

**EFFECT OF INTERNAL FACTORS ON THE LEVEL OF NON-
PERFORMING LOANS AMONG DEPOSIT TAKING MICROFINANCE
BANKS IN KENYA**


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REQUIREMENTS FOR THE AWARD OF THE DEGREE IN MASTER OF
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DECLARATION

This study work is unique to me, and it has never been submitted to another institution or university.

Signature  Date 08/11/2022

Pritty Ombuya Kebeya **D63/87703/2016**

With my consent as the university supervisor, this study project has been submitted for examination.

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ABSTRACT

Microfinance banks have been experiencing increased cases of loan default, which is a hindrance to their primary objective of supporting low-income households. Therefore, this study sought to determine the effect of internal factors on the level of non-performing loans among deposit taking microfinance banks in Kenya. The precise goals were to ascertain how Kenyan deposit-taking microfinance banks' levels of capital adequacy, asset quality, management competence, earning capacity, and liquidity influenced the proportion of non-performing loans. The adverse selection and moral hazard theories served as the study's foundation. The explanatory research design was used in this study. 13 CBK-regulated microfinance banks made up the study's sample. The study used secondary panel data that covered the years 2015 through 2021. Both descriptive and inferential statistics were used to analyze the data. The results showed that the level of nonperforming loans was positively and significantly influenced by managerial skill. The level of non-performing loans was significantly and negatively impacted by liquidity. The level of nonperforming loans was negatively but insignificantly impacted by capital sufficiency, asset quality, and earnings potential. The study concluded that management capability of microfinance banks is unable to recognize and respond to financial challenges such as non-performing loans. The study came to the additional conclusion that microfinance institutions with high liquidity levels can control the level of non-performing loans. The study also found that capital adequacy, asset quality, and earnings capacity had a little impact on the level of non-performing loans. According to the study, management of microfinance institutions should improve their management skills. By lowering operating costs and raising operational profits, this can be accomplished. The report also suggests that microfinance bank management should improve their liquidity ratio. This can be achieved through control of overhead expenses, disposal of unnecessary assets, and renegotiation of debt obligations.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

For the majority of people and organizations, who frequently are unable to engage in the official financial system, the role of microfinance in providing universal financial services is crucial (Chortareas, Logothesis, Magkronis, & Zekente, 2016). Microfinance institutions are primarily involved in the provision of loans and advances, as well as the deposit of public funds. By collecting interest on loans and paying dividends or interest on securities they own, companies generate income (Laryea, Ntow-Gyamfi & Alu, 2016). The caliber of a microfinance institution's credit determines its performance (MFIs). Due to the fact that credit risk management is so important to the success or failure of a financial institution, more emphasis needs to be paid to it. As a result, if the monies they borrow are not repaid by the borrowers, MFIs tend to underperform, lose depositors, or even fail. As a result, non-payment of loans, which results in negative credit, continues to have an impact on their ability to finance and manage their lending operations (Laryea et al., 2016).

The NPL survey was conducted by the Banking Sector. Saba, Kouser, and Azeem (2012) investigated the factors that led to subprime lending in the US banking industry and discovered that real capital GDP and inflation, despite having negative interest rates, had a positive and significant effect on subprime lending. The growth rates of real GDP, ROA, and ROE were found by Luzis et al. (2010) to be negatively correlated with the amount of non-performing loans in the Greek financial sector, while positively correlated with credit, unemployment, and inflation, and negatively correlated with credit/deposit ratios and capital adequacy.

In a study in African countries, Calice (2012) observed a decline in asset quality in the Tunisian banking sector. According to Blanco and Gimeno (2010) and Kolapo (2012) for South African banks and Nigerian banks, respectively, bad loans are also detrimental to the profitability of the banking sector. It's critical to comprehend why there are poor loans because they have a negative impact on the banking industry's capacity to survive. The causes of this vary between nations and can be ascribed to contextual factors like the state of the banking industry's economy and elements at the bank level. Poor credit checks, ineffective credit monitoring, a culture that tolerates bad credit, flexible credit conditions, aggressive lending, weakened institutional capacity, unfair banking competition, diverting funds for

unforeseen uses, and delayed funding are all factors that affect credit in Ethiopia (Wondimagegnehu, 2012).

At the local level, Kibera (2012) found that loan design, customer screening, and loan committee controls determine loan default rates in microfinance firms. The presence of bad loans, according to the author, decreases an institution's profitability as well as its long-term viability. Simba (2013) looks on the connection between loan interest rates and the quantity of nonperforming loans maintained by Kenyan custodian banks. He discovered that bad debts and interest rates had no meaningful link.

1.1.1 Internal Factors

The internal factors to be used in this study constitutes the CAMELS framework. CAMELS is a prudential rating system developed in the United States to analyze overall bank stability. The abbreviation CAMELS denotes six variables that are taken into account when ranking. Capital adequacy, asset quality, management, profitability, liquidity and market risk sensitivity are elements that need to be considered (Babu & Kumar, 2017). Unlike other key regulatory figures or ratings, the CAMELS rankings are not publicly published. It is only used by senior management to comprehend and manage potential risks. The regulator rates each bank on a scale of 1 to 5. The capacity of CAMELS to anticipate which financial institutions will survive and which will collapse is its strength (Aspal & Dhawan, 2016).

Capital adequacy is assessed from the institution's compliance with the provisions of the minimum level of capital reserves. The supervisory authority determines the rating by assessing the current financial position of the financial institution and for several years. It is determined by the total equity to total assets ratio, which demonstrates the organization's resilience to non-performing loans as well as its strength and stability during a crisis (Mutumira, 2019; Meher & Getaneh, 2019; Onang 'o, 2017). These assets' quality serves as a barometer for the quality of bank assets. Because risky investments can lose value quickly, asset quality is crucial. A loan, for instance, is an asset that can suffer if money is lent to a high-risk person (Scheck, 2008). The ratio of total credit to total assets is the definition of asset quality in this study.

Management capability is a measure of the management team's capacity to recognize and address financial issues. The category is judged by the effectiveness of the bank's internal controls, financial performance, and business strategy (Grier, 2007). In this study, the

management's effectiveness is measured using the ratio of operating expenses to operating income. The ability of the business to make money refers to its capacity to sustain and grow its net value through operating profit (Kongiri, 2012). The return on investment (ROI) is utilized to determine profitability in this study. Liquidity is the amount of money available to support a project or an institution's ability to fund asset appreciation while paying creditors on time (Adrian & Shin, 2010). Liquidity is described in this study as the relationship between current assets and current liabilities. The degree to which interest rate and inflation changes might harm a company's profitability is referred to as market risk sensitivity.

1.1.2 Non Performing Loans

According to Khan and Ahmad (2017), non-performing loans are advances that are not returned over a specific time frame. Non-profitable NPLs are defined by Asiama and Amoah (2019). According to Messai and Jouini (2013), loans that don't result in profits over a longer time frame don't have interest or amortization. The performance of the bank as a whole is impacted by bad loans, which puts the bank's solvency in jeopardy. The growing stock of NPL can have a significant influence on a bank's overall performance (Saba et al., 2012).

