



Board Structure and Financial Performance of Selected Commercial Banks in Rwanda

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Abstract: This study examined the effect of board structure on the financial performance of selected commercial banks in Rwanda. Guided by the Agency Theory, which emphasizes effective governance mechanisms in aligning management actions with shareholders' interests, the study investigated how elements of board structure specifically board size influence financial performance indicators such as Return on Equity (ROE) and Return on Assets (ROA). A descriptive and correlational research design was adopted to ensure comprehensive analysis. A census approach was used to collect data from all thirteen commercial banks operating in Rwanda as of June 2024, from which five banks Bank of Kigali, I&M Bank, Cogebank, Ecobank, and Access Bank were selected using convenience sampling due to accessibility and representativeness. Data were obtained entirely from secondary sources, primarily annual financial statements and reports covering the period 2019–2023, sourced from official bank websites and the Rwanda Stock Exchange. Data analysis was conducted using SPSS version 27, employing descriptive statistics to summarize the data, Pearson correlation analysis to assess relationships, and multiple regression analysis to test hypotheses. Diagnostic tests for multicollinearity, heteroscedasticity, and normality were also conducted to ensure model reliability. The findings revealed a strong positive and statistically significant relationship between board size and financial performance ($r = 0.877, p < 0.01$), and regression results confirmed that board structure variables, particularly board size and independence, are significant predictors of financial performance. The study concludes that well-structured boards enhance decision-making, oversight, and accountability, thereby improving profitability and efficiency in commercial banks. It recommends that Rwandan commercial banks maintain balanced boards that incorporate diversity, expertise, and independence to strengthen governance frameworks and promote sustainable financial growth.

Keywords: Board structure, Financial performance, Board size, Commercial banks, Rwanda

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1. Introduction

The composition and effectiveness of a bank's board of directors are critical determinants of its strategic direction, governance quality, and financial outcomes (Hordofa, 2023). Boards are responsible for setting policies, overseeing management, and ensuring accountability, which directly impacts the institution's ability to achieve sustainable growth. Effective board structures help align

organizational goals with stakeholder interests and mitigate risks associated with poor decision-making. Understanding the relationship between board structure and financial performance is therefore essential for enhancing corporate governance practices, improving operational efficiency, and ensuring the long-term sustainability of banks (Benvenuto, Avram, Avram & Viola, 2021).

Globally, commercial banks operate within diverse regulatory and economic environments, and the composition of their boards significantly influences financial performance. In Italy, Benvenuto et al. (2021) highlight that boards with a balance of independence, expertise, and diversity are associated with improved decision-making and higher profitability. In Vietnam, Quoc (2022) emphasizes that board characteristics such as independence, gender diversity, and financial expertise play a pivotal role in shaping key financial metrics, including profitability, risk management, and capital adequacy. Similarly, in Turkey, Yilmaz (2020) argues that boards with strong governance mechanisms, strategic vision, and risk oversight capabilities are linked to enhanced long-term sustainability, stakeholder value creation, and improved market confidence. These studies collectively underline the universal importance of robust board governance in influencing bank performance across varying contexts.

In the African context, boards of directors similarly play a crucial role in navigating regulatory challenges, economic volatility, and governance issues. In Nigeria, Esan, Ananwude, and Okeke (2020) contend that diverse and independent boards are essential for ensuring transparency, stability, and investor confidence, even in the face of regulatory and operational challenges. In Ethiopia, Hordofa (2023) notes that strong governance structures and strategic board oversight are critical for attracting foreign investment, fostering growth, and maintaining financial stability. These findings underscore the necessity of competent boards in African banks to manage risks, ensure compliance, and enhance institutional performance.

Regionally, within East Africa, banks face unique pressures arising from regional integration, technological advancements, and competitive financial markets. Kinyangi, Musiega, and Nelima (2023) highlight that effective boards, equipped with risk management expertise, strategic guidance, and governance acumen, enable banks to respond to regional economic trends and technological disruptions. Such boards help institutions leverage regional opportunities, maintain competitive advantage, and promote sustainable growth. This underscores that board composition is not merely a structural formality but a strategic instrument for improving financial performance in dynamic regional markets.

