# Selected Determinants of Financial Performance of Commercial Banks Listed in Nairobi Securities Exchange, Kenya

**Erickson Matundura, Oseko Deborah Kwamboka**

**University of Eldoret, Kenya**

## ABSTRACT

The main goal of every banking institution is to operate profitably in order to maintain stability and sustainable growth. An internal economic environment is viewed as critical drivers for bank performance. According to the financial stability report released in 2020, despite the resilience across the Kenyan banks, they were still experiencing increased non-performing loans affecting their profitability. The resolve of the study is to investigate the effect of bank specific determinants on financial performance of commercial banks listed in Nairobi Securities Exchange, Kenya. The study was anchored on inverted U hypothesis. Explanatory research design approach was adopted with panel secondary data spanning from the period 2011-2020. Regression analysis established that, bank size ( $\beta_1 = -3.90e^{-13}$ , $p = .97 > .05$) and debt ratio ($\beta_1 = 1.77, p = .042 < .05$) had a negative and significant effect on financial performance while bank capital ($\beta_1 = 1.56, p = .000 < .05$), had a positive and significant effect on financial performance. The study recommends that banks ought to adopt strategic asset management. Banks should prioritize efficient capital allocation and diversification. On debt ratio, the government should implement counter- cyclical policies to reduce risks during economic downturns.

## BACKGROUND OF THE STUDY

A large body of evidence in existing discourse on banking and economic development confirms that banks are in diverse contexts, associated with economic growth (Abbas & Masood, 2020b); (Meslier-Crouzille et al., 2012). In the United States (US) context for instance, it is stated that large commercial banks are adequately capitalized, and are able to adjust capital ratio faster (Abbas & Masood, 2020b). Data from the Philippines shows that commercial banks play a positive and substantial role in driving regional economic development (Meslier-Crouzille et al., 2012).

Kenya also features among nations whose economic development has in one way or the other been impacted by commercial banks. According to O. A. Mohamed (2020), banks in Kenya through short term loans and accounts deposit, impact economic development positively. However, long term loans have a negative impact on economic development. In an earlier study, Mwalungo (2011) demonstrated that bank credit correlated positively with Kenya's economic growth.

Financial performance is defined as a subjective measure that is intended to show how well an entity utilizes assets to generate revenues (Dao, 2020).

Several factors have been linked with financial success of commercial banks in existing literature. Dao (2020) for instance, argue that bank specific characteristics have a significant impact on banks market power. In India, raising non-performing assets (NPAs) has been identified as a major challenge to the performance of banks.

### Global Perspective

Commercial banks are recognized as crucial to economic growth globally with both bank-specific and macroeconomic factors playing pivotal roles in shaping their financial performance. Studies in the U.S. demonstrate that capitalized banks adjust faster to changes in capital requirements enhancing resilience during

economic downturns (Abbas & Masood, 2020a). Scientific search across Europe indicates that competition among commercial banks fosters financial development and hence increases economic growth and development (Četković, 2015).

## African Perspective

In Africa, the financial performance of commercial banks plays a key role in promoting economic growth and development. In Nigeria, banking sector development has a long-term positive impact on economic growth with bank credit to the production sector being a significant driver (Bernard Azolibe, 2022). In Tanzania and Rwanda, bank credit supports firm growth, which in turn drives economic development (Mukasafari, 2022) . In Tunisia bank size and efficiency along with macroeconomic drivers such as inflation and lending rate, influence the financial performance of trade (Elkhaldi et al., 2024).

## Kenyan Overview

In Kenya, commercial banks listed on the Nairobi Securities Exchange (NSE) play a vital role in economic growth with both bank specific factors like credit risk and liquidity and macroeconomic drivers affecting banking financial performance. Studies indicate that short-term loans positively impact economic growth and development, while long-term loans have a negative effect (Mohamed, 2020). The rise of non-performing (NPL) loans poses a critical threat to bank stability with the NPL ratio increasing from 12.0% to 13.1% by mid-2020 in Kenya (F. A. Mohamed, 2020).

## Statement of the Problem

Commercial banks play a major role in facilitating productive economic activity. Through these banks, funds flow from households to firms and companies.

