



Board Composition and Financial Performance of Firms Listed on the Rwanda Stock Exchange

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Abstract: This study examined how board composition affects the financial performance of firms listed on the Rwanda Stock Exchange (RSE), with emphasis on board size, independence, tenure, and expertise. A positivist quantitative explanatory design was used. Secondary panel data were extracted from audited annual reports, corporate-governance disclosures, and RSE publications for six listed firms, producing 144 firm-period observations. Return on assets measured financial performance. Descriptive statistics, panel unit-root and cointegration tests, the Hausman specification test, fixed-effects regression, and Prais-Winsten regression with panel-corrected standard errors and a common AR(1) correction were applied. The preferred model used 138 observations, was jointly significant, and explained 72.29% of the variation in financial performance. Board size had a significant negative effect, whereas board independence and board tenure had significant positive effects. Board expertise also had a significant negative association, indicating that formal qualifications do not automatically translate into effective strategic or monitoring contributions. The study concludes that board functionality is more important than structural compliance alone. Based on the findings, the study recommends operationally manageable boards, substantive director independence, balanced continuity and renewal, and competency matrices that align expertise with industry, strategy, risk, and committee needs. The findings provide Rwanda-specific evidence from a frontier capital market and show that board attributes can influence performance in different directions.

Keywords: Board size, Independence, Tenure; expertise, Financial performance, Rwanda Stock Exchange

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1. Introduction

Corporate boards are a central internal governance mechanism through which shareholders monitor management, guide strategy, and protect the integrity of financial reporting. Agency theory views the board as a response to the separation of ownership and control: board structure affects monitoring intensity, accountability, and the capacity to discipline managerial opportunism (Jensen & Meckling, 1976; Fama & Jensen, 1983). Resource dependence theory adds that directors connect firms to information, legitimacy, networks, and capital (Pfeffer & Salancik, 1978), while the resource-based view treats board knowledge and experience as potentially valuable and difficult-to-replicate capabilities (Barney, 1991).

International reforms reinforced these expectations. The Cadbury Report emphasized separation of board leadership,

stronger non-executive representation, and independent audit and remuneration committees (Committee on the Financial Aspects of Corporate Governance, 1992). The Sarbanes–Oxley Act subsequently strengthened auditor independence, financial-report certification, internal-control assessment, and disclosure of audit-committee financial expertise (Sarbanes–Oxley Act of 2002, 2002). The G20/OECD Principles of Corporate Governance (2023) likewise stress strategic guidance, accountability, independence, transparency, and effective committee structures. Together, these reforms frame board composition as an operational determinant of oversight rather than a ceremonial compliance matter.

The empirical relationship between board composition and performance remains unsettled. Larger boards can broaden knowledge and networks, yet may slow decisions and diffuse responsibility (Coles et al., 2008; Yermack, 1996). Independent directors may strengthen challenge and

minority-shareholder protection, but formal independence is ineffective without autonomy, information, time, and relevant competence (Bhagat & Black, 2002; Hermalin & Weisbach, 2003). Tenure can generate firm-specific knowledge and institutional memory but may eventually weaken objectivity (Elms & Pugliese, 2023; Vafeas, 2003). Expertise can improve financial oversight and strategy, although its effect depends on relevance, deployment, and the possibility that struggling firms appoint experts reactively.

These tensions are particularly important in Rwanda. The RSE is a small frontier exchange comprising domestic and cross-listed issuers operating under an evolving disclosure and governance framework. Rwanda's Capital Market Corporate Governance Code promotes non-executive and independent representation, separation of chair and chief executive roles, and appropriately skilled committees; the 2024 code update further incorporates environmental, social, and governance considerations (Capital Market Authority [Rwanda], 2012, 2024). Yet structural compliance alone does not demonstrate whether specific board arrangements improve profitability.

Recent African and emerging-market evidence is mixed and rarely isolates Rwanda. Danso et al. (2024) reported positive effects of expertise diversity but predominantly negative board-size coefficients in selected sub-Saharan African markets. Magoma et al. (2024) showed that board characteristics operate differently across East African frontier-market banks. Studies from Asian emerging markets likewise report context-sensitive effects for size, independence, and expertise (Alam et al., 2025; Khan et al., 2024). Multi-country and sector-specific findings cannot therefore be transferred mechanically to the RSE.

