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# Ownership Structure and CSR Disclosure: Moderating Role of Board Commissioners

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## ABSTRACT

The research aims to examine the effect of ownership structure on Corporate Social Responsibility Disclosure (CSRD) and analyze the moderating role of the board of commissioners. Ownership structure is proxied by managerial and institutional ownership, while the role of the board of commissioners is measured by the frequency of board meetings. CSRD is measured as a dummy variable, and full disclosure consists of 89 indicators from Global Reporting Initiative (GRI) Standard 2021. The research uses panel data from 45 banking companies listed on the Indonesia Stock Exchange (IDX) during 2021–2023, resulting in 135 firm-year observations. The data are analyzed using panel regression with model selection tests, including Chow, Hausman, and Lagrange Multiplier tests, followed by classical assumption testing. The results before time lag (t) indicate that managerial and institutional ownership have no significant effect on CSRD, and the board of commissioners does not moderate the relationship. However, after applying a time lag (t+1), institutional ownership shows a positive and significant effect on economic, social, and total CSRD, while managerial ownership positively affects environmental disclosure. The moderating role of the board of commissioners remains insignificant. The research contributes to stakeholder theory by emphasizing the importance of powerful stakeholders, particularly institutional investors, in influencing CSR disclosure over time.

**Keywords:** ownership structure, Corporate Social Responsibility Disclosure (CSRD), institutional ownership, managerial ownership, board commissioners

## INTRODUCTION

In recent years, sustainability has become an increasingly important issue for companies as stakeholder expectations for responsible business practices have grown. Companies are expected not only to achieve financial performance but also to contribute to social welfare and environmental sustainability. As a result, organizations are increasingly encouraged to integrate economic, social, and environmental considerations into their business activities and strategic decision-making processes.

Corporate Social Responsibility (CSR) is a company's commitment to operating sustainably from economic, social, and environmental perspectives (Kirana & Prasetyo, 2021; Bidari & Djajadikerta, 2020; Garanina, 2024; Ma et al., 2023). Therefore, CSR disclosure encompasses economic, social, and environmental aspects. Corporate Social Responsibility Disclosure (CSRD) is a company's responsibility to positively impact society and the environment through actions (Tran et al., 2021). CSRD is considered optimal when all three dimensions are adequately disclosed within a company's sustainability report. However, evidence suggests that CSRD among Indonesian banking companies is still not optimal. According to (Tuk Indonesia, 2023), an evaluation conducted by Transformasi untuk Keadilan (TuK) Indonesia, in collaboration with the Trisakti Sustainability Center, on 37 banks from Core-Capital-Based Bank Group (KBMI) III, KBMI IV, and foreign banks during 2019–2021 found that CSR disclosure practices remained limited. KBMI III and KBMI IV banks showed high disclosure in social aspects, while foreign banks tended to disclose more information on economic aspects. Nevertheless, environmental

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disclosure remained relatively low across all bank categories. According to Otoritas Jasa Keuangan (2017), social, economic, and environmental aspects should be comprehensively disclosed to support sustainable finance implementation and regulatory compliance. The low level of CSR disclosure remains a concern because sustainability reporting is often viewed merely as a compliance requirement rather than as an important indicator of sustainable business practices (Tempo, 2024). Furthermore, Ramadhani (2022) has reported that, based on company data recorded by the Indonesia Business Council for Sustainable Development (IBCSD), CSRD, and sustainability reports in Indonesia remain below 50%, placing Indonesia 36th among 47 capital markets worldwide. These findings indicate considerable room to improve the quality and comprehensiveness of CSR disclosure among Indonesian companies.

According to Nwude and Nwude (2021), CSRD is the dissemination of information regarding a company's social responsibility initiatives and actions undertaken for the welfare and interests of society. Broadly speaking, CSR refers to a company's commitment, while CSRD refers to disclosing the actions the company undertakes. The implementation of CSRD is crucial for all types of businesses, as it is related to building trust with stakeholders and the community (Kirana & Prasetyo, 2021; Tran et al., 2021), as well as legitimacy and transparency in the operations of small, medium, and large companies (Garanina, 2024). CSRD is also an activity and reporting undertaken by a company to demonstrate its commitment to environmental performance and social responsibility (Lu & Wang, 2021). When commitment and responsibility are realized, benefits derived from CSRD include increased transparency and accountability, improved financial performance, more structured company policies and practices, and heightened social awareness (Bidari & Djajadikerta, 2020).

According to Ali et al. (2022), external and internal factors influence CSRD. CSRD is influenced by compliance with corporate governance, board characteristics (including board size, board age, board gender, and the presence of independent commissioners), government regulations and policies, social and managerial strategies, performance measurement, company characteristics (profitability and leverage), company size, and ownership structure (Kirana & Prasetyo, 2021; Nwude & Nwude, 2021; Tran et al., 2021; Xu et al., 2023). These factors are frequently encountered in studies related to CSRD. For example, board characteristic, such as board independence, directors' age, gender composition, and board size, have been examined by Al-Zaqeba et al. (2023) and Rouf and Hossan (2021). Company characteristic, particularly profitability and leverage, have been investigated by Handayati et al. (2022), Respati and Oktaviani (2022), and Siswanto and Daniswara (2022). Company size has also been examined as a potential determinant of CSRD by Miloud (2024), Nugraheni et al. (2022), and Respati and Oktaviani (2022). Furthermore, ownership structure, including managerial, institutional, foreign, public, government, block, and director ownership, has been investigated by Nugraheni et al. (2022) and Ramdhony et al. (2024). Hence, this research focuses on ownership structure as an assumed factor in CSRD.

Stakeholder theory in this research refers to Deegan (2009), which defines stakeholder theory into two branches. The first branch is the ethical (moral) or normative branch, in which the company treats all stakeholders equally, and issues related to stakeholder power are not directly relevant. In other words, managers must manage the organization for the benefit of all stakeholders. According to Freeman and McVea (2001), this ethical branch can simultaneously create sustainable long-term value and face existing market and business challenges. The second branch, the managerial branch, shows that company managers will meet the hopes or expectations of certain stakeholders. Stakeholders in this branch tend to have higher power. In line with this theory, organizations need to be encouraged to promote a balance among their business processes, social responsibility, and environmental sustainability (Tran et al., 2021). Therefore, this theory is particularly useful when integrating it with CSR due to the support it provides for the sustainability initiatives implemented by the company.

