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Do Ownership Types Matter for Carbon Emissions Disclosure? Evidence from the Indonesian Mining Sector

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ABSTRACT: This study examines the relationship between ownership structure and carbon emissions disclosure (CED) among Indonesian mining firms. Grounded in agency, stakeholder, legitimacy, and institutional perspectives, the study analyzes whether ownership concentration, institutional ownership, government ownership, and foreign ownership affect firms' carbon disclosure. The empirical investigation draws on data from 26 mining firms listed on the Indonesian Stock Exchange over the 2021–2023 period, resulting in a total of 76 firm-year observations. Carbon emissions disclosure is measured through a content analysis approach based on the GRI 305 (Emissions) guidelines, while data on ownership structures are obtained from firms' annual reports. Using multiple regression analysis, the results demonstrate that both foreign ownership and government ownership have a positive and statistically significant effect on the extent of carbon emissions disclosure. In contrast, ownership concentration and institutional ownership do not exhibit a significant relationship with disclosure practices. These findings suggest that ownership types associated with higher external legitimacy pressures, greater international orientation, and stronger political accountability are more likely to encourage firms to improve environmental transparency. Overall, this study contributes to the literature by highlighting the importance of ownership heterogeneity and the institutional setting in shaping carbon emissions disclosure within emerging economies that are highly dependent on natural resources.

KEYWORDS: Carbon emissions disclosure; ownership structure; foreign ownership; government ownership; mining companies; Indonesia

I. INTRODUCTION

Climate change represents a critical global challenge, primarily driven by the persistent escalation of atmospheric CO_2 concentrations that exacerbate global warming and generate profound adverse effects on human welfare and ecological systems (Chen et al., 2021; IPCC, 2014). Empirical evidence indicates that global atmospheric CO_2 concentrations reached 427 ppm in May 2024, substantially exceeding the scientifically recommended range of 310–330 ppm, thereby reflecting the severity of current emission trajectories (Lindsley, 2025). Corporations play a pivotal role in this phenomenon, as a relatively small number of firms account for a disproportionate share of global carbon emissions (Carbon Disclosure Project, 2017; InfluenceMap, 2024). As a result, escalating stakeholder pressure has positioned carbon emissions disclosure as a central mechanism of corporate accountability. Such disclosure facilitates systematic evaluation of firms' environmental performance, signals strategic commitment to emissions reduction, and supports alignment with global sustainability objectives, particularly the Sustainable Development Goals promoted by the United Nations (Poole, 2022; Syafik et al., 2025).

In the Indonesian context, data from the International Energy Agency indicate that Indonesia is the largest carbon emitter in Southeast Asia, with total emissions reaching approximately 600 million metric tons in 2021 (International Energy Agency, 2025). Furthermore, Indonesia ranks seventh globally among the world's largest carbon-emitting countries (Climate Watch, 2022). In response to the urgency of reducing carbon emissions, Indonesia ratified the Kyoto Protocol through Law No. 17 of 2004, thereby committing to the mitigation of greenhouse gas emissions. In addition, Indonesia has pledged to achieve net-zero emissions by 2060, as articulated by the United Nations (2023). Consequently, research on carbon emissions disclosure is of particular importance, especially within the Indonesian context, as it provides critical insights into corporate accountability and supports national efforts to achieve long-term climate mitigation targets.

Prior studies have considered factors that affect carbon emissions disclosure, such as firm characteristics (Bae Choi et al., 2013; Chu et al., 2013; Rosita et al., 2022; Saraswati et al., 2021; Wahyuningrum et al., 2024), board characteristics (Saraswati et al., 2021; Wahyuningrum et al., 2024; Wulan, 2022), ownership structure (Bedi & Singh, 2024; Rosita et al., 2022; Singhania & Bhan, 2024; Wahyuningrum et al., 2024; Wulan, 2022), and industry types (Ott et al., 2017). Ownership structure has been identified as a significant factor influencing carbon emissions disclosure, due to its strong association with corporate governance and managerial

