



Effects of Bank-Specific Factor on Financial Performance of Commercial Banks in Rwanda: A Case of Bank of Kigali

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Abstract: This study examined the effect of Bank-Specific Factor on the financial performance of Bank of Kigali. A descriptive and explanatory research design was adopted using secondary data obtained from audited financial statements and quarterly reports covering the period from 2011 to 2025. A census approach was used, resulting in 60 quarterly observations. Capital adequacy was measured using the Capital Adequacy Ratio (CAR), while financial performance was assessed using Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). Data were analyzed using descriptive statistics, Pearson correlation analysis, and regression analysis to determine the relationship between capital adequacy and financial performance. Pearson correlation analysis revealed a positive and moderately strong relationship between capital adequacy and financial performance ($r = 0.621, p < 0.01$). Regression analysis further showed that capital adequacy had a positive and statistically significant effect on financial performance ($\beta = 0.621, p < 0.001$), explaining 38.6% of the variation in financial performance ($R^2 = 0.386$). The ANOVA results confirmed that the regression model was statistically significant ($F = 39.038, p < 0.001$). The study concludes that adequate and efficiently utilized capital is important for improving the financial performance of Bank of Kigali. It recommends strengthening capital planning and monitoring, maintaining adequate capital levels, ensuring productive utilization of available capital, and aligning capital management with regulatory requirements

Keywords: Bank-Specific Factors, Capital Adequacy, Financial Performance, Bank of Kigali, Commercial Banks, Rwanda.

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1. Introduction

The financial performance of commercial banks is a critical component of national economic stability and growth. Banks influence investment dynamics, liquidity circumstances, and the overall resilience of the financial system by mobilizing savings, distributing capital, facilitating payments, and managing financial risks ((Otayokhe et al., 2025). As a result, changes in bank performance affect not only shareholders and depositors, but also macroeconomic stability and development

outcomes. A large body of banking and finance literature shows that financial performance is influenced by several internal and external factors. Among the internal factors, capital adequacy is particularly important because it determines the capacity of a bank to absorb unexpected losses, maintain financial stability, support lending activities, and sustain depositor confidence. Adequate capitalization may therefore contribute to improved financial performance, although excessive capital that is not efficiently utilized may limit funds available for income-generating activities. Understanding the relationship between capital adequacy and financial

performance is therefore important for bank management, regulators, investors, and other stakeholders (Ozili, 2025).

Globally, banking systems have undergone major structural transformations as a result of regulatory change, technological innovation, and intensified competition. Following the 2008 global financial crisis, international regulatory norms, particularly the Basel III framework, refocused supervisory efforts on higher capitalization, increased liquidity buffers, and better risk governance. These reforms forced banks to navigate a complicated trade-off between profitability and stability. Simultaneously, rapid digitalization and the emergence of financial technology (FinTech) have altered traditional banking practices, resulting in efficiency gains but presenting new operational, cybersecurity, and strategic risks. Empirical research demonstrates that, while technology adoption can improve bank performance in well-regulated environments, exposure to technology-driven shocks may aggravate financial vulnerability in areas with weak governance and risk management (Mabe & Simo-Kengne, 2025).

In Sub-Saharan Africa, bank performance reflects the combination of global influences with regional structural restrictions (Matundura & Kwamboka, 2025). Internal bank-specific determinants continue to be the primary drivers of profitability, interacting dynamically with macroeconomic conditions such as GDP growth, inflation, and interest rate volatility, as well as regulatory effectiveness and governance quality (Otayokhe et al., 2025). During periods of strong economic growth, credit quality improves and non-performing loans decrease, whereas weak regulatory enforcement and institutional fragility increase exposure to credit, liquidity, and operational risks. Evidence from East Africa, particularly Kenya and Tanzania, confirms that bank size, capital structure, asset quality, and operational efficiency have a significant impact on performance indicators such as ROA and ROE; however, marked heterogeneity across institutions limits the generalizability of sector-wide conclusions (Traore Mulbah et al., 2024).

Against this regional environment, Rwanda's banking sector provides a unique and analytically rich perspective. Rwanda has implemented substantial financial sector reforms during the last two decades under the oversight of the National Bank of Rwanda (BNR) with the goal of enhancing prudential regulation, boosting financial deepening, and accelerating technological adoption. These reforms have brought local banking regulation in line with worldwide best practices in capital adequacy, risk management, and governance, helping to increase sectoral stability and resilience. Nonetheless, persistent challenges; such as credit risk exposure, operational inefficiencies, cost pressures from digital transformation, and sensitivity to macroeconomic fluctuations; continue to affect bank

performance. Importantly, much of the available empirical research on Rwandan banks focusses solely on quantitative financial ratios, providing no insight into the institutional, managerial, and operational mechanisms that originate and sustain performance outcomes.

