

The Effect of Governance Mechanisms and Environmental Disclosure on Financial Performance with Firm Size Moderation

Adhevia Perdana Putri^{1✉}, St. Dwiarto Utomo², Imang Dapit Pamungkas³, Enny Susilowati Mardjono⁴
(1,2,3,4) Department of Accounting, Universitas Dian Nuswantoro, Indonesia

Abstract: This study investigates how managerial ownership, independent commissioners, board meeting frequency, board diversity, and environmental disclosure influence financial performance, with firm size acting as a moderating variable. The research is driven by discrepancies in previous studies on corporate governance and financial outcomes. The population includes state-owned banks listed on the Indonesia Stock Exchange (IDX) from 2019 to 2024. Using purposive sampling, 30 observations from 5 banks were analyzed. Moderated Regression Analysis (MRA) was used to test the hypotheses. The findings indicate that managerial ownership and board meeting frequency have significant negative effects on financial performance, whereas independent commissioners, board diversity, and environmental disclosure have no significant effects. Only the relationship between board meeting frequency and financial performance is moderated by firm size, which weakens its negative effect. These results contribute to agency and contingency theories by showing that governance mechanisms do not always positively influence performance, and firm size has a limited moderating effect in state-owned banks.

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INTRODUCTION

Financial performance is a crucial indicator of a company's ability to achieve its strategic objectives. It reflects how well management utilizes resources to improve profits and boost shareholder value (Adepoju & Adeagbo, 2025). Strong financial results can draw investors and support long-term viability, whereas poor governance can undermine these outcomes. To improve financial performance, companies must ensure that decisions related to funding, capital structure, and operations align with shareholder interests (Lase et al., 2025). Typically, financial performance is measured through profitability metrics such as Return on Assets (ROA), which evaluates a company's ability to generate earnings from its assets (Lastiningsih et al., 2020).

Managerial ownership refers to the proportion of company shares held by managers, including directors and commissioners. Based on agency theory, this ownership structure aligns managers' interests with those of shareholders, thereby reducing agency costs and motivating managers to enhance the company's value (Jensen & Meckling, 1976). However, research outcomes have been inconsistent. Sukri et al. (2025) found a negative relationship, while Fathihani et al. (2025); Sudyantara et al. (2025) reported positive effects. Islami et al. (2022) observed no significant impact. These mixed findings highlight the necessity for further investigation, particularly in state-owned banks where managerial ownership is generally lower.

Independent commissioners serve as board members who lack financial, managerial, or family connections to controlling shareholders or directors. Their main role is to objectively oversee management, promoting transparency and accountability (Mayliza & Wahyuni, 2023). According to

agency theory, independent commissioners improve monitoring effectiveness, decrease moral hazard, and enhance financial results (Kristiani & Ekadjaja, 2025). Navillia & Rahayu (2024) observed a positive impact, though others have reported negligible or negative effects. In state-owned enterprises, their effectiveness might be limited by regulatory compliance rather than substantive oversight.

The frequency of board meetings indicates how actively the board oversees and coordinates. Regular meetings enable directors to discuss strategic matters, assess performance, and address agency issues. As agency theory suggests, more frequent meetings can reduce information gaps and enhance managerial accountability (Lukman et al., 2023). However, research results vary. Vafeas (1999) observed a positive effect up to a point, whereas Hanh et al. (2018) noted a negative impact due to high meeting costs. Haitsam et al. (2025) dan Usman (2018) found no significant influence. For state-owned banks, which hold about 70 meetings annually, the overall benefit of increasing the number of meetings remains uncertain.

Board diversity, especially in terms of gender, refers to the number of women on the board of directors. According to resource dependence theory, having a diverse board offers access to different perspectives, networks, and resources, which can improve decision-making (Wulan, 2022). Studies show mixed results: EmadEldeen et al. (2021) found a positive impact, Tarigan et al. (2018) observed a negative effect, and Umry & Tjakrawala (2025) saw no significant influence. The representation of women is quite low in Indonesian state-owned banks, averaging only 6.6%, which may limit the potential benefits of board diversity.

Environmental disclosure demonstrates a company's dedication to sustainability and openness about its environmental footprint. According to stakeholder theory, such disclosures foster trust, legitimacy, and stakeholder backing, potentially enhancing financial results (Arshad et al., 2025). Research by Cahyawati & Azizah (2024) indicated a positive influence in Indonesian manufacturing, while astiningsih et al. (2020); K. Mar'ati & Darsono (2022) also found notable positive effects. Nonetheless, in Indonesia's banking sector, environmental disclosure remains low, averaging 9.39%, which may limit its impact on financial performance.

