FIRM CHARACTERISTICS AND FINANCIAL PERFORMANCE OF TIER THREE COMMERCIAL BANKS IN KENYA

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ABSTRACT

This study examined the effect of asset quality and leverage on the financial performance of Tier Three commercial banks in Kenya. The financial performance of these banks is important for economic stability and the effective functioning of the banking sector. Despite their significant role, limited research has examined how asset quality and leverage influence their financial performance, presenting a gap in understanding the factors affecting their profitability. The study was guided by the Capital Asset Pricing Model and Modigliani-Miller (M&M) theory. A quantitative approach was adopted, using secondary data collected from 22 licensed Tier Three commercial banks over the period 2015–2025. Panel data regression analysis was employed to examine the relationships between the study variables, alongside diagnostic tests. Financial performance was measured using Return on Assets (ROA), asset quality using the ratio of non-performing loans to total loans, and leverage using the EBIT-to-EBT ratio. The findings revealed that asset quality had a significant negative effect on financial performance ($\beta = -0.573$, $p = 0.011$). Similarly, leverage had a significant negative effect on financial performance ($\beta = -0.006$, $p = 0.003$). These findings indicate that increasing non-performing loans and excessive leverage are associated with reduced bank profitability. The study concludes that effective credit risk management and prudent leverage management are important for improving the financial performance of Tier Three commercial banks. It recommends that banks strengthen credit appraisal, loan monitoring and debt recovery practices while maintaining sustainable leverage levels. The findings provide useful insights for bank management and regulatory authorities seeking to enhance profitability and financial stability in Kenya's banking sector.

Keywords: Asset quality; Leverage; Financial performance; Return on Assets (ROA); Tier Three commercial banks; Kenya

INTRODUCTION

Background of the Study

Commercial banks are considered an economic cornerstone in the economic structure of a nation. They support the financial intermediation process, which encourages the delivery of crucial financial services required by both consumers and businesses (Liedholm, 2021). How each bank serves businesses and customers is influenced by firm characteristics that are unique to individual commercial banks. It is well recognised that these firm-specific characteristics influence the financial performance of commercial banks. Strong firm characteristics are typically displayed by commercial banks that function as major economic actors (Glanday, 2022).

Performance in the banking industry has been of interest to academic researchers and stakeholders in the banking industry (George, Walker, & Monster, 2019). This is because the performance of commercial banks has critical implications for economic growth in any country and is generally considered a reflection of a country's financial and economic conditions, in addition to its intermediation role in the economy (Macharia & Mungai, 2021). When banks perform well, consumers, businesses and governments are able to access financial services that support economic growth (Adeyinka et al., 2018).

When a financial institution experiences declining performance, operating conditions may deteriorate, heavy financial burdens become commonplace, and bankruptcy may eventually become a reality (Muchori & Wanjala, 2019). However, appropriate management of firm characteristics can help financial institutions recover and improve their performance. Among the important firm-specific characteristics influencing bank performance are asset quality and leverage. These characteristics affect the quality of a bank's earning assets, its exposure to financial risk and its capacity to generate sustainable returns.

According to Jebet and Wepukhulu (2020), firm characteristics are factors that affect banks internally and can be controlled by bank management. Unlike external or macroeconomic factors, these characteristics are specific to individual banks. Firm characteristics include capital adequacy, asset quality, leverage and bank size (Nyabaga & Wepukhulu, 2020), among other factors. Kasabuli (2022) further explains that the characteristics of banks comprise factors such as bank size, capital adequacy, management efficiency, asset quality and portfolio composition. In this regard, asset quality and leverage are important firm-specific characteristics because they influence the risk profile, financial stability and profitability of commercial banks.

Asset quality is a key determinant of financial strength and risk because it reflects the quality of a financial institution's assets, particularly its loan portfolio and investments. Banks with high-quality assets are better positioned to generate stable returns, whereas poor asset quality, particularly through non-performing loans, can lead to financial distress (Berger & DeYoung,

2020). In commercial banks, non-performing loans represent credit facilities whose repayment has become doubtful or delayed, thereby affecting the ability of banks to generate expected income from their lending activities. High levels of non-performing loans increase loan loss provisions, reduce interest income and expose banks to potential financial losses. Consequently, investors, regulators and other stakeholders closely evaluate asset quality when assessing a bank's ability to sustain profitability and meet its financial obligations.