Referring to the stakeholder theory used in this research, the second branch, the managerial branch, holds that companies tend to meet the expectations of certain stakeholders (tending toward powerful stakeholders). In other words, companies meet the needs of stakeholders with the greatest power within the company, namely owners or shareholders. The company's decision to manage owners or shareholders, which will be considered by the company, requires good management. This good management is reflected in the ownership structure. With the existing ownership structure, decisions and policies in each company certainly differ depending on the manager (owner) and its structure. The more structured a company's ownership is, and the more effective and efficient its performance, the better the output it produces. One of the company's outputs is CSRD. Companies have their own ways of managing the distribution of ownership among shareholders, including individuals, institutions, and other entities (Tayeh et al., 2023). This is called ownership structure.

According to Al Amosh and Khatib (2022), ownership structure includes foreign ownership, state ownership, managerial ownership, blockholder ownership, and family ownership. Ownership structure is the distribution of ownership rights among various parties (the state, institutional investors, and individual investors) and control over a company that can influence management behavior and decisions (Fan & Wang, 2022; Tayeh et al., 2023). Ownership structure can describe a company's identity and is divided into several categories: foreign ownership,

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state ownership, managerial ownership, block ownership, and family ownership (Al Amosh & Khatib, 2022). Regarding CSRD, managerial ownership has a positive effect, but institutional ownership does not. Institutional investors may place greater emphasis on financial performance and investment returns than on sustainability disclosure. This perspective may explain why institutional ownership is found to have no significant effect on CSRD (Prasetio & Rudyanto, 2020). Meanwhile, according to Nugraheni et al. (2022), managerial ownership structure does not affect CSRD, but institutional ownership structure has a positive effect on CSRD. Managerial ownership structure has no effect because managerial ownership is low. The country of origin of the owner, in terms of foreign ownership, does not pay much attention to CSR. Investor participation is low in terms of public ownership. The findings of Prasetio and Rudyanto (2020) and Nugraheni et al. (2022) indicate inconsistent evidence regarding the influence of ownership structure on CSRD. These inconsistent findings suggest that the relationship between ownership structure and CSRD may be context-dependent rather than universally applicable. Differences in industry characteristics, ownership concentration, regulatory environments, and disclosure measurement approaches may contribute to the variation in empirical results. Furthermore, several previous studies have examined CSR disclosure as a single aggregate construct, providing limited evidence regarding whether ownership structure influences economic, environmental, and social disclosure differently (Mohd Ghazali, 2007; Ludya & Dewi, 2024; Nugraheni et al., 2022; Prasetio & Rudyanto, 2020; Pratitarari & Honggowati, 2025; Putri & Hadinugroho, 2023; Ramdhony et al., 2024). Therefore, further investigation is needed to understand better the relationship between ownership structure and CSR disclosure, particularly across different disclosure dimensions.

In this research, ownership structure serves as a proxy for institutional and managerial ownership. Institutional ownership refers to the type of company share ownership held by institutions, such as pension funds, insurance companies, or other institutional investments (Acar et al., 2021). This creates tighter monitoring through investor oversight of management, as well as demands for reputation and public image, since large institutions must avoid tarnishing their reputation. Meanwhile, managerial ownership refers to the proportion of shares owned by managers in a company (Tayeh et al., 2023). The choice of managerial ownership structure reflects the interests of managers who own shares. They tend to have an incentive to increase the company's long-term value, which can be achieved through CSRD. Furthermore, transparency among managers with high shareholdings tends to be more open and responsible for company activities, including CSRD.

The research focuses on managerial and institutional ownership, with CSRD through the GRI Standards being comprehensive but analyzed separately for economic, environmental, and social aspects. This is due to the potential for different focuses for each company in its CSRD (Amosh & Khatib, 2022; Orazalin & Mahmood, 2018). Economic disclosure primarily reflects information related to value creation, financial sustainability, risk management, and long-term business viability. Institutional investors generally have strong incentives to monitor information that affects firm performance and investment returns (Nugraheni et al., 2022; Prasetio & Rudyanto, 2020). Therefore, institutional ownership may encourage broader economic disclosure to reduce information asymmetry and improve transparency for capital market participants. Environmental disclosure is often associated with long-term environmental risks and sustainability investments whose benefits may not be immediately observable (Orazalin & Mahmood, 2018). Managers who own company shares may have stronger incentives to protect long-term firm value and reputation. Consequently, managerial ownership may be more closely related to environmental disclosure because environmental performance can affect future firm value (Cho & Ryu, 2022; Ongsakul et al., 2021). Meanwhile, social disclosure reflects a firm's relationship with employees, customers, communities, and other stakeholders (Kirana & Prasetyo, 2021; Nwude & Nwude, 2021). Institutional investors may support broader social disclosure because social responsibility initiatives can strengthen corporate reputation, legitimacy, and stakeholder trust (Nugraheni et al., 2022; Nwude & Nwude, 2021). Therefore, institutional ownership may be more strongly associated with social disclosure than with other dimensions. These arguments suggest that ownership structure may not influence all dimensions of CSR disclosure uniformly (Nugraheni et al., 2022; Prasetio & Rudyanto, 2020). Instead, different ownership types may prioritize different sustainability objectives, resulting in heterogeneous disclosure outcomes across economic, environmental, and social dimensions (Amosh & Khatib, 2022; Orazalin & Mahmood, 2018).

Prior studies generally suggest that managerial and institutional ownership may encourage CSRD through monitoring and long-term value creation mechanisms (Cho & Ryu, 2022; Nugraheni et al., 2022; Ongsakul et al., 2021). However, empirical evidence remains inconclusive. While some studies report positive associations between ownership structure and CSR disclosure, others find insignificant relationships (Nugraheni et al., 2022; Ongsakul et al., 2021; Prasetio & Rudyanto, 2020). These inconsistent findings may arise from differences in industry characteristics, ownership concentration, regulatory environments, and CSRD measurements. In addition, most prior studies examine CSRD as a single aggregate construct, which may obscure differences across economic, environmental, and social dimensions. Therefore, further investigation is needed to understand better how ownership structure influences different dimensions of CSRD. According

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to Prasetio and Rudyanto (2020), ownership structure may influence CSRD by shaping corporate monitoring and decision-making processes. Accordingly, the research treats total CSRD as the primary dependent variable because corporate sustainability disclosure is generally evaluated as an integrated reporting outcome. To provide additional evidence and assess the robustness of the findings, supplementary analyses are conducted separately for the economic, environmental, and social dimensions of CSR disclosure. Hence, the first proposed hypothesis is as follows:

**H1:** Managerial and institutional ownership structures positively influence overall CSRD.

In this research, institutional and managerial ownership structures are considered dominant in companies, leading to dominance in company policy-making (Muller-Kahle, 2013). Thus, a conflict of interest arises between majority and minority shareholders. This conflict of interest requires the board of commissioners to balance or control the role of dominant owners in the company (Beasley et al., 1999). In this case, the board of commissioners can strengthen oversight of the company, especially in overcoming a centralized and dominant ownership structure. Therefore, the research uses the role of the board of commissioners as a moderating variable to strengthen the influence of ownership structure on CSR disclosure. In this research, the board of commissioners' role is measured by the number of board meetings, reflecting the independence and control exercised at each meeting.