Locally, Rwanda's financial sector is rapidly growing and evolving, presenting opportunities and challenges that necessitate strong corporate governance. According to Manishimwe (2022), achieving the ideal combination of board independence, expertise, and diversity is vital for enhancing the performance of commercial banks in

Rwanda's competitive financial sector. Furthermore, Kadhafi et al. (2024) emphasize that robust board oversight contributes to organizational resilience, operational efficiency, and investor confidence, supporting Rwanda's ambition to position itself as a regional financial hub. These perspectives highlight the growing recognition that effective board structures are central to sustaining financial sector growth and stability in Rwanda.

Despite the wealth of research on board structure and financial performance in Rwanda, most studies have been limited to single banks or sectors, leaving comparative analyses largely unexplored. Previous investigations, such as those by Uwizeyimana (2021) and others, primarily focused on individual banks without examining the broader impact of different board structures across multiple institutions. This lack of comparative evidence represents a critical research gap, particularly concerning major commercial banks like Bank of Kigali Plc, Ecobank Rwanda Plc, and I&M Bank Rwanda Plc. Therefore, this study seeks to fill this gap by analyzing the relationship between board structure and financial performance across selected Rwandan banks, providing empirical insights that can inform governance practices and policy formulation

1.1 Problem Statement

The Rwandan banking sector accounts for 67% of the country's total financial sector assets, with loans contributing significantly. Loans increased by 15.4% to reach Rwf 1,230 billion by the end of 2021, following a contraction of 8.2% in the previous year (BNR, 2021). However, banks wrote off Rwf 75 billion in 2021 compared to Rwf 22 billion in 2020 due to the economic effects of the COVID-19 pandemic (BNR, 2022). By mid-2020, 20.1% of total lending was directed toward the economy, causing notable losses and capital erosion for commercial banks (Twesige, Uwamahoro & Ndikubwimana, 2021). Some banks, including I&M Bank and Ecobank Rwanda, also reported declines in government securities, deposits, profitability, and return on equity (ROE), highlighting challenges in maintaining financial performance.

Board structure is a critical factor influencing the financial performance of commercial banks. Studies in other countries indicate mixed outcomes: Yilmaz (2020) highlighted the positive effect of board characteristics on banking performance in Turkey, while Edeti and Garg (2020) found a significant linear relationship between board composition and Return on Assets (ROA) in Ethiopian banks ($\beta = 0.762$, $p = 0.021$). In contrast, Kinyangi et al. (2023) observed a negative and insignificant effect of board size on net interest margin. Locally, Manishimwe (2022) found that board

independence positively and significantly impacts financial performance in Rwandan banks. These findings underscore the importance of board structure but also reveal inconsistencies that warrant further investigation.

Most research in Rwanda has focused on individual banks, leaving a gap in comparative analysis across multiple institutions. Limited evidence exists on how different board structures affect financial performance in the Rwandan banking sector. This study aims to fill this gap by examining the effect of board structure on the financial performance of selected commercial banks, specifically Bank of Kigali Plc, Ecobank Rwanda Plc, and I&M Bank Rwanda Plc. The findings are expected to provide empirical insights that can inform corporate governance practices and policy decisions to strengthen sector performance

This study sought to achieve the following Research Objectives:

To determine the effect of board size on the financial performance of selected commercial banks in Rwanda.

2. Literature Review

2.1 Introduction

Board structure refers to the composition, organization, and functioning of a company's board of directors, defining the roles, responsibilities, and relationships among its members. It includes elements such as board size, composition, diversity, independence, and expertise (Hordofa, 2023). One key aspect of board structure is the balance between executive and non-executive directors, including independent directors who are not involved in daily management but provide oversight and strategic guidance (Derbali, Jamel, Lamouchi, Elnagar & Ltaifa, 2020). Another important dimension is board diversity, encompassing gender, ethnicity, professional background, and skill sets, which enrich decision-making and bring a wider range of perspectives to the boardroom (Manishimwe, 2022).

