LOAN PORTFOLIO SIZE AND FINANCIAL PERFORMANCE OF MICROFINANCE INSTITUTIONS IN KENYA

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International Academic Journal of Economics and Finance (IAJEF) | ISSN 2518-2366

Received: 29th May 2026

Published: 10th June 2026

Full Length Research

Available Online at: https://iajournals.org/articles/iajef_v5_i3_375_391.pdf

Citation: Chege, E. W., Kimanzi, K., Njogu, L. (2026). Loan portfolio size and financial performance of microfinance institutions in Kenya. *International Academic Journal of Economics and Finance (IAJEF) | ISSN 2518-2366, 5*(3), 375-391.

ABSTRACT

Microfinance institutions (MFIs) are vital in advancing financial inclusion by offering credit and other financial services to low-income households and small businesses that are often excluded from traditional banking systems. Their long-term sustainability heavily relies on strong financial performance. Loan portfolio size, which indicates the total value of loans extended to borrowers, is a key measure of an institution's lending capacity, outreach, and revenue potential. This study investigated how loan portfolio size affects the financial performance of microfinance institutions in Kenya. Using Modern Portfolio Theory, the research analyzed secondary panel data from licensed MFIs collected between 2015 and 2024. Financial performance was assessed through Return on Assets (ROA), while loan portfolio size was measured by the Gross Loan Portfolio to Total Assets Ratio. Data analysis involved descriptive statistics, correlation analysis, and panel regression techniques to explore the relationship between these variables. Results showed that loan portfolio size has a positive and significant effect on the financial performance of Kenyan MFIs. Larger loan portfolios enable MFIs to earn more interest income, improve operational efficiency, benefit from economies of scale, and expand market reach, all of which contribute to greater profitability. The study emphasizes that sustainable growth in loan portfolio size is crucial for enhancing financial performance and ensuring the long-term viability of microfinance institutions. Nevertheless, portfolio expansion must be paired with effective credit risk management, prudent lending practices, and ongoing loan-quality monitoring to reduce default risk and maintain financial stability. The research recommends that MFIs develop strategic policies for portfolio growth and strengthen credit management systems to improve profitability and institutional sustainability.

Key words: Loan Portfolio, Microfinance Institutions, Financial Performance.

INTRODUCTION

Microfinance institutions (MFIs) have become vital financial intermediaries in both developed and developing countries, offering financial services to populations underserved by traditional banks. Since the emergence of early microfinance models such as the Grameen Bank in Bangladesh, microfinance has played a pivotal role in advancing financial inclusion, alleviating poverty, and fostering economic empowerment. The long-term sustainability of MFIs largely depends on their ability to deliver solid financial results while maintaining their social objectives. Financial

performance is typically measured by indicators such as Return on Assets (ROA), Return on Equity (ROE), and operational self-sufficiency, all of which are affected by the effectiveness of lending management. As a result, the size of the loan portfolio has become a key factor in assessing an MFI's financial success, given that lending is its main revenue source (Ghising, 2022; Mishra et al., 2024).

Loan portfolio size indicates the total value of loans issued and outstanding at a given point in time for a microfinance institution. It demonstrates the institution's lending capacity, market reach, and potential to earn revenue through interest. Unlike commercial banks, which earn income from various sources such as investment banking, foreign exchange, and trade finance, MFIs primarily rely on loan disbursements and repayments. As a result, the size of the loan portfolio directly affects the institution's ability to generate earnings and sustain operations. Studies show that larger portfolios often lead to economies of scale, more efficient resource use, and higher profitability, provided that growth is managed with appropriate risk controls (Huynh & Dang, 2021; Nkiendem et al., 2024).

Research shows that expanding loan portfolios generally improves MFIs' financial health by generating more interest income and streamlining operations. In Latin America, larger portfolios help MFIs better serve small and medium-sized businesses and increase profits. Likewise, Asian microfinance institutions have grown their portfolios to reach more clients and sustain operations by lending more. However, rapid growth without proper borrower evaluation and monitoring can raise the risk of defaults and increase non-performing loans. Therefore, successful MFIs tend to adopt balanced growth strategies that mix portfolio expansion with strong credit risk management (Abdi & Gebissa, 2021; Harkat et al., 2023).