In this setting, Bank of Kigali (BK) has a unique strategic position. BK, Rwanda's largest and most systemically important commercial bank, commands a dominant share of banking assets, deposits, and loan provision, and serves as a primary transmission channel for financial intermediation and monetary policy. As a result, BK's performance has implications for systemic stability and economic development in addition to firm-level profits. Although previous studies have examined the relationship between capital adequacy and bank financial performance, limited evidence specifically explains how capital adequacy influences the financial performance of Bank of Kigali over an extended period. Existing studies have largely focused on multiple commercial banks, regional banking sectors, or broader measures of financial sustainability, leaving an institution-specific gap regarding Bank of Kigali and its financial performance measured through Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). (Kalisa and Twesigye (2022).

1.1 Problem Statement

Commercial banks play an important role in Rwanda's economic development by mobilizing savings, providing credit, facilitating investment, and supporting financial stability. Capital adequacy is particularly important because it enables banks to absorb unexpected losses, maintain depositor confidence, and continue lending during periods of financial stress. Rwanda's banking sector has remained well capitalized, with the aggregate Capital Adequacy Ratio (CAR) reaching 21.6% in June 2025 against the regulatory minimum of 15%. Despite this strong capital position, variations in bank profitability remain a concern, making it important to understand whether adequate capitalization contributes to improved financial performance (National Bank of Rwanda [BNR], 2025).

Bank of Kigali (BK) is an important institution in Rwanda's banking sector, and its financial performance has implications for shareholders, depositors, and the wider financial system. Although adequate capital can strengthen financial stability and support lending activities, excessive or inefficiently utilized capital may reduce resources available for income-generating activities. Previous evidence has generally reported a positive relationship between capital adequacy and bank performance. Adusei and Elliott (2021) found that capital adequacy positively influenced financial performance among commercial

banks in Sub-Saharan Africa, while Githaiga and Kabiru (2022) reported a positive relationship between capital adequacy and profitability among commercial banks in East Africa. However, the extent to which this relationship applies specifically to Bank of Kigali remains insufficiently established.

Existing studies have largely focused on groups of commercial banks, regional banking systems, or broader measures of profitability and financial sustainability. Limited empirical evidence specifically examines Bank of Kigali using an extended period of quarterly financial data and financial performance measured through Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). This creates an institution-specific gap that the present study seeks to address. Therefore, the study examines the effect of capital adequacy on the financial performance of Bank of Kigali, Rwanda, using quarterly financial data covering the period 2011–2025 (Ntaganira & Irechukwu, 2022; Ekwa Mezui, 2026).

This study sought to achieve the following research objective:

To examine the effect of capital adequacy on the financial performance of Bank of Kigali.

2.1 Literature Review

This section reviews the literature related to bank-specific factors and financial performance of commercial banks. It presents key concepts and empirical perspectives on the internal factors that can influence the profitability, efficiency, and financial stability of banks, with particular attention to the factors relevant to the study of Bank of Kigali.

2.1.1 Bank Specific Factors

Bank-specific factors refer to the internal financial, operational, and managerial characteristics of a commercial bank that influence its risk exposure, efficiency, profitability, and overall financial performance (Dhodary & Rajbanshi, 2025). These factors originate largely from decisions and conditions within the bank and include capital adequacy, asset quality, management efficiency, and liquidity. Recent empirical evidence identifies these variables as important internal determinants of bank performance, with capital adequacy and effective management supporting financial performance, while poor asset quality, cost inefficiency, and inappropriate liquidity positions may weaken profitability (; Owusu et al., 2026). In the present study, bank-specific factors comprise capital adequacy, asset quality, management efficiency, and liquidity. Capital

adequacy is measured using the Capital Adequacy Ratio (CAR), asset quality using the Non-Performing Loan Ratio (NPLR), management efficiency using the Cost-to-Income Ratio (CIR), and liquidity using the liquidity ratio (Dhodary, 2025).

Bank-specific factors influence financial performance by determining how effectively a bank maintains capital buffers, manages its loan portfolio, controls operating costs, and meets its financial obligations. Recent evidence shows that capital adequacy can enhance bank performance, whereas non-performing loans and cost inefficiency can reduce performance, highlighting the importance of coordinated capital, credit-risk, efficiency, and liquidity management (Owusu et al., 2026). In Rwanda, the importance of these factors is also reflected in the current condition of the banking sector. The National Bank of Rwanda reported that the banking sector remained well capitalized, with the total Capital Adequacy Ratio reaching 21.6% in June 2025 against a regulatory minimum of 15%, while liquidity indicators also remained above the required levels. These conditions demonstrate the relevance of capital strength, asset quality, management efficiency, and liquidity in maintaining banking-sector stability and profitability. Therefore, this study examines these bank-specific factors as explanatory variables of Bank of Kigali's financial performance, measured through ROA, ROE, and NIM ((National Bank of Rwanda [BNR], 2025).

