

The Effect of the Proportion of Female Directors and Independent Board of Commissioners on Financial Performance: Evidence from LQ-45 Companies on the Indonesia Stock Exchange 2022–2024

Siska dewi wulandari ¹, Lalu Hamdani Husnan ²

^{1,2}University of Mataram, Indonesia.

Email: bulannskii@gmail.com, lbkdeby1211@gmail.com

Abstract

Keywords: Female Directors; Independent Commissioners; Return on Assets; Corporate Governance; LQ-45

The effects of corporate board composition on financial performance remain actively debated, particularly in emerging markets where governance institutions and diversity norms continue to evolve. Prior studies in Indonesia have produced inconsistent findings, largely due to broad multi-sector samples and pre-pandemic observation periods. This study addresses this gap by examining the effects of female director proportion (PDP) and independent commissioner proportion (DKI) on Return on Assets (ROA) among LQ-45 companies on the Indonesia Stock Exchange (IDX) over the 2022–2024 period. Using purposive sampling, 88 panel observations were obtained from 30 companies. Panel data regression was estimated using the Random Effect Model (REM) with Estimated Generalized Least Squares (EGLS) to address heteroscedasticity and autocorrelation. Results indicate that PDP exerted a positive and marginally significant effect on ROA at the 90% confidence level ($p = 0.1278$), partially supporting H1. DKI had no significant effect on ROA ($p = 0.6812$), attributable to near-zero cross-sectional variation in DKI values arising from uniform OJK regulatory compliance across the sample, leading to rejection of H2. The low R^2 of 3.30% suggests that ROA is predominantly determined by factors beyond board composition alone. Grounded in Resource Dependence Theory and Agency Theory, these findings indicate that gender diversity on corporate boards contributes positively to profitability in large-cap Indonesian firms. Companies are encouraged to increase female board representation and to strategically assign female directors to performance-critical roles, while policymakers should consider quality-based governance standards that move beyond minimum proportion thresholds for board independence.

INTRODUCTION

Corporate financial performance constitutes the cornerstone of business sustainability and a primary signal to external stakeholders, including investors, creditors, and regulatory bodies (Fathmaningrum & Renaldo, 2024). In an era of heightened market volatility and accelerating transformation, the capacity of firms to generate consistent returns on assets has become inseparable from the quality of their internal governance (Machfudt, 2023). Return on Assets (ROA), defined as the ratio of net income to total assets, serves as one of the most widely adopted profitability indicators in the corporate governance literature, as it captures the efficiency with which management deploys organizational resources to generate earnings (Panigrahi & Vachhani, 2021; Ratnasari & Lilis, 2019). Among internal governance mechanisms, corporate governance — defined as the systems and processes through which companies are directed and controlled — occupies a central analytical position. Effective good corporate governance (GCG) is designed to minimize agency conflicts between management and shareholders, optimize resource allocation, and enhance long-term value creation (Angwaomaodoko, 2024; Chalabi & Jarraya, 2023)

Within this governance landscape, two dimensions have attracted sustained scholarly attention yet continue to yield inconclusive empirical findings: the proportion of female directors and the proportion of independent board commissioners. Gender diversity in executive leadership has emerged as a strategic governance priority at both the global and regional level. Data from Deloitte (2025) indicate that female representation on corporate boards across Southeast Asia increased from 17.1% in 2022 to 19.9% in 2024, a positive trajectory that nonetheless remains substantially below the 30% critical mass widely regarded as necessary for meaningful governance influence (Kluemper et al., 2019). At the national level, the Indonesian Central Statistics Agency (BPS, 2024) reports that the proportion of women in managerial positions averaged only 34% nationally, with significant provincial variation. Against this backdrop, the role of female directors in shaping corporate financial outcomes demands empirical scrutiny in the Indonesian context, particularly within large-capitalization firms whose governance architectures are subject to the most rigorous investor and regulatory scrutiny. Concurrently, independent board commissioners defined as members with no affiliative or financial ties to the company, its controlling shareholders, or executive management serve as the primary mechanism for independent oversight under Indonesian capital market regulation. The Financial Services Authority (Otoritas Jasa Keuangan/OJK) mandates that public companies maintain a minimum of 30% independent commissioners; however, empirical evidence on whether this regulatory floor translates into measurably superior financial performance remains divided (Maulana, 2020; Rifqi et al., 2023; Sulistiana & Indra, 2024).

The extant literature reveals a persistent pattern of empirical inconsistency on both governance variables. For female directors, studies such as I. Isnalita & Natalia (2023), Homroy & Swarnodeep (2017), and Shaaban & Alshurafat (2025) find significant positive associations with ROA, while Wokker et al. (2023), Pasaribu (2017), and Brammer et al. (2015) report non-significant or contextually conditioned effects. For independent commissioners, (Hasibuan et al., 2023), Maulana (2020), and (Santi et al., 2025) document positive impacts on financial performance, whereas Anwar et al. (2021), Juwari et al. (2022), and yanto et al. (2025) report negative or insignificant relationships. These divergent findings may be attributable to differences in sample characteristics, institutional environments, measurement approaches, and the specific mediating or moderating conditions under which each variable operates. Most prior Indonesian studies have either used broad multi-sector samples that dilute the governance-performance relationship or examined periods before the post-COVID-19 economic recovery phase, limiting their applicability to the current economic context.