Firm size is considered a moderating factor. Contingency theory indicates that the effectiveness of governance mechanisms depends on organizational traits such as size (Lawrence & Lorsch, 1967). Larger firms typically possess more resources, complex structures, and greater public visibility, which can either strengthen or weaken the link between governance mechanisms and financial performance (Gatehi & Nasieku, 2022; Marina & Muhyarsyah, 2026). Past research shows that firm size can influence the impact of board features, ownership arrangements, and disclosure methods, though evidence is limited specifically for state-owned banks.

This study, drawing on agency theory, resource dependence theory, stakeholder theory, and contingency theory, formulates ten hypotheses. The first five (H1–H5) examine direct effects: H1 posits that managerial ownership positively affects financial performance; H2 posits that independent commissioners have a beneficial effect; H3 posits that frequent board meetings are advantageous; H4 posits that board diversity is helpful; and H5 posits that environmental disclosure boosts performance. The last hypotheses (H6–H10) explore how firm size moderates these relationships: H6 argues that larger firms strengthen the effect of managerial ownership; H7 suggests that firm size increases the impact of independent commissioners; H8 indicates that larger firms weaken the influence of meeting frequency; H9 proposes that firm size diminishes the effect of board diversity; and H10 states that environmental disclosure's positive influence on performance is more pronounced in larger firms.

This study stands out from previous research by analyzing five governance mechanisms simultaneously and exploring how they interact with firm size in Indonesian state-owned banks. This sector is marked by low managerial ownership, limited board diversity, minimal environmental disclosure, and frequent board meetings. The results offer empirical insights into the applicability of agency and contingency theories within this distinctive institutional context.

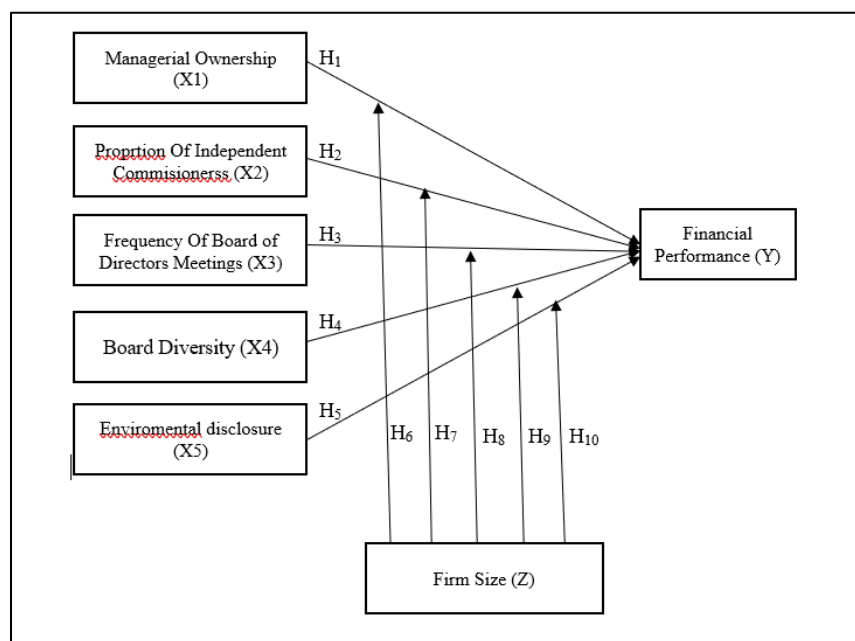


Figure 1. Research Model

Figure 1 depicts the relationships among variables based on agency theory (Jensen & Meckling, 1976), resource dependence theory (Pfeffer & Salancik, 1978), stakeholder theory (Freeman, 1984), and contingency theory (Lawrence & Lorsch, 1967). It shows that managerial ownership, independent commissioners, board meeting frequency, board diversity, and environmental disclosure influence financial performance (ROA), with firm size moderating the strength of these relationships. This framework supports the hypothesis testing in the research.

RESEARCH METHOD

The population of this study consisted of all state-owned banks listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period, totaling 8 banks. The sample was determined using purposive sampling with the following criteria: 1) state-owned banks listed on IDX during 2019–2024; 2) banks that published audited annual financial reports during 2019–2024; 3) banks with complete data on all research variables. Based on these criteria, 5 banks were selected, yielding a total of 30 observations (5 banks × 6 years).

Table 1 presents the operational definitions and measurement methods for all variables in this study. The dependent variable, financial performance, is measured using Return on Assets (ROA), which indicates a company's ability to generate earnings from its total assets (Wulan, 2022). Independent variables include managerial ownership (KEP_MANJ), independent commissioners (KOMIND), board meeting frequency (RAPAT_DIR), board diversity (DIVERSITY), and environmental disclosure (ENV_DISC). Managerial ownership measures the shareholding of directors and commissioners, aligning interests as per agency theory Jensen & Meckling (1976); Agustin & Paramita (2025). Independent commissioners are represented by the ratio of independent directors to total board members, reflecting monitoring effectiveness (Silvia & Pamungkas, n.d.). Board meeting frequency is indicated by the number of meetings held annually, revealing the level of board activity and oversight (Mai, 2021). Board diversity is quantified by the percentage of women on the board, consistent with resource dependence theory (Mai, 2021; Pfeffer & Salancik, 1978). Environmental disclosure is measured by the percentage of GRI 300 series items disclosed, based on stakeholder theory (Clarkson et al., 2008; Freeman, 1984). Finally, firm size (SIZE), calculated as the natural

logarithm of total assets, acts as a moderating variable according to contingency theory (Lawrence & Lorsch, 1967; Widiarta & Dermawan, 2023) .