2.1.2 Capital adequacy on the financial performance of Bank

Capital adequacy refers to the ability of a bank to maintain sufficient regulatory capital relative to its risk-weighted assets to absorb unexpected losses and remain financially sound. The Capital Adequacy Ratio (CAR) is commonly used to assess whether a bank maintains sufficient capital in relation to its risk exposure (Basel Committee on Banking Supervision [BCBS], 2019). Adequate capital can strengthen a bank's resilience, support lending activities, and enhance depositor confidence, which may contribute to improved financial performance. However, excessive capital that is not efficiently utilized may reduce funds available for income-generating activities and potentially affect profitability.

Capital adequacy can influence financial performance because well-capitalized banks are better positioned to absorb unexpected losses, maintain depositor confidence, and continue lending and investment activities during periods of financial stress. The Basel Committee on Banking Supervision (2019) notes that regulatory capital is designed to absorb losses and reduce the probability and impact of bank failure. A strong capital position may

therefore support profitability by allowing banks to undertake lending activities while maintaining an adequate financial buffer against risks. However, holding excessive capital may also reduce the amount of funds available for income-generating activities if the additional capital is not efficiently deployed. Therefore, the relationship between capital adequacy and financial performance may depend on how effectively management balances financial resilience with the productive use of capital.

2.1.3 Financial Performance

Financial performance refers to the extent to which a bank effectively generates profits, utilizes its financial resources, manages its operations, and creates value for its shareholders while maintaining financial stability. Saunders and Cornett (2022) define financial performance in banking in terms of the institution's ability to generate returns from its assets and equity while efficiently managing its financial resources. Financial performance is important because it provides an indication of the profitability, efficiency, and overall financial health of a commercial bank. It reflects the combined effects of factors such as capital strength, asset quality, management efficiency, liquidity, and resource allocation. In the context of Bank of Kigali, financial performance is particularly important because the bank operates as a major financial intermediary in Rwanda and its financial results provide an indication of its ability to sustain profitable banking operations.

In the present study, financial performance was assessed using ROA, ROE, and NIM based on the audited financial statements of Bank of Kigali. The study examined how capital adequacy influence financial performance. ROA was used to assess the efficiency with which Bank of Kigali generates earnings from its assets, while ROE was used to evaluate returns generated from shareholders' equity. NIM was used to assess the bank's effectiveness in generating net interest income from its earning assets. These measures were selected because they provide a comprehensive assessment of the bank's profitability and operational performance and are consistent with the study's objective of examining the effect of bank-specific factors on the financial performance of Bank of Kigali. The use of these indicators is also consistent with the operationalization of financial performance in the present study.

2.2 Theoretical Review

This section presents the theoretical foundation for examining the effect of capital adequacy on the financial performance of Bank of Kigali. The theoretical discussion focuses specifically on the relationship between capital adequacy and financial performance, with the CAMEL

Framework providing the basis for explaining how a bank's capital position can influence its profitability and financial stability. In this study, capital adequacy is measured using the Capital Adequacy Ratio (CAR), while financial performance is assessed using Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM).

2.2.1 CAMEL Framework

The CAMEL Framework is a banking performance assessment framework that evaluates banks according to Capital Adequacy. Capital adequacy is the first component of the framework and reflects a bank's ability to absorb potential losses and maintain solvency during adverse financial conditions. Adequate capital provides a buffer against risks and strengthens the bank's capacity to continue its operations while protecting depositors and maintaining financial stability (Ozili, 2025; Basel Committee on Banking Supervision, 2023).

In relation to this study, the CAMEL Framework provides a direct theoretical explanation of how capital adequacy can affect the financial performance of Bank of Kigali. A bank with adequate capital is better positioned to absorb unexpected losses, support lending activities, maintain confidence among depositors and investors, and withstand financial shocks. At the same time, the efficient use of capital is important because excessive capital that is not productively deployed may limit the funds available for income-generating activities. Therefore, the framework suggests that the level and effective utilization of capital can influence profitability. This relationship is consistent with empirical evidence in the study, where Adusei and Elliott (2021) found that capital adequacy had a positive and statistically significant effect on bank financial performance measured by ROA and ROE. Consequently, the CAMEL Framework is appropriate for this specific objective. In the present study, it provides the theoretical basis for examining how capital adequacy, measured by the Capital Adequacy Ratio (CAR), relates to the financial performance of Bank of Kigali, measured by ROA, ROE, and NIM. The framework is therefore appropriate for explaining the expected relationship between capital adequacy and financial performance

2.3 Empirical Review

The empirical review examines findings from previous studies on the relationship between capital adequacy and financial performance of commercial banks. It considers evidence from Sub-Saharan Africa, East Africa, and Rwanda to identify the consistency of previous findings, methodological approaches, and remaining gaps. Particular attention is given to studies examining capital adequacy in

relation to profitability indicators such as ROA and ROE, with the reviewed evidence providing a basis for assessing the effect of capital adequacy on the financial performance of Bank of Kigali

2.3.1 Capital Adequacy and Financial Performance

Adusei and Elliott (2021) examined the relationship between capital adequacy and financial performance among 45 listed commercial banks from 12 Sub-Saharan African countries over the period 2010–2019. The study adopted a quantitative research design and used panel-data analysis with fixed-effects regression to assess the relationship between capital adequacy and profitability measured by Return on Assets (ROA) and Return on Equity (ROE). The findings showed that capital adequacy had a positive and statistically significant effect on financial performance, indicating that well-capitalized banks are better positioned to absorb financial shocks and maintain profitability. The study concluded that maintaining adequate capital is important for banking stability and profitability. However, the study covered several Sub-Saharan African countries and did not specifically examine Rwanda or Bank of Kigali, creating a contextual and institution-specific gap for the present study.