The significance of board structure lies in its central role in corporate governance, ensuring effective management, accountability to stakeholders, and sustainable growth (Hordofa, 2023). A well-structured board provides oversight, strategic direction, and risk management expertise. Independent directors are particularly important in safeguarding shareholder interests, challenging management decisions, and upholding ethical standards, thereby enhancing transparency and accountability (Esan et al., 2020). Furthermore, a diverse and balanced board promotes innovation, mitigates groupthink, and contributes

to long-term organizational performance and value creation (Berhe, 2023).

The implications of board structure extend beyond internal governance to influence a company's reputation, competitiveness, and stakeholder relationships. Firms with strong boards are often perceived as more transparent, accountable, and resilient, which can enhance investor confidence and improve access to capital (Berhe, 2023). Conversely, weaknesses such as limited independence, lack of diversity, or ineffective governance can expose organizations to higher risks, regulatory scrutiny, and reputational damage (Derbali et al., 2020). Therefore, the design and composition of a company's board have far-reaching consequences for its ability to navigate challenges, seize opportunities, and deliver sustainable value to shareholders and society (Esan et al., 2020).

2.1.1 Board Size

The number of directors on a board can significantly influence an organization's performance, as larger boards may face coordination challenges, slower decision-making, and control issues (Edeti & Garg, 2020). Board size is widely acknowledged as a key internal mechanism of corporate governance that affects the management and strategic direction of an organization (Yilmaz, 2020). One of the most debated topics in corporate governance is how board size impacts financial performance. According to the agency theory, smaller boards are more effective because they encounter fewer coordination problems and are less susceptible to undue influence from the CEO, leading to improved monitoring and decision-making (Tapa & Mat, 2023; Quoc, 2022).

Contrastingly, resource dependence theory suggests that larger boards may provide advantages by offering broader networks, access to critical information, and enhanced connections with external stakeholders, which can reduce a firm's reliance on external resources and improve overall performance (Edeti & Garg, 2020). Smaller boards, however, are often more cohesive and can act decisively, making them efficient at overseeing management operations and ensuring alignment with shareholder interests (Quoc, 2022). This dual perspective highlights that both small and large boards may offer unique benefits depending on the specific organizational context and strategic needs.

Board responsibilities encompass oversight and advisory functions, both of which are critical for organizational success (Edeti & Garg, 2020). In an advisory capacity, board members provide managers with informed guidance and access to valuable information (Manishimwe, 2022). Internal and external directors each contribute distinct

insights, with external members offering impartial perspectives that are less influenced by management (Edeti & Garg, 2020). Studies suggest that larger boards, particularly those with a higher proportion of non-executive members, can enhance firm performance by combining diverse expertise and stronger oversight capabilities (El-Chaarani, Abraham & Skaf, 2022). Consequently, board size, together with the composition of executive and non-executive directors, plays a pivotal role in the financial performance and governance effectiveness of banks.

2.1.2 Financial Performance

Financial performance refers to a firm's ability to generate revenue, manage costs, and achieve profitability while sustaining long-term growth. It is a critical indicator of organizational success and is commonly assessed using financial ratios and metrics such as Return on Assets (ROA), Return on Equity (ROE), net interest margin, and earnings per share (Adeyemi & Olowookere, 2021). In the banking sector, financial performance reflects the effectiveness of strategic management, risk management, and corporate governance practices, including the role of board structures in influencing decision-making and oversight.

Scholars emphasize that financial performance is multifaceted. Profitability ratios like ROA and ROE measure how efficiently banks utilize their assets and equity to generate returns (Boateng & Agyemang, 2020). Liquidity and capital adequacy ratios provide insight into a bank's stability and regulatory compliance, while non-performing loans and write-offs highlight operational risks and management effectiveness. In this context, financial performance is not only a measure of profitability but also a reflection of a bank's resilience, sustainability, and capacity to deliver value to shareholders and stakeholders.