incentives. Previous studies show that differences in monitoring intensity, investment horizons, and risk preferences across owner types can lead to different—and sometimes contradictory—empirical results about how companies disclose carbon information (Bae Choi et al., 2013; Bedi & Singh, 2025; La Porta et al., 1999). This issue is even more pronounced in emerging market settings like Indonesia, where ownership is typically highly concentrated, allowing controlling shareholders to exert significant discretion over corporate disclosure policies (Claessens et al., 2000; Fan & Wong, 2002; Kristiawan, 2020; La Porta et al., 1999). The existing literature frequently treats ownership structure in a partial manner, focusing on individual ownership dimensions without considering the overall diversity of ownership types and the unique incentives they generate for environmental transparency. Consequently, empirical evidence is inconsistent and heavily influenced by institutional and contextual variables (Bedi & Singh, 2025; Choi et al., 2013; Singhania & Bhan, 2024). Ownership structure is a fundamental governance mechanism, as it determines the allocation of the distribution of control rights and cash-flow rights that influence managerial risk preferences, strategic decision making, and disclosure practices. In contrast, other governance mechanisms usually work as complementary or derivative arrangements (Jensen & Meckling, 1976; Shleifer & Vishny, 1997). Different types of ownership, such as concentrated and state ownership, institutional and foreign ownership, have distinct incentives, monitoring mechanisms, and pressures to be accountable. These differences help explain why companies disclose their carbon emissions in different ways that can't be fully explained by their business operations or the fact that they belong to a certain industry (Cohen et al., 2023; Yahaya, 2025). Accordingly, adopting a more integrated examination of ownership structure offers deeper insights into the fundamental drivers of carbon disclosure and contributes to addressing a critical gap in the extant literature, particularly within developing economy contexts such as Indonesia.

This study focuses on the Indonesian mining industry for several important considerations. First, the mining sector is highly visible to the public because of its substantial environmental impact (Kumala & Siregar, 2021). Mining-related activities—including oil, gas, and coal extraction—constitute the dominant sources of carbon emissions in Indonesia and account for nearly 70% of the country's fossil energy consumption (Nasih et al., 2019). Beyond its environmental relevance, the mining industry also holds a strategic position in the national economy. It contributes roughly 10% to Indonesia's gross domestic product (GDP), underscoring its economic significance and policy relevance (Kementerian Energi dan Sumber Daya Mineral, 2024). Moreover, mining outputs constitute one of Indonesia's primary export commodities. Accordingly, motivated by these economic considerations as well as the identified research gap, this study examines the effect of carbon emissions disclosure on earnings management in Indonesian mining companies

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A. Theoretical Framework Underpinning Carbon Emissions Disclosure

From the standpoint of agency theory, disclosing carbon emissions functions as a governance tool to mitigate information asymmetry and agency costs arising from the division of ownership and control (Jensen & Meckling, 1976). Carbon disclosure gives shareholders important non-financial information about environmental risks, regulatory exposure, and long-term sustainability strategies. This makes monitoring more effective. Managers may be reluctant to disclose information due to reputational or political costs, especially in carbon-intensive sectors; however, robust ownership-based monitoring can necessitate increased transparency. Ownership structures characterized by long-term investment horizons, such as institutional or government ownership, are more inclined to necessitate comprehensive carbon disclosure. Conversely, concentrated ownership may diminish disclosure incentives if controlling shareholders prioritize personal benefits over transparency.

From the standpoint of stakeholder theory, disclosing carbon emissions demonstrates companies' attempts to respond to mounting environmental accountability demands from various stakeholder groups (Freeman et al., 2007). In industries that are sensitive to the environment, like mining, stakeholders are more likely to be affected by climate-related externalities, which makes the need for clear carbon reporting even more urgent. Failure to meet these expectations may expose firms to reputational damage and potential legal repercussions. The ownership structure affects how stakeholders can affect a company. For example, institutional, foreign, and government owners tend to focus on ESG performance and carbon transparency to protect their reputation and long-term interests. So, disclosing carbon emissions shows how companies try to meet the needs and expectations of all of their stakeholders.

Drawing on legitimacy theory, firms may use carbon emissions disclosure as a strategic tool to align perceived operations with prevailing societal norms and expectations, particularly in response to legitimacy threats arising from environmentally harmful activities (Deegan, 2019). In carbon-intensive sectors such as mining, disclosure serves as a strategic tool to signal environmental responsibility, regulatory compliance, and commitment to climate mitigation. This is especially relevant in emerging markets where extractive industries are under strong public and international scrutiny. Ownership structure influences legitimacy-driven disclosure, as government and foreign ownership heighten exposure to political and global norms, thereby increasing incentives for more extensive carbon emissions disclosure.

In emerging markets, ownership structure serves as a crucial governance mechanism influencing firms' disclosure incentives, especially in environments marked by concentrated control, inadequate investor protection, and predominant controlling shareholders (Claessens et al., 2000; La Porta et al., 1999). In line with evidence regarding institutional investors' demand for climate-related information, ownership heterogeneity correlates with varying incentives and pressures that influence firms' decisions

on carbon emissions disclosure (Cohen et al., 2023). Ownership structure thus offers a substantial theoretical framework for comprehending inter-firm disparities in CED, especially within the Indonesian mining industry.