The role of the board of commissioners in the research is represented by the number of board of commissioner meetings, which is assumed to reflect the board's independence. Board of commissioner meetings can serve as a means of communication among board of commissioner members to make decisions on existing policies and resolve problems faced by the company. The number of board of commissioner meetings is the frequency of meetings in a year (Harymawan et al., 2020). Board of commissioners meetings are activities carried out by the board of commissioners to make joint decisions regarding policies to be implemented in the future (Trisnawati et al., 2022). The more frequently the board of commissioners meets, the more information the board exchanges on economic, social, and environmental issues (Ratri et al., 2021). The frequency of board meetings tends to indicate higher CSR because meetings allow information, ideas, and suggestions for addressing CSR-related problems and issues to be obtained and evaluated (Agustia et al., 2022; Harymawan et al., 2020; Ratri et al., 2021).

In each board of commissioners meeting, the topics discussed are certainly not the same each time. At times, the board of commissioners may discuss CSRD, social, environmental, and economic issues, the company's ownership structure, and each stakeholder's needs (Nwude & Nwude, 2021; Ratri et al., 2021). The first branch of stakeholder theory, the ethical (moral) or normative branch, holds that managers must fulfill each stakeholder's needs fairly (Deegan, 2009; Freeman & McVea, 2001). Thus, the existence of a board of commissioners meeting assumes that the board of commissioners supervises company managers regarding their responsibilities in meeting each stakeholder's needs, as stated in the theory. In addition to focusing on the main stakeholder, namely shareholders, the company can also consider the needs of the board of commissioners, which is also a stakeholder. Thus, the second branch of stakeholder theory can also play a role in this moderating variable. In other words, the ownership structure that influences CSRD can be strengthened by the role of the board of commissioners.

Ownership structure, especially institutional ownership, can be strengthened by the presence of a board of commissioners in influencing CSRD (Hanaya & Suhartini, 2025; Susanto et al., 2024; Zaid et al., 2020). An independent board of commissioners is assumed to supervise the fulfillment of stakeholder needs and control the ownership structure that influences CSR disclosure, thereby strengthening its influence. Based on the explanation and research results, the second hypothesis in this study is:

**H2:** The role of the board of commissioners strengthens the influence of managerial and institutional ownership structures on CSRD as a whole.

Based on the research gap identified in previous studies, this research investigates the effect of ownership structure on corporate social responsibility disclosure. It examines whether the board of commissioners moderates this relationship. The problems are: (1) How does the ownership structure influence CSRD? (2) What is the role of the board of commissioners as a moderating variable? The research aims to examine the effect of ownership structure on CSRD, moderated by the role of the board of commissioners. The results are expected to be useful for shareholders and stakeholders, including employees, the public, and investors, in implementing CSRD within the company. For the development of scientific knowledge, the research is expected to provide insight into the influence of ownership structure on CSRD, as well as the moderating role of the board of commissioners.

The research contributes to the literature in three ways. First, it extends previous studies by examining CSRD separately across economic, environmental, social, and overall dimensions rather than treating CSRD as a single aggregate construct. Second, the research incorporates the moderating role of the board of commissioners within a corporate governance framework to provide additional insights into how governance mechanisms relate to sustainability disclosure. Third, the research employs a one-year time-lag specification and an endogeneity test to

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provide more robust empirical evidence regarding the relationship between ownership structure and CSRD.

While stakeholder theory provides a useful foundation for understanding corporate responses to stakeholder pressures, contemporary ESG literature suggests that sustainability disclosure is also shaped by governance mechanisms and monitoring incentives. Recent studies argue that ownership structure affects ESG disclosure through monitoring effectiveness, information transparency, and long-term value creation (Al Amosh & Khatib, 2022; Garanina, 2024; Mukti et al., 2025). From a corporate governance perspective, institutional investors act as external monitoring mechanisms that encourage firms to disclose more sustainability-related information, reducing information asymmetry and reputational risks. Meanwhile, managerial ownership aligns managerial interests with long-term firm value, potentially motivating greater environmental and social accountability. Therefore, the research integrates stakeholder theory with contemporary ESG governance perspectives to explain how different ownership structures influence CSRD.

The research focuses on internal factors influencing CSRD. The research focuses on internal factors because company decisions and policies tend to depend on the corporate strategy developed and implemented by company management. The internal factors examined are ownership structure and the board of commissioners because ownership structure is a company characteristic, and the board of directors and commissioners, which are part of corporate governance, are also internal factors influencing CSRD.

## METHODS

The research population is banking companies listed on the Indonesia Stock Exchange (IDX) from 2021 to 2023. The period 2021–2023 is selected because it reflects the implementation phase following the adoption of the GRI Standards 2021 and represents the most recent period with complete and publicly available annual and sustainability reports at the time of data collection. This research uses purposive sampling, selecting companies that publish annual and sustainability reports. This research selects banking companies because the banking sector plays a crucial role in economic growth. Banking companies, which also lend funds to companies in other industrial sectors, sometimes require good social responsibility, one of which is through CSR disclosure, as a condition for obtaining loans.

The research uses secondary data. The data collected include CSR data obtained from annual reports and company sustainability reports, ownership structure data, and the number of board of commissioners' meetings obtained from financial reports on IDX. Annual and sustainability reports are used to identify CSRD items related to economic, environmental, and social disclosures. Ownership structure data are collected to obtain information on managerial and institutional shareholdings, while financial reports are used to identify the number of board commissioners' meetings during each fiscal year. The information collected from these reports is organized by research variables and observation periods to construct the research dataset. The data are then used to examine the relationship between ownership structure and CSRD, as well as the moderating role of the number of board commissioners' meetings in this relationship.

CSRD is measured using Global Reporting Initiative Standards (n.d.) as the benchmark for sustainability disclosure. The benchmark consists of 89 disclosure items covering economic, environmental, and social dimensions. Managerial ownership is measured as the total number of shares held by directors and commissioners divided by the total number of shares outstanding, expressed as a percentage. Meanwhile, institutional ownership is measured as the total number of shares owned by institutional investors divided by the total number of shares outstanding, expressed as a percentage (Cornett et al., 2007). The moderating variable, namely the board of commissioners, is measured by the natural logarithm of the total number of board meetings held during one fiscal year (Harymawan et al., 2020).