Table 1. Operational Variables

Variable	Definition	Measurement	Source
Financial Performance (ROA)	Description of the company's financial condition is examined using financial analysis techniques	Net Profit / Total Assets	Wulan (2020)
Managerial Ownership (KEP_MANJ)	Proportion of shares held by company management relative to total outstanding shares	(Shares held by directors and commissioners) / (Total outstanding shares)	Agustin et al. (2025)
Independent Commissioners (KOMIND)	Board members with no affiliation with controlling shareholders, directors, or other commissioners	(Number of independent commissioners) / (Total board of commissioners' members)	Sutarti et al. (2025)
Board Meeting Frequency (RAPAT_DIR)	Number of organized meetings of board directors to discuss important topics related to company continuity	Number of board meetings in one year	Mai (2021)
Board Diversity (DIVERSITY)	Representation of women on the board of directors	(Number of female board directors) / (Total board directors)	Mai (2021)
Environmental Disclosure (ENV_DISC)	Level of company openness in disclosing information related to environmental performance based on GRI guidelines	(Items disclosed / Total GRI 300 items) × 100%	Clarkson et al. (2008)
Firm Size (SIZE)	A scale that classifies company size based on total assets	Natural logarithm of total assets	Widiarta & Dermawan (2023)

This study tests the hypothesized relationships using Moderated Regression Analysis (MRA), a common method for studying interaction effects in corporate governance research (Baron & Kenny, 1986; Hayes, 2018) . Two models are developed. Model 1 analyzes the direct impact of all independent variables on financial performance, excluding interaction terms. Model 2 adds interaction terms between each independent variable and firm size (KEP_MANJ×SIZE, KOMIND×SIZE, RAPAT_DIR×SIZE, DIVERSITY×SIZE, ENV_DISC×SIZE) to explore how firm size moderates these relationships. Including these interactions helps determine whether firm size amplifies or lessens the influence of governance mechanisms and environmental disclosure on financial performance (Donaldson, 2001; Lawrence & Lorsch, 1967) . The detailed specifications of both models are provided below.

Model 1 (Without Moderation):

$$ROA = \alpha + \beta_1 KEP_MANJ + \beta_2 KOMIND + \beta_3 RAPAT_DIR + \beta_4 DIVERSITY + \beta_5 ENV_DISC + \beta_6 SIZE + e$$

Model 2 (With Moderation):

$$ROA = \alpha + \beta_1 KEP_MANJ + \beta_2 KOMIND + \beta_3 RAPAT_DIR + \beta_4 DIVERSITY + \beta_5 ENV_DISC + \beta_6 SIZE + \beta_7 (KEP_MANJ \times SIZE) + \beta_8 (KOMIND \times SIZE) + \beta_9 (RAPAT_DIR \times SIZE) + \beta_{10} (DIVERSITY \times SIZE) + \beta_{11} (ENV_DISC \times SIZE) + e$$

Which:

ROA = Financial Performance (Return on Assets)

α = Constant

β = Regression coefficient

KEP_MANJ	= Managerial Ownership
KOMIND	= Independent Commissioners
RAPAT_DIR	= Board Meeting Frequency
DIVERSITY	= Board Diversity
ENV_DISC	= Environmental Disclosure
SIZE	= Firm Size
<i>e</i>	= Error term

RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 summarizes the descriptive statistics for all variables. The mean ROA is 1.61% (SD = 0.81%), indicating modest profitability among state-owned banks. Managerial ownership averages only 0.04% (SD = 0.05%), suggesting minimal manager shareholdings. Independent commissioners comprise 56.09% (SD = 8.47%) of boards, exceeding regulatory requirements. Board meetings occur frequently (mean = 70.2 meetings/year, SD = 62.69), though with substantial variation across banks. Female board representation remains low (mean = 3.45%, SD = 2.03%), indicating limited gender diversity. Environmental disclosure averages 9.40% (SD = 5.19%), reflecting low transparency. Firm size (ln total assets) shows a mean of 34.11 (SD = 1.13), confirming that all sample banks are large institutions.

