agaje (2004), a business enters in the marketplace lacking significant information on individual prospective growth.

Immediately after entry, the firm begins to acquire knowledge about the provision of its profitability established on data from recognised returns. The firm may decide to enlarge, contract, or to leave the market by recurrently modernising such learning. This learning model suggests that businesses and directors of the companies learn about their competence as soon as they are upright in the industry. Corporations enlarge their operations when bosses notice their estimate of directorial efficiency has underrated real heights of efficiency.

For instance, as microfinance business assets intensify the proprietor's estimate of efficiency turn out to be more correct, declining the likelihood that the production will extensively vary from one year to another. The inference of this theory could clarify the microfinance institute size as a financial factor of outreach. Size of the MFI have the effect the outreach, the bigger the size in form of assets the higher the outreach. The larger MFIs seem to have higher financial and communal efficacy, which is associated with the existence of higher-scale economies hence, the increased capacity to boost outreach (Wijesiri, Yaron, & Meoli, 2017).

### *2.2.4 Capital buffer theory*

The advocates of buffer theory were Rob and Calem (1996). Buffer denotes to the capital that surpasses the minimum statutory requirement. The minute Microfinance Institutions approach the required minimum level they continue to increase their capital ratio and minimize risk with the goal of evading costs related to regulation provoked by violation of the statutory capital requirements. Breaching the contract of minimum statutory capital requirements will activate the regulator to undertake remedial actions which could be costly (Quayes, 2012).

Capital Buffer theory could explain capital adequacy as a financial determinant of outreach. The foundation of the theory is created on dependability and reliability on capital and variability of capital adequacy ratio to help in the long term planning. If a MFI is unable of mobilizing deposits it will be faced with the likelihood of capital erosion (Almazari &

Alamri, 2017) . In such occurrence, the bank could experience a variability of capital adequacy ratio. Consequently, to avoid breaching the minimum statutory capital requirements assumed an unstable capital adequacy ratio the theory proposes that MFIs are more willing to keep a buffer of capital exceeding the minimum mandatory (Quayes, 2012). Violation of the minimum statutory capital requirement will lead to the regulator imposing penalties, sanctions and even possibly putting the Micro finance institutions in receivership reducing the level of outreach. Maintaining the minimum statutory capital requirement, MFIs are able to focus on increasing their lending and therefore boost their profitability thereby reaching out to more poor clients increasing the levels of outreach

## 2.3 Empirical Review

Within literature in different sectors, there are several studies carried out about firm characteristics and business performance. Previous research literature has shown how monetary firm characteristics for example: assets, age, diversification, capital, leverage, board composition, institutional shareholding, profitability, liquidity, growth, and environmental, economic variables make an impact on a business's financial, monetary performance and growth.

### *2.3.1 The Relationship between microfinance institution size and outreach*

Wijesiri et al (2017) did a study "Assessing the financial and outreach efficiency of microfinance institutions: Do age and size matter?" The results were that there exists a relationship between the size of Microfinance institution and outreach. Bigger MFIs have a tendency to have higher outreach efficiency. As of the second stage analysis of the study, the bigger MFIs are comparatively ineffective in reaching the outreach goals. Hartarska (2005) did a study "Governance and performance of microfinance institutions in Central and Eastern Europe and the newly independent states", discussed the Microfinance Size as a variable. Hartarska, 2005 looked at the influence of MFIs size on breadth and depth of its outreach.

The results of the study pointed out that significant connection doesn't exist between MFIs size and its outreach (depth and breadth). The results confront MFIs size as a determinant of outreach in the study.

These results of Hartarska (2005) are not supported by (Mersland & Strøm, 2010) whose study was "Microfinance mission drift?" Their study findings designated that MFIs size influences positively and negatively on breadth and depth of outreach, respectively. The mentioned results confirm that; increasing the assets of the MFIs enhances outreach levels in terms of breadth of outreach. Larger MFIs are more efficient and benefited from the economies of scale thus increased levels of outreach. MFI size permits the researcher to test the proposal that big MFIs may have an advantage from economies of scale (Bibi, Balli, & Tripe, 2018).

Wondirad, (2020) tried to analytically examine financial performance and outreach in a large relative study grounded on a data set of 124 microfinance organisations in 49 nations. The study empirically examined whether trade-off occurs among the depth of outreach and profitability of MFIs. The financial outreach of MFIs is significantly and positively affected by size. Size as a variable is significant since it highlights the economies of scale or diseconomies of scale. Organization's benefit from synergies and economies of scale; up to a definite size. Beyond the given level, the organizations grow large and become difficult where the diseconomies of scale occur.

Hermes et al. (2011) whose study was Microfinance: Outreach and efficiency of microfinance institutions. MFIs' size is measured by assessing the value of the assets. Hermes et al. (2011) discovered a significant positive interrelationship between size and outreach. According to Quayes (2011), whose study was" Depth of outreach and financial sustainability of microfinance institutions?" The results of this study were size of the institution, calculated by gross loan portfolio (LP), will have a negative influence on

outreach. On the other hand, an increase in size will have a positive association with breadth of outreach.

### *2.3.2 The relationship between operating efficiency and outreach*

MFIs are unlikely to achieve their objectives where there are high operational charges assigned to reach a populace with little revenue. This is especially in developing countries where they are problems like corruption facing the economy. It is also important to note that profitability is normally measured through financial self- sufficiency (FSS) which according to MIX market is the ability of an MFI to cover its operating costs. The MFI ratio of revenues to expenses must be greater than 1.10 to be considered as financially self- sustainable (Ramírez , Cervantes , & Bernal , 2018).Concerning operating efficiency there is an adverse effect on outreach (Ramírez , Cervantes , & Bernal , 2018). Financial stability and a bigger outreach can only be gathered through increment in charges and interest of the loans. Quayes, 2012 however states that "there exists statistical evidence which shows that financially self-sufficient MFIs have better outreach than MFIs that are not self-sufficient."

Wambua, 2017 illustrated that he "…. investigated the relationship between expansionary strategies and operational efficiency of deposit taking Microfinance Institutions in Kenya during the period of 2010 to 2015." The study used a sample size of 9 Deposit Taking Microfinance institutions. The study adopted data envelopment analysis (DEA) and Pearson correlation, t-test and Regression tests were then conducted to the degree of interconnection between the variables of the study. The study found that the relationship between outreach and operational efficiency was negative.

Ngumo et al., 2017 "… examined the determinants of financial performance of Microfinance banks in Kenya. The study adopted a descriptive research design and applied secondary data from 7 micro finance banks for a period of 5 years from 2011 to 2015. The mentioned study analysed data using correlation and regression analysis." The data found a

positive and statistically significant relationship between operational efficiency and financial performance of microfinance banks in Kenya. The research made a conclusion that there exists a direct relationship between operational efficiency and financial performance. The study pointed out that there is a weak positive correlation between outreach and operational efficiency.

Hermes et al. (2011) did a study of outreach and efficiency of micro finance institutions. The results of the mentioned research indicated there is substantial indication that outreach is adversely correlated to operating efficiency of MFIs. More precisely, the study concluded that MFIs that have a lesser typical loan balance (a ratio of the depth of outreach) are also less efficient. The researcher tends to critique the findings because where the operating expenses are higher the outreach levels are limited.

Natamba, 2013 did a study on transaction costs and outreach of microfinance institutions in Uganda. The data were implied and analysed using descriptive statistics, correlation and regression analysis methodology. The findings of this study pointed out that there is significant positive relationship between transaction costs of MFIs and outreach. Discoveries of this study further show that MFIs are incurring high transaction costs to serve their customers. This in turn affects the abilities of the MFIs to reach more clients.

Bibi et al. (2018) did a study, the discovery designates that increased operating expenses for loan processing adversely effect on the breadth and depth of outreach procedures. The microfinance works interpret high value of the Operating expense ratio (OER) positively, in the logic that a higher cost for the MFIs demonstrates that the organization is on expenditure to reach poorer clients. The aforementioned is thus expected that upper cost ratios might result in stronger public outreach. The results indicate that operating efficiency is positively related to outreach of the MFIs. Regardless of many poor people capable of making positive earnings from their investments, they are not all capable to

consume loaned out money in such a fruitful method and, and so, loans at commercial rates from MFIs become expensive.

Singh and Padhi (2019) Operating expense ratio is used as proficiency pointer for MFIs outreach because it consists of all managerial and workforce's expenses. MFIs that run lesser loans will associate unfavourably to others, even though they might be attending to their target market efficiently. As well, MFIs that offer savings and other services will also compare unfavourably to those that do not offer these services, if gross loan portfolio is used as the denominator. Cost per debtor provides a significant portion of efficiency by presenting the normal cost of keeping an active borrower. Meanwhile the magnitude of the loans is not portion of the denominator; organisations with higher loans do not automatically seem more efficient, as is the situation with the operating expense ratio.