The analysis of financial performance has become increasingly important due to changes in the financial sector, including intensified competition and a shift toward market-oriented banking systems (Berhe, 2023). Both internal actors, such as managers, and external stakeholders, including regulators, rely on performance analysis to assess a bank's stability and capacity to meet obligations (Barua, 2020). Financial statements, including the Statement of Financial Position and the Statement of Comprehensive Income, form the foundation for this analysis, with financial ratios providing key insights into profitability, liquidity, and efficiency (Xingrui, 2022; Majani, 2022). Profitability is central, as a bank's ability to generate dividends and capital gains determines its short-term success and long-term viability.

Key indicators of financial performance include Return on Equity (ROE) and Return on Assets (ROA). ROE measures the return generated on shareholders' equity, reflecting a firm's ability to convert equity investments into profits and create shareholder value (Chowdhury, 2020; Manishimwe, 2022). A consistently high ROE signals effective management of equity and growth potential, while declining ROE may indicate inefficient investment decisions (Nguyen & Huynh, 2023). ROA measures net income per unit of total assets, indicating how efficiently a company uses its resources to generate profit (Tapa & Mat, 2023; Klein, 2014). Although ROA is particularly useful for short-term operational efficiency, it should be compared to historical figures or industry benchmarks to evaluate long-term financial viability (Quoc, 2022). Together, ROE and ROA provide essential tools for monitoring profitability, guiding management decisions, and informing investors.

In Rwanda, studies on financial performance highlight the interplay between corporate governance, management practices, and external economic conditions. Nkurunziza (2021) found that banks with strong governance structures, including well-composed boards, report higher profitability and lower operational risks. Similarly, Habimana et al. (2022) emphasized that effective board oversight, independence, and strategic guidance enhance both short-term profitability and long-term financial stability. Despite these findings, there is limited comparative research across multiple banks in Rwanda, creating a gap that this study aims to address by examining how board structure influences the financial performance of selected commercial banks, specifically Bank of Kigali Plc, Ecobank Rwanda Plc, and I&M Bank Rwanda Plc.

2.1.3 Theoretical Review

The study was anchored on Agency Theory, which explains the relationship between principals (shareholders) and agents (managers) in an organization. The theory posits that managers may pursue personal interests that conflict with shareholders' goals, creating agency problems, and that an effective board, including its size and composition, serves as a monitoring mechanism to align management actions with shareholder interests and enhance financial performance.

2.1.3.1 Agency Theory

The relationship between board size and financial performance of commercial banks can be explained through Agency Theory, originally proposed by Jensen and Meckling (1976). The theory posits that there is a principal-agent relationship between shareholders (principals) and managers (agents), where agents are entrusted with decision-making authority over the company's resources.

Agency problems arise when managers pursue personal interests rather than maximizing shareholder value, leading to inefficiencies and potential financial underperformance.

In the context of board size, agency theory suggests that an adequately structured board acts as a monitoring mechanism to reduce agency costs and align the interests of managers with those of shareholders (Fama & Jensen, 2020). Smaller boards are argued to be more effective at coordination and decision-making, enabling closer oversight of management and quicker responses to emerging risks, which can enhance financial performance. Conversely, larger boards may provide more diverse perspectives and specialized knowledge, potentially improving access to resources and strategic guidance, but may face coordination and communication challenges that slow decision-making.

Applying agency theory to Rwandan commercial banks, the composition and size of the board are critical for mitigating agency problems and enhancing performance. A well-sized board, with the right balance of executive and non-executive directors, ensures effective monitoring of management activities, strengthens governance mechanisms, and ultimately contributes to improved profitability, as measured by indicators such as ROE and ROA. This theoretical perspective provides a foundation for analyzing how board size influences the financial performance of selected banks in Rwanda, including Bank of Kigali Plc, Ecobank Rwanda Plc, and I&M Bank Rwanda Plc

2.2 Empirical Literature

Empirical studies have shown that board characteristics, such as size, independence, and diversity, significantly influence the financial performance of commercial banks across different countries. In Rwanda, limited research exists on how these board attributes collectively affect profitability, highlighting a gap that this study seeks to address.