Leverage also plays a significant role in influencing a firm's financial performance because it reflects the extent to which a company uses debt or other financial obligations to finance its operations and growth. The relationship between leverage and financial performance is rooted in the idea that the strategic use of debt can enhance returns to equity holders due to the tax benefits of interest payments, often referred to as the tax shield. However, this positive effect holds only up to a certain point, since excessive leverage increases financial risk and the potential for insolvency, which can ultimately diminish profitability. Therefore, the impact of leverage on financial performance may be non-linear, with moderate levels potentially improving performance while high levels may harm it. Researchers have found mixed evidence in this regard, suggesting that the effect of leverage varies depending on firm size, industry and market conditions (Abor, 2020). As such, understanding how leverage affects financial performance is essential for making optimal capital structure decisions that balance risk and return.

Locally, in Kenya, commercial banks are categorised into three tiers. Tier One comprises large banks, Tier Two comprises medium-sized banks, while Tier Three comprises small-sized banks. Tier Three commercial banks control a relatively smaller share of the banking market compared with their larger counterparts. While large-sized banks and, to some extent, medium-sized banks can easily compete and penetrate markets, including investing in foreign markets, Tier Three commercial banks often experience performance challenges and regulatory actions, particularly in relation to compliance with requirements concerning asset bases and operating capital (Okwiri & Muathe, 2024).

The financial performance of Tier Three commercial banks is therefore an important concern given their role in providing financial services and supporting economic activities. Their performance may be influenced by the quality of their loan portfolios and the extent to which they rely on borrowed funds to finance their operations. Poor asset quality, reflected in high levels of non-performing loans, can reduce interest income, increase loan loss provisions and weaken profitability. Similarly, excessive leverage may increase financing costs and financial risk, thereby constraining the ability of banks to sustain satisfactory returns. These concerns underscore the importance of examining asset quality and leverage as key firm-specific characteristics influencing the financial performance of Tier Three commercial banks in Kenya.

Problem Statement

Banks play an important role in economic development by facilitating the transfer of financial resources from those with surplus funds to those experiencing financial deficits (Guţu, 2018). Despite this role, Tier Three commercial banks in Kenya continue to experience financial performance challenges. They account for over 75% of the number of commercial banks but control approximately 8% of the market share. Most have reduced their staff and branch networks as cost-cutting measures (CBK, 2022). Further, the Kenya Bankers Association (KBA, 2021) reported that approximately 70% of Tier Three banks were struggling to operate under the required minimum capital of Kshs. 1 billion, while some institutions experienced declining profitability. The Central Bank of Kenya (CBK, 2021) also reported that some banks, including Sidian Bank, recorded net losses exceeding Kshs. 600 million.

The performance challenges are reflected in the financial results of these institutions, with the study reporting negative Return on Assets (ROA) among Tier Three banks between 2019 and 2023. Two firm-specific characteristics that may explain these challenges are asset quality and leverage. The deterioration of asset quality, particularly through increasing non-performing loans, reduces interest income and increases loan loss provisions, thereby weakening profitability. The study's trend analysis indicated that the non-performing loans ratio increased from approximately 9.9% in 2015 to 21.6% in 2025. Similarly, increased reliance on leverage may expose banks to higher financing costs and financial risks, potentially reducing their returns. The leverage ratio increased from approximately 7.2 to 8.9 before easing during the study period.

Previous studies have examined determinants of financial performance in different banking and industry contexts. For instance, Khalid (2022) examined the effect of asset quality on the profitability of private banks in India between 2016 and 2021, while Mafumbete et al. (2022) investigated firm-specific determinants of financial performance in the power industry. However, differences in geographical and sectoral contexts limit the extent to which these findings explain the financial performance of Tier Three commercial banks in Kenya. Furthermore, previous studies have not adequately established the combined influence of asset quality and leverage on the financial performance of these institutions.

Consequently, this study examines the effect of asset quality and leverage on the financial performance of Tier Three commercial banks in Kenya, measured using Return on Assets (ROA).

Objectives of the Study

The main objective of the study is to determine the effect of asset quality and leverage on the financial performance of Tier Three commercial banks in Kenya.
The study was guided by the following specific objectives:

1. To examine the effect of asset quality on the financial performance of Tier Three commercial banks in Kenya.
2. To determine the effect of leverage on the financial performance of Tier Three commercial banks in Kenya.

Research Hypotheses

The study was guided by the following null hypotheses:

1. **H_{01}:** Asset quality has no significant effect on the financial performance of Tier Three commercial banks in Kenya.
2. **H_{02}:** Leverage has no significant effect on the financial performance of Tier Three commercial banks in Kenya.