The data analysis uses EViews 10 to examine the effect of ownership structure on CSRD, with the board of commissioners as a moderating variable. The research will begin by conducting a panel data regression model selection test first. Next, the classical assumption test will adjust the results of the panel data regression model selection test. The use of a one-year lag is based on the argument that changes in ownership structure influence corporate policies through monitoring, strategic direction, budgeting decisions, and managerial oversight. These governance mechanisms are unlikely to be reflected immediately in sustainability disclosures because CSR initiatives require planning, implementation, and reporting processes before becoming observable in sustainability reports. Therefore, ownership structure in year $t$ is expected to influence CSRD in year $t+1$ rather than contemporaneously.

In addition to the one-year time-lag specification, this research performs an additional endogeneity analysis using the two-step System Generalized Method of Moments (System GMM) estimator as a robustness check. The System GMM approach is appropriate for panel data because it addresses potential endogeneity by employing internal instruments derived from lagged values of the endogenous variables. Following the reviewer's recommendation, the validity of the instruments is evaluated using the Hansen overidentification test and supported by the Sargan overidentification test. The primary regression analysis remains based on the Fixed Effects Model (FEM). At the same time, the System GMM estimation is conducted to assess whether the main findings are robust after accounting

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for potential endogeneity.

The sample comprises 135 companies over a 3-year research period. The primary analysis employs two models using total CSR disclosure ($CSRD_{TOT}$) as the dependent variable. Additional analyses using economic, environmental, and social CSR disclosure are performed as robustness checks to examine whether the results remain consistent across disclosure dimensions (Equations (1) and (2)):

$$CSRD_{TOT} = \alpha + \beta_1 MOWN_{it} + \beta_2 IOWN_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \varepsilon_{it}, \quad (1)$$

$$CSRD_{TOT} = \alpha + \beta_1 MOWN_{it} + \beta_2 IOWN_{it} + \beta_3 MOWN_{it} * MEET_{it} + \beta_4 IOWN_{it} * MEET_{it} + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \varepsilon_{it}. \quad (2)$$

Equations (1) and (2) have $CSRD_{TOT}$ as total CSRD, *MOWN* as managerial ownership, *IOWN* as institutional ownership, *MEET* as board of commissioners' meeting frequency, *SIZE* as firm size, *LEV* as leverage, $\alpha$ as constant, $\beta_1$–$\beta_6$ as regression coefficients, $\varepsilon$ as error term, *i* as company, and *t* as year.

## RESULTS AND DISCUSSION

Table 1 presents descriptive statistics for the key variables: CSRD (economic, environmental, social, and overall categories), ownership structure (managerial and institutional), and the board of commissioners. The descriptive statistics provide an overview of the data, including distributional characteristics, reflecting the CSRD, ownership structures, and boards of commissioners of bank companies listed on the IDX. The results of the descriptive statistical analysis show that CSRD measured using a dummy indicator has a mean (25.777) which means that the CSRD carried out by most companies has not disclosed CSR comprehensively. This is evident when comparing the average disclosure score with the GRI Standards 2021 benchmark, which consists of 89 disclosure items. Table 1 shows that CSRD's mean per category is low, especially in the environmental CSRD category ($CSRD_{ENV}$) (8.385). This is very far from the overall $CSRD_{ENV}$ indicators, which are 40. Hence, the mean represents 20.96% of $CSRD_{ENV}$ indicators. Similarly, the mean scores for $CSRD_{SOC}$ and $CSRD_{ECO}$ indicate limited disclosure. $CSRD_{SOC}$ (mean = 11.592) represents 32.20% (11.592/36) of $CSRD_{SOC}$, and $CSRD_{ECO}$ (mean = 5.6) represents 43.08% (5.6/13) of $CSRD_{ECO}$. The results in descriptive statistics indicate that CSRD as a whole, per aspect, is not optimal in most companies.

The company ownership structure data by calculating the average of institutional and managerial ownership structures (mean = 7%) show that managerial shareholders are not major. However, institutional ownership (mean = 77.2%) shows that institutions are assessed as the majority shareholders. The board of commissioners is measured by the natural logarithm of the number of board of commissioner meetings held per company during each year (mean= 2.324, min = 1.386, max = 4.234). This result means that, in most companies, the board of commissioner meetings per year is relatively frequent. The control variables are company size and leverage, showing mean of 31.542 and 4.527, respectively.

Table 2 presents the results of regression model selection to select between the Common Effect Model (CEM), Random Effect Model (REM), or Fixed Effect Model (FEM) using the Chow, Hausman, and Lagrange Multiplier tests. The tests are conducted to identify the panel data regression mode the best fits the characteristic of the research data. The Chow test is used to compare the CEM and FEM, while the Hausman test is used to determine whether the FEM or REM is more appropriate. The Lagrange Multiplier test is used to compare the CEM and REM. The regression

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Table 1 Results of Descriptive Statistical Analysis Test

| | N | Minimum | Maximum | Mean | Standard Deviation |
|---|---|---|---|---|---|
| $CSRD_{TOT}$ | 135 | 4 | 66 | 25.777 | 13.558 |
| $CSRD_{ECO}$ | 135 | 0 | 13 | 5.600 | 3.468 |
| $CSRD_{ENV}$ | 135 | 0 | 29 | 8.385 | 6.045 |
| $CSRD_{SOC}$ | 135 | 2 | 28 | 11.592 | 5.996 |
| MOWN | 135 | 0.200 | 0 | 0.007 | 0.032 |
| IOWN | 135 | 0.300 | 0.998 | 0.772 | 0.167 |
| MEET | 135 | 1.386 | 4.234 | 2.324 | 0.733 |
| SIZE | 135 | 28.538 | 35.315 | 31.542 | 1.672 |
| LEV | 135 | 0.080 | 15.308 | 4.527 | 2.896 |

Note: Corporate Social Responsibility Disclosure (CSRD), Total (TOT), Economic Category (ECO), Environmental Category (ENV), Social Category (SOC), Managerial Ownership (MOWN), Institutional Ownership (IOWN), Board of Commissioners (MEET), Company Size (SIZE), and Leverage (LEV).

model selection results indicate the FEM is the most appropriate model for this research. This regression model is used for the next step of this research.

Table 3 shows the normality test results using the Jarque-Bera test. The Jarque-Bera statistic is 2.705, with the probability value (0.258) greater than the 0.05 significance level. This result indicates an insufficient statistical evidence to conclude that the residuals deviate from a normal distribution. The Jarque-Bera test evaluates the normality of the distribution based on its skewness and kurtosis. These result suggest that the normality assumption is satisfied for the residuals examined in this test.