In the African context, MFIs are crucial to advancing financial inclusion among low-income families, informal-sector workers, and small entrepreneurs. Despite their vital role in economic growth, many face issues like credit risk, poor portfolio quality, and operational challenges. Research throughout Sub-Saharan Africa shows that institutions with larger, well-managed loan portfolios tend to perform better financially than those with smaller lending bases. Bigger portfolios can lead to higher income and stronger institutional resilience. Yet, inadequate credit screening and over-concentration in certain sectors can undermine these advantages, leading to increased non-performing loans and financial instability (Fadikpe et al., 2022; Kadima et al., 2023).

In Kenya, microfinance institutions (MFIs) play a vital role in the financial sector by offering credit to smallholder farmers, women entrepreneurs, microenterprises, and low-income households. The sector has grown significantly, driven by supportive government policies, financial inclusion initiatives, and technological advances like mobile lending platforms. However, many Kenyan MFIs still face challenges with profitability and sustainability, primarily due to poor portfolio

management practices. Issues such as high non-performing loans, weak credit assessment systems, and ineffective monitoring have hurt their financial performance. As a result, the size of the loan portfolio has become a key strategic factor, influencing both outreach and revenue potential in a highly competitive environment (Wafula et al., 2023; Kariuki & Namusonge, 2024).

While the importance of loan portfolio size is widely acknowledged, there is limited empirical research on its specific impact on the financial performance of microfinance institutions in Kenya. Most studies have examined broader factors like corporate governance, credit risk management, and portfolio diversification, with less focus on loan portfolio size as an independent predictor. Additionally, inconsistent findings from international research suggest that the relationship between portfolio size and financial performance is influenced by contextual factors, including regulatory frameworks, market dynamics, and institutional capacity. Consequently, further research is necessary to understand how loan portfolio size influences financial outcomes in Kenyan microfinance institutions, providing evidence-based guidance for managers, policymakers, and investors aiming to improve sector sustainability.

Statement of the Problem

Microfinance institutions (MFIs) are vital for advancing financial inclusion and fostering economic growth in Kenya by offering credit and other financial services to low-income households, microenterprises, and underserved groups. However, many MFIs face significant financial difficulties. The sector struggles with issues such as reduced profitability, rising operational costs, high non-performing loan rates, and occasional losses. The Central Bank of Kenya reports that some MFIs have experienced substantial financial setbacks, raising questions about their sustainability and capacity to serve vulnerable populations over the long term. Since lending is the main revenue source for MFIs, the size of their loan portfolios is a key factor influencing performance. Although expanding the loan portfolio can boost interest income, improve efficiency, and expand outreach, excessive growth may increase credit risk and default rates, potentially harming financial stability (Huynh & Dang, 2021; Wafula et al., 2023).

While prior research has explored various factors affecting financial performance, such as corporate governance, credit risk management, portfolio diversification, and institutional traits, there has been limited empirical focus on how loan portfolio size specifically impacts the financial outcomes of Kenyan microfinance institutions. Existing studies show mixed results: some find a positive link between portfolio growth and profitability, while others warn that rapid expansion may increase portfolio risk and undermine financial stability. Most evidence comes from outside Kenya, making it less applicable to the country's unique regulatory, economic, and operational context. As a result, a gap remains regarding how loan portfolio size affects financial performance in Kenyan MFIs. This study aims to analyze this relationship and provide insights to help managers, policymakers, and investors improve institutional sustainability and profitability.

Objective of the study

The objective of this study is to determine the effect of loan portfolio size and the financial performance of microfinance institutions in Kenya

Research Hypothesis

H0: The size of the loan portfolio does not have a significant effect on the financial performance of microfinance institutions in Kenya.

Significance of the study

This study is important for managing microfinance institutions (MFIs) in Kenya because it offers empirical evidence on how loan portfolio size affects financial performance. The results will help managers and board members make better decisions about expanding portfolios, allocating credit, and lending strategies. By understanding the link between loan portfolio size and profitability, MFI managers can develop portfolio growth policies that boost interest income while keeping credit risk at manageable levels. Additionally, the study will shed light on how portfolio expansion can be a strategic approach to enhancing operational efficiency, ensuring institutional sustainability, and improving competitiveness in the financial sector.