Theoretical Review

The study was guided by the Capital Asset Pricing Model Theory and Modigliani and Miller (M&M) Theory. The theories provide the basis for explaining the relationship between asset quality, leverage and the financial performance of Tier Three commercial banks in Kenya.

Capital Asset Pricing Model Theory

The Capital Asset Pricing Model Theory was developed by Sharpe (1964) and refined by Lintner (1965) and Black (1972). This model explains that investors must diversify their portfolios and that they must possess a given fraction of the bank's market portfolio. Investors without special investment knowledge are advised to hold diversified portfolios. This is called the efficient markets hypothesis (Black, 1971).

All investors need high levels of assurance of expected returns so as to invest in highly risky ventures. However, it should be known that in the presence of informational asymmetries and contract enforcement problems, banks will not always commit their resources to businesses with high returns. Making corrections on estimation errors can greatly improve investment performance. According to this model, investors always try to avoid risks and they only look at the variance and mean on their return on investment during a single period when choosing portfolios (Fofack, 2009).

This model further assumes that the qualities of assets or loans are key items in any given bank's portfolio since a bank's portfolio comprises both assets and liabilities. This model is relevant to this study because it is used in evaluating the performance of financial instrument portfolios. The theory therefore supports the asset quality variable by explaining how the risk associated with banks' assets and loan portfolios may influence their financial performance.

Modigliani and Miller (M&M) Theory

The Modigliani and Miller (M&M) theory represents a cornerstone in modern corporate finance, particularly in understanding the implications of financial leverage on a firm's value. In their seminal 1958 paper, Modigliani and Miller proposed that in a perfect capital market where there are no taxes, transaction costs, or bankruptcy risks, the capital structure of a firm is irrelevant to its overall value. This means that whether a firm finances itself with debt, equity, or a combination of both, its total market value remains unchanged. The rationale is that investors can create their own leverage by borrowing on personal accounts, thereby neutralizing the firm's leverage decisions (Modigliani & Miller, 1958).

However, this idealized model was later adjusted in 1963 when the authors introduced corporate taxes into the equation. Under the revised theory, they recognized that interest payments on debt are tax-deductible, thus generating a tax shield, a key advantage of using debt over equity. This insight altered the original proposition and suggested that, in reality, firms could increase their value through the use of debt financing, as the tax savings would enhance after-tax earnings and, consequently, shareholder wealth (Modigliani & Miller, 1963).

Despite this advantage, the theory also implicitly acknowledges that excessive financial leverage introduces the risk of financial distress, such as the inability to meet interest obligations, which can erode firm value. Although the M&M propositions are based on strict assumptions that rarely hold entirely in practice, they serve as a theoretical benchmark for understanding capital structure decisions. The theory supports the leverage variable in this study by explaining how the use of debt financing may influence the financial performance of Tier Three commercial banks in Kenya.

Conceptual Framework

Mugenda (2008) defined a conceptual framework as a short description of the idea under examination, accompanied by a graphical or visual delineation of the fundamental factors under investigation. Further, Young (2009) defined a conceptual framework as a diagrammatic portrayal demonstrating the relationship between the predictor and dependent variables. In this study, the independent variables are asset quality and leverage, while the dependent variable is financial performance.