2.2.1 Effect of board size on the financial performance of commercial banks

Benvenuto et al. (2021) examined the impact of corporate governance on financial performance in both developing and developed banking systems in Europe, focusing on Romania and Italy. The study assessed how modifications in corporate governance legislation influenced the two banking systems, which differ significantly in size. Romania has 34 banks while Italy has over 350 banks. Findings indicated that improvements in corporate governance positively affected profitability and capital adequacy in homogenous banking systems, while the

impact was negative in heterogeneous systems. This study highlights that corporate governance principles, including board characteristics such as size, play a critical role in shaping financial performance, particularly in large versus small banking systems, and suggests further research on how board size influences profitability in varying contexts.

In Africa, Asare et al. (2022) investigated the effects of board structures on the financial performance and stability of 366 banks across 26 countries from 2007 to 2015. The study measured financial performance using net interest margin and risk-adjusted return on assets, and assessed board structure through board size, independence, and gender diversity. Using system generalized method of moments and panel-corrected standard error estimation techniques, the study concluded that board independence negatively affected financial stability, while board size and board gender diversity had an insignificant impact on both performance and stability. These findings suggest that within the African context, board size alone may not strongly determine financial outcomes, but its interaction with other governance factors could be influential.

Kinyangi et al. (2023) analyzed the effect of governance structure on the financial performance of microfinance banks in Kenya using agency theory as a foundation. The study employed a causal research design and included all 14 microfinance banks in the country. Secondary data from the Central Bank of Kenya for 2018–2022 was analyzed using descriptive and inferential statistics. Results indicated that governance structure, which incorporates board size and other board characteristics, significantly influenced financial performance ($\beta = 0.639906$, $p = 0.034$), accounting for 16.08% of the variation in financial performance. The study demonstrates that regionally, board composition and size are key drivers of financial outcomes in banking institutions.

In Rwanda, Manishimwe (2022) evaluated the effect of corporate governance practices, including board size, on the financial performance of listed commercial banks such as Bank of Kigali, Equity Bank Rwanda, KCB Bank Rwanda, and I&M Bank Rwanda. Using data from 2017 to 2021, the study employed both descriptive and inferential statistics. Findings revealed that board size had a negative and significant effect on financial performance, while audit quality and board independence positively influenced outcomes. The results suggest that in the Rwandan context, optimal board size, combined with independent oversight and financial expertise, is critical for enhancing bank performance.

3. Methodology

This section outlines the research methodology used to investigate the effect of board structure on the financial

performance of selected commercial banks in Rwanda. It provides a detailed description of the research design, study population, sampling methods, data collection techniques, analytical procedures, diagnostic tests, and ethical considerations. The methodology was designed to ensure the collection of accurate, reliable, and valid data while maintaining research integrity and adhering to Mount Kenya University ethical guidelines.

The study adopted a census approach, which involves collecting data from the entire population to ensure comprehensive coverage and accurate representation. This approach was combined with correlation analysis to examine the strength and direction of relationships between variables, and multiple regression analysis was employed to test hypotheses. The design allowed for both descriptive and inferential evaluation of key variables, including board size, independence, gender diversity, and education, and their influence on financial performance indicators such as Return on Equity (ROE) and Return on Assets (ROA).

The population of the study comprised all commercial banks operating in Rwanda as of June 2024, totaling thirteen institutions. From this population, a sample of five banks, Bank of Kigali, I&M Bank, Cogebank, Ecobank, and Access Bank was selected using convenience sampling. This non-probability sampling method was chosen due to its accessibility, efficiency, and cost-effectiveness, allowing the researcher to select banks that were easiest to access while still providing representative data for analysis. The sampling process and selected banks were clearly documented to ensure transparency.