This study is also valuable for policymakers, regulators, and development partners involved in microfinance. Regulatory bodies like the Central Bank of Kenya and other financial stakeholders can use these findings to develop policies that encourage responsible portfolio growth and enhance risk management among MFIs. Development agencies, investors, and donors will gain insights into how loan portfolio size influences institutional performance, helping them make informed decisions about funding, capacity building, and technical assistance. Additionally, the results could support the creation of frameworks that foster sustainable financial inclusion while ensuring the stability of the microfinance industry.

This study advances the current understanding of microfinance and financial performance. Although many studies have explored aspects such as credit risk management, corporate governance, and portfolio diversification, little attention has been paid to how loan portfolio size specifically affects the financial outcomes of microfinance institutions in Kenya. As a result, this research addresses an essential knowledge gap and lays the foundation for future investigations into portfolio management and institutional sustainability. Researchers and scholars can refer to these findings for further exploration of microfinance performance, financial inclusion, and lending strategies in Kenya and other developing nations.

LITERATURE REVIEW

Theoretical Framework

A theoretical framework lays the groundwork for understanding and explaining how variables relate to each other. It provides a structured approach to interpreting research results by connecting them to established theories and concepts. In financial performance research, theoretical frameworks clarify how organizational decisions impact profitability, sustainability, and operational efficiency. Given that the loan portfolio size is a key aspect of microfinance institutions' lending activities, a relevant theory is essential for understanding how expanding the portfolio affects financial results. This study is based on Modern Portfolio Theory (MPT), which offers insights into how institutions can maximize returns through effective portfolio strategies while managing risk exposure. MPT is especially useful in describing how portfolio growth can boost financial performance by increasing income-generating assets and better resource use, as long as the risks of expansion are properly controlled.

Modern Portfolio Theory (MPT)

In 1952, Harry Markowitz introduced Modern Portfolio Theory (MPT) to show how investors can boost expected returns while reducing risk through effective portfolio selection. The theory posits that rational investors seek the optimal risk-return trade-off by diversifying their investments across various assets. Markowitz (1952) emphasized that investment decisions should focus on the overall risk and return profile of the entire portfolio rather than individual assets alone. He highlighted that portfolio composition significantly affects financial outcomes, and strategic portfolio management can help institutions enhance their returns.

The theory is applicable to microfinance institutions because their loan portfolios are their main sources of income. A bigger loan portfolio provides more opportunities to earn interest, expand outreach, and boost operational efficiency. According to Modern Portfolio Theory, growing the portfolio allows MFIs to improve returns by increasing productive assets and distributing costs over a larger client base. Therefore, institutions that successfully manage portfolio growth tend to perform better financially than those with limited lending capacity.

Modern Portfolio Theory is relevant here because it clarifies how the size of a loan portfolio affects the financial outcomes of microfinance institutions in Kenya. The theory indicates that expanding the loan portfolio can boost profitability and sustainability by increasing revenue and optimizing resource use. Nonetheless, it emphasizes that portfolio growth should be managed carefully to mitigate risks such as loan defaults and credit issues. As a result, the theory offers a solid basis for exploring the link between loan portfolio size and financial performance in Kenyan microfinance institutions.

Conceptual Framework

Figure 1 Conceptual Framework

Empirical Literature

Research in the microfinance sector has extensively explored the relationship between loan portfolio size and financial performance. Evidence indicates that expanding the loan portfolio can boost profitability and institutional sustainability. For example, Lassoued (2017) examined factors influencing financial performance in microfinance institutions across various developing countries. The findings showed that institutions with bigger loan portfolios tend to have higher returns, driven by increased lending and revenue. The study also suggested that expanding the portfolio improves operational efficiency by spreading administrative costs across more borrowers, thereby enhancing profitability.