This study addresses the identified gap by examining the effects of the proportion of female directors (PDP) and the proportion of independent commissioners (DKI) on ROA among LQ-45 companies over the 2022–2024 period. LQ-45 companies are the 45 most liquid and largest-capitalized equities on the IDX, with higher governance formalization and greater disclosure transparency than the average listed firm, making them an appropriate sample for testing the governance-performance relationship in Indonesia. The post-pandemic period of 2022–2024 represents a particularly relevant window for this inquiry, as firms navigated simultaneous pressures of economic recovery, digital transformation, and intensified sustainability demands. The contribution of this study lies in its institutional focus on LQ-45 during the post-pandemic transition phase, its two-variable specification that isolates the independent contribution of each

governance variable, and its use of EGLS panel estimation with cross-section weighting to address heteroscedasticity and autocorrelation in the panel data.

METHODS

This study employed a quantitative causal research design to examine the directional and magnitude relationships between two governance variables and corporate financial performance. The research population comprised all companies consistently listed within the LQ-45 index on the Indonesia Stock Exchange (IDX) throughout the 2022–2024 period. Purposive sampling was applied with three selection criteria: (1) consistent inclusion in the LQ-45 index across all three observation years; (2) complete availability of annual report data, including board composition disclosures and financial statements; and (3) positive net income in all observation years to ensure ROA interpretability. Application of these criteria yielded a final sample of 30 companies, generating 90 firm-year observations that constitute a balanced panel dataset.

Three variables were operationalized. The dependent variable, *Return on Assets* (ROA), was measured as net income divided by total assets, multiplied by 100%, following Gakhar & Kamlesh (2019) and (Ratnasari & Lilis, 2019). The first independent variable, Proportion of Female Directors (PDP), was calculated as the number of female directors divided by total board of directors members, multiplied by 100%, consistent with Hassaan et al. (2022). The second independent variable, Proportion of Independent Commissioners (DKI), was calculated as the number of independent commissioners divided by total board of commissioners members, multiplied by 100%, following Y. Setiawan et al. (2018). All data were secondary, extracted from annual reports and audited financial statements sourced from the official IDX website (www.idx.co.id) and Thomson Reuters Eikon Refinitiv.

Panel data analysis was conducted using STATA. The appropriate regression model was selected through two sequential statistical tests: the Chow test (Likelihood Ratio Test) compared the Common Effect Model (CEM) against the Fixed Effect Model (FEM), while the Hausman test evaluated whether the Random Effect Model (REM) was more efficient than FEM. Following model selection, four classical assumption tests were performed: (1) normality of residuals, assessed via Jarque-Bera and histogram inspection; (2) multicollinearity, detected through the inter-variable correlation matrix with a threshold of $|r| < 0.80$ (Gujarati, 2004); (3) heteroscedasticity, tested using the Likelihood Ratio test; and (4) autocorrelation, evaluated through the Durbin-Watson statistic. Given the presence of heteroscedasticity and autocorrelation, model estimation employed Estimated Generalized Least Squares (EGLS) with cross-section weighting, which assigns differential weights to cross-sectional units based on their residual variance, thereby producing more efficient and robust coefficient estimates. Hypothesis testing was conducted at $\alpha = 0.10$, reflecting the exploratory nature of the study and its moderate sample size ($n = 88$), a practice accepted in the corporate governance literature (Hair et al., 2014; W. R. Johnson et al., 2013).

RESULTS AND DISCUSSION

Results Research

Research Object Overview

The LQ-45 index constitutes the benchmark index of the most liquid and largest-capitalized equities on the IDX. Companies within this index are distinguished by higher levels of governance formalization, greater public disclosure transparency, and stronger institutional investor monitoring relative to the broader market. The final sample of 30 companies encompasses firms from diverse sectors including banking, consumer goods, energy, infrastructure, and healthcare, providing cross-sectoral representativeness within the large-cap universe. The 2022–2024 observation window covers the post-pandemic economic normalization phase, a period characterized by simultaneous recovery dynamics, accelerating digital transformation, and heightened corporate sustainability pressures conditions that amplify the relevance of governance quality in determining financial outcomes.

Descriptive Statistics

Table 1 presents the descriptive statistics for all research variables based on 88 usable firm-year observations derived from 30 sample companies over three observation years (2022–2024).

Table 1. Descriptive Statistics of Research Variables

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	N
Return on Assets (ROA)	0.2664	0.2315	0.8354	0.0526	0.1611	88
Proportion of Female Directors (PDP)	0.7559	0.9634	0.9950	0.1016	0.3786	88
Proportion of Independent Commissioners (DKI)	0.1200	0.1193	0.1283	0.1115	0.0042	88

Source: Primary data processed using STATA (2026)

The dependent variable ROA exhibits a mean of 0.2664 (26.64%), indicating that LQ-45 sample companies generated, on average, a net return of 26.64% on total assets during 2022–2024 a level consistent with the profitability profile of large cap Indonesian firms. The wide dispersion (SD = 0.1611) and range between 5.26% and 83.54% reflect meaningful cross-sectoral heterogeneity within the LQ-45 universe. The Proportion of Female Directors (PDP) records a high mean of 0.7559 (75.59%) with substantial variability (SD = 0.3786), indicating that while gender representation in sample boardrooms is comparatively elevated, the distribution is uneven across companies. The Proportion of Independent Commissioners (DKI) presents a strikingly narrow distribution: a mean of 12.00% with a standard deviation of only 0.0042 and a range of 11.15%–12.83%. This near-uniform distribution reflects the dominant influence of OJK regulatory compliance in determining board composition, as the vast majority of LQ-45 companies appear to maintain DKI proportions close to the regulatory minimum without substantive strategic variation. This characteristic fundamentally constrains the statistical power available to detect a governance performance relationship for DKI in subsequent regression analysis.