After all data have passed the normality test, the next step is the multicollinearity test, as shown in Table 4. All variables have a centered Variance Inflation Factor (VIF) value of less than 10. Because the data have met the requirements to pass the multicollinearity test (VIF < 10), the data are declared to have passed the multicollinearity test. The analysis continues with a heteroscedasticity test.

Table 5 shows the heteroscedasticity test results. The data show a probability value of more than 0.05. After conducting the heteroscedasticity test, the results indicate that the data meet the requirements to pass the test. Therefore, the data satisfy the heteroscedasticity assumption. The final classical assumption test will be the autocorrelation test.

Table 2 Results of Regression Model Selection

| Testing | Results | Decision |
|---|---|---|
| Chow Test | 0.0000 | Fixed Effect Model |
| Hausman test | 0.0037 | Fixed Effect Model |
| Lagrange Multiplier Test | 0.0001 | Random Effect Model |

Table 3 Normality Test Results

| Indicator | Value |
|---|---|
| N | 135 |
| Jarque-Bera | 2.705392 |
| Probability | 0.258542 |

Table 4 Multicollinearity Test Results

| Variables | Coefficient Variance | Uncentered VIF | Centered VIF |
|---|---|---|---|
| C | 42930.600 | 77622.320 | NA |
| MOWN | 2938.538 | 1.466 | 1.1826 |
| IOWN | 317.862 | 344.418 | 1.5489 |
| MEET | 9.257 | 91.701 | 1.3005 |
| SIZE | 43.171 | 77664.900 | 1.2541 |
| LEV | 1.145 | 43.874 | 1.4406 |

Note: Constant (C), Variance Inflation Factor (VIF), Managerial Ownership (MOWN), Institutional Ownership (IOWN), Board of Commissioners (MEET), Company Size (SIZE), and Leverage (LEV).

Table 5 Heteroscedasticity Test Results

| Variables | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | -25.6637 | 89.2119 | -0.2877 | 0.7743 |
| MOWN | -6.0242 | 23.3402 | -0.2581 | 0.7970 |
| IOWN | -6.9567 | 7.6764 | -0.9062 | 0.3674 |
| MEET | -1.4770 | 1.3100 | -1.1275 | 0.2627 |
| SIZE | 1.2775 | 2.8290 | 0.4516 | 0.6527 |
| LEV | -0.1552 | 0.4607 | -0.3368 | 0.7371 |

Note: Constant (C), Managerial Ownership (MOWN), Institutional Ownership (IOWN), Board of Commissioners (MEET), Company Size (SIZE), and Leverage (LEV).

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The autocorrelation test is shown in Table 6. The data (n = 135, k = 5) show a lower bound (dL) of 1.6429 and an upper bound (dU) of 1.7962, with (4-dU = 2.2038). Following Durbin and Watson (1951), the Durbin-Watson (dW) statistic indicates no evidence of first-order autocorrelation when (dU < dW < 4-dU). The data have a dW value of 2.0953 (1.7962 < 2.0953 < 2.2038). It is declared to pass the entire classical assumption test so that a linear regression analysis will be carried out.

Table 7 presents the results of the additional endogeneity analysis using the two-step System GMM estimator. The Hansen overidentification test indicates that the null hypothesis of instrument validity cannot be rejected for either the baseline model ($\chi^2$ = 1.14; p = 0.285) or the moderation model ($\chi^2$ = 2.29; p = 0.514). Likewise, the Sargan test supports the validity of the selected instruments, with p-values greater than 0.05 for both models. These findings suggest that the internal instruments employed in the System GMM estimation are valid and that potential endogeneity is unlikely to influence the main empirical findings materially.

Table 8 shows the results of the simultaneous test. It shows that the probability value is < 0.05, namely 0.000001. Thus, the independent variable, moderating variable, and control variable simultaneously influence the dependent variable.

Table 9 shows the results of the coefficient of determination test, with an adjusted R-square of 0.458652. This means the independent, moderating, and control variables explain 45.87% of the variation in the dependent variable, while the remaining 54.13% is explained by variables outside the research model. The adjusted R-square is useful because it accounts for the number of explanatory variables in the model, providing a more accurate measure of the model's explanatory power than R-square alone. Therefore, the result indicates that the variables included in the model explain some of the variation in the dependent variable, while other factors may also contribute to its variation.

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Table 6 Autocorrelation Test Results

| Test | Value |
|---|---|
| Durbin-Watson Statistics | 2.095320 |

Table 7 Results of the System Generalized Method of Moments (GMM) Endogeneity Analysis

| Statistics | Model 1 | Model 2 |
|---|---|---|
| Estimator | Two-step System GMM | Two-step System GMM |
| Number of Groups | 45 | 45 |
| Number of Observations | 90 | 90 |
| Number of Instruments | 7 | 12 |
| Hansen $\chi^2$ | 1.14 | 2.29 |
| Hansen p-value | 0.285 | 0.514 |
| Sargan $\chi^2$ | 1.11 | 2.54 |
| Sargan p-value | 0.293 | 0.467 |

Table 8 Results of Simultaneous Test

| Test | Value |
|---|---|
| F-statistic | 3.226085 |
| Prob(F-statistic) | 0.000001 |

Table 9 Results of the Coefficient of Determination Test

| Test | Value |
|---|---|
| R-squared | 0.664688 |
| Adjusted R-squared | 0.458652 |

Tables 10 and 11 present the results of the main regression model for overall CSRD ($CSRD_{TOT}$). Institutional ownership has a positive and significant effect on overall CSRD (coeff. = 214.8312; prob. = 0.0266), while managerial ownership does not show a significant effect (coeff. = 1,096.5890; prob. = 0.1194). Therefore, H1 is partially supported. The results support the hypothesized positive relationship for institutional ownership but do not provide sufficient evidence to support the proposed positive relationship for managerial ownership. These findings suggest that firms with higher institutional ownership tend to disclose more CSR information overall, while no statistically significant relationship is found between managerial ownership and overall CSRD.