The NPL affects the entire lending routine, threatening the bankruptcy of the sector (Khan, Siddique & Sarwar, 2020). The significant amount of NPL has a direct influence on the entire company's financial performance (Dimitrios, Helen and Mike, 2016). According to a report by the State Bank of Pakistan, the number of problematic loans in Pakistan is quickly increasing (SBP). The stock of maturing loans was 6.7% in 2005, increased to 14.3% in 2010 and continues to grow. Large NPL in banks are the primary source of economic crises in African nations, claim Mpofu and Nikolaidou (2018). In Kenya, the main problem facing credit institutions is the increasing volume of bad loans that must be added or written off to financial institutions' profit and loss accounts, which affects the performance of the sector.

1.1.3 Internal Factors and Non-Performing Loans

Information exchange reduces adverse decisions by increasing lenders' information about loan applicants (Pagano & Jappelli, 1993). It is difficult to distinguish who deserves credit and who does not, which can create problems with unfavorable selection and moral hazard. The moral hazard issue states that if there are no repercussions for subsequent loan applications, debtors are more inclined to default. If the lender is unable to assess the borrower's financial situation, the borrower may be motivated to withdraw from the loan. To

prevent this from happening, lenders will raise interest rates, which will eventually lead to market collapse (Alary & Goller, 2001). The adverse selection and moral hazard theory provides theoretical link between internal factors and non-performing loans.

Sarwar, Siddique, and Khan (2020) established that capital adequacy had a negative and substantial effect on non-performing loans in financial institutions. Atem (2017) found that asset quality did not significantly influence non-performing loans. Abdul and Ngungu (2020) discovered that management capability had a significant impact on non-performing loans. Jolevski (2017) revealed that a negative relationship between earnings ability and non-performing loans.

1.1.4 The Deposit Taking Microfinance Banks in Kenya

A microfinance bank is described as a company whose owners and employees operate as if they are taking deposits on a daily basis. Microfinance banks are not fully regulated banks and are governed by the Microfinance Act (2006), but they are subject to many of the same prudent pulp and paper controls because they rely on customer deposits to create capital (Smith, 2015). They collect investment deposits and use the money to produce capital to lend to consumers. Kenya ranks first in Africa and fifth globally in microfinance operations (Ayele, 2015).

There are 13 registered microfinance banks in Kenya (CBK, 2018). In 2017, the microfinance banks recorded Ksh 9.301 billion worth of NPLS, in 2018, the amount was Ksh 9.893 billion, in 2019, the value was Ksh 9.819 billion, in 2020, the amount rose to Ksh 12.980 billion, and in 2021, the amount of NPLs was Ksh 13.797 billion (CBK, 2021). This is a clear indication of continuous increase in the value of NPLs among the microfinance banks in Kenya. Credit institutions confront a number of issues, including dropping interest rates and shifting market dynamics, which raise credit risk by increasing non-performing loans, reducing deposit reliance, and increasing reliance on costlier loans.

1.2 Research Problem

Microfinance institutions help to alleviate poverty by expanding low-income households' access to financial services and goods in developing nations. Mung'aho, Ondiek, and Odhiambo (2016) constructed institutions to reinforce and promote direct engagement of groups and individuals in established businesses, as well as to improve their social and

economic standing through long-term financial and social support. However, microfinance banks have been experiencing increased cases of loan default, which is a hindrance to their primary objective of supporting low-income households.

According to the CBK Supervision reports, the microfinance banks have continued to register increased NPLs. In 2017, the microfinance banks recorded Ksh 9.301 billion worth of NPLS, in 2018, the amount was Ksh 9.893 billion, in 2019, the value was Ksh 9.819 billion, in 2020, the amount rose to Ksh 12.980 billion, and in 2021, the amount of NPLs was Ksh 13.797 billion. The continuous rise in the value of NPLs is a clear indication that there is a problem among deposit taking microfinance banks that requires attention.

Previous studies have attempted to link internal factors to level of non-performing loans. However, some of these studies (Khan, Siddique & Sarwar, 2020; Gezu, 2014; Ikram, Su, Ijaz & Fiaz, 2016, Koju et al., 2018; Sarwar et al., 2020) were conducted in other developed environments that are different from Kenya. Therefore, adapting the findings to explain the local situation may be impractical. Further, local studies (Warue, 2013; Atem, 2017; Nganga, 2016; Ngungu & Abdul, 2020) focused on commercial banks as opposed to microfinance banks. Findings based on commercial banks may not be generalized to explain situation of microfinance banks. Moreover, local studies done on microfinance institutions indicate research gaps in terms of concepts and methodologies (Ndung'u, 2014; Muthoni, 2016). In order to fill in the gaps in the literature, this study looked at the effect of internal factors on the amount of nonperforming loans in Kenyan microfinance organizations.

1.3 Objective of the Study

To ascertain how internal factors affect the level of non-performing loans in Kenya's deposit-taking microfinance institutions.

1.3.1 Specific Objectives

- i. To determine the effect of capital adequacy on the level of non-performing loans among deposit taking microfinance banks in Kenya.
- ii. To establish the effect of asset quality on the level of non-performing loans among deposit taking microfinance banks in Kenya.
- iii. To find out the effect of management capability on the level of non-performing loans among deposit taking microfinance banks in Kenya.
- iv. To determine the effect of earnings ability on the level of non-performing loans among deposit taking microfinance banks in Kenya.
- v. To determine the effect of liquidity on the level of non-performing loans among deposit taking microfinance banks in Kenya.

1.4 Value of the Study

Numerous parties, including microfinance institutions, lawmakers, and other researchers, will profit from the study's findings. This investigation will have political implications and thus politicians in particular; The CBK can use the research findings for the development of regulatory standards for microfinance bank lending policies. The microfinance banks management will also be able to streamline internal regulatory standards regarding the lending policies.

This study will also encourage the management of microfinance banks to pay attention to managing the variables that affect bad loans and provide them with comprehension of activities that improve their credit performance. This is because knowing the variables that determine poor creditworthiness helps bank managers to focus on loan quality, not quantity. In addition, the results of this study will stimulate further research by researchers. This is also a recommendation for other researchers in the field. In this way, gaps in the research literature, particularly in the case of microfinance banks, are reduced.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The section provides a summary of the literature related to the objectives of the investigation. The sections include an overview of research gaps, a conceptual framework, an empirical review, and the theoretical literature.

2.2 Theoretical Reviews

2.2.1 Adverse Selection and Moral Hazard Theory

Information exchange reduces adverse decisions by increasing lenders' information about loan applicants (Pagano & Jappelli, 1993). It is difficult to distinguish who deserves credit and who does not, which can create problems with unfavorable selection and moral hazard. In general, a country is in a stronger position in the market to negotiate the best transaction terms with the counterparty if it has more knowledge about a certain subject (Auronen, 2003). In this way, parties who do not understand the subject of the same transaction can judge whether the transaction is right or wrong.