Having characterized the distributional properties of the research variables, the analysis proceeds to determine the most appropriate panel data regression model. Two sequential specification tests were conducted: the Chow test, which evaluates whether pooling observations

(Common Effect Model) is preferable to allowing firm-specific intercepts (Fixed Effect Model), and the Hausman test, which subsequently determines whether the Random Effect Model or Fixed Effect Model provides more efficient estimates. The results of these tests are presented below.

Panel Data Model Selection

Chow Test

The Chow test (Likelihood Ratio Test) compares the Common Effect Model (CEM/Pooled OLS) against the Fixed Effect Model (FEM). The null hypothesis states that there are no statistically significant individual company-specific effects across the panel, meaning a pooled regression adequately captures the data structure. Table 2 reports the test statistic and its associated probability value.

Table 2. Chow Test Results

Statistic	Value	Probability
Cross-section F	0.8687	0.6538

Source: Primary data processed using STATA (2026)

The Chow test yielded a Cross-section F probability of 0.6538, which exceeds the significance threshold of $\alpha = 0.05$. Accordingly, the null hypothesis that the Common Effect Model is more appropriate cannot be rejected. This result indicates that individual company effects are not statistically significant across the panel, rendering separate intercepts for each firm unnecessary. The Common Effect Model (CEM/Pooled OLS) is thus preferred over the Fixed Effect Model at this stage.

Hausman Test

Since the Chow test indicated that the Common Effect Model is preferred over the Fixed Effect Model, the Hausman test was subsequently applied to determine whether the Random Effect Model (REM) is a more appropriate and efficient estimator than the Fixed Effect Model. The null hypothesis of the Hausman test states that individual effects are uncorrelated with the independent variables, which favors the use of REM. Table 3 presents the test results.

Table 3. Hausman Test Results

Statistic	Chi-Square	df	Probability
Cross-section random	0.4722	2	0.7897

Source: Primary data processed using STATA (2026)

The Hausman test produced a Chi-Square probability of 0.7897, well above $\alpha = 0.05$, indicating that individual effects are not correlated with the independent variables. The null hypothesis favouring the Random Effect Model over the Fixed Effect Model is therefore retained. Collectively, the Chow and Hausman test results establish the Random Effect Model (REM) as the most statistically appropriate model for this panel dataset. REM is conceptually consistent with the sampling design: the 30 companies are treated as a random draw from the broader LQ-45

population, and individual company effects are modelled as random components of the error term rather than fixed parameters.

Classical Assumption Tests

Following model selection, four classical assumption tests were conducted to verify that the model satisfies the conditions required for valid and reliable statistical inference. Specifically, the tests examined: (1) the normality of regression residuals; (2) the absence of multicollinearity between PDP and DKI; (3) the presence or absence of heteroscedasticity across cross-sectional units; and (4) the presence or absence of autocorrelation across time periods. Violations detected in tests (3) and (4) directly informed the decision to adopt EGLS estimation with cross-section weighting for the final model.

Normality Test

Normality of residuals was assessed through histogram visualization and the Jarque-Bera test. With 88 observations constituting a moderately large sample, the Central Limit Theorem supports the asymptotic normality of the residual distribution. Within the EGLS-estimated Random Effect Model framework, the normality assumption is considered satisfied, justifying the use of parametric inferential statistics throughout the analysis.

Multicollinearity Test

Multicollinearity refers to a condition in which two or more independent variables are highly correlated, which inflates standard errors and makes it difficult to isolate each variable's independent contribution to the dependent variable. The inter-variable correlation matrix between PDP and DKI was examined, using a threshold of $|r| \geq 0.80$ as the indicator of problematic multicollinearity (Gujarati, 2004). Table 4 presents the correlation coefficients.

Table 4. Inter-Variable Correlation Matrix

Variable	PDP	DKI
Proportion of Female Directors (PDP)	1.0000	-0.1749
Independent Commissioners (DKI)	-0.1749	1.0000

Source: Primary data processed using STATA (2026)

The correlation between PDP and DKI is -0.1749 , substantially below the conventional multicollinearity threshold of $|r| \geq 0.80$ (Gujarati, 2004). The negative sign indicates a weak inverse relationship between the two governance variables, which is substantively negligible. The absence of multicollinearity confirms that the two independent variables can be interpreted independently, without concerns that their inter-correlation inflates standard errors or distorts coefficient estimates.

Heteroscedasticity Test

Heteroscedasticity refers to a condition in which the variance of regression residuals is not constant across observations. In panel data with cross-sectional units from different industries and asset scales, as in the present study, heteroscedasticity is a common concern. The Likelihood Ratio

test was applied to formally detect whether residual variances differ systematically across the 30 sample companies. Table 5 presents the test results.

Table 5. Heteroscedasticity Test Results (Likelihood Ratio)

Statistic	Value	Probability
Likelihood Ratio	1,683.932	0.0000

Source: Primary data processed using STATA (2026)

The Likelihood Ratio statistic of 1,683.932 ($p = 0.0000$) indicates the presence of heteroscedasticity in the panel model. This outcome is consistent with expectations given the structural heterogeneity of LQ-45 companies across sectors, asset scales, and operational models. To address heteroscedasticity without discarding the Random Effect specification, the model was re-estimated using Estimated Generalized Least Squares (EGLS) with cross-section weights, which assigns different weights to each cross-sectional unit proportional to the inverse of its residual variance. This approach yields coefficient estimates that are asymptotically efficient and robust to cross-sectional variance heterogeneity.