The moderating analysis in Table 11 shows that the interaction between managerial ownership and board meetings (MOWN*MEET) is insignificant (prob. = 0.9665), as is the interaction between institutional ownership and board meetings (IOWN*MEET) (prob. = 0.3058). These results indicate that the frequency of board of commissioners' meetings does not strengthen

Table 10 Results of Hypothesis 1

| Variables | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | 411.9963 | 882.0681 | 0.4670 | 0.6429 |
| MOWN | 1,096.5890 | 689.4261 | 1.5905 | 0.1194 |
| IOWN | 214.8312 | 93.3981 | 2.3001 | 0.0266 |
| SIZE | -19.3328 | 27.4137 | -0.7052 | 0.4847 |
| LEV | 5.4206 | 3.9231 | 1.3817 | 0.1745 |

Note: Constant (C), Managerial Ownership (MOWN), Institutional Ownership (IOWN), Board of Commissioners (MEET), Company Size (SIZE), Leverage (LEV).

Table 11 Results of Hypothesis 2

| Variables | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | 305.3870 | 904.1180 | 0.3377 | 0.7374 |
| MOWN | 1,435.7900 | 796.3618 | 1.8029 | 0.0793 |
| IOWN | 338.3216 | 145.5929 | 2.3237 | 0.0256 |
| MEET | 49.8323 | 33.8718 | 1.4712 | 0.1495 |
| MOWN*MEET | -15.5238 | 367.6163 | -0.0422 | 0.9665 |
| IOWN*MEET | -43.5334 | 41.9372 | -1.0380 | 0.3058 |
| SIZE | -20.3831 | 27.4527 | -0.7424 | 0.4624 |
| LEV | 6.2805 | 3.8630 | 1.6258 | 0.1123 |

Note: Constant (C), Managerial Ownership (MOWN), Institutional Ownership (IOWN), Board of Commissioners (MEET), Company Size (SIZE), and Leverage (LEV).\

Table 12 Time Lag Comparison Results

| Variables | Year *t* | Year *t*+1 |
|---|---|---|
| MOWN | $-146.1762_{(0.5481)}$ | $1,435.7900_{(0.0793)}$ |
| IOWN | $12.8048_{(0.7133)}$ | $338.3216_{(0.0256)}$ |
| MEET | $-1.1703_{(0.9301)}$ | $49.8323_{(0.1495)}$ |
| MOWN*MEET | $109.4989_{(0.5015)}$ | $-15.5238_{(0.9665)}$ |
| IOWN*MEET | $-7.4892_{(0.6542)}$ | $-43.5334_{(0.3058)}$ |
| SIZE | $24.8737_{(0.0004)}$ | $-20.3831_{(0.4624)}$ |
| LEV | $-1.8941_{(0.0854)}$ | $6.2805_{(0.1123)}$ |
| Adj $R^2$ | 0.5879 | 0.4587 |
| Prob(F-statistics) | 0.0000 | 0.0000 |

Note: Constant (C), Managerial Ownership (MOWN), Institutional Ownership (IOWN), Board of Commissioners (MEET), Company Size (SIZE), and Leverage (LEV).
Coefficients are reported with p-values in parentheses. Statistical significance is assessed at the 5% level.

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the relationship between ownership structure and overall CSR disclosure. Therefore, H2 is not supported.

To further examine whether ownership structure affects different dimensions of CSRD, robustness analyses are conducted separately for economic, environmental, and social disclosure categories. The comparison between the contemporaneous model (year *t*) and the lagged model (year *t+1*) is presented in Table 12. The results show substantial differences between the two models. In year *t*, neither managerial ownership nor institutional ownership significantly influences CSRD. However, after applying a one-year time lag, institutional ownership becomes positively associated with overall CSRD, while managerial ownership becomes significant in the environmental disclosure category. These findings suggest that the influence of ownership structure on CSRD requires time to materialize through corporate planning, implementation, and reporting processes.

Table 13 presents the robustness analysis for economic CSRD. Institutional ownership has a positive and significant effect on economic disclosure (coeff. = 52.3067; prob. = 0.0411), whereas managerial ownership remains insignificant (prob. = 0.3735). This finding suggests that institutional investors may encourage greater transparency on economic performance, value creation, and long-term sustainability.

Table 14 presents the robustness analysis for environmental CSRD. Managerial ownership shows a positive and significant effect on environmental disclosure (coeff. = 611.2141; prob. = 0.0357), while institutional ownership is not significant (prob. = 0.0917). This result indicates that managers with ownership stakes may be more willing to support environmental disclosure initiatives that contribute to long-term firm value and reputation.

Table 15 reports the robustness analysis for social CSRD. Institutional ownership positively influences social disclosure (coeff. = 96.6806; prob. = 0.0378), whereas managerial ownership remains insignificant (prob. = 0.3404). The result implies that institutional investors may place greater emphasis on stakeholder relations, corporate reputation, and social accountability.

The overall robustness results summarized in Table 16 demonstrate a heterogeneous pattern across CSR dimensions. Institutional ownership consistently influences economic, social, and overall CSRD, whereas managerial ownership is only associated with environmental disclosure. These findings indicate that different ownership groups may prioritize different sustainability objectives. Institutional investors appear to be associated with broader disclosure practices, while managerial ownership is more closely related to environmental reporting. Consequently, ownership structure affects CSRD differently across disclosure dimensions rather than uniformly across all aspects of sustainability reporting.

The use of a one-year time lag is based on the logic of causality. The changes in ownership structure reflected in the annual report (year *t*) are expected

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Table 13 Robustness Analysis Results
with Economic Corporate Social Responsibility Disclosure (CSRD)

| Variables | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | -160.7556 | 234.2258 | -0.6863 | 0.4964 |
| MOWN | 164.7076 | 183.0713 | 0.8996 | 0.3735 |
| IOWN | 52.3067 | 24.8010 | 2.1090 | 0.0411 |
| SIZE | 3.5869 | 7.2794 | 0.4927 | 0.6248 |
| LEV | 1.2381 | 1.0417 | 1.1885 | 0.2415 |

Note: Constant (C), Managerial Ownership (MOWN),
Institutional Ownership (IOWN), Company Size (SIZE), and Leverage (LEV).

Table 14 Robustness Analysis Results with Environmental
Corporate Social Responsibility Disclosure

| Variables | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | 451.5864 | 360.0270 | 1.2543 | 0.2168 |
| MOWN | 611.2141 | 281.3978 | 2.1720 | 0.0357 |
| IOWN | 65.8437 | 38.1215 | 1.7272 | 0.0917 |
| SIZE | -16.2710 | 11.1892 | -1.4541 | 0.1535 |
| LEV | 1.5825 | 1.6012 | 0.9883 | 0.3288 |

Note: Constant (C), Managerial Ownership (MOWN),
Institutional Ownership (IOWN), Company Size (SIZE), and Leverage (LEV).

to influence CSRD in the sustainability report of the following year (year *t+1*). Conceptually, strategic decisions related to CSR are not implemented instantaneously but require planning, budgeting, and reporting before they are reflected in sustainability disclosures. Furthermore, the additional System GMM estimation provides further evidence that potential endogeneity is unlikely to influence the empirical findings materially. The Hansen overidentification test supports the validity of the internal instruments in both the baseline and moderation models, suggesting that the observed relationships remain robust after accounting for potential endogeneity. Therefore, the combination of the one-year time-lag specification, fixed-effects estimation, and the additional System GMM robustness analysis provides an appropriate empirical framework for examining the relationship between ownership structure and CSR disclosure.