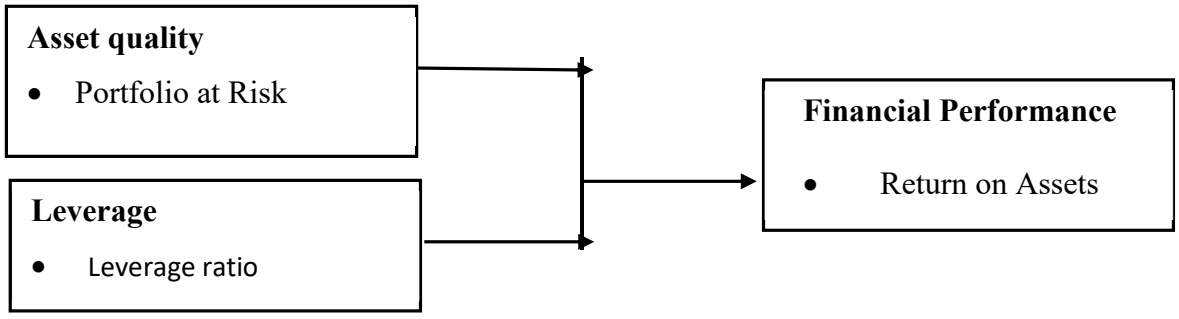


Figure 2.1: Conceptual Framework

Asset Quality

Asset quality refers to the condition and performance of a firm's assets, particularly its loan portfolio and investment holdings. It is a critical factor in assessing financial health, especially in banking and financial institutions, as it influences profitability, risk exposure and stability. Poor asset quality, often indicated by a high ratio of non-performing loans (NPLs) or impaired assets, can increase credit risk and reduce earnings (Berger & DeYoung, 2020). Conversely, high asset quality reflects well-performing assets that generate stable returns and minimise financial risk, contributing to long-term sustainability (Ghosh, 2021). In this study, asset quality was measured using the loan book and non-performing loans.

Leverage

Leverage refers to the use of borrowed capital (debt) to increase the potential return on investment. It enables a company to acquire assets or finance operations without using its own funds entirely, thereby amplifying both potential gains and potential losses (Brigham & Houston, 2022). In financial terms, leverage reflects the extent to which a company utilises borrowed funds to finance its operations and investments. One way of measuring financial leverage is through the ratio of Earnings Before Interest and Taxes (EBIT) to Earnings Before Taxes (EBT). This ratio captures the impact of interest expenses on a firm's earnings by comparing operating income (EBIT), which excludes financing costs, to pre-tax income (EBT), which includes them (Brigham & Houston, 2022).

Empirical Literature Review

Asset Quality on financial performance

Khalid, 2022 studies the effects of asset quality to profitability of private banks found in India using Return on Asset (ROA) as profitability variable for the period 2016 – 2021. The research used various models of regression to analyze correlation between banks asset quality and operating performance. The research found out that a negative relationship exists between banking operating performance after control of impacts on operating scale and bad asset ratio, idle fund ratio and traditional banking business concentration.

Abata (2021) studied the way asset quality relates to bank performance in Nigeria. Annual reports and accounts retrieved from the 6 largest Nigerian banks provided secondary data from 2015 to 2020. The study relied on ratios which supported the measurement of asset quality and the performance which banks post. The study analyzed his data using the Pearson correlation and regression tool. The findings of the study revealed that asset quality influenced bank performance significantly. The study recommends that banks should embrace policies that encourage credit risk minimization and revenue diversification. Minimization of banks' liquidity holdings was also prioritized. The study commented that conducting further research to determine the factors that are

responsible for influencing the liquidity of commercial banks that operate in Nigeria could contribute more value to academic literature as well as the profitability of banks.

Cheruiyot (2022) carried a study on the effect of asset quality on profitability of the commercial banks in Kenya. The study specifically aimed at studying effects of Assets quality, management efficiency on profitability of the commercial banks in Kenya. The researcher took a sample size of 43 registered commercial bank in Kenya as at the end of the year 2014. Data collected was analyzed through regression analysis and found out that there was positive relationship between asset quality, on profitability of registered commercial bank in Kenya. The study concluded that there is a positive relation between the profitability and asset quality was because when non-performing assets to net asset ratio is low, assets quality is high.

Leverage on financial performance

Burakat (2023) investigated the effect of leverage on the profitability in Saudi pharmaceutical firms. 340 pharmaceutical firms were considered however just 152 firms were chosen as the sample for the investigation. The study used secondary data from the websites of the firms and linear regression model which was well organized and efficient. From the study, he confirmed that the use of debt led to declined profitability

Brigham and Gapenski (2022), however, hold a view insolvency expense could increase a trade-off is done amid debt and equity. By relying on too much debt, highly leveraged firms incur financial distress cost. Financial distress costs include legal fees, loss of tax shield, accountancy fees and administrative costs which reduce the profit margins. Therefore, according to this proposition, there is a negative association between leverage and financial performance.