### *2.3.3 The relationship between capital adequacy and outreach*

The capital has numerous basic functions for microfinance banks. They include: it helps to boost depositor's confidence in their deposits, it specifies the amount of risk the owners are prepared to take, acts as safeguard in absorbing losses and it point out the cost of financing method used (Ayaydin & Karakaya, 2014). Capital adequacy is measured using Capital to Assets Ratio (CAR). CAR is a ratio of the total MFI equity to its total assets. CAR designates the MFIs capability and inner financial strength to endure economic shock wave and losses in times of crisis. It is projected that the bigger capital to assets ratio, the poorer the clients, because comparatively less lending is done (Hermes, Lensink, & Meesters, 2011).

According to Bibi et al. (2018), whose study was "New approaches to measure the social performance of microfinance institutions (MFIs)?" The findings of this study were the CAR has a positive effect on specification on breadth and depth of outreach using regression. MFIs are less leveraged which is explained by the difficulties in leveraging MFI's uncertain loan portfolios hence reducing the outreach levels. Bibi et al., 2018 "…. expected that the

higher the value of capital to assets ratio, the poorer will be its community performance, because fairly less lending is being done." Quayes, 2011 did a study whose results were that, impulsively, a larger level of equity ought to have a positive influence on outreach, since greater equity may have need of MFIs to commit to explicit outreach targets. As a result, a larger level of total equity should have a positive impact on depth of outreach, breadth of outreach.

Ngumo et al. (2017) the study, whereby the inferences of the study were that capital adequacy has a positive significance influence on the outreach microfinance banks in Kenya. The study conclusion was there is direct connection between capital adequacy and outreach ranks of microfinance banks in Kenya. The accessibility and use of external finances by microfinance institutions assisted to grow their capital base and also improve microfinance institutions performance towards reaching numerous borrowers. CAR was one of the important features that impacted the operations and sustainability of microfinance institutions. This is because capital adequacy ratio assures financiers and investors to have confidence with microfinance institutions (Wondirad, 2020). HA (2019) carried a study to examine "the interactive relationship between credit growth and operational self-sustainability of People's Credit Funds in Mekong Delta Region of Vietnam." When regression analysis on a set of panel data from 2013 to 2018 of 24 People's Credit Funds (PCFs,) established that capital adequacy ratio and outreach of microfinance institutions are positively interrelated.

### *2.3.4 The Relationship between liquidity and outreach*

Liquidity is defined as capability of MFIs to meet its immediate obligations, such as savers, as they mature or fall due. According to Idama, 2014 liquidity risk in a microfinance bank comes up when expense obligations fall due or cash requests are not met in a timely and cost-efficient way. According to Ongore and Kusa (2013) Microfinance institutions holding high

levels of liquid assets are more willing to have increased levels of risk. This means the MFIs are more likely to increase the outreach levels with adequate levels of liquidity. Marketable securities and cash are regarded as the most liquid assets. Microfinance outreach has a positive correlation with an adequate level of liquidity (Ongore & Kusa, 2013).

According to Ayaydin and Karakaya (2013) liquidity risks in a Microfinance institution can be minimised by high cash holding which could lead to their stability hence increased levels of outreach. High liquid assets that back demand liabilities of a microfinance institution results to minimised liquidity risk and margins of the MFI. Microfinance organization having inadequate liquidity are less resistant towards future uncertainty, are unlikely to meet growth targets. This can make the MFIs have a rise in risk from one portfolio to the other and delays in refinancing, hence reduced levels of outreach (Brom, 2009). For microfinance bank to reduce liquidity risk, each branch will have to draft a daily funding plan that matches the cash inflows from deposits and loan repayments with the cash outflows (Idama, 2014)

Adusei (2021) argues that liquidity threat displays a strong adverse and statistically significant outcome on the outreach performance of MFIs. Acharya and Naqvi (2012) emphasize that surplus liquidity leads to uncontrolled lending, hence credit booms resulting to financial crisis. The study illustrates that additional liquidity even if it sparks some credit boom in MFIs; it in due course increases the outreach levels. As of this perception, when MFIs retains more liquid assets so as to reduce its liquidity risk, it damages its outreach assumed the fact that the main objective is to lend out to reduce poverty of the society.

**2.4 Conceptual Framework.**

Conferring to Nyaera and Okeyo (2019), a concept is an intellectual or general idea inferred or obtained from specific instances. A theoretical structure is an establishment of comprehensive concepts and philosophies derived from applicable arears of analysis and used

to construct a consequent variables demonstration. Conceptual framework shows the connections between the independent variables and dependent variable. Della (2008), terms an independent variable also identified as the expounding variable as the supposed reason for the changes of the dependent variable, while a dependent variable denotes to the variable which the researcher needs to give details and investigate on.

The objective of a theoretical context is to classify plus define ideas applicable to the research and plot relations amongst the concepts. A framework aids scholars outline the concept, plan the study territory or theoretical scope, connects concepts, and recognize knowledge holes in literature. The research proposal tries to investigate on the financial determining factors of outreach of Microfinance institutions in Kenya. The exploration seeks to categorize elements that affect the monetary capacity of MFIs to enhance outreach goals. The dependent variable is outreach, which is measured as breadth of outreach, with each of the independent variables namely Operating efficiency, Microfinance institution's size, capital adequacy and liquidity.

**Figure 1 Conceptual Framework**

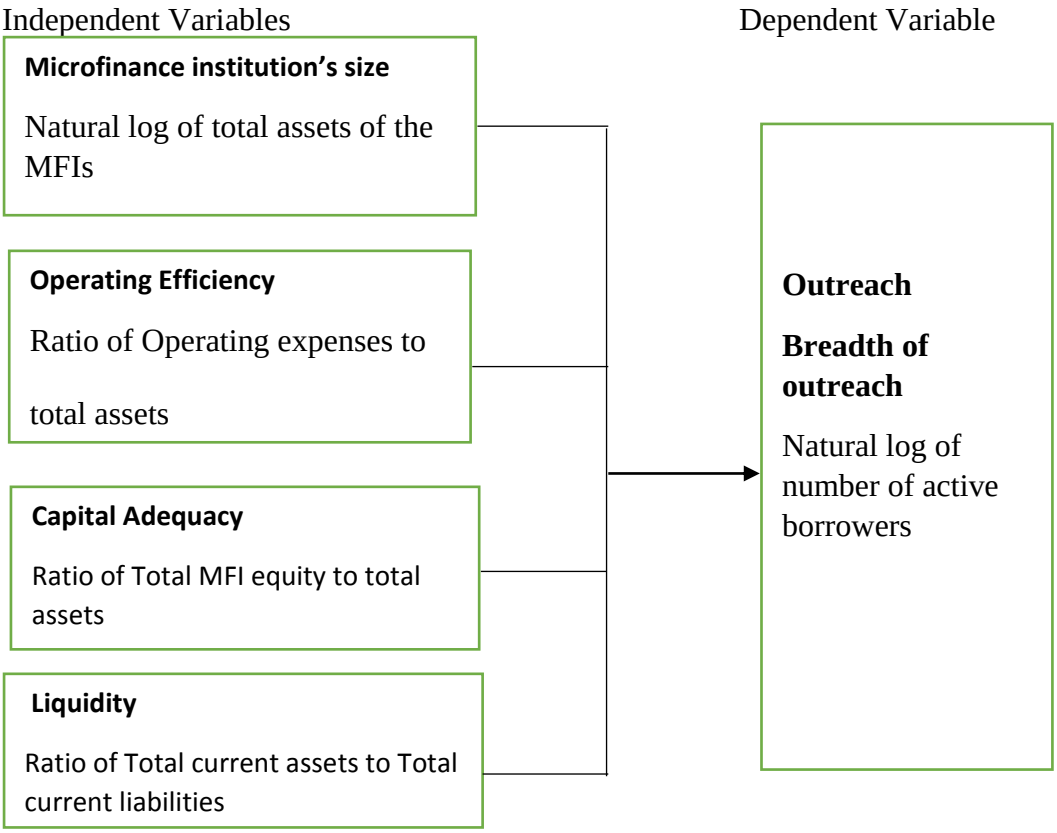


*Figure 1Conceptual Framework*

**Figure 2 Conceptual Framewor2.5 Operationalization of variables.**

**Figure 2.3: Conceptual Framework**

**2.5 Operationalization of variables.**

The dependent variable is outreach. The outreach is measured using two aspects namely depth and breadth. The depth of outreach shows an increase in the number of community served by MFIs credit services (Ajija, Sukmana, & Sari, 2020). Ajija et al. (2020) indicated that the level and rate of outreach is determined by the average loan (savings or deposit) to borrower ratio, and the average financing per member. In this study the outreach will be measured using the breadth of outreach. Breadth of outreach is measured using natural logarithm number of the active borrowers (Hossain, Galbreath, Hasan, & Randøy, 2020). The data will be transformed into natural logarithm for logical reasons in order to make the

findings interpretable due to the large numbers involved. Higher value of the sum of active borrowers denotes the breadth of outreach.