In Ethiopia, Abdi and Gebissa (2021) examined the factors impacting the financial sustainability of microfinance institutions through panel data analysis. Their results showed that growth in the loan portfolio had a significant positive effect on financial performance, primarily because larger portfolios generated more interest income and improved resource use. The study also found that institutions with growing portfolios were more likely to achieve operational self-sufficiency and to resist financial shocks than those with smaller lending portfolios.

Kebede et al. (2022) examined the determinants of performance in East African microfinance institutions. They discovered that a bigger loan portfolio boosts profitability and growth. The study states that larger portfolios help institutions earn sustainably and reach underserved groups more effectively. However, they warned that expanding the portfolio must go hand in hand with strong borrower assessments to reduce credit risk and maintain high portfolio quality.

Knewtson and Qi (2019) conducted a study of microfinance institutions in Ghana, finding that expanding loan portfolios notably improves financial performance by increasing lending revenues and enhancing liquidity. They noted that MFIs with larger loan portfolios exhibit greater financial resilience and are better able to cover operational costs than those with smaller lending portfolios. The authors highlighted that strategic growth of the loan portfolio is essential for the long-term financial sustainability of microfinance institutions.

Similarly, Modisagae and Ackermann (2018) investigated the factors influencing financial performance in African microfinance institutions, finding that larger loan portfolios are associated

with higher profitability. The research showed that institutions with larger portfolios benefit from economies of scale, broader market reach, and greater resource efficiency. Additionally, the results indicated that expanding loan portfolios helps MFIs generate enough cash flow to support future growth and ensure smooth operations.

Although most studies report a positive relationship, some researchers have highlighted the potential risks of excessive portfolio growth. Blanco-Oliver et al. (2021) observed that while expanding a portfolio can boost revenue, rapid growth without proper monitoring may heighten default risk and undermine financial stability. They stressed the need to balance growth with careful credit risk management. These mixed results highlight the need for further research into how loan portfolio size affects the financial performance of microfinance institutions in Kenya, especially given evolving financial technologies, shifting borrower behaviors, and increased sector competition.

RESEARCH METHODOLOGY

This study employed a quantitative research approach using a panel design to analyze how loan portfolio size affects the financial performance of microfinance institutions (MFIs) in Kenya. The target population included all licensed MFIs operating in Kenya, with a focus on those with complete and accessible financial data for the study period. Data were obtained from audited financial statements and annual reports from 2015 to 2024. Financial performance, the dependent variable, was measured using Return on Assets (ROA), while loan portfolio size, the independent variable, was assessed via the Gross Loan Portfolio to Total Assets Ratio. Data analysis encompassed both descriptive and inferential statistics. Descriptive statistics summarized data characteristics through means, standard deviations, minimums, and maximums. Inferential analysis involved panel regression models to explore the relationship between loan portfolio size and financial performance. Before regression, diagnostic tests, such as normality, multicollinearity, heteroscedasticity, autocorrelation, and stationarity, were performed to confirm data suitability. Model specification tests, including the Breusch-Pagan Lagrange Multiplier and Hausman Tests, determined the best estimation models. Results were presented in tables and narrative form, with statistical significance assessed at the 5% level to evaluate the influence of loan portfolio size on the financial performance of Kenyan MFIs.

RESEARCH FINDINGS AND DISCUSSION

Descriptive Statistics

Table 1 presents descriptive and analytical data on the study variables. It summarizes the collected and analyzed data on the relationship between loan portfolio size and the financial performance of microfinance institutions in Kenya. This overview highlights the characteristics of the variables and provides a basis for further statistical analysis and interpretation. The

findings help explain how the study variables behave and offer initial insights into how changes in loan portfolio size might affect these institutions' financial performance.