B. Ownership Concentration and Carbon Emissions Disclosure

Ownership concentration is the extent to which a small number of major shareholders have most of the power over a company and can make important decisions about its strategy and how much information it shares with the public. From an agency theory perspective, a concentrated ownership structure may mitigate conventional agency dilemmas between managers and shareholders by improving oversight and aligning managerial actions more closely with the goals of controlling owners. In emerging markets, concentrated ownership structures can intensify principal–principal conflicts, as controlling shareholders may seek private advantages to the detriment of minority shareholders, potentially diminishing incentives for transparency (Shleifer & Vishny, 1997)

Recent empirical studies indicate that ownership concentration is often correlated with diminished levels of environmental and carbon emissions disclosure, especially in institutional contexts marked by inadequate investor protection and restricted external oversight. Dominant shareholders might intentionally restrict carbon disclosure to maintain the advantages of private control, potentially diminishing firms' motivations for transparency, especially in contexts with increased regulatory or reputational risk (Bedi & Singh, 2025; Singhania & Bhan, 2024). This tendency is particularly pronounced in carbon-intensive sectors like mining, where extensive disclosure may reveal environmental liabilities, escalate compliance costs, or incite activism and public condemnation. Emerging economies show that concentrated ownership structures often lead to weaker incentives for sustainability transparency. This is because controlling shareholders tend to put the preservation of private control benefits ahead of the expansion of voluntary disclosure (Bedi & Singh, 2025; Singhania & Bhan, 2024).

Moreover, the absence of strong external governance mechanisms allows controlling shareholders to dominate disclosure policies without sufficient countervailing pressure from minority investors or regulators. Accordingly, companies with concentrated ownership structures tend to have weaker incentives to voluntarily disclose detailed information on carbon emissions. In line with this reasoning, the following hypothesis is proposed.

H1: Ownership concentration has a negative effect on carbon emissions disclosure.

C. Institutional Ownership and Carbon Emissions Disclosure

Institutional ownership refers to the proportion of a firm’s equity held by institutional investors, namely organizations that invest pooled capital on behalf of beneficiaries and possess both the resources and incentives to engage in monitoring corporate management. These entities generally possess substantial capital and sophisticated monitoring mechanisms that enable them to supervise managerial actions effectively. Institutional investors are commonly associated with longer investment horizons and well-diversified portfolios, which heighten their concern for long-term value preservation and risk management, including risks related to climate change and environmental issues. Within the agency framework, institutional shareholders are viewed as important governance actors who can discipline managers by encouraging more accountable decision-making and strategies oriented toward sustainable, long-term performance (Ferreira & Matos, 2008).

Recent studies indicate that institutional investors increasingly regard carbon emissions disclosure as a critical source of information for evaluating firms’ exposure to climate-related financial risks, regulatory pressures, and overall sustainability performance. As climate-related issues gain economic relevance, these investors tend to call for carbon reporting practices that are consistent, reliable, and comparable across firms to facilitate sound investment analysis and effective portfolio risk management (Cohen et al., 2023; Dyck et al., 2019). Such demands are especially evident in carbon-intensive sectors, including mining, where elevated emission levels amplify transition risks and reputational concerns. Evidence from both advanced and emerging economies further demonstrates a positive relationship between institutional ownership and the extent of carbon emissions disclosure, suggesting that institutional shareholders can serve as an important driver of enhanced environmental transparency (Bedi & Singh, 2025; Cohen et al., 2023; Singhania & Bhan, 2024).

Moreover, institutional investors often engage with firms through voting, dialogue, and stewardship activities, reinforcing disclosure expectations aligned with global ESG standards. Consequently, higher levels of institutional ownership may enhance firms’ incentives to adopt more extensive carbon emissions disclosure practices. Based on this reasoning, this study advances the following hypothesis.

H2: Institutional ownership has a positive effect on carbon emissions disclosure.

D. Government Ownership and Carbon Emissions Disclosure

Government ownership creates a unique governance dynamic because state shareholders have to balance their financial goals with their social and environmental goals and their political legitimacy. From the viewpoints of legitimacy and stakeholder theory, government-owned or government-affiliated companies face increased public scrutiny, media focus, and political oversight, which amplifies the pressure to exhibit environmental responsibility through transparent disclosure practices. State involvement is frequently observed in sectors such as mining, which are both strategically important and environmentally sensitive, where public welfare and national interests are often invoked to justify government ownership (Shleifer, 1998).

Recent empirical evidence from emerging and developed markets consistently indicates that government ownership is positively associated with environmental and carbon emissions disclosure. State ownership can strengthen firms' alignment with national climate policies and regulatory frameworks, which are often shaped by broader international environmental initiatives, thereby encouraging greater carbon disclosure (Akermi & Amar, 2025; Singhania & Bhan, 2024). Government-owned firms are often subject to stronger regulatory and political pressures, which may encourage greater engagement in carbon disclosure as part of broader sustainability and accountability objectives (Cohen et al., 2023). In emerging markets, where private enforcement mechanisms may be weak, government ownership can function as an alternative governance mechanism that promotes transparency and accountability.