Enekwe et al. (2014) conducted research with an objective of ascertaining the connection amid financial leverage and financial performance of listed pharmaceutical firms in Nigeria. The research used ex-post factor research design on selected six quoted pharmaceutical companies in Nigeria. Correlation and multiple regression analysis study was conducted on a 12-year financial reports data for the period 2001–2012. The analysis found an insignificant effect between independent variables and financial performance of the sampled companies. The period of study is long enough to give reliable findings however the population sample was small to give a conclusive recommendation. Future studies on the topic should be done on a bigger population sample to give more reliable findings

Kale (2022) conducted research on the effect of financial leverage on performance non- financial businesses in Kenya. The data consisted of firms listed in the NSE 20 share index excluding financial firms as at 1st August 2022. The study adopted descriptive design and regression analysis model. The study findings showed significant negative link amid leverage and firm performance with ROA as the performance metric. The study findings must be interpreted with caution since it

only focused on firms in the NSE 20 share index excluding financial firms. As such the results cannot be generalized

RESEARCH METHODOLOGY

The study employed a quantitative research approach using secondary panel data to examine the effect of asset quality and leverage on the financial performance of Tier Three commercial banks in Kenya. The target population comprised 22 Tier Three commercial banks licensed and regulated by the Central Bank of Kenya (CBK), as listed in its 2022 report. A census approach was adopted because the study covered the entire population of the identified banks.

Secondary data was obtained from the banks' annual and audited financial statements and the Central Bank of Kenya banking sector reports covering the period 2015–2025. The data was cleaned, coded and analysed using descriptive statistics, Pearson correlation and panel regression analysis. Diagnostic tests were conducted to assess the suitability of the data for regression analysis. These included normality, homoscedasticity, multicollinearity, serial correlation, unit root and linearity tests. The Hausman specification test was used to determine the appropriate panel estimation technique.

The study adopted a fixed-effects panel regression model to examine the relationship between asset quality, leverage and financial performance. The model was specified as follows:

$\mathbf{Y}it = a + \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \mu_{it}$.

Where; t = 1,2,3 and 4 …n (time for 10 years, from 2015– 2025)

Where Y_{it} represents financial performance *i* at time *t*

a represents Constant (Co-efficient of intercept)

β1, β2, represents Regression co-efficient of two variables.

a, β represents Regression constant

$X_1(it)$= represents asset quality of firm i at time t

$X_2(it)$= represents leverage of firm i at time t

μ (it) = unobserved individual-specific effects

In the study, X_{nit} represented independent variables to measure influence of firm characteristics and financial performance of firm *i* at time *t*.

Financial performance was measured using Return on Assets (ROA), calculated as net income divided by total assets and expressed as a percentage. Asset quality was measured using the ratio of non-performing loans to total loans, while leverage was measured using the EBIT-to-EBT ratio.

The study adhered to ethical principles of integrity and transparency throughout the research process. Necessary authorisation was sought from Jomo Kenyatta University of Agriculture and Technology, together with a research permit from the National Commission for Science, Technology and Innovation (NACOSTI). All sources of information used in the study were appropriately acknowledged.

DATA ANALYSIS, PRESENTATION AND DISCUSSION

Descriptive Findings

Descriptive statistics were used to summarise the characteristics of the study variables. The analysis included the number of observations, mean, standard deviation, minimum, maximum, median, skewness and kurtosis. The findings for financial performance, asset quality and leverage are presented in Table 1.

Table 1: Descriptive Statistics

Variable	*N*	*Mean*	*SD*	*Min*	*Max*	*Median*	*Skewness*	*Kurtosis*
Return on Assets	242	0.040	0.592	-0.068	9.200	0.004	15.534	241.540
Asset Quality	242	0.137	0.095	-0.052	0.470	0.142	0.502	0.146
Leverage	242	8.171	3.485	3.100	35.200	7.800	3.234	17.996

Source: Study Data (2026)

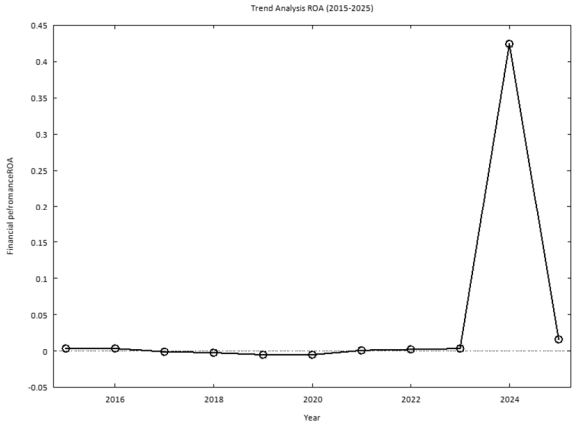
Return on Assets (ROA), the dependent variable representing financial performance, recorded a mean of 0.040 (SD = 0.592), with values ranging from -0.068 to 9.200. The median of 0.004 was considerably lower than the mean, indicating that a small number of exceptionally high values influenced the average profitability. This is further reflected in the high skewness (15.534) and kurtosis (241.540), suggesting a highly positively skewed distribution with extreme observations.