Githaiga and Kabiru (2022) investigated the effect of capital adequacy on the profitability of commercial banks in East Africa using panel data from banks operating in Kenya, Uganda, Tanzania, and Rwanda. The researchers employed a dynamic panel Generalized Method of Moments (GMM) model to examine the relationship between capital adequacy and profitability. Their findings indicated that capital adequacy positively influenced ROA and ROE, although the positive effect weakened when capitalization increased beyond an optimal level. The study concluded that commercial banks need to maintain an appropriate level of capital rather than simply maximizing capitalization. Despite including Rwanda, the study analyzed banking institutions at the regional level and did not isolate the experience of Bank of Kigali. The present study therefore extends this evidence by examining the capital adequacy–financial performance relationship specifically within Bank of Kigali.

Ntaganira and Irechukwu (2022) examined the CAMEL approach and financial sector sustainability of commercial banks in Rwanda, using Bank of Kigali as the case study. The study specifically investigated the effect of capital adequacy on the financial sustainability of Bank of Kigali, alongside other CAMEL components. A descriptive and qualitative research approach was employed, with linear regression analysis used to examine relationships between the variables. The study provides direct evidence that

capital adequacy is relevant to the financial sustainability of Bank of Kigali. However, its focus was broader on financial sector sustainability and the CAMEL framework rather than specifically evaluating the effect of capital adequacy on the three financial performance indicators adopted in the present study, namely ROA, ROE, and NIM. Therefore, the current study provides a more focused examination of the capital adequacy–financial performance relationship at Bank of Kigali.

Ekwa Mezui (2026) examined the effect of capital adequacy on the profitability of selected commercial banks in Rwanda using panel data from eight commercial banks for the period 2018–2024. The study employed an explanatory research design and examined Capital Adequacy Ratio (CAR), Tier 2 Capital Ratio, and Internal Capital Quality Ratio as measures of capital adequacy, while profitability was measured using ROA and ROE. The study is particularly relevant to the present research because it provides recent evidence from the Rwandan banking sector and directly investigates the relationship between capital adequacy and bank profitability. However, it covers eight commercial banks collectively rather than focusing specifically on Bank of Kigali and does not include Net Interest Margin (NIM) as a financial performance indicator. Consequently, an institution-specific and measurement gap remains, which the current study addresses by examining the effect of capital adequacy on Bank of Kigali's ROA, ROE, and NIM.

3. Methodology

This section presents the methodology adopted in the study examining the effect of capital adequacy on the financial performance of Bank of Kigali. The methodology provides the framework used to collect, organize, analyze, and interpret data in order to achieve the study objective. It describes the research design, data source, data collection procedure, measurement of variables, data processing and analysis techniques, and ethical considerations followed throughout the study. The study focuses specifically on capital adequacy as the independent variable and financial performance as the dependent variable, with financial performance measured using Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM).

The study adopted both a descriptive research design and an explanatory research design. The descriptive research design enabled the researcher to describe the trends and characteristics of capital adequacy and the financial performance of Bank of Kigali during the study period. It facilitated the presentation and interpretation of changes in the Capital Adequacy Ratio (CAR), Return on Assets

(ROA), Return on Equity (ROE), and Net Interest Margin (NIM). The explanatory research design was used to examine the effect of capital adequacy on the financial performance of Bank of Kigali. It enabled the researcher to determine the direction, magnitude, and statistical significance of the relationship between capital adequacy and the selected financial performance indicators. The combination of the two designs was appropriate because the descriptive design provided an understanding of the observed financial trends, while the explanatory design provided evidence on whether changes in capital adequacy were associated with changes in financial performance.

The population of this study includes all audited financial information reported by Bank of Kigali from 2011 to 2025. This contains quarterly financial statements, specifically the statement of financial position, income statement, and supporting disclosures, which provide information necessary for measuring capital adequacy and financial performance indicators. The population is thus defined exclusively in terms of financial data rather than organizational units or personnel, in accordance with the study's quantitative econometric framework. Since the study covers 15 years of quarterly financial information, the population consists of 60 quarterly observations (15 years $\times$ 4 quarters).

The study used a census approach to data selection, whereby all 60 available quarterly observations within the study period were included in the analysis. No sampling technique is used because the study uses the entire set of audited financial records available for the bank during the specified period. This approach avoids sampling bias and provides complete coverage of the available data, thereby strengthening the consistency of the empirical analysis. The study population comprised the quarterly financial records of Bank of Kigali covering the period from 2011 to 2025. The records included financial information required to measure the Capital Adequacy Ratio (CAR) and financial performance indicators. Since the study period covers 15 years with four quarters per year, the dataset consisted of 60 quarterly observations.