In Indonesia, these incentives are even stronger because of the government's regulatory role through Financial Services Authority Regulation No. 51/POJK.03/2017, which has been in effect since 2020 and requires publicly listed companies to share information about their sustainability, such as their environmental performance and emissions. This set of rules makes government ownership more important by turning carbon and environmental disclosure from a voluntary effort into a compliance mechanism that is almost mandatory. As a result, companies owned by the government are under more institutional and political pressure to make sure that their disclosure practices meet regulatory standards. This gives them more reasons to provide more complete information about their carbon emissions in order to make their operations seem more legitimate. Consequently, this study posits the following hypothesis.

H3: Government ownership has a positive effect on carbon emissions disclosure.

E. Foreign Ownership and Carbon Emissions Disclosure

Foreign ownership means that investors from other countries, usually ones with stricter environmental laws, more advanced capital markets, and higher standards of corporate transparency, are involved. Using institutional theory, we can see foreign investors as carriers of institutional pressures that bring global norms and practices into companies in the host country. This is because companies that operate in more than one country are exposed to more than one institutional environment and try to gain legitimacy in both global and local settings (Kostova & Roth, 2002). Also, these investors are usually more concerned about climate-related risks, their reputation, and their ESG performance. This is because carbon exposure is having a bigger impact on firm valuation, cost of capital, and portfolio risk in global markets.

Recent studies show that companies with more foreign ownership are more likely to disclose more and better information about their carbon emissions. From an institutional point of view, foreign ownership can expose companies to international norms and expectations, which could change how they voluntarily disclose their carbon emissions. However, the evidence is still mixed (Cohen et al., 2023; Singhania & Bhan, 2024). This monitoring role is especially important in emerging markets, where environmental enforcement and domestic governance may not be as strong. In emerging markets where regulatory enforcement is weak, foreign shareholders can act as external governance mechanisms by pushing for more openness and responsibility (Yahaya, 2025). As a result, companies with a lot of foreign ownership are more likely to adopt full carbon emissions disclosure in order to meet the expectations of international investors and keep their access to global capital markets. This study therefore suggests that foreign ownership has a positive effect on carbon emissions disclosure.

H4: Foreign ownership has a positive effect on carbon emissions disclosure.

III. RESEARCH METHODOLOGY

A. Research Design

This study adopts a quantitative research design to empirically test the proposed hypotheses. The sample comprises mining companies listed on the Indonesian Stock Exchange (IDX). The initial population includes 63 firms operating in the mining sector over the 2021–2023 period. The year 2021 is selected as the starting point due to limited availability of carbon emissions disclosure data in earlier periods. A purposive sampling technique is applied to ensure data relevance and completeness. Firms that did not publish sustainability reports consistently during the 2021–2023 period are excluded. As a result, the final sample consists of 26 mining companies, yielding 78 firm-year observations.

B. Method of Collecting Data and Measurement

Archival data sourced from corporate annual and sustainability reports are used in this study. Carbon emissions disclosure, as the dependent variable, is measured using a content analysis approach based on the GRI Standards Index, specifically GRI 305 (Emissions). This standard consists of seven disclosures, namely disclosures of:

1) direct (scope 1) greenhouse gas (GHG) emissions,
2) energy indirect (scope 2) GHG emissions,
3) other indirect (scope 3) GHG emissions,
4) GHG emissions intensity,
5) reduction of GHG emissions,
6) emissions of ozone-depleting substances (ODS)
7) nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions.

Carbon emissions disclosure items are measured using a dichotomous scoring approach, assigning a value of 1 to disclosed items and 0 to those not disclosed in the sustainability report. The individual item scores are then aggregated to generate an overall carbon emissions disclosure score for each company. Carbon emissions disclosure (CED) index calculation is presented as follows.

$$CEDI_j = \frac{\sum X_j}{n_j}$$

Where,

$CEDI_j$	=	a GRI 305–based carbon emissions disclosure index
ΣX_j	=	the total number of disclosure items reported by firm j where a value of 1 is assigned if item i is disclosed and 0 otherwise
n_j	=	the total number of disclosure items specified in the GRI 305 (Emissions) guidelines comprises seven items

Ownership concentration, institutional ownership, government ownership, and foreign ownership are employed as independent variables, based on information obtained from firms' annual reports. Ownership concentration is operationalized as the cumulative shareholdings of the three largest shareholders. Institutional ownership is measured by the proportion of equity owned by institutional investors, while government ownership is defined as the percentage of shares held by the state. Foreign ownership is measured as the proportion of a firm's equity owned by foreign investors.