The independent variables are defined as discussed below. Operating efficiency is defined by the expenses ratio, which is measured by operating expenses to total assets ratio. Microfinance institution size is defined by natural log of total assets of the MFIs. Capital adequacy is defined by Capital Assets Ratio which is measured by the ratio of equity to total assets. Liquidity is defined by MFI loan to total assets (Hossain, Galbreath, Hasan, & Randøy, 2020).

**Table 1 Operationalization of variables**

| **Variable Type** | **Variables** | **Specific Measure** | **Scale** | **Analysis** |
|---|---|---|---|---|
| Independent Variables | Microfinance institution size | Natural log of total assets of the MFIs. | Ratio Scale | Descriptive |
| | Operating Efficiency | Ratio of Operating expenses to total. assets | Ratio Scale | Descriptive |
| | Capital Adequacy | Ratio of Total MFI equity to total assets | Ratio Scale | Descriptive |
| | Liquidity | Ratio of Total current assets to Total current liabilities. | Ratio Scale | Descriptive |
| Dependent Variable (Outreach) | Breadth of outreach | Natural log of number of active borrowers. | Ratio Scale | Descriptive |

### 2.6 Summary of Literature Review

Several researches have examined the financial sustainability, firm characteristics and firm performance in some industries. A small number of studies have targeted the outreach of the Microfinance institutions in Kenya .However, the results are diversified intercontinentally; the majority of the authors have focused on Microfinance institution size and operating efficiency, in an attempt to find out the financial performance of the MFIs. Some researchers

concentrated on examining the relationship between financial sustainability and outreach for example (Karanja, 2014) (Henock, 2019) (Hermes, 2011) and (Hartarska, 2011). Other researchers concentrated on investigating the relationship between financial performance and outreach of the MFIs such as (Adhikary, 2015) (Biwot and Muturi, 2014) (Cull, 2007) and (Ekubay, 2015).

Some of these studies have found different results and relationship among the variables. Therefore, the general conclusion of these studies remains to be unclear and contradicting. This phenomenon discloses an empirical gap that exists since none of the mentioned studies covers the financial determinants of Microfinance institutions' outreach in Kenya. The researcher found it fundamental to carry out a study on financial determinants of Microfinance institutions' outreach in Kenya due to the substantial gaps that have been left by various academicians who tried to research on outreach to bridge the gap of literature that exits.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This section discusses the research method that was be used in this study. It consists of the research design, target population, data collection instruments and data analysis procedure. Model specification is also to be discussed. Statistical methods and techniques to be used in data collection and analysis are also included.

## 3.2 Research design

Research design is a rational structure that associates the observed information assembled to the preliminary research queries of a study (Mugenda & Mugenda, 2003). Creswell (2012), discoursed that a research plan consists of the processes and approaches executed to carry out systematic research. This research intends to implement a descriptive research design. Descriptive research design was adopted because the study involved an investigation of the financial determinants of Deposit Taking Microfinance Institutions' outreach in Kenya. A descriptive design tries to define an occurrence as it happens whereby it is used for categorizing and gathering data concerning the features of a particular matter (Kothari & Garg, 2014) . A descriptive research design is suitable since it includes bringing together and analyzing study elements data at a point in time in order to evaluate strength of relationships among variables. On the other hand, the design does not have the capacity to form a causal relation between the variables (Kariuki, 2017). Descriptive design is a comprehensive strategy or approach for administering a research to scrutinise specified testable research queries of concern. The collected data will be qualitative and numerical techniques that are ordinarily applied to sumarize the data collected.

### 3.3 Target population

Kombo and Tromp (2009), defines a population as a groups of people or objects gathered for research purposes. It can also be well-defined as the entire cluster of individuals or components which have a particular common characteristic. The study focused on the Deposit Taking MFIs since they bridge the gap between banks and MFIs. They also cover a wide range of customers and offer financial services usually offered by banks but this time to low income earners. The target population for this study was 12 Micro Finance Institutions registered with the Association of Micro Finance Institutions (AMFI) and are licensed by CBK as Deposit Takings Microfinance institutions. The selected must report their financials statement to CBK and are available on the MIX market.

### 3.4 Sampling and sampling procedure

"Sampling is a procedure or technique of selecting a sub-group from a population to participate in the study. It is the process of selecting a number of individuals for a study. This is in such a way that the individuals selected represent the large group from which they were selected" (Ogula, 2005). The study used a census of twelve MFIs that are Deposit Takings Microfinance institutions. The twelve are chosen since as they are registered with The Association for Microfinance institutions (AMFI) as deposit taking Microfinance institutions (DTMs).

### 3.5 Research instruments

The data collection was done from secondary sources to accomplish the purpose of the research work. Secondary information available on MIX market and CBK financial statements was extracted. A data collection sheet was prepared to facilitate the process of data analysis. Panel data was considered for the study. The instruments involved the yearly observations on the variables, which are outreach, Microfinance institution size, capital

adequacy, operating efficiency and liquidity. The data analysis involved data issued on MIX market and CBK reports from the year 2011 to year 2020.

The researcher chose this period year 2011-2020 because there are many economic forces that have happened between the mentioned periods. The main reason on the choice of the period was, Micro Finance Act legislation was passed in 2006, and became active in 2008. "By 2010 there were more than twenty large micro finance institutions in Kenya, such as Kenya Women Microfinance Bank (KWFT) and Faulu which provided US $ 1.5 billion to just about 1.5 billion active borrowers" (Microfinance in Kenya, 2022). With this trend, the researcher wanted to research more on the levels of Micro Finance institutions outreach hence the choice of 10-year period from 2020 to 2011. These changes are like modern loan applications from the modern technology forums, which enables the public to apply loans from their mobile phones. Does it have an effect on the MFIs operations on giving out loans to the masses?

### 3.6 Data collection and procedure

The data for this research was composed from both numerical and text information to have both qualitative and quantitative statistics. The application of this technique is necessary because it reduces time wastage and dismisses the possibility of gathering biased data from some of the primary sources (Kothari & Garg, 2014). As well, this technique provides a huge and extremely quality databank which can be used to help specific researchers obtain the essential information in the shortest period (Mugenda & Mugenda, 2003).This descriptive research was constructed on secondary data gotten from mix market and published statements of twelve MFIs for 10 years from year 2011 to 2020. Secondary data will be gathered from the fiscal reports of the specific MFIs. Continuous data required for the various variables was composed for a period of ten years from 2011 to 2020.

### 3.7 Data processing and analysis

Panel data analysis was beneficial to this study for examining the financial determinants of the outreach of Microfinance Institutions. According to Gujarati (2012), panel data always provides enhanced results with valuable statistics, with minimised collinearity among variables and offer more degree of freedom as well as efficiency. This is because the data have both time series and cross-section features. Regression method was used to analyse the influence of independent variables: Microfinance institution size, Capital adequacy, Liquidity, Operating efficiency and outreach of MFIs. Data will be analysed using Stata software.

The researcher estimated the regression equation using either Random Effect Model (REM) or Fixed Effect Model (FEM) following earlier related studies by Hermes et al. (2011), Bibi et al. (2018) and guidance from the results of the Hausman test. Outreach was be used as the dependent variable. Financial determinants, which are the independent variables, are as follows Microfinance institution size, operating efficiency, capital adequacy and liquidity. The following analytical model was used;

**Model** $\mathbf{Y_{it1} = \beta_o + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it}}$

$\mathbf{Y_{it1=}}$ Breadth of outreach

$\mathbf{X_1}$= MFI size

$\mathbf{X_2=}$ Operating Efficiency

$\mathbf{X_3}$= Capital Adequacy

$\mathbf{X_4}$= Liquidity

$\mathbf{B_0}$ = constant

$\boldsymbol{\beta_1, \beta_2,}$ **and** $\boldsymbol{\beta_3\ \beta_4}$ = coefficients of the variables.

$\varepsilon$ = error term

**t**= time effect

### 3.8 Diagnostic tests

The study used various estimation models on panel data. They consist of Pooled Ordinary Least Square method (POLS), Random Effect Model (REM) and Fixed Effect Model (FEM). The diagnostic test was executed to conclude the best analysis models to be carried out. The summary to the tests are presented in table 3.2.

#### *3.8.1 Breusch-Pagan lagrange multiplier (LM) test*

This test was carried out to decide whether to use the pooled OLS regression or the random effect regression. The null hypothesis in the LM test is that variances through units are zero. The inference made is that there is no panel influence or a considerable variance across units does not exist. "Where the assessment is carried out and the P value is less than the set p-value of 0.05, then it shows that there will be panel effects. The effect of this result will be the dismissal of the null hypothesis and as a result the acceptance of the alternative hypothesis" (Torres, 2007).