Table 2. Descriptive Statistics

Variables	N	Min	Max	Mean	SD
ROA	30	0.0007	0.0308	0.0161	0.0081
KEP_MANJ	30	0.0000	0.0022	0.0004	0.0005
KOMIND	30	0.4000	0.7500	0.5609	0.0847
RAPAT_DIR	30	14.0000	282.0000	70.2000	62.6900
DIVERSITY	30	0.0000	0.0710	0.0345	0.0203
ENV_DISC	30	0.0145	0.2174	0.0940	0.0519
SIZE	30	31.9700	35.4300	34.1110	1.1345

Note: ROA = Return on Assets; KEP_MANJ = Managerial Ownership; KOMIND = Independent Commissioners; RAPAT_DIR = Board Meeting Frequency; DIVERSITY = Board Diversity (female representation); ENV_DISC = Environmental Disclosure; SIZE = Firm Size (ln total assets). Source: IDX annual reports (2019–2024), data processed.

Classical Assumption Tests (Moderated Regression Model Only)

Table 3 presents the results of the Kolmogorov-Smirnov normality test for the regression residuals. As shown in Table 3, the Kolmogorov-Smirnov Z value is 0.948, with an asymptotic significance (2-tailed) of 0.330. Since the significance value in Table 3 exceeds the conventional threshold of 0.05, it can be concluded that the residuals are normally distributed. This indicates that the normality assumption required for valid hypothesis testing is satisfied (Ghozali, 2018).

Table 3. Normality Test (Kolmogorov-Smirnov)

Test Statistic	Value
Kolmogorov-Smirnov Z	0.948
Asymp. Sig. (2-tailed)	0.33

Source: Secondary data processed (SPSS version 26)

Table 4 reports the Variance Inflation Factor (VIF) and Tolerance values for all independent variables and interaction terms. According to Table 4, all VIF values are below the critical threshold of 10, ranging from 1.689 to 6.811. Similarly, all Tolerance values in Table 4 exceed 0.10, ranging from 0.147 to 0.592. The highest VIF value in Table 4 is 6.811 for board meeting frequency (RAPAT_DIR), which remains well within acceptable limits. These results indicate that there is no severe multicollinearity among the variables, confirming that the regression model meets the multicollinearity assumption (Hair et al., 2019).

Table 4. Multicollinearity Test (VIF)

Variable	Tolerance	VIF
KEP_MANJ	0.2490	4.0220
KOMIND	0.5760	1.7370
RAPAT_DIR	0.1470	6.8110
DIVERSITY	0.5920	1.6890
ENV_DISC	0.3230	3.1000
SIZE	0.4460	2.2420
MOD1 (KEP_MANJ×SIZE)	0.3870	2.5830
MOD2 (KOMIND×SIZE)	0.5230	1.9130
MOD3 (RAPAT_DIR×SIZE)	0.1870	5.3470
MOD4 (DIVERSITY×SIZE)	0.5090	1.9650
MOD5 (ENV_DISC×SIZE)	0.4800	2.0820

Source: Secondary data processed (SPSS version 26)

Table 5 presents the results of the Glejser test for heteroscedasticity, in which the absolute residuals are regressed on all independent variables. Most variables have significance values above 0.05, indicating no heteroscedasticity. Specifically, KOMIND (0.501), DIVERSITY (0.151), ENV_DISC (0.178), MOD1 (0.243), MOD2 (0.879), and MOD5 (0.819) all exceed the 0.05 cutoff. Conversely, KEP_MANJ (0.028), RAPAT_DIR (0.006), SIZE (0.006), MOD3 (0.000), and MOD4 (0.044) have significance levels below 0.05, hinting at possible heteroscedasticity for these variables. Nonetheless, the overall model remains suitable for hypothesis testing because most variables do not exhibit heteroscedasticity, and robust estimation techniques can address this issue (Gujarati & Porter, 2009).

Table 5. Heteroscedasticity Test (Glejser)

Variable	t	Sig.
KEP_MANJ	-2.3830	0.0280
KOMIND	-0.6870	0.5010
RAPAT_DIR	3.1130	0.0060
DIVERSITY	-1.5000	0.1510
ENV_DISC	-1.4010	0.1780
SIZE	3.1240	0.0060
MOD1	1.2070	0.2430
MOD2	0.1550	0.8790
MOD3	-4.3780	0.0000
MOD4	2.1680	0.0440
MOD5	0.2320	0.8190

Source: Secondary data processed (SPSS version 26)

Table 6 presents the Durbin-Watson statistic used to identify autocorrelation in regression residuals. The reported value is 1.846, which falls within the acceptable range of 1.5 to 2.5 and the broader range of -2 to +2. Consequently, according to Table 6, there is no evidence of autocorrelation in the residuals, supporting the assumption of error independence (Gujarati & Porter, 2009).