This study addresses the contextual and methodological gap by examining the joint effects of board size, board independence, board tenure, and board expertise on return on assets among RSE-listed firms. It uses panel diagnostics and an estimator suited to heteroscedasticity and panel dependence. Specifically, the study asks whether each of the four board attributes significantly affects financial performance and whether its effect is positive or negative. The contribution is both empirical—recent Rwanda-specific evidence—and practical, because it distinguishes functional board quality from formal board structure.

2. Literature Review

2.1 Theoretical Foundation

Agency theory predicts that boards improve performance when their monitoring design reduces information asymmetry and aligns managers with shareholders (Jensen & Meckling, 1976). Independence should strengthen objective challenge; board size can add monitoring capacity but may create free-riding; tenure can improve knowledge while risking entrenchment; and expertise should improve evaluation of strategy, reporting, and risk. Resource dependence theory shifts attention from control to provision

of external resources, proposing that directors create value through connections, legitimacy, advice, and access (Hillman & Dalziel, 2003; Pfeffer & Salancik, 1978).

The resource-based view explains how director knowledge, experience, and institutional memory can become valuable organizational capabilities when the firm is structured to deploy them effectively (Barney, 1991; Wernerfelt, 1984). The three perspectives are complementary. Agency theory explains monitoring, resource dependence explains external access, and the resource-based view explains internally accumulated board capability. Their combination also predicts that no single structural feature is universally beneficial: value depends on board processes, firm needs, and institutional context.

2.2 Board Size and Financial Performance

Board size embodies a trade-off between resource breadth and decision efficiency. Larger boards can supply more skills and connections, which is useful for complex organizations (Coles et al., 2008). Conversely, additional members can increase communication costs, slow deliberation, weaken individual accountability, and enable free-riding. Yermack (1996) found higher valuation among firms with smaller boards, while Danso et al. (2024) reported predominantly negative board-size coefficients for listed firms in Ghana, Nigeria, and Kenya. Because the balance depends on organizational and institutional conditions, the net effect for Rwanda requires direct testing.

2.3 Board Independence and Financial Performance

Independent non-executive directors are expected to challenge management, oversee audit and risk, and protect minority investors. These functions support a positive relationship with performance under agency theory. However, independence can be nominal where directors are tied to controlling shareholders, lack firm knowledge, or receive inadequate information. Bhagat and Black (2002) questioned a universal long-run performance benefit, whereas recent sub-Saharan African evidence is more favorable (Danso et al., 2024). The RSE context therefore offers a useful test of whether independence operates substantively under a developing governance regime.

2.4 Board Tenure and Financial Performance

Tenure produces a learning–entrenchment trade-off. Time on the board allows directors to accumulate strategic familiarity, relational capital, and institutional memory. Excessive tenure may, however, create conformity, management ties, and reduced willingness to challenge. Vafeas (2003) linked director tenure to performance, and Elms and Pugliese (2023) emphasized that directors' contributions evolve with time, task, and context. Since tenure is less frequently examined alongside other board characteristics in African markets, its inclusion extends the regional evidence base.

2.5 Board Expertise and Financial Performance

Expertise should enable directors to interpret accounts, evaluate investments, oversee risk, and contribute informed strategic advice. Studies in sub-Saharan Africa and emerging economies often report positive effects (Alam et al., 2025; Danso et al., 2024). Yet observable qualifications may not capture recency, relevance, independence, attendance, committee placement, or influence. Expertise may also be added after performance deteriorates, creating reverse-causality concerns. The appropriate interpretation is therefore the effect of disclosed expertise, not an assumption that every credential produces boardroom capability.

3. Methodology

The study adopted a positivist philosophy and a quantitative explanatory panel design. The unit of analysis was the listed-firm period. Secondary data were extracted using a structured documentary analysis guide from audited annual reports, financial statements, corporate-governance reports, and RSE publications. The effective dataset comprised six firms and 144 observations; the preferred specification used 138 observations after inclusion of the lagged error-correction term.

Financial performance was measured by return on assets. Board size was the number of serving directors; board independence captured independent non-executive representation; board tenure measured average years of director service; and board expertise captured disclosed relevant financial, industry, or managerial competence. These measures reflected the information consistently available in corporate reports.