#### *3.8.2 Hausman test*

Hausman test was used to assist the research to decide whether to use random or fixed effects. The Durbin– Wu– Hausman test also referred to as the Hausman specification test measures the uniformity of an estimator when linked to a substitute's lesser effective estimator, which is obviously recognized to be constant. The assessment allows one to examine the relationship of the statistical models used. The researcher can carry out the Hausman test by relating the Hausman statistic figure to a critical value acquired from its sample distribution and declining the null hypothesis of the accurate specification. Where the p-value is greater than 5%, the study will choose a random effects model.

#### *3.8.3 Heteroscedasticity*

Heteroscedasticity is the absence of constant error variance. Heteroscedasticity takes place when the standard deviances of a projected variable, supervised over different figures of an

independent variable or as interrelated to earlier time periods, are non-constant. It can arise due to a presence of an outlier. The occurrence of heteroscedasticity may lead to overcapitalization of the model; test statistic becomes lesser which originates the inappropriate conclusion. “If it is severe, heteroscedasticity ought not to be a problem since it doesn't appear in biased parameter approximations” (Orme & Yamagata, 2014). This study will use Modified Wald test to examine whether heteroscedasticity exists. If the p-value is less than 5%, then there is presence of non- uniform variance.

### *3.8.4 Multicollinearity*

Multicollinearity takes place when independent variables in regression model are correlated. This correlation is a challenge in analysis because independent variables should be independent. When the degree of correlation between variables is high, it causes difficulties when fitting the model and interpretation of results. The method used to check multi-collinearity is to use the Variance Inflation Factor (VIF) for independent variable or in the set of multiple regression variables. The higher the value of VIF; the higher correlation between the variables.

### *3.8.5 Serial autocorrelation*

Autocorrelation is a scientific illustration of the magnitude of resemblance between a specified time series and a lagged type of itself over consecutive time intervals. Wooldridge F- statistic test will be applied for autocorrelation check in the study. Serial correlation occurs when error terms from different time periods are correlated. It is said that the error term is serially correlated. Serial correlation modifies the efficiency of the estimators in a way that the standard errors become distorted troubling the test statistic, therefore unacceptable significance test and expectations. A p-value of less than 5% level of significance point out the presence of serial correlation” (Wooldridge, 2002).

### *3.8.6 Time fixed effects*

The study will use examine whether there are time-specific effects which affect all individuals in the same way. This extended model often functions by including a dummy variable. The study will use F- statistics whereby if p value of less than 5%, there no existence of time fixed effects; hence no use of two-way model or introduction of dummy variables.

**Table 3:1 Panel Data Diagnostic Tests**

| **Test** | **Test Used** | **Conclusion** |
|---|---|---|
| Pooled or random effects model | Breusch Pagan LM test | If P value >0.05, use pooled effects model. |
| Time Fixed Effects | F statistics | If p value >0.05, there are no time fixed effects do not use two way model or introduce dummy variables |
| Heteroscedasticity | Modified Wald Test | If P value <0.05, presence of non-uniform variance. |
| Serial correlation | Wooldridge Drukker test | If P>0.05, no serial correlation |
| Random or fixed effects | Hausman test | If p value>0.05, use random effects model. |

*Table 2Panel Data Diagnostic Tests*

# CHAPTER FOUR

# RESULTS AND DISCUSSIONS

## 4.1 Introduction

This chapter outlines the presentation of the study findings on the determinants of financial determinants of MFIs outreach in Kenya. The definite purpose of this research includes; the effect of operating efficiency, MFI size, capital adequacy and liquidity on the MFIs' outreach. It deals with the presentation and analysis of 12 annual observations from 2011 – 2020 of Microfinance banks (the deposit taking microfinance institutions). The descriptive statistics are analysed such as mean and standard deviation of the variables of the study. The chapter as well discusses the correlation of the variables. The chapter also presents the panel data analysis and include diagnostic tests for the regression assumptions before demonstration of the regression outcomes and their interpretation.

## 4.2 Descriptive statistics

From figure, 4.1 MFIs make efforts of reaching out to poor (outreach levels) at a minimum of 0.80 and maximum of 4.41. On average firms reach out to the poor or increase, outreach levels at 2.28 with a deviation of 1.26. The MFIs have average capital adequacy of 0.21 with a deviation of 0.20. The institutions also have operating efficiency of 0.21 with a deviation of 0.78. The average size for the MFIs is 2.48 with a deviation of 1.15. The average liquidity for the MFIs is 0.29 with deviation of 1.16

**Table 3 Descriptive Statistics Results**

*Table 3Descriptive Statistics Results*

| Variable | | Mean | Std. Dev. | Min | Max | Observations | |
|---|---|---|---|---|---|---|---|
| BREADT~H | overall | 2.283628 | 1.539203 | 0 | 4.915548 | N = | 120 |
| | between | | 1.261862 | .7986274 | 4.410964 | n = | 12 |
| | within | | .9472467 | -.0595398 | 4.454286 | T = | 10 |
| CAPITA~Y | overall | .2055996 | .2954587 | -1.203704 | 1.62069 | N = | 120 |
| | between | | .1988348 | -.0826378 | .7586082 | n = | 12 |
| | within | | .2252791 | -.9154663 | 1.067681 | T = | 10 |
| OPERAT~Y | overall | .2056713 | .1610669 | 0 | .7346939 | N = | 120 |
| | between | | .0781062 | .1222293 | .3452335 | n = | 12 |
| | within | | .1424898 | -.1098396 | .6564358 | T = | 10 |
| MFISSIZE | overall | 2.479987 | 1.437493 | 0 | 4.507227 | N = | 120 |
| | between | | 1.154556 | 1.199251 | 4.420523 | n = | 12 |
| | within | | .9133466 | .1124865 | 4.351799 | T = | 10 |
| LIQUID~N | overall | .292225 | .3085459 | 0 | 2.17 | N = | 120 |
| | between | | .1590949 | .118 | .737 | n = | 12 |
| | within | | .2679621 | -.294775 | 1.725225 | T = | 10 |

### 4.3 Correlation Matrix

The correlation matrix shows the strength of relationship between the variables. It shows the correlation coefficients for different variables. A correlation matrix is applied to summarize data as an input into a more advanced analysis. From figure, 4.2 results showed that all independent variables had a positive correlation with breadth of outreach. Capital adequacy correlation coefficient of 0.09, operating efficiency correlation coefficient of 0.17, MFI size correlation coefficient of 0.89 and Liquidity correlation coefficient of 0.1274.

## Table 4 Correlation Matrix Results

```
. pwcorr BREADTHOFOUTREACH CAPITALADEQUACY OPERATINGEFFICIENCY MFISSIZE LIQUIDITYPOSITION, obs sig
```

| | BREADT~H | CAPITA~Y | OPERAT~Y | MFISSIZE | LIQUID~N |
|---|---|---|---|---|---|
| BREADTHOFO~H | 1.0000 | | | | |
| | 120 | | | | |
| CAPITALADE~Y | 0.0877 | 1.0000 | | | |
| | 0.3408 | | | | |
| | 120 | 120 | | | |
| OPERATINGE~Y | 0.1724 | 0.2098 | 1.0000 | | |
| | 0.0598 | 0.0215 | | | |
| | 120 | 120 | 120 | | |
| MFISSIZE | 0.8852 | 0.1393 | 0.2710 | 1.0000 | |
| | 0.0000 | 0.1293 | 0.0028 | | |
| | 120 | 120 | 120 | 120 | |
| LIQUIDITYP~N | 0.1274 | 0.5224 | 0.2269 | 0.2896 | 1.0000 |
| | 0.1655 | 0.0000 | 0.0127 | 0.0013 | |
| | 120 | 120 | 120 | 120 | 120 |

*Table 4Correlation Matrix Results*

### 4.4 Exploratory Analysis

For gaining an insight into the data, trend plots were drawn. The study was covered from the periods from the year 2011 to 2020. According to the results in figure 6 the outreach of the MFIs portrayed properly direct relationship with regard to the size of the institution. The results on the other hand, show that MFI 3, 4, 11, and 12 had negative outreach (breadth of outreach).