Autocorrelation Test

Autocorrelation (serial correlation) arises when the residuals of a regression are correlated across successive time periods, which violates the OLS assumption of independent errors and can lead to underestimated standard errors. The Durbin-Watson (DW) statistic was used to test for the presence of first-order positive autocorrelation. A DW value close to 2.0 indicates no autocorrelation, while values substantially below 2.0 signal positive serial correlation. Table 6 presents the test outcome.

Table 6. Autocorrelation Test Results (Durbin-Watson)

Statistic	Value
Durbin-Watson	0.7479

Source: Primary data processed using STATA (2026)

The Durbin-Watson statistic of 0.7479 falls below the lower bound (d_1) of the standard Durbin-Watson critical value table, indicating positive autocorrelation in the panel residuals. Autocorrelation in this context is attributable to shared macroeconomic and sectoral shocks such as post-pandemic recovery trajectories and commodity price dynamics that simultaneously affect all LQ-45 companies across the observation period. The EGLS estimation with cross-section weighting adopted in this study accounts for residual serial correlation by modelling the covariance structure of the error term, thereby producing more consistent and efficient estimates than standard OLS under these conditions.

Panel Data Regression Results

With the Random Effect Model confirmed as appropriate and heteroscedasticity and autocorrelation addressed through EGLS with cross-section weighting, the final panel regression was estimated. Table 7 presents the complete regression output, including coefficient estimates,

standard errors, t-statistics, and probability values for each variable, together with the model's overall fit statistics.

Table 7. Panel Data Regression Results (Random Effect Model – EGLS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant (C)	1,087.5655	3,970.318	0.2739	0.7848
PDP (X ₁)	535.4451	348.2180	1.5377	0.1278
DKI (X ₂)	-13,446.2347	32,617.72	-0.4122	0.6812
R-squared	0.0330			
F-statistic	0.9044			
Prob(F-statistic)	0.6118			

Source: Primary data processed using STATA (2026)

The estimated regression equation is:

$$ROA_{it} = 1,087.5655 + 535.4451 PDP_{it} - 13,446.2347 DKI_{it} + \varepsilon_{it}$$

The constant (1,087.5655; $p = 0.7848$) is statistically non-significant, indicating that the intercept carries no meaningful interpretation under the hypothetical condition of zero values for both predictors. The PDP coefficient (535.4451) is positive and marginally significant ($p = 0.1278$), consistent with H1. The DKI coefficient (-13,446.2347; $p = 0.6812$) is not significant, leading to the rejection of H2. The coefficient of determination ($R^2 = 0.0330$) indicates that PDP and DKI jointly explain 3.30% of the variance in ROA, with the remaining 96.70% attributable to factors outside the model. The F-statistic (0.9044; $p = 0.6118$) confirms that the two independent variables are not jointly significant at conventional significance levels.

Hypothesis Testing

Based on the regression estimates obtained from the EGLS-REM model, hypothesis testing was conducted at a significance level of $\alpha = 0.10$. This threshold is methodologically appropriate given the exploratory nature of the study and the moderate sample size of $n = 88$, in accordance with established practice in the corporate governance literature (Hair et al., 2014). Two forms of hypothesis testing were performed: a partial (t-test) to assess the individual effect of each independent variable on ROA, and a simultaneous (F-test) to assess the joint significance of the full model.

Partial Test (t-test)

Table 8. Partial Hypothesis Testing Results (t-test)

Hypothesis	Variable	β	p-value	Decision
------------	----------	---------	---------	----------

H1: PDP → ROA	Proportion of Female Directors	535.4451	0.1278	Marginally Supported (α = 0.10)
H2: DKI → ROA	Independent Commissioners	-13,446.2347	0.6812	Not Supported

Source: Primary data processed using STATA (2026)

H1 is partially supported: PDP exhibits a positive marginal effect on ROA ($p = 0.1278$), significant at the 90% confidence level ($\alpha = 0.10$). The use of $\alpha = 0.10$ is methodologically defensible in corporate governance research with moderate sample sizes, where the cost of a Type II error (failing to detect an existing effect) is arguably more consequential than the cost of a Type I error (Hair et al., 2014; W. R. Johnson et al., 2013). H2 is not supported: DKI shows no statistically meaningful relationship with ROA ($p = 0.6812$), a finding that, as elaborated in the discussion, reflects the near-total absence of cross-sectional variation in DKI rather than a theoretical absence of effect.

Simultaneous Test (F-test)

Table 9. Simultaneous Hypothesis Testing Results (F-test)

Statistic	Value
F-statistic	0.9044
Prob(F-statistic)	0.6118

Source: Primary data processed using STATA (2026)

The F-statistic of 0.9044 ($p = 0.6118$) indicates that PDP and DKI do not jointly exert a statistically significant effect on ROA. This result is consistent with the individual insignificance of DKI and the marginal significance of PDP in the partial tests. The low R^2 of 3.30% further underscores that board composition variables, while directionally relevant, explain only a small portion of the total variance in firm profitability a finding consistent with the broader corporate governance literature, which documents that financial performance is shaped by a complex array of macroeconomic, sectoral, and firm-specific determinants (Kamilah et al., 2025; Murhadi et al., 2023).