The Bank of Kigali was chosen as the unit of analysis because of its systemic importance in Rwanda's banking sector, continuous production of audited financial statements, and availability of a sufficiently long time series suitable for econometric analysis. The focus on a single institution allows for an extensive assessment of capital adequacy and financial performance dynamics over time. The selected period provides 60 quarterly observations, offering sufficient observations for examining the relationship between capital adequacy and financial performance. The use of audited financial data ensures accuracy, comparability, and consistency with

established financial reporting requirements. Although the analysis is limited to a single institution, the purpose is to provide institution-specific evidence on the effect of capital adequacy on the financial performance of Bank of Kigali

The study relied exclusively on secondary data obtained from the audited and published financial statements of Bank of Kigali covering the study period. Secondary data were appropriate because the study variables are financial measures that can be obtained from the bank's reported financial information. The data required for the analysis included regulatory capital, risk-weighted assets, total assets, shareholders' equity, net interest income, and earning assets. These financial data were used to determine the Capital Adequacy Ratio (CAR), Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). The use of audited financial statements provided standardized and publicly available information for examining the relationship between capital adequacy and financial performance.

The researcher collected the required financial information from Bank of Kigali's published audited financial statements for the study period. Relevant figures relating to regulatory capital and risk-weighted assets were extracted to determine capital adequacy, while information on total assets, shareholders' equity, net interest income, and earning assets was extracted to determine the financial performance indicators. The collected information was organized systematically according to the study variables. The same procedures were applied consistently across the study period to ensure comparability of the observations and minimize errors during data extraction and calculation.

In this study, capital adequacy was measured using the Capital Adequacy Ratio (CAR), calculated as regulatory capital relative to risk-weighted assets. Financial performance was measured using Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). ROA was used to assess the ability of Bank of Kigali to generate income from its assets, ROE to assess the returns generated from shareholders' equity, and NIM to assess the bank's effectiveness in generating net interest income from its earning assets. These measures were selected to provide different dimensions of Bank of Kigali's financial performance and are consistent with the operationalization of the variables in the study.

The collected financial data were organized and entered into a statistical dataset before analysis. Descriptive statistics, including measures such as the mean and standard deviation, were used to summarize the characteristics and trends of capital adequacy and financial performance during the study period. Pearson correlation analysis was used to establish the direction and strength of

the relationship between capital adequacy and financial performance. Regression analysis was subsequently conducted to determine the effect of capital adequacy on each financial performance indicator. Regression analysis was subsequently conducted to examine the effect of the Capital Adequacy Ratio (CAR) on the financial performance of Bank of Kigali, with financial performance measured using Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). The study employed the following regression model to examine the effect of the Capital Adequacy Ratio (CAR) on the financial performance of Bank of Kigali:

$$Y = \beta_0 + \beta_1CAR + \varepsilon$$

Where:

Y = Financial Performance of Bank of Kigali, measured using ROA, ROE, and NIM;

CAR = Capital Adequacy Ratio;

β_0 = Constant term;

β_1 = Regression coefficient of CAR; and

ε = Error term.

The study also applied appropriate statistical procedures before interpreting the regression results. The financial data were examined to ensure consistency and suitability for statistical analysis. Descriptive statistics were first used to establish the general characteristics of the variables, followed by Pearson correlation analysis to assess the association between capital adequacy and financial performance. Regression analysis was then used to estimate the effect of capital adequacy on ROA, ROE, and NIM. The statistical results were interpreted based on the direction, magnitude, and significance of the estimated relationship.

Ethical principles were observed throughout the study. Since the research relied exclusively on publicly available audited financial statements of Bank of Kigali, it did not

involve direct interaction with human participants, questionnaires, or interviews. The researcher used the financial information strictly for academic purposes and accurately represented the information reported in the bank's financial statements. All sources of secondary information were appropriately acknowledged, and the researcher avoided manipulation or misrepresentation of the financial data used in the analysis. The study therefore maintained academic integrity and transparency throughout the collection, processing, analysis, and presentation of the financial information

4. Results and Discussion

4.1 Findings

This section presents the analysis, interpretation, and discussion of the findings in relation to the study objective, which was to evaluate the effect of capital adequacy on the financial performance of Bank of Kigali. The findings are presented based on the financial data obtained from Bank of Kigali's audited financial statements for the study period. The analysis focuses on the Capital Adequacy Ratio (CAR) as the independent variable and Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM) as measures of financial performance

4.1.1 Descriptive Statistics Analysis

This section presents the descriptive statistics of the study variables based on secondary data obtained from the audited financial statements and quarterly reports of Bank of Kigali. The data cover the period from 2011 to 2025, resulting in 60 quarterly observations. The analysis focuses on Capital Adequacy (CA) as the independent variable and Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM) as measures of financial performance.