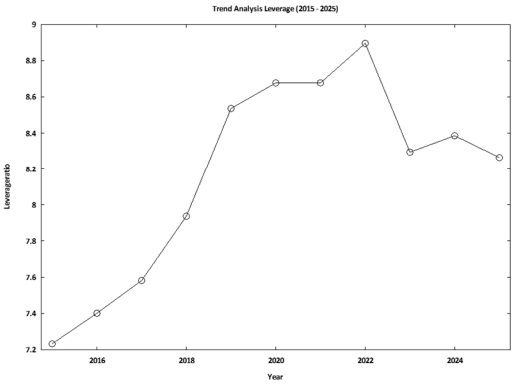
Asset quality, measured using the ratio of non-performing loans to total loans, recorded a mean of 0.137 (SD = 0.095), indicating that approximately 13.7% of the sampled banks' loan portfolios were non-performing on average. The values ranged from -0.052 to 0.470, while the median was 0.142. The skewness (0.502) and kurtosis (0.146) indicate a relatively symmetrical distribution, although the negative minimum warrants examination of the underlying observations.

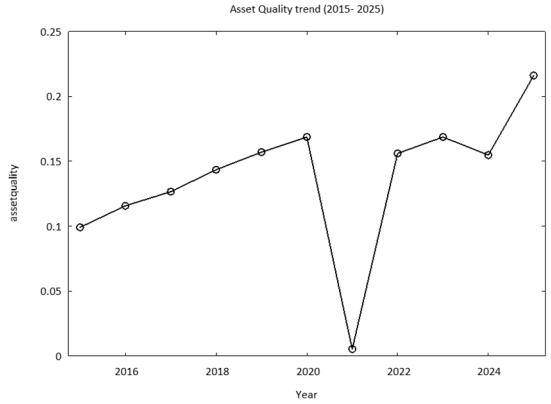
Leverage, measured using the ratio of Earnings Before Interest and Taxes (EBIT) to Earnings Before Taxes (EBT), recorded a mean of 8.171 (SD = 3.485), with values ranging from 3.100 to 35.200. The median was 7.800, slightly below the mean, indicating the influence of relatively high observations. The skewness of 3.234 and kurtosis of 17.996 indicate a positively skewed distribution with heavier tails, suggesting substantial variation in leverage among the sampled banks.

Trend Analysis of Study Variables

The trend analysis examined the movement of financial performance, asset quality and leverage among Tier Three commercial banks in Kenya between 2015 and 2025.







The average Return on Assets remained marginal for most of the study period, turning negative between 2017 and 2020 before recovering to marginally positive levels between 2021 and 2023. The weakest performance occurred in 2019 and 2020, when average ROA reached approximately -0.5%. In 2024, the average ROA rose sharply to approximately 42.5% before declining to about 1.6% in 2025. The unusually high 2024 value may reflect extreme observations or data irregularities and should therefore be interpreted cautiously. Overall, the trend indicates considerable instability in the profitability of Tier Three commercial banks during the study period.

The asset quality trend, measured using the non-performing loans (NPL) ratio, showed a general deterioration between 2015 and 2025. The average NPL ratio increased from approximately 9.9% in 2015 to 11.6% in 2016, 12.7% in 2017 and 14.3% in 2018. It continued rising to approximately 15.7% in 2019 and 16.9% in 2020. An isolated decline to approximately 0.5% was recorded in 2021, before the ratio returned to higher levels of 15.6% in 2022, 16.9% in 2023 and 15.5% in 2024. By 2025, the ratio had increased to approximately 21.6%. The general

upward movement suggests increasing credit risk exposure among the banks, which may weaken profitability through increased loan-loss provisions and reduced interest income.

The leverage trend showed an increase from approximately 7.2 in 2015 to 8.9 in 2022, followed by a decline to approximately 8.3 in 2025. Between 2015 and 2018, leverage increased gradually from 7.2 to 7.9, before rising to approximately 8.5 in 2019 and 8.7 in 2020 and 2021. The ratio reached its highest level of approximately 8.9 in 2022. Between 2023 and 2025, it remained relatively stable, declining from approximately 8.3 in 2023 to 8.3 in 2025 after a slight increase to 8.4 in 2024. The trend indicates that leverage increased during much of the study period before easing towards the end.