Data for the study were obtained entirely from secondary sources, primarily annual financial statements and reports from the selected banks covering the period 2019–2023. These documents were sourced from official bank websites and reputable platforms such as the Rwanda Stock Exchange. The use of secondary data allowed for a longitudinal analysis of financial performance trends over five years, providing insight into the effects of board structure on profitability, efficiency, and overall financial outcomes in the selected banks.

Data analysis was conducted using descriptive and inferential statistical techniques in SPSS version 27. Descriptive statistics, including mean and standard

deviation, were employed to summarize and interpret board structure characteristics and financial performance measures. Pearson correlation coefficients were calculated to evaluate the strength and direction of relationships between variables. Multiple linear regression analysis was applied to assess the significance of independent variables board size, gender diversity, board independence, and board education on financial performance, with ROE and ROA as dependent variables. Post-estimation diagnostic tests, including checks for multicollinearity, heteroscedasticity, and normality, were conducted to ensure model reliability and accuracy.

Ethical considerations were strictly observed throughout the study. The research relied on publicly available audited financial reports, ensuring transparency and respect for institutional data. No data manipulation occurred, and interpretations reflected the true outcomes of the analysis. The study adhered to Mount Kenya University's ethical guidelines, emphasizing honesty, objectivity, and respect for all stakeholders. Copies of the research findings were made available to relevant institutions and stakeholders to promote accountability and ensure the responsible use of research outcomes.

4. Results and Discussion

This section presents the analysis and interpretation of the findings of the study in relation to the research objectives.

4.1 Results

This section presents the analysis and interpretation of the findings of the study in relation to the research objective.

4.1.1 Descriptive Statistics

Descriptive analysis entails the summary of the study dataset into more interpretable coefficients that represent the entire data for meaningful conclusion. The analysis involves both central and measures of dispersions such as mean, standard deviations, median, number of observations, with minimum and maximum values. Table 1 displayed the outcomes of the descriptive analysis.

Table 1: Descriptive Statistics

Variable	Orbs	Mean	Std. Dev.	Min	Max
Financial Performance	22	3.146448	5.137127	.018429	25.63367
Board size	22	7.48	1.758787	5	12

Source: Study Data (2025)

The descriptive analysis summarizes the key characteristics of the study variables. For financial performance, with 22 observations, the mean of 3.15 indicates that the selected commercial banks generally reported moderate financial performance during the study period. The standard deviation of 5.14 shows considerable variability, suggesting that some banks performed much better or worse than others. The minimum and maximum values of 0.018 and 25.63 reflect a wide range of financial outcomes, which could be influenced by differences in management practices, governance, and operational efficiency.

For board size, also measured over 22 observations to align with financial performance data, the mean of 7.48 shows that the sampled banks typically have boards of about

seven to eight directors. The standard deviation of 1.76 indicates moderate variation in board size across banks. The smallest board had 5 members, while the largest had 12, demonstrating differences in board composition. This variability provides a basis for analyzing the potential effect of board size on financial performance, as board size may influence decision-making efficiency, oversight quality, and strategic guidance.

4.1.2 Correlation Analysis

The findings of the correlations between the independent variables and the dependent variables are summarized and presented in Table 2

Table 2: Correlation between independent variable and dependent variable

		Board Size	Financial Performance
Board Size	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	22	
Financial Performance	Pearson Correlation	.877**	1
	Sig. (2-tailed)	.000	
	N	22	22

Source: Primary data, 2025

The correlation analysis shows a strong positive relationship between board size and financial performance, with a Pearson correlation coefficient of 0.877. This indicates that, in general, as the size of the board increases, the financial performance of the selected commercial banks also tends to improve. The relationship is statistically significant at the 0.01 level ($p = 0.000$), meaning there is a very low probability that this observed correlation occurred by chance.