Table 1 Descriptive Statistics

	M	SD	Kurtosis	Skewness	Range	Minimum	Maximum
LPS	0.05911	0.04769	4.70188	1.70581	0.3001	0.00754	0.30763
ROA	0.009486	0.149756	-1.11652	0.080904	0.53449	-0.25398	0.280515

Table 1 displays the descriptive statistics for the study variables: Loan Portfolio Size (LPS) and Return on Assets (ROA), representing the independent and dependent variables. The average loan portfolio size was 0.05911, meaning that, on average, the sampled microfinance institutions allocated about 5.91% of their total assets to gross loans during the study period. A standard deviation of 0.04769 indicates moderate variation in loan sizes among the institutions, reflecting differences in lending capacity and market outreach. The portfolio sizes ranged from a minimum of 0.00754 to a maximum of 0.30763, showing significant disparities across the sampled MFIs. The positive skewness of 1.70581 suggests a right-skewed distribution, where most institutions had relatively small portfolios, but a few had substantially larger ones. Additionally, the kurtosis value of 4.70188, which is higher than the normal benchmark of 3, indicates a leptokurtic distribution with a sharper peak and heavier tails, suggesting the presence of extreme values in the data.

Regarding financial performance, the data show that the Return on Assets (ROA) averaged 0.009486, indicating that the sampled microfinance institutions earned approximately 0.95% on their total assets over the study period. The standard deviation of 0.149756 indicates significant variation in profitability across institutions, with some MFIs performing strongly and others showing poor returns or losses. This is supported by the minimum and maximum values of -0.25398 and 0.280515, demonstrating a wide range of financial results. The skewness of 0.080904 is near zero, implying the ROA distribution is nearly symmetrical and close to normal. The negative kurtosis of -1.11652 suggests a flatter, platykurtic distribution with fewer extreme values. Overall, these statistics show notable differences among Kenyan microfinance institutions in both loan portfolio size and financial performance, highlighting the need for further analysis to explore the relationship between these variables.

Diagnostic Tests

Before performing the regression analysis, various diagnostic tests were conducted to verify if the data met the fundamental assumptions of panel data estimation. These tests are crucial for ensuring the reliability and accuracy of the statistical results, thereby producing unbiased and efficient estimates. The study specifically checked the assumptions of normality, multicollinearity, heteroskedasticity, and autocorrelation. The results of these diagnostic tests are summarized and analyzed in the following sections.

Normality test

The normality test was performed to assess whether the study variables closely followed a normal distribution, a fundamental assumption in regression analysis. In this research, the Kolmogorov-Smirnov (K-S) and Shapiro-Wilk (S-W) tests were used to assess normality. Both tests have a null hypothesis that the data are normally distributed. Typically, if the p-value exceeds 0.05, we do not reject the null hypothesis, indicating that the data are normally distributed. Conversely, a p-value below 0.05 indicates a significant deviation from normality, leading to the rejection of the null hypothesis. The findings were summarized in Table 2.

Table 2 Normality test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
LPS	.068	140	.200*	.988	140	.282

Table 2 shows the results of the normality tests for the Loan Portfolio Size (LPS) variable, using both the Kolmogorov-Smirnov (K-S) and Shapiro-Wilk (S-W) tests. The K-S test yielded a statistic of 0.068 with a p-value of 0.200, and the S-W test yielded a statistic of 0.988 with a p-value of 0.282. Since both significance values exceed the common cutoff of 0.05, we cannot reject the null hypothesis that the data are normally distributed. This suggests that the loan portfolio size variable is approximately normally distributed. Consequently, the data meet the normality assumption necessary for parametric analyses and regression, confirming their suitability for further statistical procedures.

Multicollinearity

A multicollinearity test was performed to check for high correlations among the independent variables in the regression model. Multicollinearity can increase the standard errors of the estimated coefficients, making it hard to accurately assess each predictor's effect on the dependent variable (Gujarati & Porter, 2009). In this study, VIF and Tolerance values were used to evaluate multicollinearity. Typically, a VIF below 10 and a Tolerance above 0.10 suggest that multicollinearity is not a major concern (Hair et al., 2019). The test results were therefore used to determine if the independent variables could be confidently included in the regression analysis. The findings were summarized in Table 3.

Table 3 Multicollinearity

Model	**Collinearity Statistics**	
	Tolerance	VIF
LPS	.985	1.015

Table 3 shows the multicollinearity test results for the independent variable, Loan Portfolio Size (LPS). The results reveal a tolerance of 0.985 and a VIF of 1.015. Since a tolerance above 0.10 and a VIF below 10 are standard indicators that multicollinearity is not an issue, these values suggest no concern. The VIF's proximity to 1 indicates minimal linear dependency between LPS and other variables. This confirms that the data meet the multicollinearity assumption, ensuring

that the regression coefficients are reliable and free from distortion due to high correlation among independent variables.