Overall, the descriptive and trend findings indicate that Tier Three commercial banks experienced unstable profitability alongside deteriorating asset quality and relatively high leverage during the study period. These patterns provide a basis for further examining the relationship between asset quality, leverage and financial performance through panel regression analysis.

Correlation Analysis

Pearson correlation analysis was conducted to establish the relationship between asset quality, leverage and financial performance measured by ROA among Tier Three commercial banks in Kenya. The results are presented in Table 2.

Table 2: Correlation Analysis

Variables	ROA	Asset Quality	Leverage
Financial Performance (ROA)	1.000		
Asset Quality	-0.602***	1.000	
Leverage	-0.534***	0.478***	1.000

*Note: *** $p < 0.01$. $N = 242$.*

Source: Study Data (2026)

The results indicate a negative and statistically significant correlation between asset quality and financial performance ($r = -0.602$, $p < 0.01$). This implies that an increase in non-performing loans, indicating deterioration in asset quality, is associated with a decline in ROA. Similarly, leverage had a negative and statistically significant correlation with financial performance ($r = -0.534$, $p < 0.01$), suggesting that increased reliance on debt financing is associated with lower profitability. The correlation between asset quality and leverage was positive and statistically significant ($r = 0.478$, $p < 0.01$).

Diagnostic Tests

Diagnostic tests were conducted to assess the suitability of the data for panel regression analysis. The tests included normality, multicollinearity, homoscedasticity, serial correlation and panel unit root tests.

Table 3: Normality Test

Variable	N	W Statistic	V	z	p-value
Regression Residuals	242	0.542	1.221	2.211	0.054

Source: Study Data (2026)

The Shapiro–Wilk test produced a p-value of 0.054, which is greater than the 0.05 significance level. Therefore, the null hypothesis of normality was not rejected, suggesting that the regression residuals did not significantly depart from normality.

Table 4: Multicollinearity Test

Variable	Tolerance	VIF
Asset Quality	0.701	1.427
Leverage	0.335	2.982

Source: Study Data (2026)

The Variance Inflation Factor (VIF) values for asset quality and leverage were 1.427 and 2.982, respectively. Both values were below the conventional threshold of 10, indicating that multicollinearity was not a serious concern among the selected explanatory variables in the reported model.

Table 5: Tests for Panel-Level Homoscedasticity

Test	Test Statistic	p-value	Decision
Breusch–Pagan Test	1.316	0.251	Fail to reject H_0
White Test	14.640	0.403	Fail to reject H_0

Source: Study Data (2026)

The Breusch–Pagan and White tests produced p-values of 0.251 and 0.403, respectively. Since both values exceeded 0.05, the null hypothesis of constant error variance was not rejected, suggesting that heteroscedasticity was not evident in the reported model.

Table 6: Wooldridge Test for Serial Correlation

Test	F-statistic	p-value
Wooldridge Test for First-Order Serial Correlation	1.411	0.248

Source: Study Data (2026)

The Wooldridge test produced an F-statistic of 1.411 and a p-value of 0.248. Since the p-value exceeded 0.05, the null hypothesis of no first-order serial correlation was not rejected.

Hausman Specification Test

The Hausman specification test was conducted to determine the appropriate panel estimation technique between the fixed-effects and random-effects models. The results are presented in Table 7.

Table 7: Hausman Test Summary

Test Statistic	Value
Chi-square (χ^2)	6.14
Degrees of Freedom	3
p-value	0.01589

Source: Study Data (2026)

The Hausman test produced a chi-square statistic of 6.14 and a p-value of 0.01589. Since the p-value was below the 0.05 significance level, the null hypothesis was rejected, supporting the use of the fixed-effects model over the random-effects model.

Panel Data Regression Analysis

The fixed-effects panel regression model was used to examine the effect of asset quality and leverage on the financial performance of Tier Three commercial banks in Kenya. The results from the original regression analysis are presented in Table 8.

Table 8: Fixed-Effects Panel Regression Results Predicting ROA

Variable	Coefficient	Std. Error	t-value	p-value
Asset Quality	-0.573	0.225	-2.547	0.011
Leverage	-0.006	0.002	-3.000	0.003
Constant	0.044	0.020	2.200	0.029
Model Statistics		**Value**		
Observations		242		
R-squared		0.505		
F-statistic		4.271		
Prob > F		0.000		

Source: Study Data (2026)

The regression results indicate that asset quality had a negative and statistically significant effect on the financial performance of Tier Three commercial banks in Kenya ($\beta = -0.573$, $p = 0.011$). This suggests that an increase in the non-performing loans ratio is associated with a decline in ROA. Higher non-performing loans increase loan-loss provisions, reduce interest income and expose banks to credit losses, thereby weakening profitability. The findings demonstrate the importance of effective loan portfolio management in sustaining bank performance.