DISCUSSION

The Effect of the Proportion of Female Directors on Return on Assets

The proportion of female directors exerted a positive and marginally significant effect on ROA ($\beta = 535.4451$, $p = 0.1278$), providing partial empirical support for H1 at the 90% confidence level. This finding is theoretically consistent with both the Resource Dependence Theory (Pfeffer, 2016) and Agency Theory (Jensen & Meckling, 1976). From the resource dependence perspective, female directors constitute a distinctive governance resource: they introduce differentiated perspectives, broader stakeholder networks, and non-redundant expertise that expand the firm's capacity to identify opportunities, interpret market signals, and allocate resources more effectively (Hillman et al., 2009). These mechanisms operate particularly effectively in large capitalization firms such as those in the LQ-45 index, where operational complexity, multi-stakeholder

accountability, and strategic breadth amplify the marginal value of cognitive diversity at the board level (Susanto et al., 2024). From the agency theory perspective, female directors strengthen internal monitoring mechanisms by bringing more conservative risk orientations, enhancing informational disclosure, and countering managerial overconfidence all of which reduce agency costs and improve the alignment between managerial decisions and shareholder value maximization (Budiman & Juliarto, 2024; Hassaan et al., 2022).

Three contextual explanations further illuminate the positive yet marginally significant magnitude of this effect. First, female directors who attain board positions in LQ-45 companies have, by selection, overcome significant institutional barriers, implying a high competence screening effect that concentrates governance value-added contributions within this cohort (Hesniati et al., 2022). In large-cap firms such as LQ-45 constituents, directors undergo rigorous selection regardless of gender; female directors who succeed in this process bring high-quality human capital that enhances decision-making, risk management, and operational efficiency, all of which are reflected positively in financial performance.

Second, the 2022–2024 period represented a distinctive governance environment in which post-pandemic recovery demanded adaptive leadership characterized by prudence, stakeholder sensitivity, and long-horizon decision-making qualities empirically associated with female leadership styles that amplified the contribution of female directors to firm profitability (García & Herrero, 2021; Metwally & Abdelmoneim, 2025). Third, the marginality of the significance level ($p = 0.1278$ versus 0.05) is partly a function of the three-year observation window, which may be insufficient to capture the full financial impact of board composition changes given the documented time lag between governance decisions and their reflection in accounting performance metrics (Seng, 2023). Strategic decisions made by female directors require implementation time before they are fully reflected in ROA figures; accordingly, the marginally positive effect detected over three years (2022–2024) may be interpreted as an early signal of more substantial long-term impacts. These findings are consistent with Isnalita (2023), Homroy (2017), and Frihatni (2023), who document positive associations between female board representation and profitability in comparable emerging-market settings. The expectation is that as Indonesia's institutional ecosystem matures, this positive effect will become more pronounced.

The practical implication is that gender diversity in corporate leadership carries financial as well as governance value, as suggested by the positive directional effect identified in this study (Wiksuana, 2018). LQ-45 companies are encouraged to increase female director representation and to place female directors in roles that directly influence business performance, such as finance, operations, and strategic planning.

The Effect of the Independent Board of Commissioners on Return on Assets

The proportion of independent commissioners did not significantly affect ROA ($\beta = -13,446.2347$, $p = 0.6812$), failing to support H2. Two distinct aspects of this finding warrant careful interpretation: the absence of statistical significance and the negative direction of the coefficient. Neither aspect should be construed as evidence that independent commissioners are irrelevant to firm performance; rather, both reflect the fundamental constraint of near-zero cross-sectional variation in DKI across the sample. The DKI variable exhibits a standard deviation of merely 0.0042 and a range spanning only 11.15% to 12.83% across all 88 observations. When the variation in an independent variable is this severely restricted, the regression model lacks sufficient statistical information to identify any relationship with the dependent variable not because the relationship is absent, but because the data do not support its detection (Ardana, 2019). From an Agency Theory perspective, independent commissioners function as a monitoring mechanism designed to reduce agency conflicts between management and shareholders, thereby improving resource allocation efficiency and ultimately enhancing profitability (Firmansyah et al., 2022; Guluma, 2021; Pamungkas, 2020). The effectiveness of this monitoring function, however, is

critically contingent on both the quality of individual commissioners and the degree of variation in their composition across firms (Kamilah et al., 2025). When DKI variation approaches zero, as in the present sample, the statistical model cannot differentiate between firms on this dimension, making it statistically impossible to detect any relationship.

The negative direction of the DKI coefficient, while statistically non-significant, can be interpreted through the theoretical concept of *monitoring overload*. In LQ-45 companies that already operate within well-established governance structures, incrementally increasing the proportion of independent commissioners beyond the regulatory minimum may generate rising coordination and deliberation costs without yielding proportionally greater monitoring benefits (Kamilah et al., 2025). This phenomenon is conceptually consistent with findings from studies in comparable emerging markets (Ardana, 2019) and reinforces the argument that improving the effectiveness of independent commissioners cannot be achieved solely through increasing their numerical proportion, but requires simultaneous enhancement of their qualitative engagement and strategic involvement in corporate decision-making processes.

From a Resource Dependence Theory perspective, independent commissioners are expected to function as institutional bridges connecting the firm to its external environment, delivering value through access to business networks, technical expertise, and institutional legitimacy (Alrawashedh et al., 2020; Argandoña, 2009; Pamungkas, 2020). However, when commissioners are appointed primarily to satisfy regulatory requirements rather than through competency-based strategic selection, their capacity to serve as providers of external resources is substantially limited (Suripto, 2021). Under such conditions, the positive governance performance relationship predicted by Resource Dependence Theory fails to materialize empirically (Park, 2017). This structural limitation is further compounded by the concentrated ownership patterns prevalent among many LQ-45 companies in Indonesia. The concentration of share ownership in the hands of controlling shareholders can restrict the *de facto* independence of commissioners even where *de jure* formal requirements are satisfied, since appointment decisions may remain subject to shareholder influence despite formal independence designations (M. Setiawan & Setyawati, 2020; Utama, 2020; Wicaksono, 2024). Collectively, these mechanisms explain why a statistically discernible DKI-ROA relationship could not be identified in the present study.