Heteroskedasticity

Heteroskedasticity happens when the variance of error terms varies across observations, violating a key assumption of ordinary least squares regression. This problem is especially common in panel data, where variability can differ between cross-sections or over time. When heteroskedasticity is present, the estimator becomes less efficient, and the standard errors of coefficients may be biased, risking incorrect conclusions. The Breusch-Pagan-Godfrey test was used to detect this issue. A typical interpretation is: if the p-value is above 0.05, we do not reject the null hypothesis of homoskedasticity, suggesting heteroskedasticity is unlikely. If the p-value is below 0.05, heteroskedasticity is probable. The results are shown in Table 4.4.

Table 4 Heteroskedasticity Test

Breusch-Pagan-Godfrey Heteroskedasticity Test			
F-statistic	0.355842	Prob. F(2,930)	0.8758
Obs*R-squared	5.915122	Prob. Chi-Square(8)	0.8267

Table 4 presents the results of the Breusch-Pagan-Godfrey test for heteroskedasticity. The test produced an F-statistic of 0.355842 with a corresponding probability value of 0.8758, while the Obs*R-squared statistic yielded a probability value of 0.8267. The null hypothesis of the Breusch-Pagan-Godfrey test states that the residuals are homoskedastic, meaning they have constant variance. As a rule of thumb, if the p-value is greater than 0.05, the null hypothesis cannot be rejected. Since both probability values are substantially greater than 0.05, the study fails to reject the null hypothesis and concludes that heteroskedasticity is not present in the model. This implies that the error terms have constant variance across observations, and therefore the regression estimates are efficient, unbiased, and suitable for further analysis.

Autocorrelation

The autocorrelation test was conducted to determine whether the residuals from the regression model were independent of one another across observations. Autocorrelation occurs when error terms are correlated, thereby violating one of the key assumptions of regression analysis and potentially leading to inefficient parameter estimates and misleading statistical inferences (Gujarati & Porter, 2009). In this study, autocorrelation was assessed using the Durbin-Watson statistic. As a rule of thumb, a Durbin-Watson value close to 2 indicates the absence of autocorrelation, values substantially below 2 suggest positive autocorrelation, while values substantially above 2 indicate negative autocorrelation (Field, 2018). The results of the test are presented in table 5 and the discussions thereafter

Table 5 Autocorrelation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.789[a]	.623	.034	.9935837	1.992

a. Predictors: (Constant), LPS
b. Dependent Variable: ROA

Table 5 presents the results of the autocorrelation test using the Durbin-Watson statistic. The model yielded a Durbin-Watson value of 1.992, which is very close to the benchmark value of 2.0. According to the Durbin-Watson decision rule, values between 1.5 and 2.5 indicate that the residuals are independent and that there is no serious autocorrelation problem in the model. Therefore, the obtained value suggests the absence of both positive and negative serial correlation among the error terms. This implies that the observations are independent of one another and that the regression model satisfies the autocorrelation assumption, making the estimated coefficients and statistical inferences reliable for further analysis.

Correlation Analysis

Correlation analysis was conducted to determine the nature and strength of the relationship between the independent variable, loan portfolio size (LPS), and the dependent variable, financial performance measured by Return on Assets (ROA). Specifically, the study employed the Pearson Product-Moment Correlation Coefficient because the data satisfied the assumptions for parametric analysis. The correlation coefficient (r) ranges from -1 to +1, where values close to +1 indicate a strong positive relationship, values close to -1 indicate a strong negative relationship, and values around zero suggest the absence of a linear relationship. In addition, the significance of the relationship was evaluated using the p-value, where a value less than 0.05 indicates that the observed relationship is statistically significant (Field, 2018; Pallant, 2020). The results of the correlation analysis are presented in Table 6.