**Figure 4.1 Trend plots**

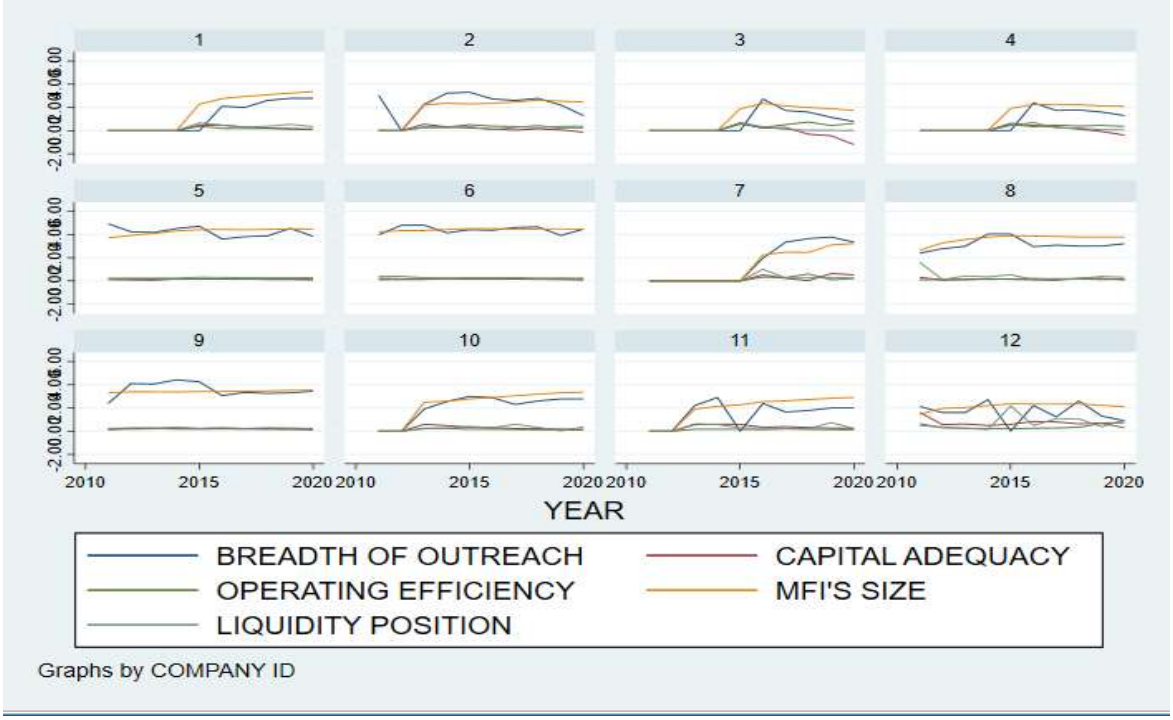


*Figure 4 Trend Plots*

## 4.5 Panel Diagnostic Tests

Panel diagnostic tests were used to assess the correct model for estimation that were carried out. This was of assistance to decide the most appropriate model for the study. The results of the diagnostic tests are as presented below.

### *4.5.1 Normality tests*

Normality tests are used to determine if a data set is well modelled by a normal distribution and to calculate how probable it is for casual variable underlying residuals or the error terms to be normally distributed. A normality test is applied to define whether sample data has been drawn from a normality distributed population. The null hypothesis for normality test is the data follows a normal distribution. The alternate hypothesis is the data does not follow a normal distribution. From figure 4.3, it shows p-value of 0.0396, which is less than 0.05 we reject the null hypothesis and conclude the data does not follow a normal distribution.

**Table 5 Normality Tests Results**

```
. predict residuals
(option xb assumed; fitted values)

. jb residuals
Jarque-Bera normality test:   6.46 Chi(2)  .0396
Jarque-Bera test for Ho: normality:
```

*Table 5 Normality Tests Results*

### *4.5.2 Testing for random effects*

The study applied Breusch-Pagan Lagrange Multiplier (LM) to test whether a panel model or pooled Ordinary Least Square method (OLS) can be used. The null hypothesis in this test therefore is there is no panel effect. This means that there is no significant change through the units since the variances across is zero. The alternative hypothesis for this test is there is panel effect. From the results of the Breusch -Pagan test, p-value of 0.004 is less than 0.05, hence reject the null hypothesis, therefore there is panel effect in the data of this study. In this study, the random effects are appropriate. As a result, the conclusion is we cannot run Pooled Ordinary Least Square method (OLS) regression but a panel model.

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        BREADTHOFOUTREACH[COMPANYID,t] = Xb + u[COMPANYID] + e[COMPANYID,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+------------------------------
                BREADTH~H |    2.369147       1.539203
                        e |    .4064714       .6375511
                        u |    .0559195       .2364731

        Test:   Var(u) = 0
                                chibar2(01) =     6.91
                              Prob > chibar2 =   0.0043
```

*Table 6 Breusch and Pagan Lagrangian Multiplier Test for Random effects*

**Table 6: Breusch and Pagan Lagrangian Multiplier Test for Random effects**

### *4.5.3 Testing for fixed or random effects*

In this reading, Hausman test was performed to check between the fixed effect and random effect model. The test was used to conclude whether to use the fixed or random effects. In Hausman test, the null hypothesis is random effect model is suitable. The alternate hypothesis is that the model is fixed effects model. This expounds that the unique errors (*ui*) are not correlated with the regressors. The null hypothesis is that correlation does not exist between the two. The results are presented in the figure 4.4. It can be deduced that p value of

0.9115 is greater than 0.05(p value >0.05) then we fail to reject the null hypothesis and fit random effect model. This implies that the random effect model is appropriate for the study.

**Table 7: Hausman Test Results**

```
. hausman re fe
```

| | Coefficients (b) re | (B) fe | (b-B) Difference | sqrt(diag(V_b-V_B)) S.E. |
|---|---|---|---|---|
| CAPITALADE~Y | .3009085 | .3990249 | -.0981163 | . |
| OPERATINGE~Y | -.634276 | -.4069449 | -.2273311 | . |
| MFISSIZE | .9697265 | .8668714 | .1028552 | . |
| LIQUIDITYP~N | -.7082115 | -.5911716 | -.1170399 | . |

```
                b = consistent under Ho and Ha; obtained from xtreg
     B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.99
                Prob>chi2 =      0.9115
                (V_b-V_B is not positive definite)

.
```

*Table 7 Hausman Test Results*

### *4.5.3 Testing for heteroscedasticity*

Modified Wald test for group wise heteroscedasticity was used to test the presence of heteroscedasticity between variables in the data. The null hypothesis for the mentioned test is that there is no heteroscedasticity. The alternate hypothesis is that there is heteroscedasticity. This means that the variance of the error is the same for all variables. The results in figure 4.5 show that the p- value is greater than 0.05 (P-value > 0.05). We fail to reject the null and conclude the data does not have heteroscedasticity.

**Table 8: Wald Test for Heteroscedasticity Results**

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of BREADTHOFOUTREACH

         chi2(1)      =     2.07
         Prob > chi2  =   0.1499
```

*Table 8 Wald Test for Heteroscedasticity Results*

### *4.5.4 Testing for multicollinearity*

In a regression model, there should be no two variables that are highly correlated to each other. The independent variables should be not highly correlated. The Figure 4.6 shows the results for mulita-collinearity results.

**Table 9: Multicollinearity Test Results**

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
LIQUIDITYP~N |      1.48    0.674582
CAPITALADE~Y |      1.39    0.717177
    MFISSIZE |      1.15    0.870253
OPERATINGE~Y |      1.12    0.890362
-------------+----------------------
    Mean VIF |      1.29
```

*Table 9 Multicollinearity Test Results*

### *4.5.6 Testing for serial correlation*

The study used Woolridge test for autocorrelation in panel data. The null hypothesis is that there is no first order for autocorrelation in panel data. The alternate analysis is there is first order for autocorrelation. First order serial correlation means errors in one-time period are correlated directly with errors in the subsequent period. This means there is no serial

correlation. If the p value > 0.05 we fail to reject the null hypothesis and conclude the data does not have first order autocorrelation.

**Table 10: Autocorrelation Test Results**

```
. xtserial BREADTHOFOUTREACH CAPITALADEQUACY OPERATINGEFFICIENCY MFISSIZE LIQUIDITYPOSITION

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      11) =      3.486
          Prob > F =      0.0888