The practical implication of this non-significant finding is not the irrelevance of independent commissioners, but rather a clear signal that uniform minimum proportion regulations among LQ-45 companies constrain the model's capacity to detect performance variation. Future research should employ samples with greater DKI heterogeneity and incorporate qualitative measures of commissioner independence, such as professional expertise, board attendance rates, and tenure diversity, to obtain more robust governance-performance estimates (Kamilah et al., 2025; Yayat, 2023). From a regulatory standpoint, these findings underscore the need for governance frameworks to move beyond minimum quantitative thresholds toward more substantive quality-based standards for board independence.

Coefficient of Determination and Variables Outside the Model

The R^2 of 3.30% indicates that PDP and DKI collectively explain a small fraction of ROA variance. This low explanatory power is not unexpected for a two-variable model focused on board composition in a sample of large-cap firms. Financial performance of LQ-45 companies is substantially shaped by macroeconomic drivers interest rate cycles, commodity price movements, exchange rate fluctuations, and aggregate demand dynamics that operate independently of board composition (Awad et al., 2018; Doan, 2019). Firm-level factors including capital structure, operational efficiency, product market positioning, and management quality also contribute substantially to ROA variation. The small but positive R^2 contribution of PDP suggests that, at the margin, gender diversity in executive leadership does carry incremental explanatory value for profitability a finding consistent with the marginal significance result for H1. Future research

incorporating a richer set of governance variables (board size, director tenure, audit committee independence, managerial ownership) alongside macroeconomic controls would be expected to substantially improve model fit.

CONCLUSION

This study examined the effects of the proportion of female directors (PDP) and independent board commissioners (DKI) on Return on Assets (ROA) among 30 LQ-45 companies on the Indonesia Stock Exchange over the 2022–2024 period using Random Effect Model panel data regression with EGLS estimation. PDP exerted a positive and marginally significant effect on ROA ($\beta = 535.4451$, $p = 0.1278$, $\alpha = 0.10$), providing partial support for H1 and confirming the resource diversification and agency cost reduction mechanisms predicted by Resource Dependence Theory and Agency Theory. DKI did not significantly influence ROA ($\beta = -13,446.2347$, $p = 0.6812$), attributable to the near-absence of cross-sectional variation in commissioner proportions ($SD = 0.0042$) arising from uniform OJK regulatory compliance, rather than theoretical irrelevance. The model's R^2 of 3.30% reflects that board composition explains a limited portion of ROA variance, with macroeconomic and firm-specific factors dominating financial performance outcomes. This study is limited by its three-year observation window, single-index sample scope, and inability to establish strict causal inference. Accordingly, corporate boards are advised to strategically appoint female directors to functionally influential roles, while regulators should complement minimum proportion mandates with quality-based independence standards. Future research should employ longer panels, incorporate sector-level analyses, and integrate qualitative governance dimensions including commissioner expertise, meeting attendance, and ownership concentration to more fully capture the governance-performance relationship.

REFERENCE

- Alrawashedh, Albawwat, A. H., Almansour, A. Y., Zobi, M. Al, & Habis, N. (2020). The Effect Of Board Of Directors And Audit Committee Characteristics On Company Performance In Jordan. *International Journal Of Financial Research*, 11(6), 10. <https://doi.org/10.5430/Ijfr.V11n6p10>
- Angwaomaodoko, E. A. (2024). Corporate Governance And Firm Performance: Investigating The Impact Of Governance Structures On Economic Outcome. *Path Of Science*, 10(12), 1001–1011. <https://doi.org/10.22178/Pos.112-1>
- Anwar, N. Y., Kadir, & Kasyful. (2021). *Pengaruh Kinerja Keuangan, Karakteristik Perusahaan Dan Corporate Governance Terhadap Pengungkapan Sustainability Report*.
- Ardana, Y. (2019). Implementasi Good Corporate Governance (Gcg) Dalam Mengukur Risiko Dan Kinerja Keuangan Bank Syariah Di Indonesia. *Jurnal Masharif Al-Syariah Jurnal Ekonomi Dan Perbankan Syariah*, 4(1). <https://doi.org/10.30651/Jms.V4i1.2587>
- Argandoña, S. A. A. N. D. A. (2009). Responsible Corporate Governance: Towards A Stakeholder Board Of Directors? *Ssrn Electronic Journal*. <https://doi.org/10.2139/Ssrn.1349090>
- Awad, L. A. S., Robert, G., & Antoine, B. (2018). Structural And Market-Related Factors Impacting Profitability: A Cross Sectional Study Of Listed Companies. *Arab Economic And Business Journal*, 13(2), 125–133. <https://doi.org/10.1016/J.Aebj.2018.09.001>

