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FIRM CHARACTERISTICS AND NON-PERFORMING LOANS OF MICROFINANCE BANKS IN KENYA

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ABSTRACT

Microfinance banks in Kenya provide services such as collection of deposits from depositors, payment transaction, insurance services, transfers and other financial services within their jurisdiction. Due to lack of sufficient funding like their counterparts which is the commercial banks, their major earnings have been through loan services in order to meet up with capital requirements. However, it was reported that there has been increasing level of nonperforming loans by the microfinance banks. Therefore, this study aimed at looking into how firm characteristics affect Kenyan microfinance banks' non-performing loans. It precisely assessed how capital adequacy, loan size, and bank size affect the Kenyan non-performing loans of microfinance banks. The investigation was anchored by agency, modern portfolio, and efficiency structure theories. Its intended audience was Kenya's 15 microfinance institutions, which would be active between 2015 and 2020. The investigators took a relaxed attitude to their work. The annual reports of microfinance institutions were audited in order to collect the secondary data used in this analysis. We used SPSS, a combination of descriptive statistics (mean and standard deviation), and a multiple regression method to analyze the data. The data was presented in tables. Normality, heteroscedasticity, stationarity, autocorrelation, and multicollinearity tests were run on the study variables before they were included in the analysis. Research ethics committees in both the United States and Kenya reviewed the project. The study found that at the 5% significance level, non-performing loans at Kenyan microfinance banks were not affected by loan size or bank size. However, capital adequacy was found to have a significant and inverse effect on non-performing loans. Microfinance banks in Kenya were urged to implement prudent capital adequacy procedures to curb the rising tide of bad debt by lowering the probability of loan default among their clientele.

Key Words: Firm characteristics, Non-Performing Loans, Capital Adequacy

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INTRODUCTION

Financial institutions worldwide face credit risks as a result of non-performing loans through payment defaults on the part of the borrowers (Afolabi, Obamuyi & Egbetunde, 2020). The function of banks as serving as intermediary between the creditors and debtors in a financial economy makes them susceptible to having non-performing loans which then affects their financial performance (Ameur & Mhiri, 2013). Firm characteristics are firm specific factors controlled by the management and they include firm size, leverage, liquidity and firm size (Nyabaga & Matanda, 2020). These firm characteristics have been argued to help firms navigate through their losses and financial crisis. According to the CAMEL model, firm characteristics include capital adequacy, liquidity, asset quality, earnings and management efficiency (Kageana, 2014).

In Nigeria, according to Okoye and Agwu (2017), it was stated that non-performing loans affects both commercial banks and microfinance banks of the country. The microfinance banks provide loan services such as micro credits to low income earners in the country that are deprived of such services from the commercial banks (Otieno, Nyagol & Onditi, 2016). However, these services make them prone to credit risk in form of non-performing loans. In line with CBN (2018), the high level of non-performing loans has resulted to high loan loss provision. The firm characteristic of firms which are its unique attributes that helps distinguish them in terms of operations and performance which includes available resources at the firms' disposal are what most financial institutions in Nigeria have had to rely upon as a leverage (Nyabaga *et al.*, 2020). In Indonesia, the non-performing loans of the banking industry increased by 3% to 5% between 2014 and 2016 which affected their distribution of credits; this increase in non-performing loans in Indonesia also affected their profitability and ability to perform certain financial functions (Yulianti & Ibrahim, 2018).

Microfinance institutions' credit risk and GDP growth are both negatively impacted by rising levels of nonperforming loans (Hassan, Ilyas, & Rehman, 2015). Microfinance institutions in Kenya make money off of interest payments from loan repayment (Aidoo & Mensah, 2018). Since more and more borrowers are unable to repay their debts, less and fewer microfinance institutions are in a position to provide credit to those who need it (Rono, 2020). Microfinance institutions have been hampered in their efforts to expand and diversify due to a significant volume of bad loans (Namutenda & Muturi, 2017). There is an immediate need to address credit risks and agency difficulties between borrowers and depositors at Kenya's microfinance banks.