.
```

*Table 10 Autocorrelation Test Results*

### 4.6 Regression Analysis

The conclusion from the diagnostic test, the study used fixed effects model for the analysis. The results are presented in figure 4.7. The study recognized that the R-squared value for the test was 0.3773. This suggests that 37.73% of the variance in the outreach is expounded by the independent variables. The panel regression outcomes show that the constant for the coefficients was 2.83. On the other hand, this test was statistically significant at the 5% significant level because the p-value (0.000) was less than 0.05. This explains that in the absence of the effect of independent variable, the dependent variable (outreach) is deemed to change with a value of 2.83.

The findings of the study for the coefficients of the variables are as discussed below. The first objective of the study was to assess the effects of Microfinance size on the outreach of Microfinance Institutions in Kenya. The results of the study show that the coefficient for MFI size was 0.97 with p-value of 0.00. The P – value was less than 0.05, which implies that we reject the null hypothesis that MFI size has no effect on outreach and conclude that

Microfinance institution size has an effect on the outreach of the MFIs. The outcomes denote that there was a statistically important positive connection between MFI size and outreach as p- value < 0.05. This means that a unit change in MFI size in terms of assets would result to 0.97 positive changes in MFIs' outreach. This study discovery is in support of Mersland and Strom (2010) whose study findings designated that MFIs size influences positively breadth of outreach. The study further contradicted Hartarska (2005) who pointed out that significant connection does not exist between MFIs size and its outreach.

The second objective was to determine the effect of operating efficiency on the outreach of Microfinance Institutions in Kenya. The study discoveries demonstrate that the coefficient for operating efficiency was -0.63 with p-value of 0.15 which is greater than 0.05. This implies that we do not disregard the null hypothesis and decide that operating efficiency has no effect on the outreach of Microfinance institutions. The results suggest that there was a statistically insignificant negative relationship between operating efficiency and MFIs' outreach. This means that a unit change in operating efficiency would lead to a 0.63 negative change in MFIs' outreach. This study finding is in support of Hermes et al., 2011 who indicated that outreach is adversely correlated to operating efficiency of MFIs. Nevertheless, the study contradicts Ngumo et al., 2017 who pointed out that there is a weak positive correlation between outreach and operational efficiency.

The third objective of the study was to evaluate the effects of the liquidity position on the outreach of Microfinance Institutions in Kenya. This study further showed that the coefficient for Liquidity was -0.71 with p-value of 0.003, which was less than 0.05. This suggests that we reject the null hypothesis and conclude that liquidity has an effect on the outreach of the Microfinance institutions. These results show that there was a statistically significant negative relationship between liquidity and outreach as p value < 0.05. Therefore,

this study agreed with Adusei (2021) argues that liquidity threat displays a strong adverse and statistically significant outcome on the outreach performance of MFIs.

The fourth objective was to examine the relationship between Capital Adequacy and MFI outreach of Microfinance Institutions in Kenya. The results provided the coefficients for capital adequacy was 0.66 with a p-value of 0.016. The p- value for capital adequacy was more than 0.05. This implies that we fail to reject the null hypothesis and conclude that The Capital Adequacy has no significant effect on the outreach of Microfinance Institutions in Kenya. This implies that there was a statistically insignificant positive relationship between capital adequacy and MFIs outreach (breath of outreach). The results of the studies disagrees with past studies like according to Bibi et al. (2018), the CAR has a positive effect on specification on breadth of outreach using regression. Additionally, this study finding contradicts Ngumo et al. (2017) the study, whose inferences of the study were that capital adequacy has a positive significance influence on the outreach of the microfinance banks in Kenya.

*Model:*

***MFI outreach = 0.15+0.30capital adequacy - 0.63 operating efficiency + 0.97 MFI size - 0.71 liquidity***

## Table 11: Random Effect Regression Analysis Results

*Table 11 Random Effect Regression Analysis Results*

```
. xtreg BREADTHOFOUTREACH CAPITALADEQUACY OPERATINGEFFICIENCY MFISSIZE LIQUIDITYPOSITION, re

Random-effects GLS regression                   Number of obs     =       120
Group variable: COMPANYID                       Number of groups  =        12

R-sq:                                           Obs per group:
     within  = 0.6024                                         min =        10
     between = 0.9382                                         avg =      10.0
     overall = 0.8058                                         max =        10