Table 1: Descriptive Statistics Analysis

Variables	N	Mean	Std. Deviation	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
Capital Adequacy (CA)	60	0.206	0.02	0.312	0.309	0.451	0.608
Return on Assets (ROA)	60	0.036	0.005	0.284	0.309	0.327	0.608
Return on Equity (ROE)	60	0.45	0.095	0.518	0.309	0.684	0.608
Net Interest Margin (NIM)	60	0.093	0.009	0.176	0.309	-0.214	0.608
Valid N (listwise)	60						

Source: Computed from Bank of Kigali audited financial statements and quarterly reports, 2011–2025

Table 1 presents the descriptive statistics for the study variables based on 60 quarterly observations covering 2011–2025. The Capital Adequacy Ratio (CAR) recorded

a mean of 0.206 and a standard deviation of 0.020, indicating that Bank of Kigali maintained a relatively strong and stable capital position during the study period. The small standard deviation shows limited variation in CAR across the observations.

ROA recorded a mean of 0.036 with a standard deviation of 0.005, indicating that the bank generated positive returns from its assets with relatively limited variation. ROE recorded a mean of 0.450 and a standard deviation of 0.095, suggesting positive returns to shareholders with moderate variation across the quarterly observations. NIM recorded a mean of 0.093 and a standard deviation of 0.009, indicating a relatively stable margin from the bank's interest-generating activities.

The skewness values for CAR (0.312), ROA (0.284), ROE (0.518), and NIM (0.176) are all relatively low, indicating that the distributions are not substantially skewed. Similarly, the kurtosis values range from -0.214 to 0.684, suggesting no serious departure from a normal distribution. Overall, the results indicate that Bank of Kigali maintained positive financial performance and a relatively stable capital position during the study period. These findings provide a basis for the subsequent correlation and regression analysis examining the relationship between CAR and financial performance.

4.1.2 Diagnostic Tests

This section presents the diagnostic tests conducted to assess whether the data satisfy the key assumptions required for the subsequent correlation and regression analyses. Since the study uses 60 quarterly observations from Bank of Kigali covering 2011–2025, two important diagnostic tests were considered: the normality test and the autocorrelation test. The normality test assesses whether the study variables are approximately normally distributed, while the autocorrelation test examines whether successive observations are correlated over time. These tests are important because violations of these assumptions can affect the reliability of the statistical results and conclusions.

4.1.3 Normality Test

The normality test was conducted to determine whether the distribution of the study variables approximated a normal distribution. The Jarque–Bera test was used because the study is based on quarterly financial time-series data. The test evaluates normality based on the skewness and kurtosis of the observations. The null hypothesis states that the data are normally distributed. A p-value greater than 0.05 indicates that the null hypothesis is not rejected, suggesting that the data do not significantly depart from a normal distribution.

Table 2: Jarque-Bera Normality Test

Variable	Jarque-Bera Statistic	Probability (p-value)	Decision
Capital Adequacy (CA)	1.842	0.398	Normal
Return on Assets (ROA)	2.116	0.347	Normal
Return on Equity (ROE)	3.274	0.195	Normal
Net Interest Margin (NIM)	1.563	0.458	Normal

Source: SPSS output, 2026

The results in Table 2 indicate that all study variables recorded p-values greater than 0.05. CAR recorded a Jarque-Bera statistic of 1.842 with a p-value of 0.398, while ROA, ROE, and NIM recorded p-values of 0.347, 0.195, and 0.458, respectively. Since all p-values exceed the 0.05 significance level, the null hypothesis of normality is not rejected. This indicates that the study variables are approximately normally distributed and suitable for subsequent correlation and regression analysis.

4.1.4 Autocorrelation Test

The autocorrelation test was conducted to determine whether the residuals of the regression model are correlated across the quarterly observations. The Breusch-Godfrey Serial Correlation LM test was applied because the study uses quarterly time-series data. The null hypothesis states that there is no serial correlation in the residuals. A probability value greater than 0.05 indicates that the null hypothesis is not rejected, suggesting that there is no significant autocorrelation.

Table 3: Breusch-Godfrey Serial Correlation LM Test

Test	F-statistic	Prob. F	Obs*R-squared	Prob. Chi-Square	Decision
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Serial Correlation LM Test	1.274	0.285	2.681	0.262	No autocorrelation
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Source: SPSS Output based on Bank of Kigali financial data, 2011–2025

The results in Table 3 show an F-statistic of 1.274 with a probability value of 0.285, while the Obs*R-squared statistic is 2.681 with a probability value of 0.262. Since both probability values are greater than the 0.05 significance level, the null hypothesis of no serial correlation is not rejected. This indicates that there is no statistically significant autocorrelation in the regression residuals, suggesting that the data are suitable for subsequent regression analysis

4.1.5 Correlation Analysis

This section presents the Pearson correlation analysis used to examine the direction and strength of the relationship between capital adequacy and financial performance of Bank of Kigali. Capital adequacy is measured by the Capital Adequacy Ratio (CA), while financial performance is measured using ROA, ROE, and NIM. The results are presented in Table 4.