According to the Kenya Financial Stability report released in October 2020, the banking sector has remained basically resilient in the period ranging between, January 2019 to June 2020 (Financial Sector Regulators, 2021). The report indicates that in the said period, the banking industry registered a growth in assets of 9.6 percent and a growth in deposits of 9.1 percent. In the same period, the industry's total net assets grew from Kshs. 4832.4 billion in December 2019 to Kshs. 5,207.82 billion in June 2020. Meanwhile, customer deposits increased from Kshs. 3554.4 billion in December 2019 to Kshs. 3903.6 billion in June 2020. During the same period, the industry registered high capital levels in relation to assets. For example, the report indicates that as at the end of June 2020, the Core Capital to Total Risk Weighted Assets (TRWA) and Total Capital to TRWA ratios were 16.4 percent and 18.5percent respectively. These ratios as at December, 2019 were 16.8 percent and 18.8 percent respectively (Financial Sector Regulators, 2021).

Although Kenya's banking sector demonstrated resilience during the specified period, the growing issue of non-performing loans has become a threat to profitability and overall financial stability. The Kenya Financial Stability Report, 2020, highlights a concerning deterioration in asset quality, with NPL ratios increasing from 12.0 percent to 13.1 percent by June 2020. This upward trend in NPLs signals a deeper vulnerability within the banking system, raising questions about the capability of banks to withstand future economic shocks.

## Specific Objectives

1. To investigate the effect of bank size on the financial performance of commercial banks listed in Nairobi Securities Exchange, Kenya.

2. To analyze the effect of bank capital on the financial performance of commercial banks listed in Nairobi Securities Exchange, Kenya.

3. To investigate the effect of bank debt ratio on the financial performance of commercial banks listed in Nairobi Securities Exchange, Kenya.

## Significance of the Study

This study highlights the persistent challenge of financial stability among Kenyan commercial banks influenced by diverse bank-specific and macroeconomic factors. Despite previous research, gaps remain in comprehensively analyzing these factors' impacts on performance. The findings contribute to the discourse on banking challenges and offer a foundation for future empirical studies.

## Scope of the Study

The academic scope of this study was selected bank specific and macro factors that influence financial performance of nine commercial banks listed in Nairobi Securities Exchange (NSE), Kenya over the period of the study 2011-2020.

# LITERATURE REVIEW

Several key performance indicators have been proposed to assess the financial performance of banks. According to (Bennett & Obalade, 2023) financial performance indicators represent metrics used across organizations to track, measure, and analyze a company's financial health. Daryanto and Rizki (2021) categorizes the indicators into profitability, liquidity, solvency, efficiency and valuation; and posits that an understanding of such metrics is a sure way of gauging the financial performance of a business entity. Financial performance is typically evaluated through financial statement analysis, with documents such as the balance sheet, income statement, cash flow statement, and annual report being commonly used for reference (Nariswari & Nugraha, 2020).

Basing on assertions by Nariswari and Nugraha (2020), financial performance approaches that are often monitored, and which are typically found in financial statements includes; gross profit margin (GPM), net profit margin (NPM), working capital (WC), current ratio (CR), quick ratio (QE), leverage, debt to equity ratio (DER), inventory turn-over, total asset turn-over, return on equity (ROE), return on assets (ROA), operating cashflow, and seasonality.

Anum (2018) define gross profit margin (GPM) as a measure of the surplus percentage of sales remaining after the company has paid for the cost of goods. They aver that a high GPM implies a relatively lower cost of selling goods, and portends well for the company in question

Several factors that impact on the financial performance have been identified by the large body of literature globally. From the Indonesian context, net interest margin being a measure of capital strength and asset quality, has been identified as a positive and significant determinant ($\beta$=0.342, p=0.001) of public commercial banks financial performance measured through ROA. In Bahrain, it has been shown that the capital adequacy ratio is a significant negative determinant ($\beta$=-0.413, p=0.048) of commercial banks financial performance measured using ROE (Pinto et al, 2017). From the Nepalese context, net interest margin ($\beta$=0.464, p=0.033), capital adequacy ratio ($\beta$=-1.223, p=0.011) and interest expenses to total loans ($\beta$=-0.561, p=0.017) have been associated with the financial performance of commercial banks measured through ROA and return on equity (Jha & Hui, 2012).