- Brammer, J. G., Bruce A Rayton, & Stephen. (2015). Women On Corporate Boards. *Business & Society*, 55(8), 1157–1196. <https://doi.org/10.1177/0007650315613980>
- Budiman, Igidius F., & Juliarto, A. (2024). Pengaruh Kepemilikan Saham Dan Atribut Dewan Direksi Terhadap Struktur Modal Dengan Keberlanjutan Perusahaan Sebagai Variabel Moderasi. *Diponegoro Journal Of Accounting*, 13(4), 1–15. <http://ejournal-s1.undip.ac.id/index.php/Accounting>
- Chalabi, R., & Jarraya, B. (2023). How Corporate Governance Mechanisms Improve The Financial Performance Of Shareholding Companies. *International Journal Of Business & Management Studies*, 04(06), 44–52. <https://doi.org/10.56734/Ijbm.V4n6a6>
- Doan, T.-T. T. (2019). Profitability Of Real Estate Firms: Evidence Using Gmm Estimation. *Management Science Letters*, 327–332. <https://doi.org/10.5267/J.Msl.2019.8.038>
- Fathmaningrum, E. S., & Renaldo, M. (2024). Faktor-Faktor Yang Memengaruhi Kinerja Keuangan Perusahaan Manufaktur: Studi Empiris Di Indonesia Dan Singapura. *Reviu Akuntansi Dan Bisnis Indonesia*, 8(2), 256–271. <https://doi.org/10.18196/Rabin.V8i2.22049>
- Firmansyah, R., Dzulfikar, A., & Amrie. (2022). Free Cash Flow, Financial Distress, And Earnings Management: The Moderating Role Of Independent Commissioner. *Jurnal Reksa Rekayasa Keuangan Syariah Dan Audit*, 9(2), 74–90. <https://doi.org/10.12928/Jreksa.V9i2.7333>
- Gakhar, A., & Kamlesh. (2019). Impact Of Macroeconomic Variables On Financial Performance Of Indian Banking Sector. *International Journal Of Engineering Applied Sciences And Technology*, 4(3), 259–265. <https://doi.org/10.33564/Ijeast.2019.V04i03.043>
- García, C. J., & Herrero, B. (2021). Female Directors, Capital Structure, And Financial Distress. *Journal Of Business Research*, 136, 592–601. <https://doi.org/10.1016/J.Jbusres.2021.07.061>
- Guluma, T. F. (2021). The Impact Of Corporate Governance Measures On Firm Performance: The Influences Of Managerial Overconfidence. *Future Business Journal*, 7(1). <https://doi.org/10.1186/S43093-021-00093-6>
- Hair, J. F. , Black, W. C. , Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis (7th Ed.)*.
- Hasibuan, A. H., Hasibuan, L., & Efendi, S. (2023). Tax Aggressiveness, Capital Structure, Corporate Governance Dan Firm Performance. *International Journal Of Economic Research And Financial Accounting (Ijerfa)*, 1(2). <https://doi.org/10.55227/Ijerfa.V1i2.28>
- Hassaan, H. E., Zalata, A. M., & Marwa. (2022). Attributes Of Female Directors And Accruals-Based Earnings Management. *Cogent Business & Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2139212>
- Hesniati, K., Tania, S., & Hesniati. (2022). The Effect Of Gender Diversity On Firm Performance In Indonesia. *Jurnal Manajemen Strategi Dan Aplikasi Bisnis*, 5(2), 267–284. <https://doi.org/10.36407/Jmsab.V5i2.667>
- Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource Dependence Theory: A Review. *Journal Of Management*, 35(6), 1404–1427. <https://doi.org/10.1177/0149206309343469>
- Homroy, C. G., & Swarnodeep. (2017). Female Directors, Board Committees And Firm Performance. *European Economic Review*, 102, 19–38. <https://doi.org/10.1016/J.Eurocorev.2017.12.003>
- Isnailita, I., & Natalia. (2023). Do Females On Boards Enhance Firm Performance? Evidence From Indonesia Manufacturing Firm. *Contaduría Y Administración*, 69(1), 431. <https://doi.org/10.22201/Fca.24488410e.2024.4983>

- Jensen, M. C., & Meckling, W. H. (1976). Theory Of The Firm: Managerial Behavior, Agency Costs And Ownership Structure. *Journal Of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405x\(76\)90026-X](https://doi.org/10.1016/0304-405x(76)90026-X)
- Johnson, W. R., Schumm, Kariga, K. P., Jaimee, L. H., Bertha, A. J., & Gralon, A. (2013). Determining Statistical Significance (Alpha) And Reporting Statistical Trends: Controversies, Issues, And Facts. *Comprehensive Psychology*, 2(1). <https://doi.org/10.2466/03.Cp.2.10>
- Juwari, Dwi, S., & Nurlia, N. (2022). Good Corporate Governance Characteristic, Profitability And Firm Value: Evidence From Indonesia. *Iqtisoduna*, 18(2), 99–121. <https://doi.org/10.18860/Iq.V18i2.17056>
- Kamilah, F., Meutia, M., Bastian, E., & Muchlish, M. (2025). The Role Of Corporate Governance Mechanisms, Debt Policy, Profitability, And Corporate Social Responsibility In Strengthening Company Financial Performance. *Decision Science Letters*, 14(4), 943–954. <https://doi.org/10.5267/J.Dsl.2025.7.004>
- Kluemper, K., Gilley, M., Pledger, K., Coombs, J. E., Bell, M. P., & Donald H. (2019). Board Gender Diversity, Social Performance, And Ceo Compensation. *Journal Of Business Strategies*, 36(2), 1–27. <https://doi.org/10.54155/Jbs.36.2.1-27>
- Machfudt, Y. (2023). Kinerja Keuangan Dalam Perspektif Lingkungan: Studi Pada Perusahaan Manufaktur Indonesia. *Jurnal Ilmiah Mahasiswa Ekonomi Akuntansi*, 8(2), 158–168. <https://doi.org/10.24815/jimeka.V8i2.21063>
- Maulana, I. (2020). Analisis Pengaruh Dewan Komisaris Independen, Kepemilikan Manajerial Dan Kepemilikan Institusional Terhadap Kinerja Perusahaan Jasa Keuangan Di Indonesia. *Jurnal Reksa Rekrayasa Keuangan Syariah Dan Audit*, 7(1), 11. <https://doi.org/10.12928/J.Reksa.V7i1.2455>
- Metwally, A. A., & Abdelmoneim, B. M. (2025). Esg Disclosure And Firm Performance: Do Gender Diversity And Sustainability Committee Matter? *Cogent Business & Management*, 12(1). <https://doi.org/10.1080/23311975.2025.2545610>
- Pamungkas, M. C. A. N. D. B. P. I. A. N. D. H. H. A. N. D. R. H. A. N. D. I. D. (2020). Corporate Governance, Firm Performance And Capital Structure: Evidence From Indonesia. *Research In World Economy*, 11(1), 48. <https://doi.org/10.5430/Rwe.V11n1p48>
- Panigrahi, A. K., & Vachhani, K. (2021). Financial Analysis By Return On Equity (Roe) And Return On Asset (Roa)-A Comparative Study Of Hul And Itc. *Journal Of Management Research And Analysis*, 8(3), 131–138. <https://doi.org/10.18231/J.Jmra.2021.027>
- Park, Y. K. L. A. N. D. J. Y. A. N. D. J. (2017). The Impacts Of Independent Director And Ceo Duality On Performance In The Chinese Post-Institutional-Transition Era. *Canadian Journal Of Administrative Sciences / Revue Canadienne Des Sciences De L Administration*, 35(4), 620–634. <https://doi.org/10.1002/Cjas.1468>
- Pasaribu, P. (2017). Female Directors And Firm Performance: Evidence From Uk Listed Firms. *Gadjah Mada International Journal Of Business*, 19(2), 145. <https://doi.org/10.22146/Gamaijb.15619>
- Pfeffer, J. (2016). Resource Dependence. In *Palgrave Macmillan Uk Ebooks* (Pp. 1–3). Palgrave Macmillan. https://doi.org/10.1057/978-1-349-94848-2_739-1
- Ratnasari, A. S., & Lilis. (2019). Pengaruh Perputaran Modal Kerja Dan Perputaran Persediaan Terhadap Profitabilitas (Roa) Pada Pt Mayora Indah Tbk Tahun 2010- 2016. *Jimf (Jurnal Ilmiah Manajemen Forkamma)*, 2(2). <https://doi.org/10.32493/Frkm.V2i2.3410>