The ratio of a bank's capital to its total risk-weighted assets and liabilities is a common way to measure capital adequacy (Singh, Basuki, & Setiawan, 2021). Capital adequacy is a measure of the safety and soundness of a financial institution. By reducing the frequency of bank indebtedness, capital sufficiency helps minimize financial hardship and avoid problems related to bankruptcy emergency (Wafula, 2020). Capital adequacy's impact on nonperforming loans (NPL) has been debated on both sides. The research by Singh *et al.* (2021) corroborated the findings of Cheng, Lee, Pham, and Chen (2016), who found a negligible

Banks' non-performing loans are a major factor in determining the overall creditworthiness of the banking system in a nation (Anuonye, Ngwama, Uchehara, & Nkwoh, 2020). However, the definition of non-performing loans is based on the perspective of an institution, and more specifically a lending institution. From the user's perspective, a loan is considered non-performing when it is put to a use other than the one for which it was originally intended (Beck *et al.*, 2015). When a loan is seen to be poor, it may also be referred to as non-performing. The prevalence of non-performing loans is a well-established indicator of future credit losses, particularly in Africa. When looking at issues related to a bank's stability, non-performing loans

might serve as important indicators (Masinde, 2017). Nonperforming loans resulting from bank lending have been proven to be an indication of bank performance, particularly in the realm of policy.

Microfinance institutions (MFIs) are defined by the Central Bank of Kenya (CBK) as "financial institutions that provide insurance, money transfer, credit, and savings products and services to low-income individuals and households and to small and medium-sized businesses that are underserved by traditional financial institutions" (Ali, 2015). Kenya's microfinance institutions fall into two categories: those that accept deposits and those who do not (CBK, 2021). Church-based lending initiatives date back to the 1990s as Kenya's first type of microfinance. The Central Bank of Kenya (CBK) is responsible for regulating and licensing microfinance deposit-taking institutions, while the Ministry of Finance is in charge of licensing and regulating non-deposit taking institutions (Yulianti et al., 2018).

However, the non-deposit accepting institutions are prohibited from disbursing or otherwise mobilizing public monies. To alleviate poverty, microfinance is described as a credit program targeted at low-income or economically inactive persons (AMFI, 2020). There has been steady expansion in Kenya's banking industry. Kenya's banking industry is expanding at double the pace of the whole economy. However, despite its quick expansion in relation to the number of its clientele, Kenya's microfinance industry is still not robust enough (Rono, 2020). Formal, semi-formal, and non-formal institutional kinds of microfinance providers all operate in Kenya (Ali, 2015), all three of which are involved in the microfinance industry.

Problem Statement

Kenya's microfinance banks are charged with meeting the credit needs of the country's low-income population and small businesses in an effort to encourage entrepreneurship and reduce poverty (Kisengo, 2014). In addition to accepting deposits from customers and processing payments, these

institutions also provide insurance, money transfers, and other banking services to those located inside their borders (CBK, 2018). Loan services have been their primary source of income since they lack the resources of their commercial banking counterparts to invest in other areas (Namutemda et al., 2017).

Microfinance institutions have been plagued by rising levels of nonperforming loans, according to recent reports (Rono, 2020). According to CBK (2018) data, microfinance banks had a nonperforming loan rate of 12.3% in 2018. Despite the government's best efforts, however, microfinance institutions continue to struggle with high rates of nonperforming loans (NPLs) (Odhiambo, 2019). Both their assets and revenue have been negatively impacted by the rise in nonperforming loans, and it has been stated that focusing on the unique qualities of the company as a whole may help mitigate this problem (Ngungu & Abdul, 2020).

There is a lack of research on the correlation between corporate characteristics and bad loans. Similar to Kamande's (2017) research, Kisengo's (2014) found that company characteristics strongly influenced performance but didn't account for NPLs. In his research on the causes of bad loans made by Kenyan microfinance institutions, Rono (2020) focused on macroeconomic issues but ignored the role played by business characteristics. Specifically, for Kenyan commercial banks, Ngungu et al. (2020) found a substantial correlation between business characteristics and non-performing loans. This study aimed to fill in some of the blanks by analyzing the connection between business characteristics and bad loans at Kenya's microfinance institutions.