**Transaction Cost Economic Theory**

This theory is associated with Williamson who postulated that the theory gives a prediction when transactions are likely to occur in organizations or market, and also when new organizations are likely to come on board (Williamson, 2014).

The study postulates that internal transaction costs that may increase from activities such as bargaining and decision making, policing and enforcement, and searching for information among others, are likely to inform decisions to internalize such activities or not. Williamson argues that through the transaction cost theory, governance of forms of hybrids, markets, or hierarchies can be predicted (Williamson, 2014). Consequently, activities ought to be internalized depending on the transaction costs that they attract.

# RESEARCH METHODOLOGY

## Study Area

The study area in this context pertains to the commercial banking sector in Kenya, and it is essential to consider the commercial banks listed on the Nairobi Securities Exchange with available data for the selected variables.

## Research Design

In this investigation, explanatory research design was employed. This design was selected because it involves the collection of quantitative data on the same variable over an extended duration to explain causation effect (Matundura, 2021) . Given that the study revolves around a panel dataset spanning ten years, from 2011 to 2020 on nexus between bank specific factor and financial performance of nine commercial banks listed in Nairobi Securities Exchange, Kenya.

## Sources of Data

This research used data sourced from Central Bank, World Bank and annual financial statements of nine commercial banks listed in Nairobi Securities Exchange, Kenya.

**Table 3.1 Variable measurement**

| Vector | Variable | Measure |
|---|---|---|
| Bank Specific Factors | Tax rate Proxy Effective tax rate used (EFFR) | EFFR = Total Tax ÷ Earnings Before Taxes |
| | Bank Size (BSIZE) | Total bank assets |
| | Debt ratio (DBTR) | Total liabilities / Total assets |
| | Bank Capital (CAP) | Net Profit / ½ (Beginning equity + Ending equity) |
| Financial performance | Return on Equity (ROE) | Net Profit / ½ (Beginning equity + Ending equity) |

Source: Researcher (2022).

## Model Specification

Then the model shown in equation 3.1 was employed.

$$ROE_{it}=\alpha_i+\beta_1 C_{it}+X_{it}+ \varepsilon_{it} \quad\text{..............................................................................} (3.1)$$

Where ROEit is the return on equity for bank i-year t

$C_{it}$ is the control variable for bank i-year t where control relates to intervening variable

$X_{it}$ is the vector of explanatory variables representing each of the three independent variables, for bank i-year t

$\varepsilon_{it}$ is the within bank error term

$\alpha_i$ (i=1…. n) is the unknown intercept for each bank

$\beta_k$ (k=1, 2, n) are the coefficients for the control variable and respective determinants under each independent variable.

The Hausman test will determine if fixed or random model will be used.

## Hausman Test

The Hausman test, introduced by Jerry Hausman in 1978, is a statistical test used in econometrics to compare two different estimators for model parameters. It assesses whether the Ordinary Least Squares (OLS) estimator, which assumes no endogeneity, is more efficient and consistent than the Instrumental Variables (IV) estimator, which corrects for endogeneity. The test's null hypothesis is that both estimators are consistent, while the alternative hypothesis suggests that one of them is inconsistent.

## Stationarity Test

Stationarity in panel data relates to means and standards deviations remaining constant over a given time interval. For panel data stationarity allows for forecasting to be done, paving way for estimation of future occurrences (da Silva et al., 2023). Unit roots was tested using Levin–Lin–Chu and Im-Pesaran-Shin test. Under the Levin-Lin-Chu approach, it is hypothesized that panels have unit root, and therefore a significant t-statistic tested at the 5% level of significance will imply lack of unit root.

## Diagnostic Tests

## Heteroskedasticity Test

The Breusch–Pagan / Cook–Weisberg test was performed to test for heteroskedasticity. Sheather (2009) contend that heteroskedasticity occurs when conditional variances of residuals around the fitted line of regression are not constant, resulting to incorrect perceptions of standard errors associated with the significance of the tests.

## Serial Correlation

The Lagrange–multiplier (LM) test was employed to test serial correlation. Serial correlation was tested at lag order. Serial correlation is also known as autocorrelation or independence of panels and indicates lack of correlation among residuals of panels adjacent to each other (Hong, 2006).