The control variables—firm size, leverage, and return on assets (ROA)—are derived from firms' annual reports through manual data collection and subsequent calculation. Firm size is proxied by the natural logarithm (ln) of total assets. Leverage is measured using the debt-to-equity ratio, while profitability is captured by return on assets (ROA), calculated as the ratio of net income to total assets.

C. Data Analysis Techniques

To test the hypotheses, this study applies regression analysis, with classical assumption tests performed beforehand to satisfy the underlying assumptions of the regression framework. The research model is formulated as follows.

$$CED = \alpha + \beta_1 OWC_{it} + \beta_2 INST_{it} + \beta_3 GOV_{it} + \beta_4 FOROWN_{it} + \beta_5 LNSIZE_{it} + \beta_6 LEV_{it} + \beta_7 ROA_{it} + \varepsilon$$

where:

CED	= GRI 305–based carbon emissions disclosure
OWC	= ownership concentration
INST	= institutional ownership
GOV	= government ownership
FOROWN	= foregin ownership
Ln_Size	= the natural logarithm of a firm's total assets
LEV	= leverage measured using the debt-to-equity ratio
ROA	= return on assets
ε	= error term

IV. RESULT AND DISCUSSION

A. Description of Research Data

Table 1 presents the descriptive statistics of the research variables based on 76 firm-year observations. The mean value of Carbon Emissions Disclosure (CED) is 0.4505, which means that, on average, companies only disclose about 45% of the items they should. This is a big difference between companies, as shown by a standard deviation of 0.2931. This indicates variability in environmental transparency practices among the sampled companies. The average ownership concentration (OWC) is 0.7417, which means that most companies have ownership structures that are concentrated. Institutional ownership (INST) also has a high mean of 0.6711, which shows that institutional investors make up the majority of the ownership structure. Foreign ownership (FOROWN), on the other hand, has a lower mean of 0.2336, which means that foreign shareholders own a smaller share of equity in the companies that were sampled. Government ownership (GOV) is low, with an average of 0.0504, which shows that the government doesn't own many companies. When it comes to firm-specific traits, firm size (LNSIZE) goes from 15.52 to 22.73, with a mean of 19.7894, which shows that firms are of different sizes. Leverage (LEV) has a wide range of values, from 0.03 to 5.53, with an average of 0.8064. This suggests that companies have different ways of getting money. Lastly, the average return on assets (ROA) is 0.1336, with values ranging from −0.12 to 0.62. This means that most businesses are profitable, but some are not.

Table 1. Description of Research Variable

Variable	N	Minimum	Maximum	Average	Standard Deviation
CED	76	0,00	1,00	0,4505	0,29311
OWC	76	0,24	0,98	0,7417	0,15042
INST	76	0,10	0,98	0,6711	0,23804
FOROWN	76	0,00	0,92	0,2336	0,28975
GOV	76	0,00	0,66	0,0504	0,17558
LNSIZE	76	15,52	22,73	19,7894	1,82375
LEV	76	0,03	5,53	0,8064	0,99811
ROA	76	-0,12	0,62	0,1336	0,15714

B. Hypothesis Testing

Before testing the hypotheses, classical assumption tests are performed. The results confirm that the residuals are normally distributed and that the regression model is free from multicollinearity, heteroskedasticity, and autocorrelation. The outcomes of the hypothesis testing are summarized in Table 2, which displays the regression results assessing the factors influencing carbon emissions disclosure (CED). With an R^2 of 0.656 and an adjusted R^2 of 0.622, the model explains approximately 62.2% of the variation in carbon emissions disclosure, indicating a high level of explanatory power. The analysis is based on 76 firm-year observations.

Foreign ownership (FOROWN) has a positive and statistically significant relationship with CED ($\beta = 0.187$, $p < 0.05$), which means that companies with more foreign ownership tend to give more information about their carbon emissions. In the same way, government ownership (GOV) has a positive and significant effect on CED ($\beta = 0.345$, $p < 0.05$), which means that when the government is involved, it makes things more open and accountable for the environment. On the other hand, ownership concentration (OWC) and institutional ownership (INST) do not have statistically significant effects. This means that these types of ownership do not have a big impact on how the sampled firms disclose carbon.

Firm-specific control variables reveal mixed results. Firm size (LNSIZE) is positively and significantly related to carbon emissions disclosure ($\beta = 0.115$, $p < 0.01$), supporting the argument that larger firms face stronger legitimacy pressures and stakeholder demands to enhance environmental transparency. Leverage (LEV) does not exhibit a significant relationship with CED, suggesting that capital structure considerations do not materially influence disclosure decisions. Profitability (ROA) exhibits a positive and marginally significant effect on carbon emissions disclosure ($\beta = 0.262$, $p < 0.10$), supporting the view that financially stronger firms have greater capacity to disclose environmental information voluntarily.