Objectives of the Study

From a more general perspective, the survey determined how non-performing loans are affected by firm characteristics of Kenyan microfinance banks. The following is an unusually detailed description of the aims of the survey:

- To determine the impact that adequate capital has on the percentage of microfinance banks in Kenya that have loans that are delinquent.
- To determine the impact that loan size has on the percentage of microfinance loans in Kenya that are considered delinquent.
- To estimate the impact that bank size has on the percentage of microfinance institutions in Kenya that have loans that are considered to be non-performing.

The study was based on the following hypotheses;

- H₀₁ There is no substantial relationship between adequate capital and the percentage of microfinance banks in Kenya that have non-performing loans.
- H₀₂ There is no substantial relationship between loan size and the percentage of microfinance banks in Kenya that have non-performing loans.
- H₀₃ Non-performing loans held by microfinance banks in Kenya are not significantly impacted by the size of the lending institution, according to Hypothesis

LITERATURE REVIEW

Theoretical Review

Agency Theory

In 1973, Stephen Ross and Barry Mitnick were the ones who first proposed the agency theory; however, in 1976, Jensen and Meckling made several modifications to it. According to Jensen and Meckling (1976), the agency theory is predicated on the concept that the perspectives and objectives of managers of enterprises are not identical to the interests and objectives of shareholders. According to Calabrese (2011), the agency issue occurs when shareholders place the administration of the corporation in possession of the agents who are the managers to serve their interests rather than the interests of the corporate body. The connection that currently exists between shareholders and managers is known as the principal-agent

relationship. This relationship is characterized by the shareholders delegating responsibility for the decision-making process and other organizational functions of the company to the managers, with the expectation that the managers would manage in the owners' best interests (Mitnick, 1973). According to Jensen and Meckling (1976), agency theory places an emphasis not only on the issues that develop in an organization owing to the dividing of the supervisors and the owners, but also on the reduction of these problems.

The agency theory is effective in carrying out several systems of administration in order to effectively regulate the activity of the operators in the organizations. This is possible because to the theory's efficiency. According to Fama and Jensen (1983), the agency theory ensures that things that have changed are monitored, as well as the general lack of regard for the interests of the shareholders that is caused by the provision of a variety of activities. According to Nyabaga et al.'s research from 2020, it is their responsibility to make judgments about the firm's leverage, liquidity, capital adequacy, and other features. According to Bernard (1938), the purpose of the connection that exists between principals and agents is to encourage performance, and an agency issue will occur once either the principal or the agent becomes self-centered. According to the findings of Fama and Jensen (1983), it is very probable that managers who are agents and who have a stake in a company would always agree with the choices that are made by shareholders, who are the principals. Additionally, when there is a healthy connection between them, the risks are often shared among all of them (Eisenhardt, 1989).

The Contemporary Approach to Portfolio Theory

Markowitz is credited as being the first person to propose the current portfolio hypothesis in the year 1952. According to Chandra and Leong (2016), the goal of the idea of contemporary portfolio speculation is to lessen the risks associated with the selection of assets and to emphasize the significance of diversity in the portfolio of a

company. According to Nzongang and Atemnkeng (2006), managers of companies are charged with the duty of making decisions about leverage, capital sufficiency, and profitability. Because of this, it is imperative that managers of companies diversify their revenue streams so that earnings are not dependent on a single source. The contemporary portfolio provides managers with assistance in assessing the risks that are presented by non-performing loans. The modern idea of portfolio management allows for the diversification of a number of different assets, with the goal of better protecting against risks that are pertinent to the organization and the market in question. According to Edwin and Matins (1997), the current portfolio theory assists the majority of investors in the control of returns, categorization of returns, and assessment of returns, in addition to the dangers connected with it.

The contemporary portfolio theory refers to an approach to investing in which a portfolio is optimized to provide the highest possible output in exchange for the investor's projected return. According to the current portfolio theory, before making an investment, such as the example of banks spending extensively in providing loan services, risks should be examined in circumstances where there could be defaults of loan payment (Fabozzi and Grant, 2001). This is because there is a possibility that there would be defaults of loan payments. It centered on the need for businesses to diversify their revenue streams rather than concentrating on a single revenue source since doing so might be detrimental to performance (Rono, 2020). In addition, businesses and organizations must constantly take into account the entire risk associated with the investments they make (Fabozzi et al., 2001). Microfinance banks should examine the risks associated with more of their revenues coming from loan services and aim to leverage their firm features in order to deal with non-performing loans. This will allow the banks to capitalize on their firm characteristics. In this

particular research, the idea is used to provide support for non-performing loans.