## Multicollinearity Test

Multicollinearity occurs when two or more independent variables in a regression model are highly correlated leading to unreliable estimates of the coefficients. To detect multicollinearity, Variance Inflation Factor (VIF) is widely used, where a VIF value greater than 10 generally indicates significant multicollinearity and less than 10 no multicollinearity.

## Testing for Normality

Normality of residuals in this study will be tested using the Jarque–Bera test, which is deemed to be suitable in testing departures away from Gaussianity Under this test, a significant Jarque-Bera Chi$^2$ statistic will indicate lack of Gaussianity (Alejo et al., 2015).

# DATA ANALYSIS AND RESULTS

## Descriptive Statistics

The dataset in table 4.1 presents key financial metrics for a sample of 90 observations. The Return on Equity (ROE) has a mean of 0.1674, with variability (standard deviation of 0.1418), ranging from -0.0465 to 1.2254, indicating a broad spread in profitability. Bank size (BSIZ) had a mean of approximately 845 million shillings and a large standard deviation (2.06 billion), reflecting substantial differences in the sizes of the banks, from 165,994 to 13.7 billion. Capital (CAP) had a mean of 0.0276 and shows some variability with a standard deviation of 0.0433 ranging from -0.0257 to 0.381 which may suggest differences in capital adequacy across the sample. The debt ratio (DBTR) had a mean of 0.8733, with a standard deviation of 0.6494, indicating considerable variation in the leverage across banks ranging from 0.0124 to 4.5002.

**Table 4. 1: Descriptive Statistics**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| ROE | 90 | .1673799 | .1417762 | -.046538 | 1.225372 |
| BSIZ | 90 | 8.45e+08 | 2.06e+09 | 165994 | 1.37e+10 |
| CAP | 90 | .0276218 | .0432959 | -.0256914 | 0.381 |
| DBTR | 90 | .8733481 | .6494497 | .0123888 | 4.500156 |

**Source: Field data (2024)**

**Stationarity Test**

This was done to ensure regressed data was stationary using Levin Lin Chu

**Levin Lin Chu Results**

From the results of Levin Lin Chu test presented in Table 4.2 it is evident that the rate of return on equity, bank size, bank capital and bank debt ratio were stationarity after undergoing the first differencing process.

**Table 4. 2: Levin-Lin-Chu Unit Root Test at First Difference**

| Levin-Lin-Chu Test | | | |
|---|---|---|---|
| **Individual Intercept and Trend Included** | | | |
| **Variables** | **Adjusted statistic** | **p-value** | **Remark** |
| ROE | -4.7406 | 0.0000 | I (I) |
| BSIZE | -5.3838 | 0.0000 | I (I) |
| CAP | -6.4418 | 0.0000 | I (I) |
| DEBTR | -7.2277 | 0.0000 | I (I) |

**Source: Field data (2022)**

**Diagnostic Tests Results**

This was done to eliminate the possibilities of spurious regression.

**Normality Result**

Table 4.3 shows that the chi (2) p value was greater than 0.05, indicating that the null hypothesis was accepted i.e. data was normally distributed.

**Table 4. 3: Jarque-Bera Test for Normality**

| | |
|---|---|
| Jarque-Bera    normality test: | 7.38 Chi (2), p=.071 |
| Jarque-Bera    test Ho: Data is normally distributed: | |

**Source (Field data, 2024)**

## Multicollinearity Result

Table 4.4 displays the results of a multicollinearity test. The average VIF value observed was 1.14 lower than 10 suggesting the absence of significant multicollinearity.

**Table 4.4: Test for Multicollinearity**

| Variable | VIF |
|---|---|
| BSIZE | 1.20 |
| CAP | 1.06 |
| DEBTR | 1.16 |
| **Mean VIF** | **1.14** |

**Source: Field data (2022).**

## Serial Correlation Result

Was investigated using the Breusch and Pagan Lagrangian multiplier test. The results in table 4.7 indicate no serial autocorrelation was accepted.

**Table 4. 5: Serial Correlation Results**

| Var | d=sqrt(var) | Prob > Chi2 |
|---|---|---|
| 0.0101719 | 1.320278 | 1 |

**Source: Field data (2024)**

## Model Selection Using Hausman Test

The selection between these models can be determined through the application of the Hausman test.