The moral hazard issue states that if there are no repercussions for subsequent loan applications, debtors are more inclined to default. This is because creditors have difficulty assessing the assets that will be accumulated by the borrower at the maturity date of the debt, not when the application is made. If the lender is unable to assess the borrower's financial situation, the borrower may be motivated to withdraw from the loan. To prevent this from happening, lenders will raise interest rates, which will eventually lead to market collapse (Alary & Goller, 2001). Credit institutions have amassed a huge number of NPLs as a result of poor selection and moral hazard (Bofondi & Gobbi, 2003). The theory underpins the non-performing loans variable in this study.

2.3 Internal Factors

2.3.1 Capital Adequacy

Capital adequacy is the company's ability to stay afloat in the event of NPLs, as well as its strength and stability during a crisis (Mutumira, 2019). To be successful, companies must

maintain a certain capital ratio (Makri & Papadatos, 2014). The solvency of a bank is determined by the equity ratio. Every financial institution is required to adhere to the minimum equity ratio. When the minimum capital ratio is raised, portfolio risk increases. A low capital ratio, on the other hand, should raise the NPL (moral hazard hypothesis) (Berger & DeYoung, 1997).

2.3.2 Asset Quality

These assets' quality serves as a barometer for the quality of bank assets. Because risky investments can lose value quickly, asset quality is crucial. A loan, for instance, is an asset that can suffer if money is lent to a high-risk person (Scheck, 2008). As a stand-in for asset quality in this study, the ratio of total credit to total assets was used.

2.3.3 Management Capability

The management team's capacity to recognize and address financial issues is measured by management literacy. The category is judged by the effectiveness of the bank's internal controls, financial performance, and business strategy (Grier, 2007). In this study, management capacity was evaluated using the operating costs to operating income ratio.

2.3.4 Earnings Ability

The ability of a company to sustain and grow its net value through earnings from operations is referred to as earnings ability (Kongiri, 2012). These profits can be used to measure the long-term profitability of the company. In order to expand its activities and maintain its competitiveness, banks need appropriate returns. The jackpot prize is best suited when estimating the win. The main advantage of an institution is long-term and constant income which is not affected by one-time elements. In this study, ROA was used to measure earnings ability.

2.3.5 Liquidity

Liquidity refers to the amount of money available to fund a project, or an institution's ability to fund asset appreciation while paying creditors on time (Adrian & Shin, 2010). Liquidity is very important because lack of liquidity can lead to bankruptcy. Liquidity risk refers to the possibility of not being able to meet present or foreseeable cash flow needs without

interfering with ongoing business operations. In this study, liquidity is defined as the interaction between current assets and current liabilities.

2.4 Empirical Literature Review

Atem (2017) evaluated the influence of loan size and bank size on KCB Bank Kenya Limited's non-performing loans. This study uses secondary data and employs a quantitative research approach. NPLs at KCB are affected by loan size and bank size, according to this analysis, however the association is not statistically significant. However, the study points to gaps in content and methodology, as the study was limited to one company, according to which non-performing loans were granted to KCB Bank Kenya Limited, while this research focused on savings banks in Kenya.

Abdul and Ngungu (2020) evaluated the impact of bank size on Kenyan banks' non-performing loans (NPL). This study employs a causal strategy that targets each of Kenya's 40 banks between 2001 and 2017. Using census techniques and panel data, the study discovered that bank size had a significant impact on non-performing loans in Kenyan commercial banks. However, there is a content gap in this study because it only looks at Kenyan commercial banks, whereas this study looked at Kenyan savings banks.

Jolevski (2017) investigates the association between profitability metrics and the volume of non-performing loans in the Republic of Macedonia's banking sector from 2007 to 2015. In this study, the ratio of non-performing loans and profitability metrics in financial organizations with performing loans are compared. The findings revealed a very negative relationship between non-performing loans and return on equity and investment. As a result, bank profitability rises as the percentage of non-performing loans rises, and vice versa. However, this study indicates contextual and methodology deficiencies because it only looks at the Republic of Macedonia from 2007 to 2015, whereas this study looked at microfinance bank fundraising in Kenya through 2020.

Sarwar, Siddique, and Khan (2020) looked at how capital adequacy affected non-performing loans in commercial banks that were listed on the Pakistan Stock Exchange. The findings indicate that the performance of non-performing loans has a substantial inverse/negative association with capital sufficiency. The detrimental relationship between bank capital and nonperforming loans is also supported by Rajan (1994). In addition to the major conclusions,

this study fills a contextual vacuum by focusing on commercial banks listed on the Pakistan Stock Exchange, as opposed to the research's concentration on microfinance banks in Kenya.