                                                Wald chi2(4)      =    317.50
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000
```

| BREADTHOFOUTREACH | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| CAPITALADEQUACY | .3009085 | .2589282 | 1.16 | 0.245 | -.2065813 | .8083984 |
| OPERATINGEFFICIENCY | -.634276 | .4411505 | -1.44 | 0.150 | -1.498915 | .2303631 |
| MFISSIZE | .9697265 | .0584849 | 16.58 | 0.000 | .8550982 | 1.084355 |
| LIQUIDITYPOSITION | -.7082115 | .2399972 | -2.95 | 0.003 | -1.178597 | -.2378257 |
| _cons | .1542616 | .1597266 | 0.97 | 0.334 | -.1587967 | .4673199 |
| sigma_u | .23647313 | | | | | |
| sigma_e | .63755108 | | | | | |
| rho | .12093563 | (fraction of variance due to u_i) | | | | |

*Figure 5 Random Effect Regression Analysis Results*

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter sums up the fundamental findings from the collected data. The findings of this study are used to derive conclusions. Recommendations originating from the main findings are also presented. The suggestions for further readings are also pointed out.

## 5.2 Summary of Findings

The first objective of the study was to assess the effects of Microfinance size on the outreach of Microfinance Institutions in Kenya. The research established that the MFIs size was positively related to MFIs' outreach. The second objective was to determine the effect of operating efficiency on the outreach of Microfinance Institutions in Kenya. The research discovered that the relationship between operating efficiency and MFIs outreach was negative. Thirdly, the purpose of the study was to evaluate the effects of the liquidity position on the outreach of Microfinance Institutions in Kenya. The study revealed that the relationship between liquidity and MFIs' outreach was negative. The last objective of the research was to examine the relationship between Capital Adequacy and MFI outreach of Microfinance Institutions in Kenya. The discoveries of the study showed that there was a positive relationship between the capital adequacy and outreach of the Microfinance institutions in Kenya.

## 5.3 Conclusions

The first objective of the study was to assess the effects of Microfinance size on the outreach of Microfinance Institutions in Kenya. The research found that there was significant effect of the MFI size on the outreach of Microfinance institutions. The second objective was to determine the effect of operating efficiency on the outreach of Microfinance Institutions in Kenya. The findings revealed that the effect of operating efficiency was negative but the test

was insignificant. The third objective was to evaluate the effects of the liquidity position on the outreach of Microfinance Institutions in Kenya. The study further revealed that liquidity had a significant effect on the MFIs' outreach. The fourth objective was to examine the relationship between Capital Adequacy and MFI outreach of Microfinance Institutions in Kenya. Conclusively, capital adequacy positively affected the outreach of the microfinance institutions in Kenya; this was on the other hand, insignificant.

## 5.4 Recommendations

Grounded on the findings of this study the subsequent recommendations were made to enhance the outreach of the microfinance institutions.

### *5.4.1 MFI Size*

From the research discovery, bigger MFIs look like they are reaching out to the poor more than the smaller MFIs. The researcher recommends that smaller MFIs should consider merging to bigger MFIs. This is to help the institutions earn from the economies of scale. This can increase the finance accessibility from their financiers therefore leading to increase their financial capacity to reaching more to the poor population in the societies. The merging of smaller MFIs can make more order and structure in reaching out to the poor masses in the communities.

### *5.4.2 Liquidity*

The study findings were that liquidity was negatively related to MFIs' outreach but significant. The study recommends that the microfinance institutions should keep low their debts and maximize their equity. This is to improve financial capacity to reaching out more to the poor masses in Kenya. To minimize liquidity risks the MFIs should have liquidity risk assessments to ensure the goal of outreach is violated. This can also mean transforming the illiquid assets to liquid assets to increase liquidity.

The research advised that businesses hold additional cash to decrease transaction costs. In the existence of inadequate cash to pay for its bills, MFIs may be required to borrow finances from external monetary sources until it can liquidate its noncash assets, which causes further interest overheads and transaction costs. As a result, to avoid such costs, the research recommends that MFIs choose to use internal funds like cash or retained earnings rather than external finance such as bank loans and debt. With the fact that internal finance is more affordable than exterior funds, it is rational to expect that when MFIs keeps more liquid funds this is an indicator of low liquidity risk. This decision restricts the lending out to the poor people hence lowers the outreach levels in the communities. This requires a balance on liquidity and outreach consideration because liquidity of the MFIs decrease as the outreach levels raises.

### *5.4.3 Capital adequacy*

The study discovered that capital adequacy positively affected the outreach of the MFIs. The MFIs should ensure that the equity is maximized to enhance the reaching of the poor efficiently.

### *5.4.4 Operating efficiency*

The study further found that operating efficiency negatively affected the outreach of the microfinance institutions. The research recommends that the MFIs should consider matching between reducing the transaction costs involved with the outreach goal. As much as the costs of transacting the loans are concerned, MFIs should reach out to the poor at minimised costs.

## 5.5 Suggestions for Further Research

The study is done on financial determinants of Microfinance institutions' outreach in Kenya. The research used breadth of outreach as measure of outreach in terms of number of active borrowers. The research suggests similar studies de done using other dimensions of outreach such as breadth of outreach. In addition, the research pointed out the 12 Microfinance

institutions registered as deposit taking micro finance institutions. The research should be extended to the entire financial sector in Kenya. The research suggests that similar studies should also be done involving non-deposit taking microfinance institutions.

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# APPENDICES

## APPENDIX I: LETTER OF INTRODUCTION

EMMACULATE NDIA

KCA UNIVERSITY

DEAR RESPONDENTS

**RE: FINANCIAL DETERMINANTS OF MICROFINANCE INSTITUTIONS' OUTREACH IN KENYA**

My name is Emmaculate Wambui Ndia a Masters student at KCA University. This research aims to look at financial determinants of microfinance institutions' outreach in Kenya your organization is chosen for this study. The purpose of the letter is to request for information and assure that all the information will be treated with utmost confidentiality and used for academic purposes.

I wish you all the time and look forward to your cooperation.

Thank you

Emmaculate Ndia

**APPENDIX II: Microfinance institutions registered as Deposit Taking**

| | |
|---|---|
| **1** | **Caritas Microfinance Bank Limited** |
| **2** | **Century Microfinance Bank Limited** |
| **3** | **Choice Microfinance Bank Limited** |
| **4** | **Daraja Microfinance Bank Limited** |
| **5** | **Faulu Microfinance Bank Limited** |
| **6** | **Kenya Women Microfinance Bank Limited (formerly KWFT)** |
| **7** | **Maisha Microfinance Bank Limited** |
| **8** | **Rafiki Microfinance Bank Limited** |
| **9** | **SMEP Microfinance Bank Limited** |
| **10** | **SUMAC Microfinance Bank Limited** |
| **11** | **U & I Microfinance Bank Limited** |
| **12** | **Uwezo Microfinance Bank Limited** |

**Appendix III: Data Collection Sheet**

Name of the MFI …… Date Licensed…….

Dominant Membership……

| Variables | Measure | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MFI Size | Total Assets | | | | | | | | | | |
| Operating Efficiency | Operating expenses | | | | | | | | | | |
| | Total Assets | | | | | | | | | | |
| Capital Adequacy | Total MFI equity | | | | | | | | | | |
| | Total Assets | | | | | | | | | | |
| Liquidity | Current Assets/ current liabilities | | | | | | | | | | |
| Breadth of outreach | Number of active borrowers. | | | | | | | | | | |

**APPENDIX IV: RESEARCH BUDGET**

| Item Description | Quantity | Cost | Total (Kshs) |
|---|---|---|---|
| Photocopying Library Material | - | - | 5,000.00 |
| Stationeries | Assorted | n/a | 2,000.00 |
| Internet expenses | - | - | 20,000.00 |
| Licenses | - | - | 2,000.00 |
| Printing and binding draft copies | 300 | 5 | 1,500.00 |
| Final Report Printing | 250 | 5 | 10,000.00 |
| Thesis Binding. | 3 | 400 | 1,200.00 |
| Transport expenses | Various | 5,000 | 15,000.00 |
| Total | | | 56,700.00 |

**APPENDIX V Data of Deposit Taking Microfinance Institutions in Kenya**

| COMPANY NAME | COMPANY ID | YEAR | BREADTH OF OUTREACH | CAPITAL ADEQUACY | OPERATING EFFICIENCY | MFI'S SIZE | LIQUIDITY POSITION |
|---|---|---|---|---|---|---|---|
| **Caritas Microfinance Bank Limited** | 1 | 2011 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Caritas Microfinance Bank Limited | 1 | 2012 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Caritas Microfinance Bank Limited | 1 | 2013 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Caritas Microfinance Bank Limited | 1 | 2014 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Caritas Microfinance Bank Limited | 1 | 2015 | 0.00 | 0.47 | 0.38 | 2.27 | 0.67 |
| Caritas Microfinance Bank Limited | 1 | 2016 | 2.10 | 0.47 | 0.20 | 2.76 | 0.47 |
| Caritas Microfinance Bank Limited | 1 | 2017 | 2.00 | 0.31 | 0.18 | 2.94 | 0.30 |
| Caritas Microfinance Bank Limited | 1 | 2018 | 2.60 | 0.21 | 0.19 | 3.09 | 0.37 |