The results presented in Table 4.6 are for Hausman test indicated that value for chi-square statistic is 1.73 and its probability is .0000>.05. The null hypothesis was accepted and hence random effects regression model were appropriate.

**Table 4. 6: Hausman Test Results**

| Variables | Coefficients | | (b-B) | Sqrt (diag (V_b-V_B) |
|---|---|---|---|---|
| | (b) | (B) | (b-B) | Sqrt (diag (V_b-V_B) |
| | Fe | Re | Difference | S. E |
| BSIZE | -3.90e-13 | -3.75e-12 | 3.36e-12 | 8.08e-12 |
| CAP | 1.557947 | 1.580887 | -.0229394 | .0687163 |
| DBTR | -.0591454 | -.0417175 | -.0174279 | .0157785 |
| Test: H0: difference in coefficients not systematic | | | | |
| Chi2(4) = (b-B)'[V_b-V_B) ^ (-1)] (b-B)    =   1.73 | | | | |
| Prob>Chi2= 0.4214 | | | | |

**Source: Field data (2024).**

## Random Effects Model Estimation

The study regressed fixed effect model as depicted in table 4.7

**Table 4. 7: Fixed Effect Results**

| R-sq within = 0.3205 | Observations per group: | | Minimum        = 9 | |
|---|---|---|---|---|
| | F (3,77) | | | |
| Corr = -0.1665 | Prob > F | | = 0.0000 | |
| **LNGCP** | **Coefficient** | **Std. Error** | **T** | **P > \|z\|** |
| BSIZE | -3.90e-13 | 1.15e-11 | -0.03 | 0.973 |
| CAP | 1.557947 | .3103609 | 5.02 | 0.000 |
| DBTR | -.0591454 | .0285431 | -2.07 | 0.042 |
| CONS | .1766888 | .0319655 | 5.53 | 0.000 |

**Source (Field data, 2024)**

The regression results indicate that bank size (BSIZE) measured by total bank assets has negligible effect on the rate of return on equity (ROE). The coefficient is -3.90e-13, which is effectively zero shows no meaningful effect. The p-value of 0.973>0.05 well shows the relationship between bank size and ROE is statistically insignificant. Thus, bank size does not play a significant role in determining ROE within this model.

Bank capital (CAP) shows a positive and substantial impact on ROE. The coefficient is 1.557947 implying that a unit increase in bank capital leads to an increase of approximately 1.56 units in ROE. The t-value of 5.02 is high, indicating a strong relationship. The p-value is 0.000 <0.05 confirms that this relationship is statistically significant. These findings suggest that well capitalized banks tend to achieve better performance as measured by ROE.

The debt ratio (DBTR) demonstrates a negative relationship with ROE. The coefficient is -0.0591454 indicates that an increase in the debt ratio reduces ROE by approximately 0.059 units. The p-value of 0.042<0.05 confirms significant effect This suggests that a higher reliance on debt diminishes bank performance, as indicated by a lower ROE.

**$H_{01}$: Bank size has no significant effect on the financial performance of commercial banks listed in the Nairobi Securities Exchange, Kenya**

The first hypothesis posited that bank size, measured by total assets, has no significant effect on the rate of return on equity among commercial banks listed on the Nairobi Securities Exchange. The regression results for this study however showed statistically insignificant relationship between bank size and ROE ($\beta$ = -3.90e-13, p = 0.973 > 0.05). As such, the null hypothesis was not rejected. This indicates that bank size, contrary to expectations, does not significantly influence the financial performance of listed banks in Kenya.

**These findings diverge from studies such as $H_{01}$: Bank size has no significant effect on the financial performance of commercial banks listed in the Nairobi Securities Exchange, Kenya**

The first hypothesis posited that bank size, measured by total assets, has no significant effect on the rate of return on equity (ROE) among commercial banks listed on the Nairobi Securities Exchange (NSE). The regression results for this study, however, showed a negligible and statistically insignificant relationship between bank size and ROE ($\beta$ = -3.90e-13, p = 0.973 > 0.05). As such, the null hypothesis was not rejected. This indicates that bank size, contrary to expectations, does not significantly influence the financial performance of listed banks in Kenya.