The Theory of Effectiveness in Structure

The Efficiency Structure hypothesis was first presented by Demsetz in 1978, and Frantz Roger refined it in 1988. According to the premise, an effective strategy for affecting the performance of a company is one that emphasizes the management of the company's liquidity (Roger, 1988). The X efficiency hypothesis and the scale efficiency hypothesis are the two hypotheses that make up the theory as a whole. According to Olweny and Shipho (2011), the X efficiency argument claims that banks that possess superior credit management and cost control policies tend to perform better, while the scale efficiency premise asserts that banks with lower costs achieve greater performance. Both of these propositions are based on the efficiency assumption that scale efficiency. Roger (1988) went on to say that banks that have non-performing loans may minimize the amount of such loans if they pay attention to the management of their liquidity and capital adequacy. According to the views and hypotheses of the efficiency structure theory, the relationship that exists between the execution of any given company's business strategy and the structure of the market is included inside the proficiency of the firm. However, according to the efficiency structure hypothesis, most businesses that have efficient administration have lower expenses, and as a result, they have more advantages (Demsetz, 1973).

According to the efficiency structure hypothesis, when the overall productivity of a bank is increased to a greater extent than that of its rivals. According to Burdisso and D'Amato (1999), efficiency structure theory does, however, gain an increasing benefit at the rate of decreased operating expenses. According to the efficiency structure theory, a bank's overall performance may be improved if the institution places more of an emphasis on reducing its operating expenses and maintaining an appropriate amount of liquidity. On the other hand, according to Mensi and Zouari

(2010), this results in an inefficient and uneven distribution in the market, and it is possible that these factors do not necessarily assist enhance the performance of the banks. According to the efficient structure theory, the structure of a bank is determined by its performance, and as a bank improves its efficiency, its market share and performance will also improve (Olweny et al. 2011).

This is in accordance with the efficient structure theory. In addition, Burdisso and D'Amato (1999) state that financial institutions that have a high X efficiency often have lower levels of performance. The theory validates liquidity and capital adequacy management in banks, both of which are independent variables in this investigation; hence, the theory is pertinent to the present investigation.

The Conceptual Underpinnings

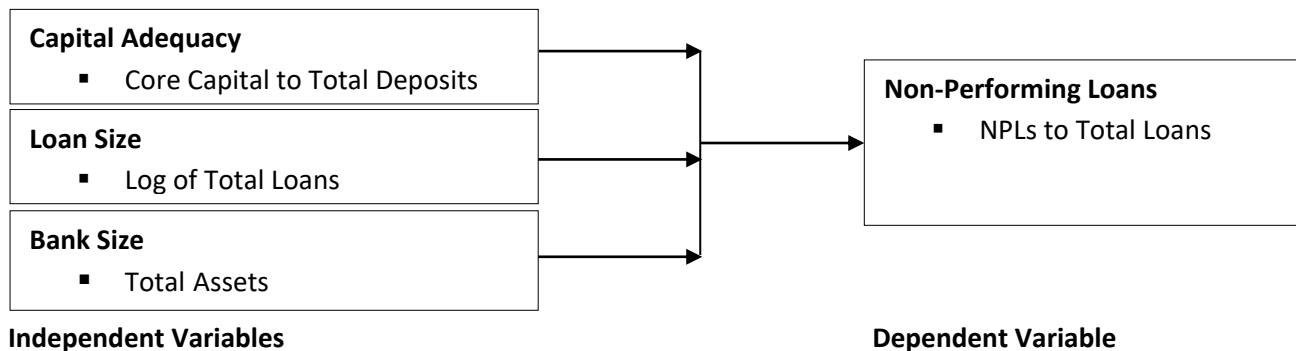


Figure 1: Conceptual Framework

METHODOLOGY

The investigation utilized casual research design in determining how firm characteristics affect the Kenyan microfinance banks' non-performing loans in that casual research design is appropriate for solving an established research problem (Njuele, 2013). Thus, the population target for the survey was Kenyan 13 microfinance banks operating between 2015 and 2020 which represent a 6 years range. Due to the small size of the banks serving as the target audience, a census sampling approach was employed to incorporate all the banks as the sample size as it is appropriate for a small given target population (Bryman, 2012). The analysis employed data sourced from the microfinance banks' audited yearly financial statements reports. Core capital and total deposits was used as further information for determining capital adequacy, the log form of loan total served as loan size and total assets was used to determine company size. Total loans and non-performing loans was collected for the dependent factor, NPLs. The time scope of all secondary data gathered was from 2015 to 2020. The data was collected in view of the documented