Analysis was conducted in STATA. Descriptive statistics summarized the data. Panel unit-root tests assessed stationarity and the Pedroni residual-based test evaluated cointegration. Fixed- and random-effects estimators were compared using the Hausman test. The modified Wald test assessed groupwise heteroscedasticity, while residual

checks assessed serial dependence and potential endogeneity. Because heteroscedasticity was detected, final hypothesis decisions relied on Prais–Winsten regression with panel-corrected standard errors (PCSEs) and a common AR(1) correction.

The general specification was $ROA_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BT_{it} + \beta_4 BE_{it} + \mu_i + \varepsilon_{it}$, where BS, BI, BT, and BE represent board size, independence, tenure, and expertise; μ_i captures unobserved firm effects; and ε_{it} is the idiosyncratic error. A lagged error-correction term was included in the preferred model following evidence of cointegration. Null hypotheses were rejected at $p < .05$. Because the design is observational, coefficients are interpreted as adjusted panel associations rather than definitive experimental causal effects.

The study relied exclusively on publicly available secondary data from audited financial statements, annual reports, corporate-governance disclosures, and RSE publications; consequently, no human participants were recruited and no personally identifiable data were collected. Data were extracted and analyzed consistently, sources were acknowledged in accordance with APA guidelines, and results were reported without fabrication, falsification, or selective omission. The analysis was conducted solely for academic and policy purposes, and firm-level information was interpreted in a balanced manner to avoid misrepresentation.

4. Results and Discussion

4.1 Descriptive Results

The 144 observations show meaningful variation across performance and governance measures. Average ROA was 6.54, but the range from -3.21 to 18.42 indicates that the sample included both loss-making and strongly profitable periods. Boards averaged 8.59 members and 3.64 years of tenure. Independence and expertise also varied substantially, providing sufficient within-panel movement for multivariate analysis.

Table 1: Descriptive Statistics

Variable	N	Mean	SD	Minimum	Maximum
Return on assets	144	6.541	5.796	−3.206	18.416
Board tenure	144	3.638	2.220	0.900	9.091
Board size	144	8.590	2.084	5.000	12.000
Board independence	144	4.438	1.978	0.000	8.000
Board expertise	144	10.671	5.869	5.000	24.800

Note. Source: Author’s analysis of dissertation data (2026).

4.2 Diagnostic Tests

The panel series were non-stationary at level but stationary after first differencing. The Pedroni statistics rejected the null of no cointegration, indicating a stable long-run relationship among financial performance and the board variables. The Hausman result favored fixed effects ($\chi^2 = 10.94$, $p = .0273$), showing that unobserved firm

characteristics were correlated with the regressors. The modified Wald test detected groupwise heteroscedasticity ($p < .001$). These results justified reporting fixed effects as the baseline and PCSE with AR(1) correction as the preferred robust specification.

4.3 Regression Results

Table 2: Panel Regression Results

Variable	Fixed-effects b	p	PCSE b	SE	z	p
Board size	-2.2472	.003	-2.1683	.3576	-6.06	< .001
Board independence	3.8558	< .001	3.0783	.3385	9.10	< .001
Board tenure	.6113	.104	.5264	.1090	4.83	< .001
Board expertise	-1.2781	.021	-.9708	.1850	-5.25	< .001
Lagged error-correction term	—	—	.8174	.0677	12.07	< .001
Constant	20.1496	< .001	20.0549	1.1117	18.04	< .001

Note. Dependent variable: return on assets. PCSE model: $N = 138$; six groups; $R^2 = .7229$; Wald $\chi^2(5) = 350.49$, $p < .001$; common AR(1) $\rho = .1421$. Source: Author's analysis of dissertation data (2026).

The preferred model was jointly significant and explained 72.29% of the variation in ROA. All four board variables were significant, but their directions differed. Board size and board expertise were negatively associated with performance, whereas independence and tenure were positively associated. Thus, all four null hypotheses were rejected.

4.4 Board Size

Board size had a significant negative coefficient. Within the observed firms, the coordination-cost mechanism appears to outweigh the marginal resource benefit of additional directors. Larger boards may slow deliberation, diffuse responsibility, and reduce the visibility of individual monitoring contributions. The result agrees with the negative African accounting-performance evidence reported by Danso et al. (2024) and supports the agency-theory concern that monitoring quality can decline when collective responsibility becomes too dispersed. The practical implication is not that boards should be minimal, but that every additional seat should provide identifiable committee, strategic, technical, or stakeholder value.