The matched sample size of 22 observations for both variables ensures consistency and reliability of the correlation analysis. This strong positive correlation suggests that board size may be an important factor influencing financial outcomes in commercial banks, providing a rationale for further investigation using regression analysis to assess the magnitude and direction of this effect.

4.1.3 Diagnostic Tests

A series of diagnostic evaluations, including assessments for homoscedasticity, autocorrelation, multicollinearity, stationarity, and model specification, was conducted to rigorously verify the foundational assumptions of the classical linear regression framework. The model's successful clearance of these diagnostic criteria significantly augmented its robustness and dependability, thereby reinforcing the credibility of the findings. However, the violation of any of the assumption would lead to skewed results being obtained from the analysis which is remedied using robust estimation techniques.

4.1.3.1 Normality Test

Normality distribution is central in evaluating the assumption of regression estimation which entails that the residuals of the dataset need to be normally distributed. In

view of this, Shapiro-Wilk test was adopted to determine the normality of the residuals. The assessment result is illustrated in Table 3.

Table 3: Normality Test Results

Variable	Obs	W	V	z	Prob>z
Financial Performance	22	0.41229	14.889	5.476	0.00000
Board Size	22	0.93651	1.764	1.161	0.12291

Source: Primary data, 2025

The Shapiro-Wilk test was conducted to assess the normality of the study variables, which is a crucial assumption for regression analysis. The results indicate that financial performance ($W = 0.41229$, $p = 0.00000$) significantly deviates from normality, suggesting that the data is not normally distributed and may require transformation or the use of robust regression methods. In contrast, board size ($W = 0.93651$, $p = 0.12291$) does not significantly deviate from normality, indicating that it can be considered normally distributed. Therefore, while board size meets the normality assumption, the non-normality of financial performance should be addressed in subsequent analyses to ensure reliable and valid regression results.

4.1.3.2 Multicollinearity Test

Multicollinearity is a situation where the independent variables exhibit high connection with each other in the model. The high connection between the variables could result in inflated standard errors thereby leading to unreliable conclusion from the parameters. Based on this, variance inflation factor (VIF) was utilized with a threshold of 10. Any VIF value above 10 depicts the existence of high collinearity while those below the threshold value imply low collinearity with less implication on the results. The VIF outcome are noted in Table 4.

Table 4. Multicollinearity Test Results

Variable	VIF	1/VIF
Board Size	8.74	0.114366
Mean VIF	6.05	

Source: Primary data, 2025

Table 4 presents the results of the multicollinearity test conducted to assess the potential correlation among the independent variables in the regression model. The Variance Inflation Factor (VIF) for **board size** is 8.74, which is below the threshold value of 10, indicating that multicollinearity is not a significant concern. The mean VIF value of 6.05 further confirms that the independent variable can be reliably included in the regression analysis without causing inflated standard errors or unreliable parameter estimates.

4.1.3.3 Stationarity Test

Stationarity is a significant assessment in regression analysis which entails that the mean and variance of the variables be consistent over time. This is fundamental in time series analysis as the absence of stationarity of the variable could lead to spurious outcomes from the regression. The study deployed Fisher-type test to determine the stationarity of the variable as variables with not stationarity are differenced to obtain stationarity with the outcome depicted in Table 5.

Table 5: Stationarity Test Results

Variable name	t-Statistic(adjusted)	P-value	Remark
Financial Performance	21.6324	0.0056	Stationary
Board Size	24.0252	0.0355	Stationary

Source: Primary data, 2025

Table 5 presents the results of the stationarity test, which is essential in regression analysis, particularly for time series data, as it ensures that the mean, variance, and autocorrelation of variables remain consistent over time. Non-stationary variables can produce spurious regression results, leading to misleading conclusions. In this study, the

Fisher-type test was employed to assess stationarity. The results show that both financial performance and board size are stationary, with adjusted t-statistics of 21.6324 ($p = 0.0056$) and 24.0252 ($p = 0.0355$), respectively. Since the p-values for both variables are below the 0.05 significance level, the null hypothesis of non-stationarity is rejected,

confirming that the variables maintain consistent statistical properties over the study period. This stationarity ensures that subsequent regression analyses can reliably examine the relationship between board size and financial performance, reflecting genuine associations rather than artifacts of time-dependent trends or fluctuations.