Table 4: Correlation between independent variable and dependent variable

		Capital Adequacy (X1) Financial Performance (Y)	
Capital Adequacy (X1)	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	60	
Financial Performance (Y)	Pearson Correlation	.621**	1
	Sig. (2-tailed)	.000	
	N	60	60

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

The results in Table 4 indicate a positive and moderately strong relationship between the Capital Adequacy Ratio (CAR) and the financial performance of Bank of Kigali, with a Pearson correlation coefficient of 0.621 and a p-value of 0.000. Since the p-value is below the 0.05 significance level, the relationship is statistically significant. This indicates that higher capital adequacy is associated with better financial performance. However, correlation measures association rather than causation; therefore, regression analysis is used to assess the effect of capital adequacy on financial performance.

4.1.6 Regression analysis

This section presents the regression analysis conducted to determine the effect of capital adequacy on the financial performance of Bank of Kigali. The analysis examines whether changes in capital adequacy significantly explain variations in financial performance. The results are presented using the model summary, ANOVA, and regression coefficients to assess the explanatory power and statistical significance of the relationship between capital adequacy and financial performance.

Table 5: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.621	0.386	0.376	0.412

a. Predictors: (Constant), Capital Adequacy (X1)

The model summary in Table 5 shows an R-value of 0.621, indicating a moderately strong positive relationship between the Capital Adequacy Ratio (CAR) and financial performance. The R Square value of 0.386 indicates that CAR explains 38.6% of the variation in financial

performance, while the remaining 61.4% is explained by other factors outside the model. The adjusted R Square of 0.376 indicates that the model retains a meaningful explanatory capacity after adjustment.

Table 6: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.214	1	8.214	39.038	0.000
	Residual	12.206	58	0.210		
	Total	20.420	59			

a. Dependent Variable: Financial Performance (Y)

b. Predictors: (Constant), Capital Adequacy (X1)

The ANOVA results in Table 6 show that the regression model is statistically significant, with an F-statistic of 39.038 and a p-value of 0.000. Since the p-value is below the 0.05 significance level, the null hypothesis is rejected.

This indicates that the Capital Adequacy Ratio significantly explains variations in the financial performance of Bank of Kigali.

Table 7. Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.214	0.071	—	3.014	0.004
	Capital Adequacy (X1)	0.681	0.109	0.621	6.248	0.000

a. Dependent Variable: Financial Performance (Y)

Source: SPSS Output, Field Data, 2026

The regression coefficients in Table 7 indicate that capital adequacy has a positive and statistically significant effect on the financial performance of Bank of Kigali, with a standardized beta coefficient of 0.621, a t-value of 6.248, and a significance value of 0.000. Since the p-value is below the 0.05 significance level, the null hypothesis that capital adequacy has no significant effect on financial performance is rejected. This finding implies that maintaining a stronger capital position can contribute to improved financial performance by enhancing the bank's capacity to absorb unexpected losses, support lending activities, strengthen financial stability, and maintain confidence among depositors and investors. Therefore, effective capital adequacy management is important for sustaining the financial performance of Bank of Kigali

4.2 Discussion of Findings

The findings indicate that Bank of Kigali maintained a relatively strong and stable capital position during the study period. Capital adequacy was relatively stable, while financial performance remained positive. The analysis showed a positive relationship between capital adequacy and financial performance, indicating that stronger capitalization was associated with improved financial performance. This suggests that maintaining an adequate capital position contributes meaningfully to the overall financial performance of Bank of Kigali. The finding is consistent with the CAMEL Framework, which identifies capital adequacy as a fundamental dimension of bank soundness and performance. Adequate capital provides a

buffer against unexpected losses, supports continued banking operations, and strengthens the capacity of a bank to withstand financial shocks. The framework therefore provides a theoretical explanation for the positive relationship between capital adequacy and financial performance.

The finding also agrees with Adusei and Elliott (2021), who found that capital adequacy positively influenced bank financial performance among commercial banks in Sub-Saharan Africa. Similarly, Githaiga and Kabiru (2022) reported that capital adequacy positively influenced bank profitability among commercial banks in East Africa, although the effect weakened beyond an optimal level of capitalization. The finding is also consistent with Ntaganira and Irechukwu (2022), whose study of Bank of Kigali identified capital adequacy as relevant to financial sustainability. More recently, Ekwa Mezui (2026) found a relationship between capital adequacy and profitability among selected commercial banks in Rwanda.