2.5 Conceptual Framework

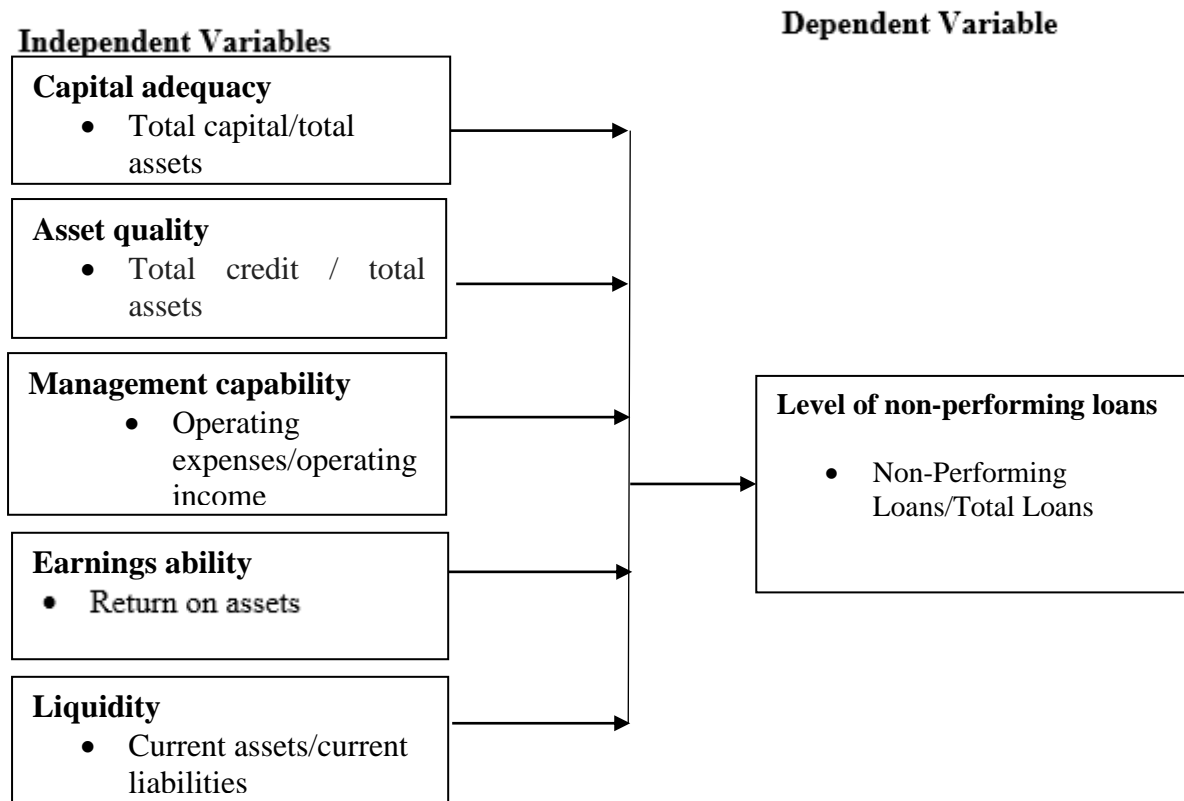


Figure 2.1: Conceptual Framework

2.6 Summary of the Literature Review and Research Gap

Based on the extensive literature reviewed, the researcher found considerable literature in support of the internal factors and how they relate to the level of NPL among deposit taking microfinance banks in Kenya. Many had found that the performance of NPLs was negative with regard to the internal factors while some found no relationship at all. However, these studies after the dissection have been found to be limited in a number of ways. Atem (2017) presented a contextual and methodological gap, as the research was limited to one company, while this research focused on several microfinance banks in Kenya. Abdul and Ngungu (2020) study showed a contextual difference because it focused on Kenyan commercial banks, while this study focused on Kenyan microfinance banks. Jolevski's (2017) study, which concentrated on the Republic of Macedonia from 2007 to 2015, identified a contextual

gap while this study examined microfinance institutions in Kenya. This study focused on Kenyan microfinance banks, whereas Sarwar et al(2020) .'s study concentrated on commercial banks registered on the Pakistan Stock Exchange, demonstrating a contextual gap.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter discussed the methods that used to conduct the survey. These included explanations of the study population, data gathering methods, and data analysis, as well as descriptions of the research design.

3.2 The Research Design

A research design is a strategy that directs data collection, analysis, and interpretation (Mugenda & Mugenda, 2003). This study adopted an explanatory research design. This design is suitable for building causal relationships between variables (Gray, 2013). This research sought to determine the causal connection between internal factors and the level of NPL in banks that finance microfinance in Kenya.

3.3 The Target Population

The number of respondents to the survey who met specific requirements represents the target audience (Kothari, 2004). Mugenda and Mugenda (2003) cited that the target group is all groups of people or objects with similar characteristics that are preferred by researchers. The population of this study included 13 microfinance banks regulated by CBK. A list of microfinance banks is given in Appendix II. Because there were few institutions, a census was done.

3.4 Data Collection

The survey used secondary panel data ranging from 2015 to 2021, which was seven years. The data was obtained from the CBK website. A data collection template (see appendix I) was used to summary the data. It comprised of rows and columns, where the rows contained the study period in years, while the columns indicated each of the study variables. The level of NPL (total loans minus non-performing loans), capital adequacy (total equity minus total assets), asset quality (total credit minus total assets), management capability (operating expenses minus operating income), earning capacity (ROA), and liquidity (current assets minus current liabilities) were the subjects of particular data collection. The data covered the period from 2016 to 2021.

3.5 Data Analysis and Presentation

This study included both descriptive and inferential analysis. Statistics representing the mean, standard deviation, minimum, and maximum of the survey data were obtained via descriptive analysis. Through the use of inferential analysis techniques like regression and correlation, the link between the variables was ascertained. Tables and graphs were used to present the findings.

3.5.1 Analytical Model

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \epsilon$$

Where:

Y = Non performing loans (NPL/Total loans),

X₁ = Capital adequacy (total equity/total assets)

X₂ = Asset Quality (total credit / total assets)

X₃ = Management capability (Operating expenses/operating income)

X₄ = Earnings ability (ROA)

X₅ = Liquidity (current assets/current liabilities)

β₀ - Constant

β₁ – β₅= Regression coefficients

€ = Error term

The study findings were interpreted using beta coefficients, F test, and P value at 95% level of confidence.

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATIONS

4.1 Introduction

The findings and analyses from the study are presented in this chapter. The outcomes are displayed using frequency tables. The study's objective was to determine the impact of internal variables on the proportion of non-performing loans among Kenyan deposit-taking microfinance organizations.

4.2 Summary Statistics

This section present summary statistics related to the study variables.

Table 4.1: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Level of NPL	91	0.591721	1.763558	0	15
Capital adequacy	91	0.116937	0.674529	-5.66667	0.836449
Asset quality	91	0.508242	0.294416	0	2.444444
Management capability	91	2.265036	2.873232	0.593651	16
Earnings ability	91	0.178813	0.157145	0.006928	1.555556
Liquidity	91	0.454901	0.77909	0.02	7.2

According to the findings in Table 4.1, Kenya's microfinance banks' average level of non-performing loans (NPL/total credit) between 2015 and 2021 was 0.591721, which is a favorable indication of the average level of NPLs in the country.

The findings also show that the average capital adequacy for microfinance banks is 0.116937, which means that from 2015 to 2021, the average capital adequacy for microfinance banks in Kenya was 11.69%.

The results also show that the average asset quality (total credit/total assets) is 0.508242, indicating that the average asset quality of microfinance banks in Kenya from 2015 to 2021 is relatively good.

The results show that the average management (operating expenses/operational income) is 2.265036, indicating that the operating expenses of microfinance banks are higher than operating income from 2015 to 2021. This indicates poor managerial ability.

The results further show that the average profitability (ROA) is 0.178813, indicating that the average profitability of microfinance banks in Kenya is positive between 2015 and 2021.

The average liquidity (current assets/current liabilities) as determined by the results is 0.454901, which suggests that from 2015 to 2021, Kenya's microfinance banks had strong average liquidity.

4.3 Trends of the Constructs

This section provides trends of each variable throughout the study period (2015-2021).

Table 4.2: Level of Non-Performing Loans

YEAR	MEAN
2015	0.16986
2016	0.179604
2017	0.269847
2018	0.34197
2019	0.490683
2020	1.040602
2021	1.649482

Table 4.2 shows that level of non-performing loans of microfinance banks was highest in 2021 (1.649482) and lowest in 2015 (0.16986). The results reveal increase in level of NPLs overtime.

Figure 4.1: Level of non-performing loans

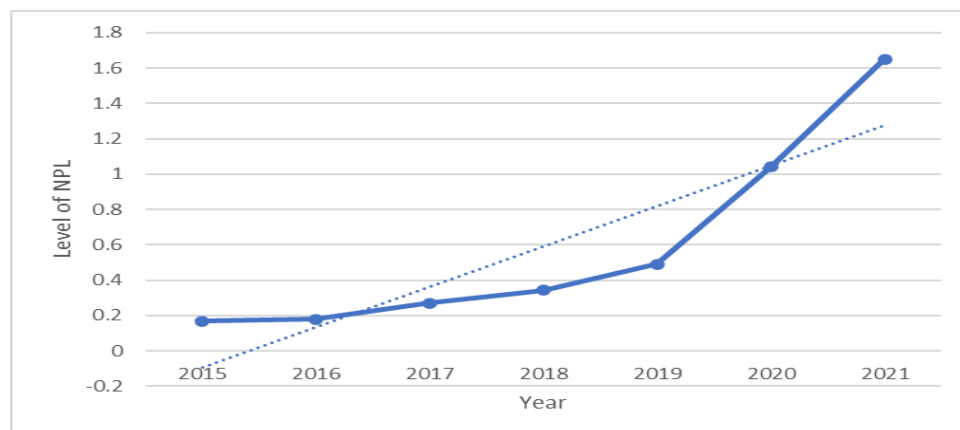


Figure 4.1 indicates an upward trend of level of nonperforming loans of microfinance banks between 2015 and 2021. This implies that level of NPLs among microfinance banks in Kenya has been increasing overtime.