To examine this temporal relationship, the regression analyses are estimated for both the contemporaneous model (year *t*) and the lagged model (year *t+1*). The contemporaneous model shows that managerial ownership, institutional ownership, and the moderating role of the board of commissioners are not significantly associated with CSRD, either overall or across individual disclosure dimensions. In contrast, the lagged model reveals that institutional ownership is positively associated with economic, social, and overall CSRD, while managerial ownership is positively associated with environmental CSRD.

These findings suggest that the relationship between ownership structure and CSRD becomes more evident when a one-year time lag is introduced. The results are consistent with previous studies. Sustainability disclosure reflects corporate decisions that require time to plan, implement, verify, and report (Alsheikh & Alsheikh, 2026; Qonita & Khomsiyah, 2025; Sánchez et al., 2026; Sulimany, 2025). In addition, the System GMM robustness analysis indicates that the Hansen overidentification test fails to reject the null hypothesis of instrument validity in both estimated models. These findings suggest that endogeneity is unlikely to drive the principal results. Accordingly, the one-year time-lag specification, the fixed-effects estimator, and the additional System GMM analysis jointly support the robustness of the empirical findings. Because the contemporaneous model (year *t*) provides no statistically significant evidence for the hypothesized relationships, the subsequent discussion focuses primarily on the lagged model (year *t+1*), which better reflects the theoretical expectation that ownership structure influences CSRD over time.

According to the managerial branch of stakeholder theory, managers tend to respond to stakeholders with greater power and influence (Deegan, 2009). In this research, institutional shareholders represent the dominant ownership group, with an average ownership of 77.2%. Consequently, stakeholder theory provides a theoretical explanation

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Table 15 Robustness Analysis Results with Social Corporate Social Responsibility Disclosure (CSRD)

| Variables | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 121.1655 | 425.3264 | 0.2848 | 0.7772 |
| MOWN | 320.6671 | 332.4359 | 0.9645 | 0.3404 |
| IOWN | 96.6806 | 45.0358 | 2.1467 | 0.0378 |
| SIZE | -6.6487 | 13.2187 | -0.5029 | 0.6177 |
| LEV | 2.5999 | 1.8917 | 1.3743 | 0.1768 |

Note: Constant (C), Managerial Ownership (MOWN), Institutional Ownership (IOWN), Company Size (SIZE), and Leverage (LEV).

Table 16 Summary of Robustness Results

| Variables | $CSRD_{TOT}$ | $CSRD_{ECO}$ | $CSRD_{ENV}$ | $CSRD_{SOC}$ |
|---|---|---|---|---|
| MOWN | ns | ns | + | ns |
| IOWN | + | + | ns | + |

Note: Corporate Social Responsibility Disclosure (CSRD), Total (TOT), Economic Category (ECO), Environmental Category (ENV), Social Category (SOC), Managerial Ownership (MOWN), and Institutional Ownership (IOWN). The (+) indicates a positive and statistically significant effect, whereas (ns) indicates a statistically insignificant effect.

for why institutional ownership may be associated with CSRD. However, institutional shareholders' influence is unlikely to be reflected immediately in the same reporting period because strategic CSR decisions require time to implement and subsequently disclose in the sustainability report. This theoretical perspective provides a basis for interpreting the empirical findings presented in the following discussion of the lagged model (year $t+1$).

Next, the results align with prior research indicating that institutional ownership structure positively affects CSRD, particularly in the economic category (Prayogo et al., 2024; Wardani et al., 2025; Zhou et al., 2024). Meanwhile, managerial ownership structure is not significantly associated with CSRD in the economic category, consistent with prior studies (Abang'a & Tauringana, 2024; Buertey et al., 2020; Habbash, 2017; Rahman & Masdupi, 2021). One possible explanation is that institutional ownership represents a substantial proportion of share ownership in many sample firms. However, the research does not directly examine whether ownership concentration explains the observed relationship. According to Deegan (2009), the managerial branch of stakeholder theory argues that stakeholders with strong power tend to influence company decisions strongly. In the research, institutional ownership, due to its strong power, has a strong influence on CSRD in the economic category. The positive association between institutional ownership and economic CSRD suggests that companies with higher institutional ownership tend to report more economic-related CSR information. This finding is consistent with stakeholder theory, which argues that powerful stakeholders may influence managerial priorities and disclosure practices. Conversely, managerial ownership is not significant, which can be explained by the low proportion of managerial shares in this study. The insignificant result may be associated with the relatively low level of managerial ownership observed in the sample. However, this explanation is not directly examined in the research.

Moreover, the research aligns with prior research indicating that managerial ownership structure has a positive effect on CSRD in the environmental category (Mahdi et al., 2023; Mukti et al., 2025; Wei et al., 2024). Meanwhile, institutional ownership structure is not significantly associated with CSRD in the environmental category (Al Amosh & Khatib, 2022; Ardana et al., 2023; Habbash, 2017; Nugraheni et al., 2022; Orazalin & Mahmood, 2018). In addition to the managerial branch in stakeholder theory, there is also a normative branch (Deegan, 2009). In the normative branch, management has a responsibility not only to pay attention to specific stakeholders, but also to consider every stakeholder. In this case, stakeholders other than institutional shareholders are managerial shareholders. The positive relationship between managerial ownership and environmental CSRD may indicate that firms with higher managerial ownership are more likely to disclose environmental information. However, this research does not directly examine managerial motivations or long-term orientation. The results do not mean that institutional shareholders are not considered. One possible interpretation is that different ownership groups may be associated with different CSRD priorities. Nevertheless, investor preferences are not directly measured in the research.