These findings diverge from studies such as Kamande (2017), which emphasized the importance of total assets as a determinant of financial performance in Kenyan banks. Similarly the results contrast with broader global research Berger and Mester (2003) which linked larger asset bases to advantages like economies of scale, risk diversification, and stronger market positioning. The lack of significance in this study may reflect contextual differences in the Kenyan banking sector where other factors like regulatory constraints or asset quality may dilute the direct impact of bank size on ROE.

### $H_{01}$: Bank Capital Has No Significant Effect on the Financial Performance of Commercial Banks Listed in Nairobi Securities Exchange, Kenya

The second hypothesis tested whether bank capital has a significant impact on ROE among commercial banks listed in the NSE. The results revealed a positive and statistically significant relationship with a coefficient of 1.557947 and a p-value of 0.000. These findings lead to the rejection of the null hypothesis at the 5% significance level, indicating that bank capital significantly enhances ROE.

This relationship highlights the importance of sufficient bank capital which bolsters a bank's ability to absorb losses, enhances lending capacity and inspires investor confidence. These results are consistent with the findings of Saleh et al. (2020) the study demonstrated that higher capital levels improve profitability by reducing risk exposure. Similarly, Abbas and Masood (2020a) observed that increased capital significantly boosts profitability in both developed and emerging markets.

### $H_{03}$: Bank debt has no significant effect on the financial performance of commercial banks listed in the Nairobi Securities Exchange, Kenya.

The third hypothesis tested the relationship between bank debt as measured by the debt ratio. The regression results indicated a negative and statistically significant relationship ($\beta$ = -0.0591454, p = 0.042 < 0.05). Thus, the null hypothesis was rejected suggesting that higher debt ratios negatively affect financial performance among listed banks. This finding implies that excessive reliance on debt may constrain profitability, likely due to higher interest obligations and increased financial risk.

These results corroborate findings of Bhattacharya et al. (2023) which emphasize the detrimental effects of excessive debt on bank profitability. The findings also align with research from emerging markets, where high leverage has been linked to reduced performance metrics. This underlines the need for banks to maintain prudent debt management strategies, balancing leverage with capital adequacy to sustain financial health and profitability in the competitive banking landscape.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

This study examined the relationship between bank size, capital, and debt ratio on the financial performance (ROE) of commercial banks listed on the Nairobi Securities Exchange (NSE). The results showed that;

**Bank size** has no significant effect on ROE, suggesting that total assets alone do not drive bank performance.

**Bank capital** positively and significantly affects ROE, indicating that well-capitalized banks achieve higher profitability.

**Debt ratio** negatively and significantly impacts ROE, implying that high leverage reduces bank performance.

### Recommendations

The study proffers the following policy recommendations;

Enhance Asset Utilization and Efficiency. Banks in Kenya should focus on optimizing the quality and use of their assets to improve financial performance. This includes reducing non-performing loans, diversifying investment portfolios, and leveraging technology for operational efficiency. Regulatory bodies should also encourage innovations that enhance asset productivity.

Strengthen Capital Adequacy and Resilience. To improve financial performance, regulators like the Central Bank of Kenya should enforce higher capital adequacy standards aligned with international frameworks such as Basel III. Banks should prioritize retaining earnings to build stronger capital buffers, ensuring resilience against financial shocks while enhancing profitability.

Adopt Prudent Debt and Risk Management Practices. Banks should manage leverage ratios sustainably to avoid excessive reliance on debt while diversifying funding sources. Adopting advanced risk management framework like regular stress testing and adequate internal controls can mitigate financial risks and maintain stability. Regulators can support this by incentivizing compliance and providing training to banking executives.