Table 4.3: Capital Adequacy

YEAR	MEAN
2015	0.3975
2016	0.3423
2017	0.1996
2018	-0.2861
2019	0.0679
2020	0.0798
2021	0.0176

Table 4.3 shows that capital adequacy of microfinance banks was highest in 2015 (0.3975) and lowest in 2018 (-0.2861). The results reveal fluctuations in capital adequacy overtime.

Figure 4.2: Capitals Adequacy

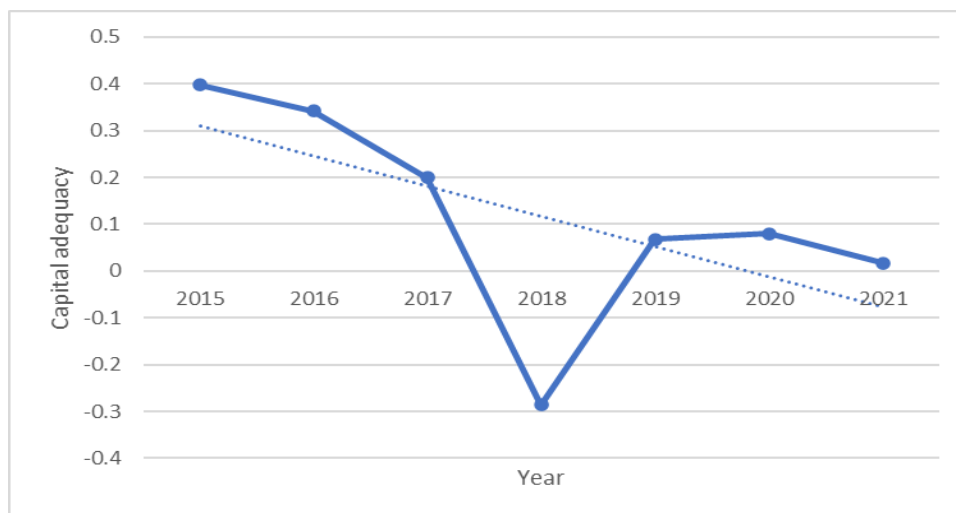


Figure 4.2 shows capital adequacy trend, which is characterized by upward and downward fluctuations. The trendline shows a general decline in capital adequacy of microfinance banks in Kenya throughout the study period.

Table 4.4: Assets Quality

YEAR	MEAN
2015	0.502
2016	0.519
2017	0.5194
2018	0.6995
2019	0.455
2020	0.4509
2021	0.4118

Table 4.4 shows that assets quality of microfinance banks was highest in 2018 (0.6995) and lowest in 2021 (0.4118). The results reveal fluctuations in assets quality overtime.

Figure 4.3: Assets Quality

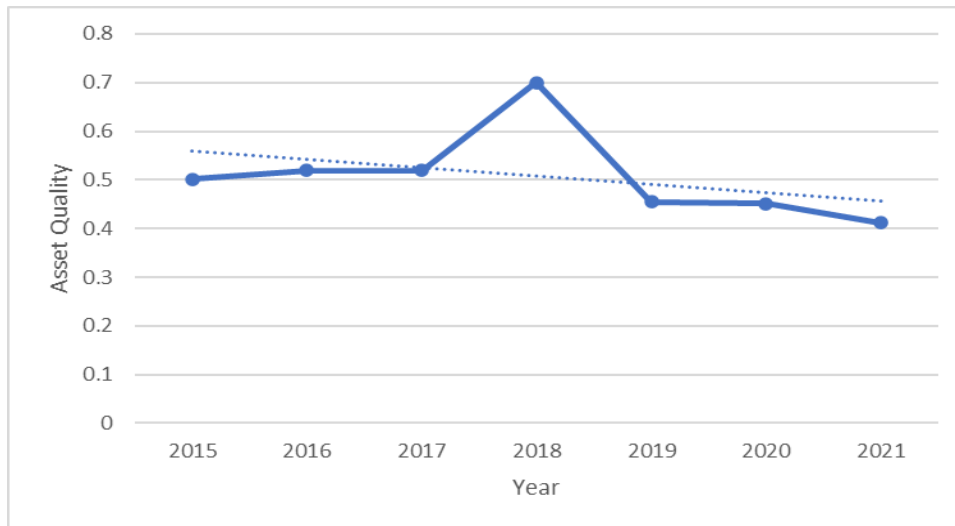


Figure 4.3 depicts the asset quality trend, which is marked by cyclical oscillations. The trendline depicts an overall reduction in Kenya's microfinance banks' asset quality during the course of the study.

Table 4.5: Management Capability

YEAR	MEAN
2015	3.147
2016	2.0977
2017	1.7526
2018	1.7379
2019	1.6785
2020	2.0676
2021	3.374

Table 4.5 shows that management efficiency of microfinance banks was highest in 2021 (3.374) and lowest in 2019 (1.6785). The results reveal fluctuations in management efficiency overtime.

Figure 4.4: Managements Capability

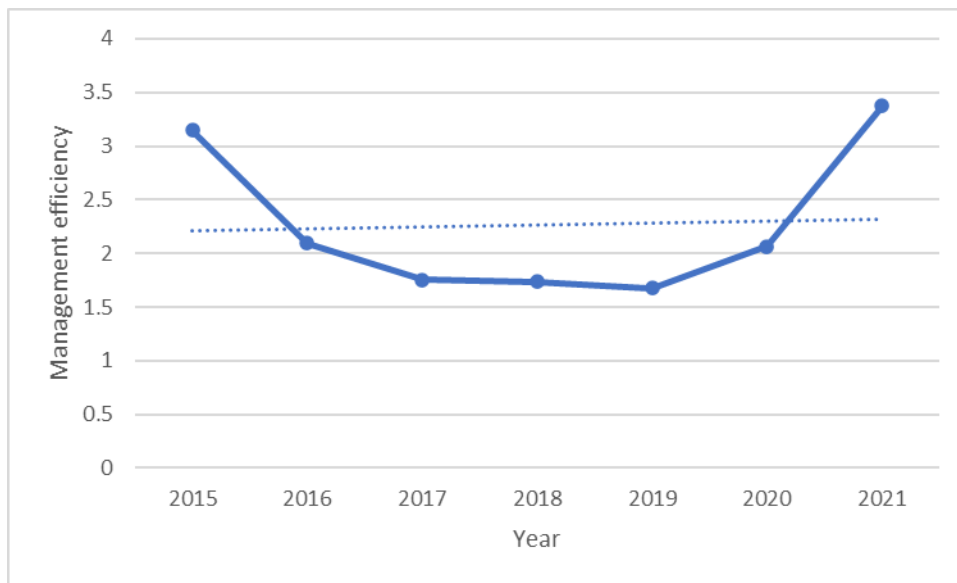


Figure 4.4 shows management capability trends, which is characterized by upward and downward fluctuations. The trendline shows a general increase in management capability of microfinance banks in Kenya throughout the study period.