review guide. Utilising descriptive statistics (mean, frequency, and standard deviation), which gave a foundational analysis, the secondary information was analyzed using the SPSS. Multiple regression analysis was used to examine the relationship between capital adequacy, loan size, and business size and nonperforming loans at Kenyan microfinance institutions.

FINDINGS

Quantitative Descriptions

The investigation's descriptive method details the characteristics of the variables used. The core extremes of the lowest and highest ranges within which the data falls are used in conjunction with the mean and standard deviation to parameterize the contribution of the variables. It evaluates how dispersed or concentrated the information used in the study is. The standard deviation, variance, minimum, and maximum of the components, in addition to their means, provide a summary of the data. Table 1. detailed the explanations of the variables.

Table 1: Descriptive Statistics

Variable	Non-performing Loans	Capital Adequacy	Loan Size	Bank Size
Obs	72	72	72	72
Mean	.1595649	.0048284	2.816488	3.035036
Std. Dev.	.1076371	.0104954	.9432786	.8543789
Min	0	-.0048186	1.041393	1.886491
Max	.4201448	.0576592	4.415824	4.507222

Source: Study Data (2023)

According to the descriptive data on non-performing loans in Table 1, the mean was 0.1595649 and the standard deviation was 0.1076371. The mean value of the non-performing loan score is 0.4201448, with a range of 0 to 0.4201448. This indicates that Kenyan microfinance institutions have a low percentage of non-performing loans. Therefore, the methods employed by Kenyan microfinance banks to determine whether or not a customer is creditworthy have a negligible effect on the percentage of loans that have gone bad. The range of values for the capital adequacy metric was from -0.048186 to 0.0576592, with a mean of 0.0048284. The standard deviation was 0.0104954. The descriptive data show that the capital adequacy of Kenya's microfinance institutions is very consistent.

The average loan amount was \$2,816,488 and the standard deviation was \$, 943,786. Results indicated that median values ranged from 1.041393 to 4.415824. The large standard deviation indicates significant variation in loan amounts across microfinance institutions. This indicates that microfinance banks limit the amount of the loans issued to customers in order to maximize profits from such lending operations. Furthermore, the average bank size was determined to be 3.035036 with a standard deviation of 0.8543789. The wide range in microfinance institution sizes in Kenya was shown by the standard deviation. The data set's dispersion permits the mean to be between the extremes of 1.886491 and 4.507222.

Tests for Diagnosis

The research did not change the assumptions of the conventional linear regression model (CLRM), thus it ran a battery of diagnostic checks to make sure

the results were accurate. Diagnostics may be used to verify the reliability of findings and to develop forecasts on the impact of microfinance features on the credit risk of Kenya's microfinance institutions. Common misunderstandings of the OLS assumptions may be put to rest by carefully assessing the assumptions' validity in the context of a particular dataset and subsequent examination before making accurate conclusions from the data. McNeish and Kelley (2019) argued that if the standard assumptions of linear regression were broken, the results would be suspect. In this analysis, we used a number of important diagnostic procedures, including tests for normality, multicollinearity, heteroscedasticity, stationarity, and model definition.

The Norm Test

When inferential test statistics like the t-test, correlation, regression, and analysis of variance are used to identify gamma-symmetrically distributed data, we say that the data come from a normally distributed sample (Knief & Forstmeier, 2021). Therefore, normality, zero mean, and constant variance in the residuals are required for the traditional linear regression. The populations from which the samples are drawn are assumed to follow a normal distribution. The data were tested using Shapiro-Wilk's normality procedure to see whether they were from a normally distributed population. When the p-value is more than 0.05, the findings are considered normal, and when it is less than 0.05, they are considered to be abnormal. Table 4.2 shows the results of the normalcy tests.