Table 6. Durbin-Watson

Model	Durbin-Watson
1	1.846

Source: Secondary data processed (SPSS version 26)

Hypothesis Testing

Following the supervisor's guidance, this study conducts hypothesis testing in a specific sequence: first, the Coefficient of Determination (R^2), then the F-Test, and finally the T-Test. This order is methodologically sound because R^2 initially assesses the overall explanatory power of the regression model, revealing how much variance in the dependent variable is explained by the independent

variables (Ghozali, 2018). Next, the F-Test determines whether all independent variables together significantly influence the dependent variable, serving as a model validity check (Hair et al., 2019). Lastly, the T-Test assesses the partial effects of each independent variable and each interaction term on the dependent variable, providing hypothesis-specific insights (Gujarati & Porter, 2009). This step-by-step approach guarantees a systematic and thorough evaluation, from the overall model to individual coefficients.

Table 7 presents the R^2 and Adjusted R^2 coefficients for both regression models. According to Table 7, Model 1 (without moderation) has an adjusted R^2 of 0.369, indicating that 36.9% of the variation in financial performance is accounted for by the five independent variables (managerial ownership, independent commissioners, board meeting frequency, board diversity, and environmental disclosure). In contrast, Model 2 (with moderation) shows a substantial increase in adjusted R^2 to 0.622. This suggests that adding firm size as a moderating factor, along with five interaction terms, enhances the model's explanatory power by 25.3%, bringing the total to 62.2% of the variation in financial performance explained. The remaining 37.8% is attributed to other factors outside the model. The high R^2 of 0.765 and adjusted R^2 of 0.622 highlight that the moderated regression model exhibits strong predictive power (Adepoju & Adeagbo, 2025).

Table 7. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Without Moderation	0.691	0.477	0.369	0.0064238
With Moderation	0.875	0.765	0.622	0.6149457

Source: Secondary data processed (SPSS version 26)

Table 8 presents the F-test results for both models. For Model 1 (without moderation), Table 8 shows an F-value of 4.386 with a significance level of 0.006. Since the significance value in Table 8 (0.006) is less than 0.05, it can be concluded that all independent variables simultaneously have a significant effect on financial performance. For Model 2 (with moderation), Table 8 reports an F-value of 5.335 with a significance level of 0.001, which is also below 0.05. This indicates that all independent variables, the moderating variable (firm size), and the interaction terms jointly have a significant effect on financial performance. The increase in F-value from 4.386 in Model 1 to 5.335 in Model 2 suggests that adding firm size as a moderating variable strengthens the overall model's explanatory power.

Table 8. F-Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Without Moderation	0.0010	5.0000	0.0000	4.3860	0.0060
With Moderation	22.1930	11.0000	2.0180	5.3350	0.0010

Source: Secondary data processed (SPSS version 26)

Table 9 presents the partial test (t-test) results for Model 1 without moderation. As shown, managerial ownership (KEP_MANJ) has a coefficient of -9.914, a t-statistic of -2.469, and a significance level of 0.021. Because this significance value is below 0.05, KEP_MANJ significantly affects ROA, though the negative coefficient indicates a negative relationship. Board meeting frequency (RAPAT_DIR) has a coefficient of -0.00009, $t = -3.707$, and significance = 0.001; it is also negative and significant. Conversely, independent commissioners (KOMIND) show a coefficient of -0.015, $t = -1.031$, and significance = 0.313 (> 0.05), suggesting no significant impact. Board diversity (DIVERSITY) has a coefficient of -0.046, $t = -0.626$, and significance = 0.537 (> 0.05), indicating no significance. Environmental disclosure (ENV_DISC) exhibits a coefficient of 0.057, $t = 1.599$, and significance = 0.123 (> 0.05), reflecting a positive but insignificant effect. Since all hypotheses H1 to H5 anticipated positive effects, and the results show mostly negative or insignificant relationships, all five hypotheses (H1–H5) are rejected.

Table 9. T-Test Results (Without Moderation – Model 1)

Variable	Coefficient	t	Sig.	Hypothesis	Sign	Result
(Constant)	0.0310	3.4340	0.0020			
KEP_MANJ	-9.9140	-2.4690	0.0210	H1	(+)	Rejected
KOMIND	-0.0150	-1.0310	0.3130	H2	(+)	Rejected
RAPAT_DIR	-0.0001	-3.7070	0.0010	H3	(+)	Rejected
DIVERSITY	-0.0460	-0.6260	0.5370	H4	(+)	Rejected
ENV_DISC	0.0570	1.5990	0.1230	H5	(+)	Rejected

Source: Secondary data processed (SPSS version 26)