| Caritas Microfinance Bank Limited | 1 | 2019 | 2.78 | 0.14 | 0.16 | 3.23 | 0.54 |
| Caritas Microfinance Bank Limited | 1 | 2020 | 2.78 | 0.11 | 0.12 | 3.36 | 0.35 |
| **Century Microfinance Bank Limited** | 2 | 2011 | 3.03 | 0.00 | 0.00 | 0.00 | 0.03 |
| Century Microfinance Bank Limited | 2 | 2012 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Century Microfinance Bank Limited | 2 | 2013 | 2.26 | 0.55 | 0.32 | 2.21 | 0.24 |
| Century Microfinance Bank Limited | 2 | 2014 | 3.24 | 0.33 | 0.31 | 2.36 | 0.26 |
| Century Microfinance | 2 | 2015 | 3.30 | 0.24 | 0.51 | 2.29 | 0.33 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Bank Limited | | | | | | | |
| Century Microfinance Bank Limited | 2 | 2016 | 2.73 | 0.14 | 0.39 | 2.35 | 0.09 |
| Century Microfinance Bank Limited | 2 | 2017 | 2.60 | 0.05 | 0.35 | 2.46 | 0.27 |
| Century Microfinance Bank Limited | 2 | 2018 | 2.78 | 0.15 | 0.25 | 2.63 | 0.45 |
| Century Microfinance Bank Limited | 2 | 2019 | 2.20 | 0.06 | 0.36 | 2.54 | 0.20 |
| Century Microfinance Bank Limited | 2 | 2020 | 1.30 | -0.13 | 0.38 | 2.47 | 0.23 |
| **Choice Microfinance Bank Limited** | 3 | 2011 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Choice Microfinance Bank Limited | 3 | 2012 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Choice Microfinance Bank Limited | 3 | 2013 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Choice Microfinance Bank Limited | 3 | 2014 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Choice Microfinance Bank Limited | 3 | 2015 | 0.00 | 0.65 | 0.56 | 1.89 | 0.69 |
| Choice Microfinance Bank Limited | 3 | 2016 | 2.73 | 0.21 | 0.27 | 2.35 | 0.33 |
| Choice Microfinance Bank Limited | 3 | 2017 | 1.73 | 0.27 | 0.52 | 2.13 | 0.10 |
| Choice Microfinance Bank Limited | 3 | 2018 | 1.60 | -0.31 | 0.73 | 1.99 | 0.03 |
| Choice Microfinance Bank Limited | 3 | 2019 | 1.15 | -0.44 | 0.44 | 1.90 | 0.02 |
| Choice Microfinance Bank Limited | 3 | 2020 | 0.78 | -1.20 | 0.63 | 1.73 | 0.01 |
| **Daraja Microfinance Bank Limited** | 4 | 2011 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Daraja Microfinance Bank Limited | 4 | 2012 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daraja Microfinance Bank Limited | 4 | 2013 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daraja Microfinance Bank Limited | 4 | 2014 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daraja Microfinance Bank Limited | 4 | 2015 | 0.00 | 0.64 | 0.52 | 1.92 | 0.44 |
| Daraja Microfinance Bank Limited | 4 | 2016 | 2.39 | 0.46 | 0.35 | 2.25 | 0.70 |
| Daraja Microfinance Bank Limited | 4 | 2017 | 1.74 | 0.31 | 0.48 | 2.23 | 0.24 |
| Daraja Microfinance Bank Limited | 4 | 2018 | 1.78 | 0.13 | 0.40 | 2.24 | 0.21 |
| Daraja Microfinance Bank Limited | 4 | 2019 | 1.60 | -0.07 | 0.45 | 2.12 | 0.08 |
| Daraja Microfinance Bank Limited | 4 | 2020 | 1.30 | -0.39 | 0.35 | 2.09 | 0.06 |
| Faulu Microfinance Bank Limited | 5 | 2011 | 4.92 | 0.11 | 0.20 | 3.71 | 0.21 |
| Faulu Microfinance Bank Limited | 5 | 2012 | 4.23 | 0.09 | 0.16 | 3.91 | 0.24 |
| Faulu Microfinance Bank Limited | 5 | 2013 | 4.17 | 0.06 | 0.15 | 4.09 | 0.23 |
| Faulu Microfinance Bank Limited | 5 | 2014 | 4.52 | 0.17 | 0.15 | 4.31 | 0.24 |
| Faulu Microfinance Bank Limited | 5 | 2015 | 4.71 | 0.15 | 0.15 | 4.40 | 0.31 |
| Faulu Microfinance Bank Limited | 5 | 2016 | 3.61 | 0.16 | 0.16 | 4.44 | 0.30 |
| Faulu Microfinance Bank Limited | 5 | 2017 | 3.81 | 0.18 | 0.16 | 4.40 | 0.26 |
| Faulu | 5 | 2018 | 3.88 | 0.13 | 0.15 | 4.43 | 0.27 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Microfinance Bank Limited | | | | | | | |
| Faulu Microfinance Bank Limited | 5 | 2019 | 4.53 | 0.13 | 0.16 | 4.47 | 0.26 |
| Faulu Microfinance Bank Limited | 5 | 2020 | 3.85 | 0.10 | 0.18 | 4.47 | 0.29 |
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2011 | 3.97 | 0.11 | 0.22 | 4.23 | 0.39 |
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2012 | 4.80 | 0.13 | 0.17 | 4.33 | 0.40 |
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2013 | 4.80 | 0.13 | 0.21 | 4.34 | 0.27 |
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2014 | 4.14 | 0.19 | 0.20 | 4.43 | 0.24 |
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2015 | 4.41 | 0.17 | 0.19 | 4.50 | 0.28 |
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2016 | 4.36 | 0.15 | 0.19 | 4.51 | 0.28 |
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2017 | 4.60 | 0.16 | 0.21 | 4.46 | 0.29 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2018 | 4.66 | 0.14 | 0.21 | 4.47 | 0.21 |
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2019 | 3.91 | 0.13 | 0.18 | 4.49 | 0.24 |
| Kenya Women Microfinance Bank Limited (formerly KWFT) | 6 | 2020 | 4.46 | 0.08 | 0.21 | 4.45 | 0.20 |
| **Maisha Microfinance Bank Limited** | 7 | 2011 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Maisha Microfinance Bank Limited | 7 | 2012 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Maisha Microfinance Bank Limited | 7 | 2013 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Maisha Microfinance Bank Limited | 7 | 2014 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Maisha Microfinance Bank Limited | 7 | 2015 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Maisha Microfinance Bank Limited | 7 | 2016 | 1.97 | 0.52 | 0.33 | 2.23 | 1.00 |
| Maisha Microfinance Bank Limited | 7 | 2017 | 3.34 | 0.22 | 0.29 | 2.48 | 0.25 |
| Maisha Microfinance Bank Limited | 7 | 2018 | 3.64 | 0.03 | 0.60 | 2.46 | 0.26 |
| Maisha Microfinance Bank Limited | 7 | 2019 | 3.78 | 0.63 | 0.10 | 3.10 | 0.30 |
| Maisha Microfinance Bank Limited | 7 | 2020 | 3.34 | 0.52 | 0.20 | 3.22 | 0.25 |
| **Rafiki Microfinance** | 8 | 2011 | 2.39 | 0.31 | 0.09 | 2.64 | 1.60 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Bank Limited** | | | | | | | |
| Rafiki Microfinance Bank Limited | 8 | 2012 | 2.78 | 0.07 | 0.12 | 3.27 | 0.12 |
| Rafiki Microfinance Bank Limited | 8 | 2013 | 2.98 | 0.13 | 0.12 | 3.57 | 0.42 |
| Rafiki Microfinance Bank Limited | 8 | 2014 | 4.04 | 0.18 | 0.14 | 3.78 | 0.35 |
| Rafiki Microfinance Bank Limited | 8 | 2015 | 4.04 | 0.14 | 0.16 | 3.89 | 0.53 |
| Rafiki Microfinance Bank Limited | 8 | 2016 | 2.95 | 0.10 | 0.21 | 3.86 | 0.12 |
| Rafiki Microfinance Bank Limited | 8 | 2017 | 3.08 | 0.06 | 0.17 | 3.83 | 0.19 |
| Rafiki Microfinance Bank Limited | 8 | 2018 | 3.00 | 0.21 | 0.17 | 3.78 | 0.21 |
| Rafiki Microfinance Bank Limited | 8 | 2019 | 3.00 | 0.21 | 0.13 | 3.77 | 0.39 |
| Rafiki Microfinance Bank Limited | 8 | 2020 | 3.20 | 0.10 | 0.15 | 3.78 | 0.31 |
| **SMEP Microfinance Bank Limited** | 9 | 2011 | 2.39 | 0.13 | 0.20 | 3.30 | 0.24 |
| SMEP Microfinance Bank Limited | 9 | 2012 | 4.10 | 0.25 | 0.17 | 3.40 | 0.28 |
| SMEP Microfinance Bank Limited | 9 | 2013 | 4.07 | 0.26 | 0.21 | 3.40 | 0.26 |
| SMEP Microfinance Bank Limited | 9 | 2014 | 4.42 | 0.19 | 0.31 | 3.38 | 0.29 |
| SMEP Microfinance Bank Limited | 9 | 2015 | 4.26 | 0.19 | 0.23 | 3.41 | 0.24 |
| SMEP Microfinance Bank Limited | 9 | 2016 | 3.06 | 0.20 | 0.25 | 3.42 | 0.30 |
| SMEP Microfinance Bank Limited | 9 | 2017 | 3.34 | 0.18 | 0.23 | 3.44 | 0.23 |

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|---|---|---|---|---|---|---|---|
| SMEP Microfinance Bank Limited | 9 | 2018 | 3.26 | 0.17 | 0.21 | 3.47 | 0.30 |
| SMEP Microfinance Bank Limited | 9 | 2019 | 3.30 | 0.15 | 0.23 | 3.52 | 0.27 |
| SMEP Microfinance Bank Limited | 9 | 2020 | 3.45 | 0.13 | 0.19 | 3.54 | 0.23 |
| **SUMAC Microfinance Bank Limited** | 10 | 2011 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUMAC Microfinance Bank Limited | 10 | 2012 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUMAC Microfinance Bank Limited | 10 | 2013 | 1.90 | 0.59 | 0.26 | 2.49 | 0.21 |
| SUMAC Microfinance Bank Limited | 10 | 2014 | 2.56 | 0.47 | 0.25 | 2.59 | 0.27 |
| SUMAC Microfinance Bank Limited | 10 | 2015 | 3.00 | 0.34 | 0.17 | 2.78 | 0.40 |
| SUMAC Microfinance Bank Limited | 10 | 2016 | 2.88 | 0.31 | 0.18 | 2.90 | 0.29 |
| SUMAC Microfinance Bank Limited | 10 | 2017 | 2.30 | 0.22 | 0.15 | 3.06 | 0.60 |
| SUMAC Microfinance Bank Limited | 10 | 2018 | 2.60 | 0.21 | 0.12 | 3.18 | 0.33 |
| SUMAC Microfinance Bank Limited | 10 | 2019 | 2.78 | 0.16 | 0.11 | 3.30 | 0.03 |
| SUMAC Microfinance Bank Limited | 10 | 2020 | 2.78 | 0.15 | 0.12 | 3.36 | 0.37 |
| **U & I Microfinance Bank Limited** | 11 | 2011 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| U & I Microfinance Bank Limited | 11 | 2012 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| U & I Microfinance Bank Limited | 11 | 2013 | 2.20 | 0.56 | 0.17 | 1.90 | 0.63 |
| U & I | 11 | 2014 | 2.90 | 0.61 | 0.17 | 2.14 | 0.57 |

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| Microfinance Bank Limited | | | | | | | |
| U & I Microfinance Bank Limited | 11 | 2015 | 0.00 | 0.58 | 0.16 | 2.26 | 0.28 |
| U & I Microfinance Bank Limited | 11 | 2016 | 2.38 | 0.34 | 0.14 | 2.55 | 0.27 |
| U & I Microfinance Bank Limited | 11 | 2017 | 1.65 | 0.40 | 0.20 | 2.61 | 0.21 |
| U & I Microfinance Bank Limited | 11 | 2018 | 1.78 | 0.32 | 0.16 | 2.73 | 0.21 |
| U & I Microfinance Bank Limited | 11 | 2019 | 2.00 | 0.25 | 0.14 | 2.84 | 0.74 |
| U & I Microfinance Bank Limited | 11 | 2020 | 2.00 | 0.24 | 0.12 | 2.91 | 0.22 |
| **Uwezo Microfinance Bank Limited** | 12 | 2011 | 2.13 | 1.62 | 0.66 | 1.46 | 0.48 |
| Uwezo Microfinance Bank Limited | 12 | 2012 | 1.60 | 0.56 | 0.29 | 1.96 | 0.36 |
| Uwezo Microfinance Bank Limited | 12 | 2013 | 1.60 | 0.62 | 0.25 | 2.03 | 0.25 |
| Uwezo Microfinance Bank Limited | 12 | 2014 | 2.72 | 0.49 | 0.22 | 2.20 | 0.15 |
| Uwezo Microfinance Bank Limited | 12 | 2015 | 0.00 | 0.59 | 0.21 | 2.35 | 2.17 |
| Uwezo Microfinance Bank Limited | 12 | 2016 | 2.21 | 0.83 | 0.25 | 2.33 | 0.49 |
| Uwezo Microfinance Bank Limited | 12 | 2017 | 1.23 | 0.80 | 0.27 | 2.33 | 1.08 |
| Uwezo Microfinance Bank Limited | 12 | 2018 | 2.60 | 0.63 | 0.33 | 2.35 | 1.06 |
| Uwezo Microfinance Bank Limited | 12 | 2019 | 1.30 | 0.70 | 0.68 | 2.23 | 0.38 |
| Uwezo Microfinance | 12 | 2020 | 0.90 | 0.75 | 0.30 | 2.13 | 0.95 |

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| Bank Limited | | | | | | | |