Table 4.6: Earnings Ability

YEAR	MEAN
2015	0.1697
2016	0.1712
2017	0.1716
2018	0.285
2019	0.1684
2020	0.1479
2021	0.1379

Table 4.6 shows that earnings ability of microfinance banks was highest in 2018 (0.285) and lowest in 2021 (0.1379). The results reveal fluctuations in earnings ability overtime.

Figure 4.5: Earning Ability

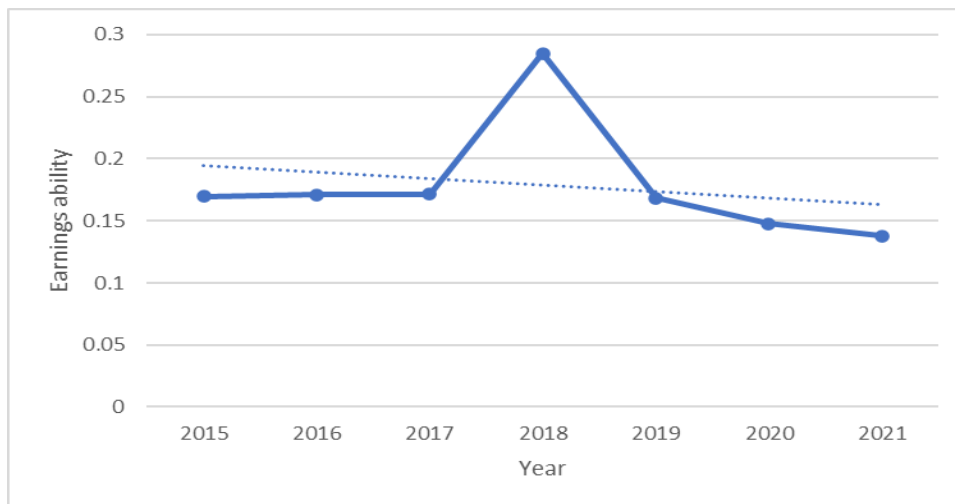


Figure 4.5 shows earnings ability trend, which is characterized by upward and downward fluctuations. The trendline shows a general decline in earnings ability of microfinance banks in Kenya throughout the study period.

Table 4.7: Liquidity

YEAR	MEAN
2015	0.5354
2016	0.3846
2017	0.3508
2018	0.3583
2019	0.3369
2020	0.3962
2021	0.8223

Table 4.7 shows that liquidity of microfinance banks was highest in 2021 (0.8223) and lowest in 2019(0.3369). The results reveal fluctuations in liquidity overtime.

Figure 4.6: Liquidity

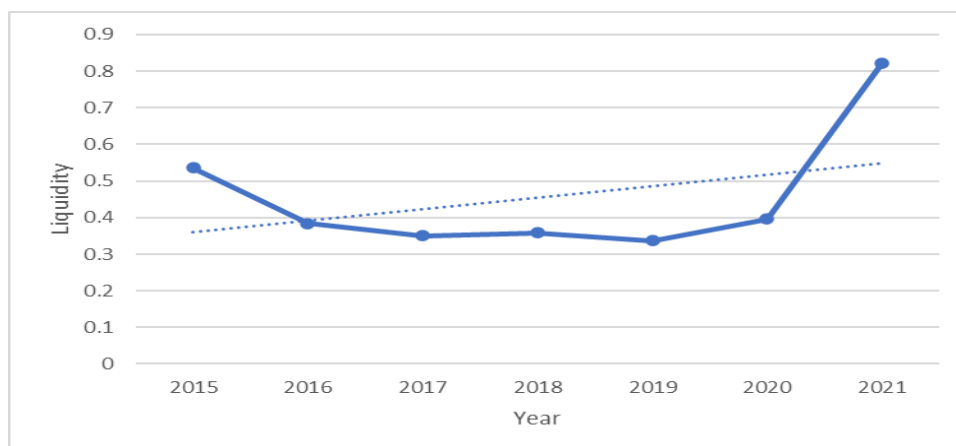


Figure 4.6 shows liquidity trend, which is characterized by upward and downward fluctuations. The trendline shows a general increase in liquidity of microfinance banks in Kenya throughout the study period.

4.4 Correlation Analysis

This section presents results on correlation between internal factors and level of NPLs among deposit taking microfinance banks in Kenya.

Table 4.8: Correlation between Internal Factors on the Level of Non-Performing Loans

	Non-Performing Loans	Capital adequacy	Asset quality	Management capability	Earnings ability	Liquidity
Non-Performing Loans	1.000					
Capital adequacy	-0.116 0.275	1.000				
Asset quality	-.290** 0.005	-.559** 0.000	1.000			
Management capability	.579** 0.000	-0.153 0.148	- 0.397**	1.000		
Earnings ability	-0.142 0.18	-.816** 0.000	.836** 0.000	-0.163 0.123	1.000	
Liquidity	-0.188 0.009	0.121 0.255	-.231* 0.028	.400** 0.000	-0.154 0.146	1.000

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.8 findings, there is a strong and positive association between management ability and the amount of nonperforming loans ($r=0.579$, $p < 0.5$). This implied that management capability is associated with increased level of NPLs among deposit taking microfinance banks in Kenya.

The results also show a weak and substantial correlation between asset quality ($r= -.290$, p value < 0.05); liquidity ($r= -0.188$, p value < 0.05), and level of nonperforming loans. This suggested that among Kenyan deposit-taking microfinance banks, a lower level of nonperforming loans is related to asset quality and liquidity.

Further, the association between capital adequacy, earnings ability and level of nonperforming loans was statistically insignificant (p values > 0.05). This implied that capital adequacy and earnings ability have no significant association with level of NPL among deposit taking microfinance banks in Kenya.

4.5 The Regression Analysis

Results on influence of internal factors on level of NPLs among deposit taking microfinance banks are shown in this section.

Table 4.9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684a	0.467	0.436	1.32446

a Predictors: (Constant), Liquidity, Capital adequacy, Management capability, Asset quality, Earnings ability

According to Table 4.9, the independent variables (capital adequacy, asset quality, managerial skill, earning ability, and liquidity) account for 46.7% of the variation in the dependent variable (level of non-performing loans). Other elements that were not considered in this study's model could be responsible for the remaining 53.3%.

Table 4.10: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	130.806	5	26.161	14.913	.000b
	Residual	149.107	85	1.754		
	Total	279.912	90			

The findings show that the significance level of 0.05 is smaller than the F test value of 14.913 with a p value of 0.000. This provides evidence that the regression model was accurate in predicting the link between the independent and dependent variables and was substantial.