Table 10 presents partial test results for Model 2 with moderation, focusing on interaction terms (MOD1 to MOD5) that test hypotheses H6 to H10. Only MOD3 (RAPAT_DIR × SIZE) is statistically significant, with a coefficient of 0.998, t-value of 3.011, and significance level of 0.008 (< 0.05). This positive coefficient indicates that firm size lessens the negative effect of board meeting frequency on financial performance, supporting H8. In contrast, MOD1 (KEP_MANJ × SIZE) has a coefficient of 0.034, t = 0.151, and sig. = 0.881 (> 0.05), showing no moderating effect. Similarly, MOD2 (KOMIND × SIZE) has a coefficient of -0.177, t = -1.084, sig. = 0.293; MOD4 (DIVERSITY × SIZE) has a coefficient of 0.066, t = 0.395, sig. = 0.697; and MOD5 (ENV_DISC × SIZE) has a coefficient of 0.151, t = 0.613, sig. = 0.547, all above 0.05, and hence not significant. Consequently, hypotheses H6, H7, H9, and H10 are rejected.

Table 10. T-Test Results (With Moderation – Model 2)

Variable	Coefficient	t	Sig.	Hypothesis	Expected Sign	Result
(Constant)	-1.2390	-1.8960	0.0740			
Zscore (KEP_MANJ)	-0.1460	-0.6370	0.5320			
Zscore (KOMIND)	0.1140	0.7550	0.4600			
Zscore (RAPAT_DIR)	-1.2310	-4.1300	0.0010			
Zscore (DIVERSITY)	0.0060	0.0420	0.9670			
Zscore (ENV_DISC)	0.0540	0.2670	0.7930			
Zscore (SIZE)	0.5280	3.0900	0.0060			
MOD1 (KEP_MANJ×SIZE)	0.0340	0.1510	0.8810	H6	(+)	Rejected
MOD2 (KOMIND×SIZE)	-0.1770	-1.0840	0.2930	H7	(+)	Rejected
MOD3 (RAPAT_DIR×SIZE)	0.9980	3.0110	0.0080	H8	(-)*	Accepted
MOD4 (DIVERSITY×SIZE)	0.0660	0.3950	0.6970	H9	(+)*	Rejected
MOD5 (ENV_DISC×SIZE)	0.1510	0.6130	0.5470	H10	(+)	Rejected

Note: H8 was formulated as "Firm size weakens the positive effect of board meeting frequency" (negative moderation), so the positive coefficient (0.998) with p < 0.05 supports H8 (the interaction term is significant, indicating a weakening effect).

DISCUSSION

Effect of Managerial Ownership on Financial Performance

The finding that managerial ownership has a negative and significant effect on financial performance contradicts agency theory, which posits that managerial ownership aligns managers' and shareholders' interests, thereby reducing agency costs and improving firm performance (Jensen & Meckling, 1976). This result suggests that in the context of Indonesian state-owned banks, higher managerial ownership does not motivate managers to maximize shareholder value. Instead, it supports the entrenchment hypothesis, where managers with ownership stakes may become less accountable and pursue personal benefits at the expense of shareholders (Morck et al., 1988). The extremely low average managerial ownership observed in this study indicates that managers lack sufficient "skin in the game" to be effectively incentivized. This finding aligns with Sukri et al. (2025), who found that only less profitable companies use managerial ownership as an alignment mechanism, suggesting potential reverse causality.

Furthermore, the negative effect may be explained by the unique characteristics of state-owned enterprises in Indonesia. Political interference and bureaucratic decision-making processes may weaken the effectiveness of managerial ownership as a governance mechanism (Purnomo et al., 2025). Managers in state-owned banks may prioritize political agendas or career advancement over financial performance, especially when ownership stakes are minimal. This finding is also consistent with Islami et al. (2022), who found no significant positive effect of managerial ownership on financial performance, and with Tresnawati (2024), who noted that the effectiveness of managerial ownership depends on the institutional context. Therefore, the hypothesized positive effect of managerial ownership on financial performance is not supported in the setting of Indonesian state-owned banks.

Effect of Independent Commissioners on Financial Performance

The results indicate that the proportion of independent commissioners does not significantly affect financial performance. This finding contradicts agency theory, which argues that independent commissioners enhance monitoring effectiveness, reduce moral hazard, and improve firm performance (Fama & Jensen, 1983). The lack of significance suggests that independent commissioners in Indonesian state-owned banks may serve primarily to fulfill regulatory requirements rather than to provide effective oversight. Although the average proportion of independent commissioners exceeds the minimum 30% mandated by POJK, this compliance may be ceremonial rather than substantive. Kristiani & Ekadjaja (2025) similarly found that board independence does not always translate into better financial outcomes when independent commissioners lack real authority or access to timely information.

Moreover, the effectiveness of independent commissioners may be constrained by the government's role as the majority shareholder in state-owned banks. The appointment process may be influenced by political considerations, compromising the true independence of commissioners (Wahyuni & Mayliza, 2023). Independent commissioners may also lack industry-specific expertise or the organizational support needed to perform effective monitoring. This finding supports Komariah & Purwaningsih (2025), who reported that board independence does not affect financial performance, and Dewanti et al. (2026), who found that the positive effect of independent commissioners is contingent on other governance mechanisms. Thus, H2 is rejected, indicating that the mere presence of independent commissioners is insufficient to improve financial performance in state-owned banks without accompanying enabling conditions.