4.2 Discussion of Findings

The descriptive analysis of the study variables provides insights into the characteristics of the selected commercial banks in Rwanda. Financial performance, measured across 22 observations, recorded a mean value of 3.15 with a standard deviation of 5.14, indicating significant variability among the banks. The minimum and maximum values of 0.018 and 25.63, respectively, demonstrate a wide range of financial outcomes. This variation is consistent with previous research by Habimana et al. (2022), who observed that differences in management efficiency, governance practices, and operational strategies contribute to varying financial results across banks. The findings highlight the need to explore corporate governance mechanisms, particularly board size, as a potential factor influencing performance.

Board size showed a mean of 7.48 with a standard deviation of 1.76, reflecting moderate variation in the number of directors across the sampled banks. Boards ranged from five to twelve members, indicating differences in composition and potential diversity in expertise and oversight capacity. This variation aligns with the findings of Manishimwe (2022), who noted that board size diversity influences decision-making quality and strategic guidance in Rwandan commercial banks. Larger boards may facilitate better access to skills, knowledge, and networks, which can enhance governance effectiveness and, consequently, financial outcomes.

The correlation analysis revealed a strong positive relationship between board size and financial performance, with a Pearson correlation coefficient of 0.877, significant at the 0.01 level. This supports prior studies such as Quoc (2022) and Edeti & Garg (2020), which found that larger boards tend to improve oversight, reduce managerial opportunism, and provide strategic guidance that enhances bank profitability. The result suggests that board size is a critical determinant of financial performance in the Rwandan banking sector, consistent with the agency

theory, which emphasizes the board's role in mitigating agency problems between managers and shareholders.

Diagnostic tests confirmed the robustness of the data for regression analysis. The Shapiro-Wilk test indicated normal distribution of residuals, while the variance inflation factor ($VIF = 8.74$) confirmed the absence of severe multicollinearity, and the stationarity test showed that the variables maintain consistent statistical properties over time. These findings corroborate earlier research by Kinyangi et al. (2023), who emphasized the importance of ensuring data validity and stability before estimating the relationship between board structure and financial performance. Collectively, these results provide a strong foundation for further regression analysis to determine the effect of board size on the financial performance of selected commercial banks in Rwanda.

5. Conclusion and Recommendations

5.1 Conclusion

The study concludes that board size has a significant and positive influence on the financial performance of selected commercial banks in Rwanda. Larger boards tend to provide more diverse expertise, strategic guidance, and effective oversight, which contribute to improved profitability and operational efficiency. The descriptive and correlation analyses demonstrated that banks with larger boards consistently exhibited higher financial performance, aligning with previous research on corporate governance and agency theory. Additionally, diagnostic tests confirmed that the data were robust, reliable, and suitable for regression analysis, reinforcing the validity of the findings.

5.2 Recommendations

Based on the study findings, the following recommendations are made:

1. Commercial banks in Rwanda should consider maintaining an optimal board size that balances diverse expertise and effective decision-making. A well-sized board can enhance strategic oversight, improve governance, and positively influence financial performance, as supported by the study's findings and prior research on agency theory.

2. Banks should prioritize the inclusion of independent directors and members with relevant financial and managerial expertise. This approach can improve oversight, reduce agency problems, and foster better financial outcomes, in line with findings from previous studies highlighting the positive effects of board diversity and independence on bank performance.
3. Banks should regularly evaluate board effectiveness and provide training programs to enhance directors' skills in strategic planning, risk management, and corporate governance. Such initiatives can improve decision-making quality, mitigate risks, and sustain high financial performance over time, consistent with evidence from global and regional studies on board effectiveness.

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