Table 2: Shapiro-Wilk test for Normality

Variable	Non-performing Loans	Capital Adequacy	Loan Size	Bank Size
Obs	72	72	72	72
W	0.93470	0.57294	0.93490	0.88248
V	4.112	26.895	4.100	7.401
Z	3.080	7.170	3.073	4.360
Prob>z	0.00104	0.00000	0.00106	0.00001

Source: Study Data (2023)

The Shapiro-Wilk test indicated that there was an issue with normality in the data, since the p-values were less than 0.05. The tests failed to reject the normality hypothesis when the p-value was larger than or equal to 0.05 (Shapiro & Wilk, 1965; Kim & Park, 2019). The results for all the variables, however, suggest that the null hypothesis was accepted, which means that the residuals do not follow a normal distribution. The p-values for these variables are less than the predetermined threshold of 0.05, indicating that the normality hypothesis is rejected. As a result, the results of the factors go against the OLS procedure's normality assumption. A normal distribution is assumed to exist when the sample size is 30 or greater, as required by the central limiting theorem. As the sample size is more than 30, there is no need for a bigger sample size, and the normality assumption is maintained despite the non-normality of the residuals. Wan, Wang, Liu, and Tong (2014) agree with the

conclusion, arguing that if the results are generalizable to a big enough sample size, the parameters should have an approximately normal distribution. The inquiry has enough data for OLS regression to be used to estimate panel multiple regression.

Multicollinearity Test

In multiple regression models, multicollinearity may manifest itself if a few of the independent variables exhibit substantial within-model correlations (Suleiman, 2015). The Variance Inflation Factor test was used to check for multicollinearity in the research. According to the specialists, a VIF of less than 10 implies mild multicollinearity, whereas a VIF of more than 5 suggests severe collinearity among the explanatory components. When the VIF is larger than 10 and the tolerance is less than 0.1, as Kim (2019) also discovered, multicollinearity arises. The VIF findings were shown in Table 3.

Table 3: Tests for Multicollinearity

Variable	VIF	1/VIF
Capital Adequacy	2.76	0.400395
Loan Size	2.85	0.401927
Bank Size	1.29	0.777866
Mean VIF	6.63	

Source: Study Data (2023)

Table 3 displayed the VIF products for each covariate, and as can be seen, all of them have VIF values below 10, which is the threshold used in the experiment. Therefore, the estimate of the parameters of the study using the regression techniques is not endangered by the multicollinearity issue. Tolerance levels of 0.400395,

0.401927, and 0.777866 across survey variables were found to be consistent with the predictions of multicollinearity made by Kim (2019) for VIF values larger than 10.

A Test for Heteroscedasticity

The OLS relies, in part, on the fact that the variance of the residuals remains fixed across time. A test was run to see whether the assumption that the variance is heteroscedastic holds true in this instance. The Breusch-Pagan test for heteroscedasticity was used to analyze the model. It looks at how the values of the explanatory variables relate to the variance of the error term in the regression (Osborne & Waters, 2019). We went through the Breusch-Pagan-Godfrey results in detail.

Test for Stationarity

The bulk of monetary and economic variables are classified as constants. Most variables are not stationary, hence this premise does not hold.

Table 4. Fisher-type unit root test

Variable	Statistic	P-value	Comment
Non-performing Loans	191.3069	0.0000	Stationary
Capital Adequacy	346.1723	0.0000	Stationary
Loan Size	210.9437	0.0000	Stationary
Bank Size	197.9012	0.0000	Stationary

Discover the remarkable findings in Table 4. With utmost significance at the 0.05 threshold, prepare to be amazed as all variables (Non-performing Loans, Capital Adequacy, Loan Size, and Bank Size) showcase their stationary nature. This incredible revelation signifies the absence of unit roots. Discover the remarkable results of our test, showcasing the unwavering consistency of both the mean and variance of the variables throughout the entire investigation. Introducing an impeccable solution: rest assured that inaccurate results are simply out of the equation. The investigation's variables have been meticulously crafted, leaving no room for unit roots to disrupt the accuracy you seek. Discover the remarkable relevance of Martens' groundbreaking research from 2001. Delve into a world where the power of discovery meets unwavering reliability.