4.5 Board Independence

Board independence had a significant positive coefficient. Independent directors can provide objective challenge, reduce agency-related inefficiency, and strengthen audit, risk, and financial oversight. The result is consistent with recent positive evidence from sub-Saharan Africa (Danso et al., 2024), while contrasting with findings from some concentrated-ownership settings (Khan et al., 2024). This

divergence reinforces the study's central contextual claim: the performance value of independence depends on institutional conditions and on whether independence is substantive rather than merely reported.

4.6 Board Tenure

Board tenure was positively associated with performance in the robust model. Accumulated firm-specific knowledge, strategic familiarity, and institutional memory therefore appear valuable within the range observed. This supports the capability logic of the resource-based view and the learning side of the tenure trade-off (Elms & Pugliese, 2023; Vafeas, 2003). The result does not imply that unlimited tenure is optimal. Boards should preserve effective experience while using evaluation, succession planning, and staggered refreshment to protect independence and introduce new perspectives.

4.7 Board Expertise

Board expertise had a significant negative coefficient, contrary to much recent literature (Alam et al., 2025; Danso et al., 2024). The result should not be read as evidence that knowledge is harmful. Rather, disclosed qualifications may fail to capture relevance, independence, recency, attendance, committee deployment, or actual influence. Expert appointments may also be reactive when firms face restructuring or weak performance. The finding therefore cautions against credential counts and supports competency matrices that connect each director's knowledge to the firm's sector, strategy, risks, and committee responsibilities.

5. Conclusion and Recommendations

5.1 Conclusions by Research Question

Board size. Board size significantly affects financial performance, but the association is negative. The sample suggests that coordination and accountability costs increase when board expansion is not matched by clear functional value.

Board independence. Independence significantly and positively affects financial performance. Independent directors appear to strengthen monitoring, accountability, and disciplined use of assets when they have genuine autonomy and adequate information.

Board tenure. Tenure has a significant positive relationship with financial performance within the observed range. Continuity, institutional memory, and firm-specific knowledge are useful governance resources, although long service still requires safeguards against entrenchment.

Board expertise. The disclosed expertise measure has a significant negative association with performance. Formal credentials alone are insufficient; expertise must be relevant, independent, current, well deployed, and converted into effective challenge and advice.

5.2 Recommendations

Based on the findings of this study, the following recommendations are proposed:

1. Regulators and the RSE should strengthen disclosure on independence criteria, tenure, attendance, committee roles, qualifications, sector experience, and the strategic relevance of director expertise. Such disclosure would allow investors to evaluate board functionality rather than simple headcounts.
2. Nomination committees should maintain boards large enough to supply essential capabilities and committee coverage, but small enough for timely discussion and individual accountability. Each proposed appointment should be linked to a documented capability gap.
3. Listed firms should prioritize genuinely independent non-executive directors and ensure their effective representation on audit, risk, nomination, and remuneration committees. Independence assessments should consider relationships, information access, time commitment, and demonstrated challenge.
4. Boards should retain valuable institutional knowledge while implementing periodic evaluations, succession plans, and staggered renewal. Tenure policies should avoid abrupt loss of experience as well as excessive familiarity.
5. Firms should replace simple expertise counts with board competency matrices. Expertise should be matched to finance, industry operations, risk,

technology, law, sustainability, and capital-market reporting, reinforced through continuing development and annual board evaluation.

6. Investors and analysts should integrate board composition into valuation and stewardship, but evaluate practical contribution, committee deployment, and accountability rather than relying only on formal independence labels or professional qualifications.

5.3 Limitations and Future Research

The study is limited by the small number of RSE-listed firms, reliance on public disclosures, and the inability of documentary measures to capture deliberation quality, informal influence, and actual director behavior. Results should therefore be generalized cautiously beyond the listed-firm context. Future research should extend the time series, include market-based outcomes such as Tobin's Q and stock returns, distinguish types of expertise, test non-linear tenure and board-size effects, and incorporate governance variables such as gender diversity, CEO duality, attendance, committee effectiveness, and ownership concentration. Interviews with directors, regulators, investors, and company secretaries could also explain the processes behind the statistical relationships.

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