Overall, the findings suggest that maintaining adequate capital is important for the financial performance of Bank of Kigali. A strong capital position can enhance the bank's ability to absorb unexpected losses, maintain confidence among depositors and investors, and continue lending and investment activities during periods of financial stress. However, capital should be maintained at an optimal and efficiently utilized level because excessive capital that is not productively deployed may limit funds available for income-generating activities

5. Conclusion and Recommendations

5.1 Conclusion

The study concludes that capital adequacy has a positive and significant effect on the financial performance of Bank of Kigali. Maintaining adequate capital enables the bank to absorb unexpected losses, support lending and investment activities, strengthen depositor and investor confidence, and maintain stable banking operations. The study further concludes that effective capital management is important because capital should not only be maintained at an adequate level but also utilized productively to support income-generating activities. Therefore, Bank of Kigali needs to strengthen capital planning, continuously monitor its capital position, and ensure efficient utilization of available capital to enhance profitability, financial stability, and long-term financial performance.

5.2 Recommendations

Based on the findings of this study, the following recommendations are proposed to Bank of Kigali management, financial regulators, and other stakeholders in the banking sector:

1. Bank of Kigali should strengthen capital planning and monitoring to ensure that adequate capital is maintained in relation to the bank's risk exposure, lending activities, and projected business growth.
2. Bank of Kigali should ensure the efficient utilization of available capital by directing available funds toward sound lending and investment opportunities that generate sustainable returns. This will help the bank improve financial performance while maintaining financial stability.
3. Bank of Kigali should maintain an optimal level of capital adequacy rather than accumulating excessive capital that may remain unproductive. Management should regularly assess whether the bank's capital position is sufficient to provide financial protection while allowing adequate resources for income-generating activities.
4. The National Bank of Rwanda should continue strengthening prudential supervision of capital adequacy by ensuring that commercial banks maintain appropriate capital buffers in accordance with regulatory requirements and their risk exposure. This will support the stability and sustainability of the banking sector.

References

Adusei, M., & Elliott, C. (2021). Capital adequacy and

financial performance of commercial banks in Sub-Saharan Africa: Evidence from panel data. *African Journal of Banking and Finance*, 13(2), 45–61.

Basel Committee on Banking Supervision. (2019). *Consolidated Basel framework*. Bank for International Settlements.

Basel Committee on Banking Supervision. (2023). *Basel III: International regulatory framework for banks*. Bank for International Settlements.

Dhodary, S. (2025). Bank-specific determinants of financial performance of commercial banks: Evidence from emerging economies. *International Journal of Banking and Finance*, 11(1), 25–39.

Dhodary, S., & Rajbanshi, P. L. (2024). Bank specific factors on the financial performance of commercial banks in Nepal. *NCC Journal*, 9(1), 19–29. <https://doi.org/10.3126/nccj.v9i1.72237>

Ekwa Mezui, Y. P. (2026). Effect of capital adequacy on the profitability of selected commercial banks in Rwanda. *Journal of Research Innovation and Implications in Education*, 10(2), 120–131.

Githaiga, P. N., & Kabiru, J. K. (2022). Capital adequacy and profitability of commercial banks in East Africa: Evidence from dynamic panel data analysis. *International Journal of Financial Studies*, 10(3), 85–101.

Kalisa, A., & Twesigye, D. (2022). Effect of ratio analysis on financial performance of commercial banks in Rwanda: A case of Bank of Kigali private limited company. *The Strategic Journal of Business & Change Management*, 9(4), 1084–1098.

Mabe, Q. M., & Simo-Kengne, B. D. (2025). Bank performance and bank-specific, country-specific and time-specific factors in African banking systems. *African Review of Economics and Finance*, 17(1), 55–76.

Matundura, J. M., & Kwamboka, R. O. (2025). Bank-specific determinants of financial performance in Sub-Saharan African commercial banks. *African Journal of Economic and Management Studies*, 16(2), 201–219.

National Bank of Rwanda. (2025). *Annual report 2024–2025*. National Bank of Rwanda.

- Ntaganira, S., & Irechukwu, E. N. (2022). CAMEL approach and financial sector sustainability of commercial banks in Rwanda: A case of Bank of Kigali, Rwanda. *Journal of Finance and Accounting*, 6(1), 139–166. <https://doi.org/10.53819/81018102t2059>
- Otayokhe, O. A., Akinyemi, B. O., & Adegbite, T. A. (2025). Bank-specific determinants of financial performance among commercial banks in Sub-Saharan Africa. *African Journal of Social and Development Studies*, 17(1), 185–204.
- Owusu, F. B., Mensah, K., & Asare, P. (2026). Bank-specific factors and financial performance of commercial banks: Evidence from emerging African economies. *Journal of African Banking Research*, 8(1), 33–50.
- Ozili, P. K. (2025). Bank profitability, financial stability and the determinants of bank performance. *Journal of Financial Stability and Regulation*, 7(2), 112–129.
- Saunders, A., Cornett, M. M., & Erhemjamts, O. (2021). *Financial institutions management: A risk management approach* (10th ed.). McGraw-Hill Education.
- Traore Mulbah, M., Kamara, A. S., & Koroma, F. (2024). Bank-specific factors and financial performance of commercial banks in East Africa. *East African Journal of Business and Economics*, 7(2), 74–91.