Table 4.11: Regression Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.54	0.517		1.046	0.298
	Capital adequacy	-0.261	0.434	-0.1	-0.601	0.549
	Asset quality	-0.477	1.005	-0.08	-0.474	0.636
	Management capability	0.408	0.067	0.665	6.129	0.000
	Earnings ability	-1.192	2.55	-0.106	-0.467	0.641
	Liquidity	-0.851	0.202	-0.376	-4.21	0.000

a Dependent Variable: NPL

Model:

Level of nonperforming loans = 0.54-0.261 Capital adequacy -0.477 Asset quality+ 0.408 Management capability-1.192 Earnings ability -0.851 Liquidity

The study first objective of the study was to determine the effect of capital adequacy on level of nonperforming loans. Results indicated that capital adequacy had a negative but insignificant effect on nonperforming loans ($p=0.549>0.05$). The findings agreed with a study by Sarwar, Siddique, and Khan (2020) that capital adequacy had an inverse/negative association with non-performing loan performance.

The second objective was to establish the effect of asset quality on level of nonperforming loans. Results indicated that asset quality had a negative but insignificant effect on

nonperforming loans ($p=0.636>0.05$). The results supported Jolevski's (2017) finding that the non-performing loan to return on assets ratio was negative.

The third objective was to determine the effect of management capability on level of nonperforming loans. Results indicated that management capability had a positive and substantial influence on level of nonperforming loans ($\beta=0.408$, $p<0.05$). This points to the microfinance banks' management inability to recognize and respond to financial challenges such as NPLs.

The fourth objective was to assess the effect of earnings ability on level of nonperforming loans. Results indicated that earnings ability had a negative but insignificant effect on nonperforming loans ($p=0.641>0.05$).

The fifth objective was to determine the effect of liquidity on level of nonperforming loans. Results indicated that liquidity had a negative and substantial influence on level of nonperforming loans ($\beta=-0.851$, $p<0.05$). This implies that increase in liquidity would result in a drop in the number of nonperforming loans. The results were consistent with those of Amir (2019) who established that an inverse movement of liquidity and nonperforming loans. However, the findings disagreed with a study by Bosshardt and Kakhbod (2020) who found that liquidity coverage ratio had no significant impact on the non-performing loan ratio.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter outlines summary of findings, conclusion, and recommendations as per the study objectives.

5.2 Summary of the Findings

This study's initial goal was to ascertain how capital adequacy affected the proportion of non-performing loans in Kenyan microfinance institutions that accepted deposits. The average equity position for microfinance banks in Kenya from 2015 to 2021 is good, according to summary statistics. According to the regression analysis, the level of non-performing loans in Kenyan microfinance banks is negatively but not significantly impacted by capital adequacy.

The study's second goal was to ascertain how asset quality affected the proportion of non-performing loans in Kenyan microfinance institutions that took deposits. Summary statistics show that the average asset quality of microfinance banks in Kenya from 2015 to 2021 is relatively good. The regression results indicate that asset quality has a detrimental but not statistically significant impact on the proportion of non-performing loans in Kenyan microfinance banks that accept deposits.

The third objective of this study was to find out the effect of management capability on the level of non-performing loans among deposit taking microfinance banks in Kenya. From the summary statistics, the operating expenses for the microfinance banks from 2015 to 2021 were more compared to operating income indicating poor management capability. The regression results showed that among Kenyan deposit-taking microfinance banks, management capacity had a positive and significant impact on the level of non-performing loans.

The fourth objective of this study is to determine the impact of earnings ability on the level of non-performing loans in microfinance banks accepting deposits in Kenya. Summary statistics show that the average earnings ability of microfinance banks in Kenya is positive between 2015 and 2021. The regression results indicate that the level of non-performing loans in

Kenyan microfinance banks accepting deposits is negatively but not significantly impacted by earning potential.

The fifth goal of this study is to ascertain how liquidity affects the quantity of non-performing loans in Kenyan microfinance institutions that accept deposits. Summary figures indicate that from 2015 to 2021, Kenya's microfinance banks have high levels of average liquidity. The regression results demonstrate that the level of non-performing loans in Kenyan microfinance banks that accept deposits is negatively and significantly impacted by liquidity.

5.3 Conclusion

The study finds that the level of non-performing loans in Kenyan microfinance banks receiving deposits was significantly and positively impacted by management competency. The bottom line is that the management capacity of microfinance banks is incapable of recognizing and responding to financial challenges such as non-performing loans.

The study also comes to the conclusion that liquidity has a negative and significant impact on the proportion of non-performing loans in Kenyan microfinance institutions that take deposits. The implication is that microfinance banks with high liquidity are able to manage the level non-performing loans. Hence, liquidity contributes to reduction in level non-performing loans.

The study also finds that the size of non-performing loans is negatively impacted by capital adequacy, asset quality, and earnings capacity, however this effect is not substantial. The bottom line is that microfinance banks with good capital, asset quality and profitability are able to overcome the level of non-performing loans. However, the contribution of capital adequacy, asset quality and earnings ability to reduce the level of NPLs would be negligible.

5.4 Recommendations

This study finds that management capability has a positive and significant effect on the level of non-performing loans in microfinance banks accepting deposits in Kenya. The study recommends that the management of microfinance banks should strengthen their management capability. This can be achieved by reducing operating expenses and increasing operating income.

This study also reveals that the level of non-performing loans in Kenyan microfinance banks that accept deposits is negatively and significantly impacted by liquidity. The study recommends that the management of microfinance banks should strengthen their liquidity ratio. This can be achieved through control of overhead expenses, disposal of unnecessary assets, and renegotiation of debt obligations.

5.5 Areas for Further Research

This study investigates how internal factors affect the proportion of non-performing loans in Kenyan microfinance institutions that accept deposits. The CAMEL components of capital sufficiency, asset quality, management ability, earnings strength, and liquidity are the main points of emphasis. The results showed that internal factors explained forty-seven percent of fluctuations in the level of NPLs. The researcher suggests that future studies can examine other factors not covered in this research model which may explain the remaining fifty three percent.