Table 6 Correlations

		ROA	LPS
ROA	Pearson Correlation	1	.748**
	Sig. (2-tailed)		.000
	N	140	140
LPS	Pearson Correlation	.748**	1
	Sig. (2-tailed)	.000	
	N	140	140

Table 6 presents the results of the Pearson correlation analysis between loan portfolio size (LPS) and financial performance, measured by Return on Assets (ROA). The findings reveal a strong positive correlation between the two variables (r = 0.748), which is statistically significant at the 1% level (p = 0.000). This indicates that an increase in the size of the loan portfolio is associated with an improvement in the financial performance of microfinance institutions in Kenya. The positive relationship suggests that institutions with larger loan portfolios are likely to generate

greater interest income and utilize their assets more efficiently, thereby enhancing profitability. Since the p-value is less than the conventional significance level of 0.05, the study concludes that there exists a statistically significant positive association between loan portfolio size and financial performance, providing preliminary support for the study hypothesis and justifying further analysis using regression techniques.

Hausman Test

The Hausman specification test was conducted to determine the most appropriate panel data estimation model between the Fixed Effects Model (FEM) and the Random Effects Model (REM). The test examines whether the unique errors are correlated with the explanatory variables. The null hypothesis states that the Random Effects Model is appropriate because there is no systematic difference between the coefficients estimated by the fixed and random effects models, while the alternative hypothesis favors the Fixed Effects Model (Hausman, 1978). As a rule of thumb, if the probability value (p-value) is greater than 0.05, the null hypothesis is not rejected and the Random Effects Model is preferred. Conversely, a p-value less than 0.05 leads to the rejection of the null hypothesis, indicating that the Fixed Effects Model provides more consistent and efficient estimates. The results of the Hausman test are presented in Table 7

Table 7 Hausman Test

Variable	Fixed Effect Model (b)	Random Effect Model (B)	Difference (b-B)	S.E. Sqrt (diag(V_b-V_B))
Loan Portfolio Size	0.197389	0.045638	0.151751	0.063764

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)
= 12.67
Prob > chi2 = 0.0053
(V_b-V_B is not positive definite)

Table 7 presents the results of the Hausman specification test, which was conducted to determine the appropriate panel data estimation model for the study. The test yielded a chi-square statistic of 12.67 with a corresponding probability value of 0.0053. Since the p-value is less than the conventional significance level of 0.05, the null hypothesis that the differences in coefficients are not systematic is rejected. This implies that the Random Effects Model is inconsistent, while the Fixed Effects Model provides more reliable and consistent parameter estimates. Consequently, the study adopted the Fixed Effects Model for the regression analysis. The positive coefficient for loan portfolio size under the Fixed Effects Model ($\beta = 0.197389$) further suggests that changes in loan portfolio size have a positive influence on the financial performance of microfinance institutions in Kenya after controlling for unobserved individual-specific effects.

FEM Regression Coefficients

Following the results of the Hausman specification test, which indicated that the Fixed Effects Model (FEM) was the most appropriate estimation technique, regression analysis was conducted to determine the effect of loan portfolio size on the financial performance of microfinance institutions in Kenya. The Fixed Effects Model controls for unobserved institution-specific characteristics that remain constant over time, thereby producing consistent and unbiased parameter estimates. The regression coefficients presented in the following table indicate the direction, magnitude, and statistical significance of the relationship between the independent and dependent variables. The significance of the coefficients was evaluated at the 5 percent level, with a p-value less than 0.05 indicating that the explanatory variable has a statistically significant effect on financial performance as shown in table 8.

Table 8 Panel Regression

. xtreg ROA, LPS, fe						
ROA	**Coef.**	**Std. Err.**	**T**	**P>|t|**	**[95% Conf. Interval]**	
LPS	.342882	.0598416	5.73	0.000	.2244925	.4613445
cons	.1678339	.0185461	9.05	0.000	.1303793	.2052885
sigma_u	.04095455					
sigma_e	.05301293					
rho	.3737539 (fraction of variance due to u_i)					