Table 2. The Result of Regression Model

Variables	Coefficients	Prob.
Constant	-2,048	0,000***
OWC	0,040	0,857
INST	0,184	0,158
FOROWN	0,187	0,031**
GOV	0,345	0,012**
LNSIZE	0,115	0,000***
LEV	-0,026	0,278
ROA	0,262	0,100*
Observations	76	
R^2	0,656	
Adj R^2	0,622	

C. Discussion

This study examines the impact of ownership structure on carbon emissions disclosure (CED) in Indonesian mining firms. The findings demonstrate that foreign ownership and government ownership exert a positive and statistically significant influence on CED, while ownership concentration and institutional ownership fail to display significant correlations. These results offer significant insights into the influence of various ownership types on disclosure incentives in environmentally sensitive industries within emerging market contexts.

The beneficial impact of foreign ownership on CED aligns with stakeholder and institutional viewpoints, which contend that foreign investors convey global norms, governance criteria, and environmental standards to firms in the host country (Kostova & Roth, 2002). Previous research indicates that foreign shareholders often require greater transparency and conformity with international ESG standards, especially in emerging markets where domestic governance structures may be less robust (Singhania & Bhan, 2024; Wulan, 2022; Yahaya, 2025). This finding aligns with Cohen et al. (2023), indicating that foreign ownership, especially by institutional investors, functions as an external monitoring mechanism that compels firms to enhance carbon disclosure in light of global investor scrutiny and reputational concerns.

In the same way, the strong positive link between government ownership and CED supports legitimacy and stakeholder theory. From a legitimacy standpoint, government ownership is anticipated to subject companies to heightened political oversight and public scrutiny, thereby elevating expectations to conform to national environmental policies and climate commitments. However, empirical evidence regarding its impact on carbon disclosure remains inconclusive (Bedi & Singh, 2025; Cohen et al., 2023). In Indonesia, where the government has pledged to reach net-zero emissions by 2060, state ownership enhances incentives for companies to reveal their carbon emissions as a way to show that they are following the rules and keeping their social and political legitimacy.

Conversely, ownership concentration shows no significant association with carbon emissions disclosure. This result indicates that principal shareholders in Indonesian mining companies may not consider carbon disclosure a strategic priority. Similar to previous research in emerging markets, concentrated owners might prioritize control and risk aversion over transparency; however, these incentives may be counterbalanced by significant external legitimacy pressures experienced by mining companies (Bedi & Singh, 2025; Singhania & Bhan, 2024). High public visibility and environmental scrutiny in the mining sector may diminish the capacity of controlling shareholders to unilaterally dictate disclosure decisions (Ott et al., 2017).

Unexpectedly, institutional ownership is also found to be insignificant. Even though institutional investors are often thought to encourage environmental transparency (Wahyuningrum et al., 2024; Yahaya, 2025). This finding may show that institutional ownership in Indonesia is not uniform. Certain institutional investors may remain passive or focused on short-term gains, thereby constraining their capacity to actively advocate for carbon emissions disclosure.

The results suggest that ownership types linked to external legitimacy and international exposure, specifically foreign and government ownership, are more influential in promoting carbon emissions disclosure than internal monitoring mechanismsThese results highlight the critical role of ownership diversity and institutional environments in shaping environmental disclosure behavior in emerging economies characterized by high resource dependence.

V. CONCLUSION, LIMITATION, & FUTURE RESEARCH

A. Conclusion

This study investigates the influence of ownership structure on carbon emissions disclosure (CED) among Indonesian mining companies from 2021 to 2023. The results show that foreign ownership and government ownership significantly increase the amount of carbon emissions disclosure, while ownership concentration and institutional ownership do not have significant effects. These findings indicate that ownership types linked to external legitimacy pressures and international or political accountability are more influential in promoting environmental transparency than internal monitoring mechanisms. The beneficial impact of foreign and governmental ownership underscores the significance of global standards, regulatory coherence, and socio-political legitimacy in promoting corporate transparency regarding carbon-related data, especially within environmentally sensitive sectors. These results show that differences in ownership structure and institutional environments are key to understanding why companies in emerging markets report different amounts of carbon emissions. It offers empirical evidence that governance mechanisms associated with external scrutiny are more efficacious in fostering sustainability reporting practices.

B. Limitation & Future Research

This study has several limitations that should be acknowledged. First, the sample is limited to mining companies that were listed on the Indonesian Stock Exchange from 2021 to 2023. This means that there aren't many firm-year observations. This could make it harder to apply the results to other fields or longer periods of time. Second, the GRI 305 index is used to measure carbon emissions disclosure through a content analysis approach. This index shows how much information was disclosed but not how good, credible, or accurate the information was about the environmental performance that was reported. Third, this study exclusively examines ownership structure as the primary governance mechanism, neglecting other governance attributes such as board characteristics, audit committees, or managerial incentives. Finally, the study is limited to a single-country context, which may restrict the interpretation of results due to Indonesia's unique institutional and regulatory framework.