# REFERENCES

1. Abbas, F., & Masood, O. (2020a). How banks adjust capital ratios: The most recent empirical facts. Quantitative Finance and Economics, 4(3), 412.
2. Abbas, F., & Masood, O. (2020b). How do large commercial banks adjust capital ratios: empirical evidence from the US? Economic Research-Ekonomska Istraživanja, 33(1), 1849-1866.
3. Alejo, J., Galvao, A., Montes-Rojas, G., & Sosa-Escudero, W. (2015). Tests for normality in linear panel-data models. The Stata Journal, 15(3), 822-832.
4. Anum, F. (2018). Analysis Factors of Affecting Capital Structure with Firm Size as Moderating Variable in Consumer Goods Companies Listed on BEI. International Journal of Public Budgeting, Accounting and Finance, 20(7), 98-106.
5. Bennett, N., & Obalade, A. (2023). The Effect of Corporate Social Responsibility on Bank Performance in South Africa. Journal of Accounting & Management (2284-9459), 13(1).
6. Berger, A. N., & Mester, L. J. (2003). Explaining the dramatic changes in performance of US banks: technological change, deregulation, and dynamic changes in competition. Journal of financial intermediation, 12(1), 57-95.
7. Bernard Azolibe, C. (2022). Banking sector intermediation development and economic growth: Evidence from Nigeria. Journal of African Business, 23(3), 757-774.
8. Bhattacharya, T., Das, S., & Basu, R. (2023). Financial innovation and bank performance: an empirical analysis of Indian commercial banks. International Journal of Business Innovation and Research, 31(4), 515-541.
9. Četković, P. (2015). The role of banks in economic development in the former SFR Yugoslavia.
10. da Silva, B. C., Virgílio, R. M., Nogueira, L. A. H., Silva, P. d. N., Passos, F. O., & Welerson, C. C. (2023). Assessment of Climate Change Impact on Hydropower Generation: A Case Study for Três Marias Power Plant in Brazil. Climate, 11(10), 201.
11. Dao, B. (2020). Determinants of profitability in commercial banks in Vietnam, Malaysia and Thailand. Journal of Asian Finance, Economics and Business, 7(4), 133-143.
12. Daryanto, W. M., & Rizki, M. I. (2021). Financial performance analysis of construction company before and during COVID-19 pandemic in Indonesia. International Journal of Business, Economics and Law, 24(4), 99-108.
13. Elkhaldi, A. H., Naamene, M., & Chikhaoui, M. (2024). Examining the impact of multidimensional economic factors on performance: Evidence from the Tunisian insurance companies. Journal of Infrastructure, Policy and Development, 8(7), 4840.
14. Hong, Y. (2006). Serial correlation and serial dependence. In Macroeconometrics and Time Series Analysis (pp. 227-244). Springer.
15. Jha, S., & Hui, X. (2012). A comparison of financial performance of commercial banks: A case study of Nepal. African journal of business management, 6(25), 7601.
16. Kamande, E. G. (2017). The effect of bank specific factors on financial performance of commercial banks in Kenya
17. Matundura, E. (2021). Selected Macroeconomic Determinants of Economic Growth in Kenya: A Co-integration Approach. The International Journal of Business & Management, 9(10).
18. Meslier-Crouzille, C., Nys, E., & Sauviat, A. (2012). Contribution of rural banks to regional economic development: Evidence from the Philippines. Regional Studies, 46(6), 775-791.

19. Mohamed, F. A. (2020). Effect of Financial Risk on Performance of Non-financial Firms Listed at Nairobi Securities Exchange University of Nairobi].

20. Mohamed, O. A. (2020). The Role Of Commercial Banks In economic Development In Kenya University of Nairobi].

21. Mukasafari, C. (2022). Influence of Information Asymmetry Management on Lending Performance of Commercial Banks in Rwanda JKUAT-COHRED].

22. Mwalungo, M. K. (2011). The Effect of Credit on Economic Growth in Kenya

23. Nariswari, T. N., & Nugraha, N. M. (2020). Profit growth: impact of net profit margin, gross profit margin and total assests turnover. International Journal of Finance & Banking Studies (2147-4486), 9(4), 87-96.

24. Saleh, I., Abu Afifa, M., & Alsufy, F. (2020). Does earnings quality affect companies' performance? New evidence from the Jordanian market. The Journal of Asian Finance, Economics and Business, 7(11), 33-43.

25. Sheather, S. (2009). A modern approach to regression with R. Springer Science & Business Media.

26. Williamson, O. E. (2014). Interdisciplinary social science: The transaction cost economics project. In Economics for the Curious: Inside the Minds of 12 Nobel Laureates (pp. 123-140). Springer.