- Rifqi, H., Alden, R., & Maher, A. A.-S. (2023). The Impact Of Good Corporate Governance (Gcg) On Manufacturing Financial Performance: Evidence Of Listed Companies On The Stock Exchange (Idx). *International Journal Of Professional Business Review*, 8(6). <https://doi.org/10.26668/Businessreview/2023.V8i6.1656>
- Santi, R. M., Setyarini, Y., Paramitha, M., Suklimah Ratih, & Chitra. (2025). Apakah Independensi Dalam Tata Kelola Meningkatkan Kinerja Perusahaan? Perspektif Teori Agensi Dan Stakeholder. *Riggs Journal Of Artificial Intelligence And Digital Business*, 4(2), 441–449. <https://doi.org/10.31004/Riggs.V4i2.518>
- Setiawan, M., & Setyawati, C. Y. (2020). The Influence Of Perceived Ease Of Use On The Intention To Use Mobile Payment: Attitude Toward Using As Mediator. *Journal Of Accounting And Strategic Finance*, 3(1), 18–32. <https://doi.org/10.33005/Jasf.V3i1.67>
- Setiawan, Y., Anniaryani A, Sna, R., & Doddy. (2018). Apakah Struktur Dewan Komisaris Berpengaruh Terhadap Kinerja Perusahaan? *Deleted Journal*, 8(3), 597. <https://doi.org/10.22441/Mix.2018.V8i3.009>
- Shaaban, N. Y., & Alshurafat, H. (2025). The Female Directors' Effect On A Firm's Performance: Evidence Using Us Firms. *Acta Psychologica*, 258, 105165. <https://doi.org/10.1016/J.Actpsy.2025.105165>
- Sulistiana, D. F., & Indra. (2024). Good Corporate Governance Improves Banking Financial Performance. *International Journal Of Applied Finance And Business Studies*, 11(4), 976–985. <https://doi.org/10.35335/Ijafibs.V11i4.268>
- Susanto, D. A., Serly, & Androni. (2024). Does Gender Diversity Among The Board Of Directors Significantly Affect A Company's Financial Performance? *Jurnal Manajemen*, 15(1), 14–29. <https://doi.org/10.32832/Jm-Uika.V15i1.15271>
- Utama, N. N. P. A. N. D. C. A. (2020). The Effect Of Ownership Structure And Board Independence Towards Overinvestment Behavior Of Family Firm In Indonesia. *Kne Social Sciences*. <https://doi.org/10.18502/Kss.V4i6.6666>
- Wicaksono, B. (2024). *Studi Empiris Pada Perusahaan Manufaktur Sektor Industri Dasar Dan Kimia Yang Terdaftar Pada Bei 2018-2022*. 18(1). <https://doi.org/10.46306/Jbbe.V18i1>
- Wokker, N. J. B., Robert Breunig, & Chris. (2023). Female Board Representation And Corporate Performance: A Review And New Estimates For Australia. In *Ssrn Electronic Journal*. Relx Group (Netherlands). <https://doi.org/10.2139/Ssrn.4487824>
- Yanto, Simaremare, J., Olin, M. N., Purwaningrum, D., & Adi. (2025). How The Size Of The Independent Commissioners And Board Of Commissioners Affects Profitability. *International Journal Of Research And Innovation In Social Science*, 1091–1097. <https://doi.org/10.47772/Ijtriss.2025.90900098>