Effect of Board Meeting Frequency on Financial Performance

The negative and significant impact of board meeting frequency on financial performance challenges the agency theory view that more frequent meetings improve oversight and reduce information asymmetry (Jensen & Meckling, 1976). Instead, this supports the cost-benefit perspective, which suggests that too many meetings incur high costs that surpass their benefits (Vafeas, 1999). The very high average meeting frequency observed in this study suggests that meetings can become routine and ineffective, leading directors to experience "meeting fatigue" that hampers decision-making. Hanh et al. (2018) observed similar outcomes among Vietnamese listed companies, noting that frequent meetings following poor financial results do not improve performance. Abderahmane & Abdelillah (2025) also noted that excessive meeting frequency can divert resources from productive activities and raise operational costs.

Additionally, in Indonesian state-owned banks, frequent meetings often indicate a bureaucratic culture, serving to fulfill procedural requirements rather than provide strategic value. The expenses associated with these meetings, such as travel, preparation, administrative costs, and director fees, can add up significantly without providing equivalent benefits (Felix Eluyela et al., 2018). This aligns with findings from Hossain & Oon (2022), who noted that beyond a certain point, more meetings lead to reduced returns, and Ebun & Emmanuel (2019), who observed negative impacts of high meeting

frequency in Nigerian insurance firms. Consequently, H3 is rejected, implying that these banks should reassess their meeting policies to better balance oversight with operational efficiency.

Effect of Board Diversity on Financial Performance

The finding that board diversity, measured as female representation on the board, does not significantly affect financial performance contradicts resource dependence theory, which predicts that diverse boards provide access to varied perspectives, networks, and resources that enhance decision-making and firm performance (Pfeffer & Salancik, 1978). The lack of significance may be attributed to the very low average representation of women, which falls far below the "critical mass" (typically 30%) needed for minority voices to influence board decisions (Kanter, 1977). Without critical mass, female directors may face tokenism, where their perspectives are marginalized and their ability to affect outcomes is limited. This finding supports Tarigan et al. (2018), who found that higher female representation reduced financial performance in Indonesian firms, and Wirawan & Willim (2023), who reported no significant effect of board diversity on banking sector performance.

Additionally, female directors in state-owned banks may lack the experience, expertise, networks, or authority needed to effectively influence financial outcomes. EmadEldeen et al. (2021) found positive effects of board diversity in the UK, suggesting that context matters significantly. In Indonesia, cultural factors and organizational hierarchies may limit the contributions of female directors (Kurniawati & Sriwati, 2023). This finding is also consistent with Putri & Danarsari (2020) who found that board gender diversity had no effect on financial performance in Indonesian firms, and with Haitsam et al. (2025) who reported mixed results depending on industry context. Thus, H4 is rejected, indicating that the potential benefits of board diversity cannot materialize without meaningful representation and genuine inclusion in decision-making processes.

Effect of Environmental Disclosure on Financial Performance

The findings indicate that environmental disclosure has a positive but statistically insignificant impact on financial performance. This partially aligns with stakeholder theory, which suggests that transparent environmental reporting can foster trust, legitimacy, and stakeholder support, thereby enhancing financial outcomes (Freeman, 1984). The lack of statistical significance suggests that current environmental disclosure levels at Indonesian state-owned banks are insufficient to elicit meaningful stakeholder responses. The very low average disclosure suggests that banks provide minimal environmental information, which stakeholders may interpret as ceremonial rather than strategic. Conversely, Cahyawati & Azizah (2024) observed a positive effect in Indonesian manufacturing companies, highlighting that sector-specific factors influence results. Since banks have less direct environmental impact than manufacturing firms, stakeholders may prioritize environmental disclosures less.

Furthermore, the banking sector's environmental impact is primarily indirect, occurring through financing activities rather than direct operations, making environmental disclosure less relevant to assessing financial performance (Gunduz, 2025). Stakeholders tend to focus more on other information, such as credit risk and financial stability, when evaluating bank performance. This supports the findings of Lastiningsih et al. (2020), who argued that environmental disclosure alone doesn't necessarily lead to better financial results without concurrent environmental performance. F. S. Mar'ati & Darsono (2022) also found that the link between environmental disclosure and economic performance is stronger when actual environmental improvements are made. Consequently, H5 is rejected, suggesting that increasing environmental disclosures without real environmental actions is unlikely to enhance financial performance in the banking sector.