Discover the true potential of your model and ensure its specifications are up When it comes to

Therefore, using non-stationary series would lead to erroneous and misleading inferences. In the event that stationarity at level is not accomplished, however, the variable(s) must be differentiated in order to achieve stationarity. Smith (2000) claims that initial differences may be used to transform non-stationary time series in levels into stationary ones. The Fisher type test was employed to check for the factor's stability. The null hypothesis was that the variable had a unit root, and it was rejected if one did not. The results of the stationarity test were shown in Table 4.

choosing the ideal model for your investigation, it's crucial for panel regression estimators to carefully consider the parameters that emerge from both the fixed and random effect models (Clark & Linzer, 2015). Experience the power of statistical analysis with the precision of the Hausman Test. Our expert team flawlessly executed the estimation of both fixed and random effect models, leaving no room for uncertainty. Uncover the perfect model that aligns with your unique needs and make data-driven decisions with confidence. Trust in our meticulous approach to deliver results that surpass expectations. Introducing the Hausman test, a powerful tool in the realm of statistical analysis. This test allows us to determine whether the esteemed random effect model should take precedence over the fixed effect model, or if there exists an intriguing inconsistency in the coefficient differences. Prepare to unlock new insights and make informed decisions with the Hausman test at your side.

Table 5: Model Specification Results

	(b)	(B)	(b-B)	Sqrt (diag(V_b-V_B))
	Fixed	Random	Difference	S.E.
Capital Adequacy	-2.65414	-2.600208	-.053932	.5451926
Loan Size	.1426409	.2098762	-.0672354	.0478091
Bank Size	-.088312	-.2497555	.1614435	.0987362
chi2(3)	7.76			
Prob>chi2	0.0513			

Source: Study Data (2023)

Introducing the remarkable findings of the Hausman test! Prepare to be captivated by the intriguing outcomes showcased in the illustrious Table 5. Brace yourself, for the evidence unequivocally demonstrates that the null hypothesis, against all odds, remains unassailable. Experience the power of the random effect model, the preferred choice over the fixed effect model, as evidenced by the remarkable outcomes of the Hausman assessment. Introducing the remarkable Hausman test! Brace yourself for the astonishing results it has unveiled. The prodigious prob > chi2 value of 0.0513 has left us in awe, surpassing the very limits of the p-value. With a threshold of significance set at 0.05, this test has truly captivated our attention. Discover the utmost importance of implementing the random effect regression model in this groundbreaking study.

Introducing the powerful tool of regression analysis! Unleash the potential of your data with this incredible technique. Dive deep into the

relationships between variables and uncover hidden insights. Let regression

Experience the power of cutting-edge statistical analysis techniques as we delve into the depths of our investigation. Our team utilized the highly sophisticated random effect regression model to meticulously analyze and unravel the hypotheses at hand. Introducing the remarkable survey that paved the way for an extraordinary panel regression model. Brace yourself as we delve into the captivating world of firm characteristics and their profound impact on the non-performing loans of microfinance banks in the enchanting land of Kenya. Prepare to be amazed by the insights that await you! Discover the remarkable findings derived from the meticulous evaluation of the investigation's hypotheses, meticulously scrutinized at an impressive 5% significance threshold level. Feast your eyes upon the captivating revelations showcased in the illustrious Table 6.

Table 6: Regression Results

Non-performing Loan	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]
Capital Adequacy	-2.65414	1.305288	-2.03	0.047	-5.268945 - .0393342
Loan Size	.1426409	.0813203	1.75	0.085	-.0202632 .3055449
Bank Size	-.088312	.1257732	-0.70	0.485	-.3402659 .1636419
_cons	.0386641	.2170365	0.18	0.859	-.3961124 .4734405
R ²	0.1937				
F(3,4)	4.49				
Prob>F	0.0068				

Source: Study Data (2023)

CONCLUSIONS AND RECOMMENDATIONS

The primary objective of the study was to determine the extent to which business characteristics were responsible for the non-performing loans held by Kenyan microfinance banks. The influence of capital sufficiency, loan size, and bank size on the percentage of microfinance banks' loans that are considered to be non-performing was the primary focus of the analysis. The descriptive analysis showed that the standard deviations for capital adequacy, loan size, and bank size on the non-performing loans were all relatively minor throughout the data. This was found to be the case after looking at all of the non-performing loans.