Consistent with prior research, the findings indicate that institutional ownership structure positively affects CSRD in the social category (Prayogo et al., 2024; Tiapuspa & Silaban, 2025; Wardani et al., 2025; Zhou et al., 2024). Meanwhile, managerial ownership structure is not significantly associated with CSRD in the social category, which is consistent with prior studies (Abang'a & Tauringana, 2024; Buertey et al., 2020; Habbash, 2017; Rahman & Masdupi, 2021). According to Deegan (2009), the managerial branch of stakeholder theory explains that stakeholders with strong power strongly influence company decisions. In this research, institutional ownership represents a relatively large proportion of ownership in many sample firms, which may be associated with its positive relationship with social CSRD. The positive relationship found in this research indicates that firms with higher institutional ownership tend to disclose more social CSR information. This finding is consistent with stakeholder theory, although the specific mechanisms underlying this relationship are not directly examined. Meanwhile, the insignificant result suggests that managerial ownership may not be associated with social CSR disclosure within the sample firms. However, the reasons underlying this result require further investigation. Managers may not have sufficient influence to expand social disclosure.

Overall, this research aligns with prior studies indicating that institutional ownership structure has a positive effect on overall CSRD (Prayogo et al., 2024; Tiapuspa & Silaban, 2025; Wardani et al., 2025; Zhou et al., 2024). Meanwhile, managerial ownership structure is not significantly associated with overall CSRD (Abang'a & Tauringana, 2024; Buertey et al., 2020; Habbash, 2017; Rahman & Masdupi, 2021). The results reinforce the managerial branch of stakeholder theory, which suggests that companies are more responsive to stakeholders with more dominant power (Deegan, 2009). The findings indicate that firms with higher institutional ownership tend to exhibit higher levels of overall CSRD. This pattern is consistent with stakeholder theory. However, the research does not directly test whether supervisory or reputational pressures explain the observed relationship. While managerial ownership can influence environmental CSRD, it is not sufficient to change the finding that two of the three CSRD categories are influenced by institutional ownership, which holds a higher shareholding than managerial ownership.

Last, the results indicate that the board of commissioners does not strengthen the relationship between ownership structure and overall CSRD. The board of commissioners is measured by the number of board meetings held in a single year.

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In the normative branch of stakeholder theory, the board of commissioners plays a role in safeguarding the interests of all stakeholders through its oversight function (Deegan, 2009). However, the insignificant moderating effect indicates that meeting frequency is not sufficient to moderate the relationship between managerial and institutional ownership structures and overall CSRD. This is because the number of board meetings reflects only the quantity of meetings in a year, not the quality of meetings or the discussions of the board of commissioners, which better reflects the independence and oversight of CSRD. Thus, the research aligns with prior research that the board of commissioners cannot strengthen the influence of managerial ownership structure and institutional ownership on CSRD as a whole (Amosh & Khatib, 2022; Cho & Ryu, 2022; Hanaya & Suhartini, 2025; Namoit & Kipchoge, 2021).

## CONCLUSION

Based on panel data analysis using the FEM approach and time-lag testing, this research finds that CSRD in the banking sector remains relatively low, particularly for environmental aspects, compared with the total indicators in the GRI Standard 2021. This indicates that sustainability implementation in the banking sector is not yet fully optimal and requires improvements in reporting quality and consistency. The test results without time lag in year t show that neither managerial nor institutional ownership structure affects CSRD in the economic, environmental, social, or overall categories. However, using the time-lag approach in year t+1 yields different results. Institutional ownership is shown to have a positive effect on CSRD in the economic, social, and overall categories. Meanwhile, managerial ownership has a positive effect on CSRD in the environmental category but no effect on the other categories or overall. These findings indicate that the association between ownership structure and CSRD becomes clearer when a time-lag approach is applied. Furthermore, the additional System GMM robustness analysis indicates that the Hansen overidentification test supports the validity of the selected internal instruments in both the baseline and moderation models. These findings suggest that potential endogeneity is unlikely to materially affect the reported relationships, thereby strengthening the robustness of the empirical evidence.

These findings extend stakeholder theory by suggesting that the relationship between ownership structure and corporate social responsibility disclosure becomes more observable after governance decisions have sufficient time to be implemented and reflected in sustainability reporting. The findings also highlight that different ownership structures may prioritize different dimensions of CSR disclosure. Furthermore, the moderation findings indicate that the role of the board of commissioners, proxied by the number of meetings, does not strengthen the influence of managerial or institutional ownership structures on overall CSRD. Therefore, the moderation hypothesis is not supported. This indicates that the frequency of board of commissioners' meetings, which reflects quantity, does not necessarily reflect the effectiveness of oversight in promoting corporate sustainability practices, which depends on meeting quality.

This research's recommendations focus on two main aspects. First, companies need to improve the quality and quantity of CSRD, particularly regarding environmental aspects, which are still low. Disclosures should not be merely formalities but should reflect a real commitment to sustainability integrated into business strategies. Second, institutional shareholders are expected to be more active in promoting corporate transparency and sustainability through stricter oversight of CSR implementation.

This research has several limitations, which are reflected in its limitations. It is limited by difficulties in observing and digesting the ownership structure obtained from the annual report, as well as the CSRD obtained from the sustainability report. In this case, a time lag is necessary because the sustainability report is prepared based on information received from the annual report, so the CSRD data cannot be taken from the same period. Therefore, the researchers need tests to distinguish between using a time lag and not using one. Furthermore, the research measures the board of commissioners only in terms of quantity, namely the number of board of commissioner meetings, so it does not capture quality. For future research, the quality of the board of commissioners can be measured by the board's independence, competence, and the audit committee.

Although the additional System GMM robustness analysis indicates that potential endogeneity is unlikely to materially affect the empirical findings, the research results should still be interpreted as statistical associations derived from observational panel data rather than definitive causal relationships. While stakeholder theory provides a theoretical explanation for the observed relationships, the research does not directly examine the underlying behavioral mechanisms, monitoring incentives, or managerial decision-making processes through which ownership structure influences corporate social responsibility disclosure. Moreover, the relatively short observation period (2021–2023) may limit the ability to capture longer-term governance dynamics and sustainability reporting practices. Future studies are encouraged to use longer panel datasets, incorporate additional governance-related variables, and consider alternative identification strategies or external instrumental variables to further strengthen causal inference.

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## AUTHOR CONTRIBUTIONS

Collected secondary data from the Indonesia Stock Exchange (IDX) and sustainability reports published by the respective companies, W. A. A.; Performed the statistical analysis and interpreted the empirical result, W. A. A.; Prepared the manuscript and incorporated revisions throughout the publication process, W. A. A.; Provided guidance on the research design, conceptual framework, and analytical approach, H. H. A.; Provided guidance on the selection of research data and the analysis tools suitable for the research, H. H. A.; and Provided supervision and academic guidance throughout the research and manuscript revision process, H. H. A.

## DATA AVAILABILITY

The data that support the findings of the research are openly available in Zenodo at https://doi.org/10.5281/zenodo.22238714.

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