Discussion of Moderating Effects

Firm Size Moderates the Effect of Managerial Ownership on Financial Performance

The finding that firm size does not moderate the relationship between managerial ownership and financial performance suggests that the extremely low levels of managerial ownership across all banks, regardless of size, provide insufficient variation to permit moderation. Managerial ownership in state-owned banks is uniformly minimal, as managers' holdings are negligible relative to government ownership. This finding aligns with Hermuningsih et al. (2020), who found that the moderating effect of firm size depends on the presence of meaningful variation in ownership structures. Without substantial differences in managerial ownership across small and large banks, firm size cannot influence the strength of this relationship. Therefore, H6 is rejected.

Firm Size Moderates the Effect of Independent Commissioners on Financial Performance

Firm size does not significantly moderate the relationship between independent commissioners and financial performance. The proportion of independent commissioners is regulated by POJK (minimum 30%) and is relatively similar across all state-owned banks, ranging from 40% to 75%. This regulatory uniformity reduces variation, limiting the ability of firm size to create differential effects. Additionally, independent commissioners in state-owned banks may face similar constraints regardless of bank size, including political appointment processes and limited access to information. This finding supports Ningsih et al. (2023), who found that firm size does not consistently moderate the effects of board independence. Thus, H7 is rejected.

Firm Size Moderates the Effect of Board Meeting Frequency on Financial Performance

The finding that firm size significantly moderates the relationship between board meeting frequency and financial performance, with a weakening effect, supports contingency (Lawrence & Lorsch, 1967). In larger banks, the negative impact of high meeting frequency is reduced because larger organizations have greater resources, better meeting management systems, professional administrative support, and more structured decision-making processes. Larger banks can absorb meeting costs more easily than smaller banks, and their established protocols may make meetings more efficient. This finding is consistent with Tharsika et al. (2024), who found that firm size moderates board characteristic-performance relationships, and with Uyar et al. (2023), who reported that organizational size affects governance effectiveness. Therefore, H8 is accepted.

Firm Size Moderates the Effect of Board Diversity on Financial Performance

Firm size does not significantly moderate the relationship between board diversity and financial performance. Female representation on boards is extremely low across all banks, regardless of size, ranging from 0% to only 7.1%. This lack of variation means that firm size cannot differentially affect the diversity-performance relationship. Even in larger banks with more resources, the absence of critical mass prevents diversity from influencing outcomes. This finding aligns with Mohsni et al. (2021), who found that the positive effect of board diversity is stronger in smaller firms, but only when meaningful diversity exists. In the absence of substantial diversity, size has no moderating role. Thus, H9 is rejected.

Firm Size Moderates the Effect of Environmental Disclosure on Financial Performance

Firm size does not significantly moderate the relationship between environmental disclosure and financial performance. Environmental disclosure levels are uniformly low across all banks, ranging from 1.45% to 21.74%, regardless of asset size. This uniformity reflects the early stage of environmental reporting in Indonesia's banking sector, where disclosure practices are not yet differentiated by firm size. Larger banks may have greater capacity to disclose, but current practices do not reflect this potential. This finding contrasts with Fathihani et al. (2025), who found that firm size strengthens ESG disclosure effects in Indonesian banking, but their study examined broader ESG disclosure rather than environmental disclosure alone. Wulandari & Istiqomah (2024) also found that firm size moderates the effects of ESG, but only when disclosure levels reach meaningful thresholds. Therefore, H10 is rejected.

CONCLUSION

This study concludes that governance mechanisms have a limited and predominantly negative influence on the financial performance of state-owned banks in Indonesia. Managerial ownership and board meeting frequency have significant negative effects, indicating that higher ownership stakes and more frequent meetings do not improve profitability but instead reduce it. Meanwhile, independent commissioners, board diversity, and environmental disclosure show no significant effect, suggesting that these mechanisms are either ceremonial or lack the necessary conditions to enhance performance. Firm size moderates only the relationship between board meeting frequency and financial performance, weakening its negative impact in larger banks. These findings demonstrate that agency theory predictions do not fully hold in the context of Indonesian state-owned banks, where political interference, bureaucratic culture, and regulatory compliance without substantive implementation limit the effectiveness of corporate governance mechanisms.

The findings suggest that state-owned banks should critically evaluate their governance practices, particularly the excessive frequency of board meetings and the minimal levels of managerial ownership, which appear counterproductive. Regulatory bodies may need to reassess whether current governance mandates, such as minimum requirements for independent commissioners, are achieving their intended objectives. However, this study is constrained by its small sample size of 30 observations across five banks and its exclusive focus on state-owned banks, which limits generalizability to other sectors. Future research should expand the sample to include private banks and non-financial state-owned enterprises, incorporate additional governance variables such as audit quality and ownership concentration, and employ longitudinal designs to capture dynamic relationships. Such extensions would provide a more comprehensive understanding of how governance mechanisms interact with contextual factors to influence financial performance.

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