The results demonstrated that capital sufficiency had a substantial negative influence on the percentage of Kenyan microfinance banks' loans that were classified as non-performing. It was determined that the findings of the panel regression that had been given before were accurate. The conclusion that can be derived from this is that the percentage of non-performing loans held by microfinance banks will fall as capital sufficiency improves. Because of this, Kenya's capital adequacy had a substantial impact on the percentage of microfinance banks' loans that were considered non-performing.

The inquiry also looked at how the amount of loans had a role in the performance of non-performing loans held by Kenyan microfinance banks. According to the findings, the amount of the loans made by microfinance banks had a favorable influence on the percentage of loans that were considered delinquent. It was found that the amount of the loan had very little of an effect on the percentage of non-performing loans held by Kenyan microfinance banks. This leads one to believe that a rise in this component would result in an increase in the amount of non-performing loans held by Kenya's various microfinance banks.

The analysis also aimed to examine how the size of a bank influenced the percentage of its loans that

were considered non-performing for Kenyan microfinance firms. The findings of the study revealed that the size of the bank did not have a significant impact on the total number of loans that were considered to be non-performing. According to the findings, an increase in the size of Kenyan microfinance banks will ultimately result in a reduction in the proportion of loans that are considered to be non-performing.

Using an investigation of how company characteristics factors influenced the non-performing loans of Kenyan microfinance banks, several findings on the specific aims that the research aimed to address were drawn, each of which led to a different set of conclusions. According to the findings of the analysis, capital adequacy has a considerable and negative influence on the percentage of Kenyan microfinance banks' loans that are considered to be in default. The findings of the analysis indicate that capital adequacy has a major effect in determining the percentage of Kenyan microfinance banks' loans that are considered to be non-performing. According to the data, having an acceptable amount of capital had a detrimental effect on the percentage of loans that were not being repaid by Kenyan microfinance banks. It did not seem as if the amount of the loan had much of an effect on the percentage of microfinance banks in Kenya that had non-performing loans. As a result, providing Kenya's microfinance banks with greater loans will lead to a rise in the country's non-performing debts. According to the findings of the research, the size of the bank had a little impact on the underperformance of Kenyan microfinance firms. According to the findings of the inquiry, the size of the microfinance bank was not found to have a significant impact on the percentage of loans that were considered non-performing. The number of loans in Kenya that are considered to be non-performing would drop in Kenya just somewhat if the size of the country's banks were increased.

Recommendations were offered with regard to the firm characteristics features that were used in the

inquiry and their influence on the non-performing loans of microfinance banks. According to the findings of the analysis, the capital adequacy had a negative and substantial influence on the amount of microfinance banks in Kenya that had loans that were not functioning as expected. The management of microfinance banks in Kenya should implement effective capital adequacy procedures in order to lower the total number of loans that are considered to be non-performing. This may be accomplished by putting a limitation on the percentage of borrowers who fall behind on their loan repayments.

According to the findings of the study, the amount of the loan has a positive and minor effect on the percentage of non-performing loans held by Kenyan microfinance banks. The management of microfinance banks has to work on increasing the efficiency of loan management in order to cut down on the amount of loss that may be incurred as a consequence of the activities of these institutions. This may be performed by the use of technology tools to locate potentially credit-worthy customers; as a result, the probability of loans being unpaid in Kenya will be reduced.

The size of a Kenyan microfinance bank did not have a substantial impact on the percentage of its

loans that were considered non-performing. The management of these banks has to strategically implement operational efficiency methods that would aid in the development of properly controlling the size of the banks in order to ideally lower the quantity of loans that are not performing well in Kenya.

Suggestions for Ongoing Research and Development

The research showed how to evaluate the influence of business characteristics on the percentage of microfinance institutions in Kenya that had loans that were not being repaid. The particular findings of the study provide the focal point for the recommendations for more research. According to the findings of the research, loan size and bank size had a little influence on the percentage of microfinance banks' non-performing loans. This finding runs counter to what was predicted. Since the research for this study relies on secondary data, a primary survey might be used to investigate how little of an effect the size of the bank and the value of the loan have on the percentage of banks' loans that are considered non-performing. Additional studies may be conducted in order to study more aspects of the firm's features.

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