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APPENDICES

APPENDIX I: RAW DATA

Microfinance banks	Period	NPL	Capital adequacy	Asset quality	Management efficiency	Earnings ability	Liquidity
KENYA WOMEN	2021	0.3278	0.0397	0.5611	0.8368	0.2089	0.26
	2020	0.2858	0.1207	0.5971	1.1613	0.1804	0.2
	2019	0.2107	0.1554	0.6197	0.9361	0.1952	0.24
	2018	0.2151	0.1331	0.6760	1.0416	0.2014	0.21
	2017	0.2102	0.1700	0.6697	0.8553	0.2430	0.29
	2016	0.1741	0.1650	0.6901	0.8143	0.2340	0.28
	2015	0.1158	0.1666	0.6934	0.8293	0.2311	0.28
FAULU	2021	0.2547	0.0169	0.5536	1.0506	0.1735	0.34
	2020	0.2327	0.0638	0.5998	1.0114	0.1771	0.29
	2019	0.1287	0.0992	0.6663	0.8205	0.1901	0.26
	2018	0.1480	0.1238	0.6220	0.8391	0.1762	0.27
	2017	0.1680	0.1576	0.6696	0.8450	0.1837	0.26
	2016	0.0923	0.1447	0.6560	0.9006	0.1760	0.30
	2015	0.0369	0.1531	0.6549	0.8974	0.1720	0.31
RAFIKI	2021	0.9363	0.0112	0.5916	1.1121	0.1530	0.4
	2020	0.6466	0.1069	0.6819	1.0147	0.1475	0.31
	2019	0.7220	0.1154	0.5122	0.9492	0.1360	0.39
	2018	0.7246	0.1260	0.4501	1.2615	0.1327	0.21
	2017	0.5970	0.0757	0.4246	1.4358	0.1180	0.19
	2016	0.3466	0.1145	0.4997	1.2709	0.1662	0.12
	2015	0.1204	0.1449	0.5525	0.8842	0.1798	0.53
SMEP	2021	0.3613	0.0115	0.4435	1.0152	0.1946	0.24
	2020	0.2641	0.0427	0.5110	1.0823	0.1799	0.23
	2019	0.2348	0.1020	0.5075	0.9010	0.2529	0.27
	2018	0.1979	0.1203	0.5598	0.9358	0.2223	0.3
	2017	0.1884	0.0914	0.6134	1.0941	0.2059	0.23
	2016	0.2004	0.1301	0.6307	1.1652	0.2140	0.30
	2015	0.1887	0.1871	0.6667	0.9482	0.2384	0.24
CARITAS	2021	0.0615	0.0115	0.6615	0.9446	0.1406	0.32
	2020	0.0907	0.1121	0.6178	0.9614	0.1248	0.35
	2019	0.1834	0.1402	0.4428	1.1991	0.1320	0.54
	2018	0.0719	0.2114	0.6037	1.5190	0.1270	0.37
	2017	0.0570	0.3106	0.3993	1.7955	0.1001	0.30
	2016	0.0000	0.4721	0.2456	2.9474	0.0662	0.47
	2015	0.2840	0.4836	0.6474	1.2763	0.1914	0.40
SUMAC	2021	0.3472	0.0000	0.4439	0.7373	0.1492	0.41
	2020	0.3234	0.1437	0.5688	0.7025	0.1732	0.37

	2019	0.1676	0.1555	0.5956	0.6005	0.1878	0.03
	2018	0.3852	0.1980	0.6007	0.5937	0.2059	0.33
	2017	0.0851	0.2190	0.5479	0.7198	0.2040	0.60
	2016	0.0613	0.3064	0.6700	0.7164	0.2503	0.29
	2015	0.1801	0.3355	0.7122	0.7481	0.2220	0.40
KEY	2021	1.3871	0.1211	0.2145	2.7619	0.0727	0.27
	2020	0.8776	0.1042	0.3192	1.4211	0.1238	0.31
	2019	0.6582	0.1724	0.3892	1.3125	0.1576	1
	2018	0.4329	0.2240	0.5335	1.4384	0.1686	0.75
	2017	0.3532	0.3927	0.6158	1.2464	0.1949	0.54
	2016	0.3402	0.5000	0.6740	1.1000	0.2210	0.36
	2015	0.6076	0.2640	0.4010	2.3488	0.2183	0.33
U & I	2021	0.0459	0.0000	0.8668	0.6099	0.1809	0.27
	2020	0.0557	0.2447	0.8696	0.7111	0.1677	0.22
	2019	0.0482	0.2520	0.8766	0.8291	0.1705	0.31
	2018	0.1038	0.3165	0.8296	0.7982	0.2041	0.21
	2017	0.0892	0.3941	0.8005	0.7843	0.2512	0.21
	2016	0.0517	0.3362	0.7721	0.7576	0.1880	0.27
	2015	0.4433	0.7832	0.4292	0.9600	0.2212	2.17
UWEZO	2021	0.0000	0.0000	0.0000	14.3333	0.0069	7.2
	2020	1.5897	0.3284	0.2910	2.5000	0.1194	0.95
	2019	0.8088	0.4048	0.4048	2.6512	0.2560	0.74
	2018	0.6963	0.5867	0.6000	1.7209	0.1911	1.06
	2017	0.7222	0.7736	0.5943	1.2609	0.2170	1.08
	2016	0.4901	0.8364	0.7056	0.9464	0.2617	0.49
	2015	0.0775	0.5815	0.7717	0.7143	0.2283	0.28
DARAJA	2021	15.0000	0.0167	0.0083	16.0000	0.0167	0.04
	2020	8.0000	-0.9597	0.0161	11.0000	0.0323	0.06
	2019	1.7000	-0.5940	0.0752	4.2857	0.1053	0.08
	2018	0.3333	-0.1919	0.2442	2.8333	0.1395	0.21
	2017	0.2075	0.0417	0.3155	4.0000	0.1190	0.24
	2016	0.1373	0.4500	0.2833	3.7059	0.0944	0.70
	2015	0.0000	0.4731	0.0591	7.0000	0.0538	0.67
MAISHA	2021	1.8816	0.0000	0.1027	1.8756	0.1304	0.3
	2020	0.5212	0.2619	0.1844	0.8359	0.2342	0.25
	2019	0.4574	0.6139	0.1487	1.4368	0.0688	0.3
	2018	0.4710	-0.0519	0.4775	3.1636	0.1903	0.26
	2017	0.1026	0.1424	0.5166	2.3514	0.1225	0.25
	2016	0.0370	0.5205	0.1579	5.6000	0.0585	1.00
	2015	0.0000	0.6494	0.2468	14.3333	0.0390	0.69
CENTURY	2021	0.8230	0.0000	0.2811	1.0843	0.2065	0.42
	2020	0.6404	-0.1385	0.3851	2.1132	0.1791	0.23
	2019	0.2406	0.0632	0.5374	1.5244	0.2356	0.2
	2018	0.2564	0.1508	0.4524	1.3049	0.1903	0.448
	2017	0.5340	-0.1146	0.3576	2.6579	0.1319	0.27

	2016	0.2897	0.1378	0.4756	1.8913	0.2044	0.09
	2015	0.0000	0.8072	0.4337	5.3750	0.0964	0.44
MUUNGANO	2021	0.0169	0.0000	0.6243	1.5000	0.1587	0.22
	2020	0.0000	0.6061	0.2197	2.3636	0.0833	1.38
	2019	0.8182	-0.7975	0.1392	4.3750	0.1013	0.02
	2018	0.4091	-5.6667	2.4444	5.1429	1.5556	0.03
	2017	0.1935	-0.0588	0.2279	3.7368	0.1397	0.10
	2016	0.1143	0.3361	0.2869	5.4545	0.0902	0.33
	2015	0.1539	0.1386	0.2574	4.5957	0.1149	0.22

APPENDIX II: LIST OF MICROFINANCE BANKS

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

Source: CBK (2020)