Future research may mitigate these constraints by broadening the sample duration and incorporating firms from various industries or by executing cross-country analyses to elucidate institutional disparities. Subsequent research may also integrate qualitative aspects of carbon disclosure, including assurance, narrative tone, or conformity with international climate frameworks.. In addition, integrating other corporate governance mechanisms or examining moderating variables—such as regulatory changes or

environmental performance—would provide a more comprehensive understanding of the determinants of carbon emissions disclosure.

REFERENCES

1) Akermi, A., & Amar, A. Ben. (2025). The effect of ownership structure on CO 2 disclosure : evidence from ESG. *Journal of Global Responsibility*. https://doi.org/10.1108/JGR-07-2023-0125
2) Bae Choi, B., Lee, D., & Psaros, J. (2013). An analysis of Australian company carbon emission disclosures. *Pacific Accounting Review*, *25*(1), 58–79. https://doi.org/10.1108/01140581311318968
3) Bedi, A., & Singh, B. (2024). Does ownership structure affect carbon emission disclosure? *Asian Review of Accounting*. https://doi.org/10.1108/ARA-11-2023-0307
4) Bedi, A., & Singh, B. (2025). Does ownership structure affect carbon emission disclosure? *Asian Review of Accounting*, *33*(1), 72–88. https://doi.org/10.1108/ARA-11-2023-0307
5) Carbon Disclosure Project. (2017). The carbon majors database: CDP carbon majors report 2017. In *Carbon Disclosure Project*. https://cdn.cdp.net/cdp-production/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf
6) Chen, Z., Zhang, X., & Chen, F. (2021). Do carbon emission trading schemes stimulate green innovation in enterprises? Evidence from China. *Technological Forecasting and Social Change*, *168*(March), 120744. https://doi.org/10.1016/j.techfore.2021.120744
7) Choi, B., Lee, D., & Psaros, J. (2013). An analysis of Australian company carbon emission disclosures. *Pacific Accounting Review*, *25*(1), 58–79. https://doi.org/10.1108/01140581311318968
8) Chu, C. I., Chatterjee, B., & Brown, A. (2013). The current status of greenhouse gas reporting by Chinese companies: A test of legitimacy theory. *Managerial Auditing Journal*, *28*(2), 114–139. https://doi.org/10.1108/02686901311284531
9) Claessens, S., Djankov, S., & Lang, L. H. . (2000). The separation of ownership and control in East Asian Corporations. In *Journal of Financial Economics* (Vol 58, bll 81–112).
10) Climate Watch. (2022). *"Historical Ghg Emissions", Indonesia: ClimateWatch*. https://www.climatewatchdata.org/countries/IDN?end_year=2022&start_year=1990
11) Cohen, S., Kadach, I., & Ormazabal, G. (2023). Institutional investors , climate disclosure , and carbon emissions. *Journal of Accounting and Economics*, *76*(2–3), 101640. https://doi.org/10.1016/j.jacceco.2023.101640
12) Deegan, C. M. (2019). Legitimacy theory time is right for a necessary makeover. *Accounting, Auditing & Accountability Journal*, *32*(8), 2307–2329. https://doi.org/10.1108/AAAJ-08-2018-3638
13) Dyck, A., Lins, K. V, Roth, L., & Wagner, H. F. (2019). Do institutional investors drive corporate social responsibility ? International evidence R. *Journal of Financial Economics*, *131*(3), 693–714. https://doi.org/10.1016/j.jfineco.2018.08.013
14) Fan, J. P. H., & Wong, T. J. (2002). Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics*, *33*, 401–425. https://doi.org/10.1080/00014788.2002.9728973
15) Ferreira, M. A., & Matos, P. (2008). The Colors of Investors ' Money : The Role of Institutional Investors Around the World ∗. *Journal of Financial Economics*, *88*(3), 499–533.
16) Freeman, R. E., Harrsion, J. S., & Wicks, A. C. (2007). *Managing for stakeholders*. Yale University Press.
17) InfluenceMap. (2024). *The Carbon Majors Database: Launch Report*. https://influencemap.org/briefing/The-Carbon-Majors-Database-26913?utm_source=chatgpt.com
18) International Energy Agency. (2025). *An energy sector roadmap to net zero emissions in Indonesia*. https://www.iea.org/reports/an-energy-sector-roadmap-to-net-zero-emissions-in-indonesia/executive-summary?utm_source=chatgpt.com
19) IPCC. (2014). *Climate change synthesis report*.
20) Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm : Managerial Behavior , Agency Costs and Ownership Structure Theory of the Firm : Managerial Behavior , Agency Costs and Ownership Structure. *Journal of Financial Economics*, *3*, 305–360.
21) Kementerian Energi dan Sumber Daya Mineral. (2024). *Kontribusi Minerba pada PDB 2023 Capai Rp2.198 Triliun*. https://www.esdm.go.id/id/media-center/arsip-berita/kontribusi-minerba-pada-pdb-2023-capai-rp2198-triliun
22) Kostova, T., & Roth, K. (2002). Adoption of an Organizational Practice by Subsidiaries of Multinational Corporations : Institutional and Relational Effects Author (s): Tatiana Kostova and Kendall Roth Source : The Academy of Management Journal , Feb ., 2002 , Vol . 45 , No . 1 (Feb . *The Academy of Management Journal*, *45*(1), 215–233.
23) Kristiawan, N. B. (2020). Ceo Characteristics, Ownership Concentration and Corporate Social Responsibility Disclosure. *Jurnal Bisnis dan Akuntansi*, *22*(2), 147–166. https://doi.org/10.34208/jba.v22i2.701
24) Kumala, R., & Siregar, S. V. (2021). Corporate social responsibility, family ownership and earnings management: the case of Indonesia. *Social Responsibility Journal*, *17*(1), 69–86. https://doi.org/10.1108/SRJ-09-2016-0156
25) La Porta, R., Lopez-de-Slianze, F., & Shleifer, A. (1999). Corporate ownership around the world. *The Journal of Finance*, *54*(2), 471–517.
26) Lindsley, R. (2025). *Climate change: atmospheric carbon dioxide*. https://www.climate.gov/news-features/understanding-