Similarly, leverage had a negative and statistically significant effect on financial performance ($\beta = -0.006$, $p = 0.003$). This implies that increased leverage is associated with lower ROA. Higher reliance on borrowed funds exposes banks to increased financing obligations and financial risks, which may erode profitability, particularly where returns generated from financed assets are insufficient to cover associated costs.

Hypothesis Testing

The study tested two null hypotheses to establish the effects of asset quality and leverage on the financial performance of Tier Three commercial banks in Kenya. The results are presented in Table 9.

Table 9: Hypothesis Testing

Hypothesis	Variable	Coefficient	p-value	Decision
H_{01}: Asset quality has no significant effect on financial performance.	Asset Quality	-0.573	0.011	Reject H_{01}
H_{02}: Leverage has no significant effect on financial performance.	Leverage	-0.006	0.003	Reject H_{02}

Note: A null hypothesis is rejected when the p-value is less than 0.05.

The first null hypothesis stated that asset quality has no significant effect on the financial performance of Tier Three commercial banks in Kenya. The regression results produced a coefficient of -0.573 and a p-value of 0.011. Since the p-value was below 0.05, the null hypothesis was rejected. Therefore, asset quality had a statistically significant negative effect on financial performance.

The second null hypothesis stated that leverage has no significant effect on the financial performance of Tier Three commercial banks in Kenya. The results produced a coefficient of -0.006 and a p-value of 0.003. Since the p-value was below 0.05, the null hypothesis was rejected. This indicates that leverage had a statistically significant negative effect on financial performance.

Limitations of the Study

The study focused on asset quality and leverage as determinants of financial performance, potentially overlooking other factors such as macroeconomic conditions, management quality and regulatory changes that may also influence bank performance. The use of secondary data obtained from annual reports may have presented challenges relating to data accuracy, missing information and limited detail, which could affect the reliability of the findings. The study covered the period 2015–2025. Although this provided a basis for examining performance over time, the period may not fully capture emerging industry trends and the effects of recent regulatory and economic developments. Finally, the study focused exclusively on Tier Three commercial banks in Kenya. Consequently, the findings may not be generalisable to larger commercial banks or banking institutions operating in other countries.

Conclusions

The study concludes that asset quality and leverage significantly influence the financial performance of Tier Three commercial banks in Kenya.

Specifically, asset quality has a significant negative effect on financial performance. High levels of non-performing loans reduce profitability through increased loan loss provisions and reduced

interest income. Effective credit appraisal, loan monitoring and debt recovery practices are therefore essential for improving asset quality and enhancing bank profitability.

The study also concludes that leverage has a significant negative effect on financial performance. Excessive reliance on debt financing increases financial obligations, interest expenses and exposure to financial risk, thereby reducing profitability. Prudent leverage management is consequently important in maintaining financial stability and improving the financial performance of Tier Three commercial banks.

Recommendations

Based on the findings, Tier Three commercial banks should strengthen their credit risk management practices by improving credit appraisal procedures, enhancing loan monitoring systems and strengthening debt recovery mechanisms. These measures would help reduce non-performing loans, improve asset quality and enhance profitability.

The study further recommends that banks adopt prudent leverage management strategies that balance the benefits of debt financing against its associated costs and risks. Management should carefully assess borrowing decisions and ensure that debt obligations remain within sustainable levels to minimise financial exposure and improve profitability.

The Central Bank of Kenya and other relevant regulatory authorities should continue strengthening supervision and regulatory measures relating to credit risk management and bank leverage. Effective oversight would promote responsible lending and borrowing practices and contribute to the stability of the banking sector.

Recommendations for Further Research

Future studies should examine the influence of macroeconomic variables such as inflation, interest rates and exchange rates on the financial performance of commercial banks in Kenya.

Further research could compare the effects of asset quality and leverage on financial performance across Tier One, Tier Two and Tier Three commercial banks to establish whether the relationships differ according to bank size.

Future studies should also investigate the influence of corporate governance practices on the financial performance of commercial banks.

Researchers could further examine the long-term effects of digital banking and financial technology innovations on bank profitability.

Finally, similar studies could be conducted in other countries to facilitate comparisons across different banking environments.

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