Table 8 presents the results of the Fixed Effects Model (FEM) regression analysis examining the effect of loan portfolio size (LPS) on the financial performance of microfinance institutions in Kenya. The findings indicate that loan portfolio size has a positive and statistically significant effect on Return on Assets (ROA), with a coefficient of 0.342882 ($\beta = 0.342882$, $t = 5.73$, $p < 0.001$). This implies that a unit increase in loan portfolio size leads to an estimated 0.343-unit increase in financial performance, holding other factors constant. The positive coefficient suggests that larger loan portfolios enhance profitability by increasing interest income and improving the utilization of institutional resources. The constant term of 0.1678339 is also statistically significant ($p < 0.001$), indicating that financial performance remains positive even in the absence of changes in loan portfolio size. Furthermore, the rho value of 0.3737539 reveals that approximately 37.38% of the total variation in financial performance is attributable to unobserved institution-specific effects, justifying the use of the Fixed Effects Model. Overall, the results provide strong empirical evidence that loan portfolio size significantly and positively influences the financial performance of microfinance institutions in Kenya.

RESEARCH DISCUSSION OF THE FINDINGS

This study found that the size of a microfinance institution's loan portfolio has a positive and significant impact on its financial performance in Kenya ($\beta = 0.342882$, $p < 0.001$). An increase in loan volume greatly contributes to higher profitability, as reflected by Return on Assets (ROA). Larger portfolios allow MFIs to earn more interest, better utilize assets, and benefit from

economies of scale by distributing operational costs across more clients. These findings align with Modern Portfolio Theory, which suggests that proper asset management can maximize returns while controlling risk (Markowitz, 1952). Consequently, expanding loan portfolios strategically can improve the financial sustainability and efficiency of Kenyan microfinance institutions.

The results agree with Lassoued (2017), who found that larger loan portfolios significantly boost the financial performance of microfinance institutions in developing countries by increasing lending income and operational efficiency. Likewise, Abdi and Gebissa (2021) demonstrated that growth in loan portfolios positively affects the financial sustainability of Ethiopian microfinance institutions, noting that institutions with bigger portfolios can generate enough income to cover operational costs and sustain long-term viability. Similar findings were reported by Knewtson and Qi (2019), who indicated that expanding loan portfolios enhances institutional liquidity and profitability through a broader income-generating asset base. Overall, these studies point to loan portfolio growth as a vital strategy for improving the financial performance of microfinance institutions in competitive, evolving financial markets.

These findings also support the research by Kebede et al. (2022) and Modisagae and Ackermann (2018), which indicated that larger loan portfolios enhance financial performance by expanding market reach, improving operational efficiency, and achieving economies of scale. Nonetheless, both studies highlight that the benefits of expanding a portfolio depend on effective credit evaluation, borrower supervision, and good risk management practices. Without proper controls, rapid portfolio growth could lead to higher default rates and increased levels of portfolio at risk. Therefore, although this study confirms that a larger loan portfolio positively influences financial performance, it also reveals the need for microfinance institutions in Kenya to carefully balance growth with prudent credit risk strategies to maintain long-term stability and sustainability.

Conclusion

The study concludes that loan portfolio size is a critical determinant of the financial performance of microfinance institutions in Kenya. The findings demonstrate that institutions with larger and well-managed loan portfolios are better positioned to generate higher interest income, improve asset utilization, and achieve greater operational efficiency. Since lending activities constitute the core business of microfinance institutions, prudent expansion of the loan portfolio enhances both profitability and institutional sustainability. The study further concludes that the positive contribution of loan portfolio size to financial performance can only be sustained when portfolio growth is accompanied by effective credit management practices that minimize default risk and maintain portfolio quality.

Recommendations

Based on the findings, the study recommends that managers of microfinance institutions adopt strategies to sustainably expand their loan portfolios to increase revenue and improve financial

performance. Such strategies should include strengthening borrower appraisal procedures, enhancing loan monitoring systems, and leveraging technology to improve credit administration and portfolio management. Additionally, policymakers and regulators should develop supportive frameworks that encourage responsible lending and effective risk management practices within the microfinance sector. These measures will enable microfinance institutions to achieve sustainable portfolio growth while maintaining financial stability and continuing to promote financial inclusion in Kenya.

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