climate/climate-change-atmospheric-carbon-dioxide?utm_source=chatgpt.com

27) Nasih, M., Harymawan, I., Paramitasari, Y. I., & Handayani, A. (2019). Carbon emissions, firm size, and corporate governance structure: Evidence from the mining and agricultural industries in Indonesia. *Sustainability (Switzerland)*, *11*(9). https://doi.org/10.3390/su11092483
28) Ott, C., Schiemann, F., & Günther, T. (2017). Disentangling the determinants of the response and the publication decisions: The case of the Carbon Disclosure Project. *Journal of Accounting and Public Policy*, *36*(1), 14–33. https://doi.org/10.1016/j.jaccpubpol.2016.11.003
29) Poole, V. (2022). 'Accounting standards: the "too difficult" box - the next big accounting issue?' A practitioner view. *Accounting and Business Research*, *52*(5), 578–581. https://doi.org/10.1080/00014788.2022.2079767
30) Rosita, T., Estuningsih, R. D., Ningsih, D. P., Zaekhan, & Nachrowi, N. D. (2022). Exploring the mitigation potential for carbon dioxide emissions in Indonesia's manufacturing industry: an analysis of firm characteristics. *Carbon Management*, *13*(1), 17–41. https://doi.org/10.1080/17583004.2022.2042394
31) Saraswati, E., Puspita, N. R., & Sagitaputri, A. (2021). Do firm and board characteristics affect carbon emission disclosures? *International Journal of Energy Economics and Policy*, *11*(3), 14–19. https://doi.org/10.32479/ijeep.10792
32) Shleifer, A. (1998). State versus Private Ownership. *Journal of Economic Perspectives*, *12*(4), 133–150.
33) Shleifer, A., & Vishny, R. W. (1997). Survey of Corporate Governance. *Journal of Finance*, *52*(2), 737–783.
34) Singhania, M., & Bhan, I. (2024). Firm ownership structure and voluntary carbon disclosure: a systematic review and meta-analysis. *Sustainability Accounting, Management and Policy Journal*, *16*(5), 1331–1369. https://doi.org/10.1108/SAMPJ-08-2023-0613
35) Syafik, M., Setiawan, D., Hartoko, S., & Aryani, Y. A. (2025). The role of media exposure on board capital and carbon emission disclosure. *Discover Sustainability*, *6*(1). https://doi.org/10.1007/s43621-025-01014-1
36) Wahyuningrum, I. F. S., Ihlashul'amal, M., Utami, S., Djajadikerta, H. G., & Sriningsih, S. (2024). Determinants of carbon emission disclosure and the moderating role of environmental performance. *Cogent Business and Management*, *11*(1). https://doi.org/10.1080/23311975.2023.2300518
37) Wulan, D. F. (2022). Foreign directors, foreign ownership, and carbon emission disclosure: Evidence from Indonesia environmentally sensitive companies. *Review of Management, Accounting, and Business Studies*, *3*(2), 90–100. https://doi.org/10.38043/revenue.v3i2.4816
38) Yahaya, O. A. (2025). How Institutional and Foreign Ownership Drive ESG Disclosure in Nigeria ? *Journal of Sustainability Business and economics*, *18*(06), 12–37.