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Board of Commissioners' Relationship and Climate Change Disclosure: Evidence from Mining Companies

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ABSTRACT

Climate change is one of the most important environmental challenges, with academics, corporate practitioners, and governments all paying close attention. The purpose of this study is to investigate the impact of board qualities such as independence, nationality, and busyness on climate change disclosure. The study consists of 44 samples and 216 data observations. Secondary data were gathered from annual reports issued by sample companies between 2018 and 2022. Darus et al. (2020) generated 19 carbon emission disclosure items, which were subjected to content analysis. According to the conclusions of the study, a bigger proportion of independent commissioners and commissioners' busyness favorably affect a company's initiative to publish climate change-related information. This study adds to the limited scholarly literature on the association between board characteristics and non-financial disclosure performance. It has significant implications for managers and regulators to pay closer attention to the effectiveness of commissioners' oversight in supporting company environmental actions.

Keywords:
Climate Change Disclosure, Board of Commissioners, Board Independence, Foreign Board, Busyness Board

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INTRODUCTION

Climate change has a negative impact not only on natural disasters such as floods, droughts, landslides, and erosion, but it also threatens food security (Sumastuti, 2015). According to Huisingh et al. (2015), global climate change poses a substantial challenge to human sustainability. According to the FAO, by 2050, global food production will be severely harmed, with widespread famine expected (Gadjah Mada University, 2023).

Indonesia, as the world's largest archipelagic nation, is certainly one of the most sensitive to environmental pollution and destruction. In 2022, Ember-Climate's Global Electricity Review 2023 listed Indonesia as the world's ninth greatest CO2 emitter, with 192.7 mtCO2 (CNBC Indonesia, 2023). The Financial Services Authority (Otoritas Jasa Keuangan) recently released Technical Regulations on OJK Regulation 14/2023 on Carbon Trading through Carbon Exchanges, as well as Circular Letter OJK 12/SEOJK.04/2023 on Carbon Trading through Carbon Exchanges Procedures. This carbon exchange is considered as a government initiative to reduce greenhouse gas emissions and hence regulate climate change. One rule requires exchange polluters to report emissions from their operations (Mongabay Environmental News Site, 2023).

Corporate reporting on environmental preservation measures is thought to be an effective and efficient way to motivate businesses to engage in carbon-cutting actions. It's no surprise that environmental disclosure, including climate change reporting, is a top issue for academics and practitioners alike. According to Ernst & Young's 2012 poll, 75% of the world's biggest firms have adopted carbon reduction strategies and initiatives to publish them in their reports, with another 16% planning to do so within the next five years. According to Freedman & Jaggi (2009), reporting is a vital tool for businesses to demonstrate transparency in their climate change initiatives and policies. Climate change and greenhouse gas emissions reporting policies, according to Giannarakis et al. (2017), are part of a company's environmental performance measurement. According to research by Braam et al. (2016); Giannarakis et al. (2017); Peters & Romi (2014); and Rankin et al. (2011), organizations with high environmental performance publish more information about their proactive measures in order to obtain positive signals from investors and other stakeholders.

Unlike other countries, Indonesia has a two-tier board system (dual governance), with a board of commissioners and a board of directors. The dual board arrangement separates supervisory and executive authorities. The board of commissioners has the authority to oversee and advise the board of directors on management. The board of commissioners' ability in controlling company activities is critical in carrying out its obligations. Internal control efficacy, according to Kusumastati et al. (2022), is a result of board diversity. Demographic diversity on the board symbolizes a variety of perspectives, innovation, expertise, and the board's ability to evaluate the company's strategic policies. Effective monitoring procedures, as demonstrated by Liao et al. (2015), can incentivize organizations to share more information by minimizing management opportunism and information asymmetry.

This study is prompted primarily by two factors. First, empirical information on the influence of the board of commissioners as a company monitoring body on climate change reporting is required. So far, most research on the impact of board diversity on reporting has concentrated on industrialized countries and countries with a one-tier board arrangement. Second, there are inconsistent findings from past studies. This could be related to variances in government rules governing carbon disclosure in the industry (Chuang et al., 2013). In fact, carbon declaration remains voluntary in Indonesia as part of yearly reporting or sustainability reporting. As a result, a re-evaluation of this issue is likely to provide clarification.

The findings of this study constitute an important addition to the discussion on carbon disclosure in developing nations, particularly in polluting businesses. The findings show that establishing a board of commissioners is a step in the right direction for motivating corporations to be transparent in the form of non-financial reporting. The inference is that the board of commissioners is a governance entity that demands regulators' attention in the implementation of environmental preservation schemes. Furthermore, policy suggestions for board diversity must be developed to bring actual benefits to businesses.

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LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Theoretical Background

The fundamental idea of agency theory is that there is knowledge asymmetry between two parties: management acting as the agent and shareholders acting as the principal. The agent is accountable for carrying out the responsibilities assigned by the principal in order to manage and govern the business for the advantage of the principal (Fama & Jensen, 1983). In practice, however, the separation of ownership and control between managers and business owners creates conflicts of interest (Mardini & Lahyani, 2022). Furthermore, information asymmetry reduces the principal's ability to detect opportunistic behavior by managers and raises agency costs (Jensen & Meckling, 1976). When management has more information than the owners, agency costs increase, prompting businesses to close the information gap through transparency (Chen & Jaggi, 2000). Due to the cost implications of information disclosure (Guidry & Patten, 2012), organizations choose to share information if they believe the potential benefits outweigh the costs (Chu et al., 2013). Companies with superior environmental and sustainability performance, according to agency theory, will be encouraged to release more information in order to gain favorable signals from investors (Clarkson et al., 2011).

Hypotheses Development

The board's independence is a vital feature of excellent governance. According to Financial Services Authority Regulation No. 33/POJK.04/2014 concerning the Board of Directors and Board of Commissioners of Issuers or Public Companies, an independent commissioner is not an individual who has worked in the issuer company within the last 6 months (except for independently reappointed commissioners), does not hold shares in the issuer, has no affiliation with the issuer, members of the board of commissioners. To reduce agency conflicts, the board of commissioners must maintain independence in order to fulfill their oversight tasks and obligations (Hajawiyah et al., 2020). An independent board can monitor and restrict CEO opportunistic conduct and protect investors' interests (Arayssi et al., 2016). As a result, the existence of an independent board of commisioners as a representative of many stakeholder groups is a critical component of governance in order to reduce conflicts of interest and gain public legitimacy (Elmagrhi et al., 2016; Lusiana & Sari, 2023; Ntim & Soobaroyen, 2013).

Organizations with a larger number of independent members are better able to direct executives to release more information in order to meet the expectations of stakeholders (Shohaieb et al., 2022). Hammami & Hendijani Zadeh (2020) and Samaha et al. (2015) found that a higher number of independent boards associated with a higher likelihood of corporations reporting voluntarily. Albitar (2015) reported a similar result in 2015, demonstrating that independent directors can exert pressure on management to improve information sharing.

Hypothesis 1: Companies with a higher share of independent board members are more likely to report on climate change.

Foreign boards have relationships with a variety of international stakeholders (Ibrahim & Hanefah, 2016). They are regarded as capable of defending the interests of foreign shareholders in obtaining transparency and accountability for business performance (Matuszak et al., 2019). A board comprised of representatives from several countries will face both support and intense pressure from stakeholders concerned about global warming caused by climate change. (Kılıç & Kuzey, 2019). Previous study has found a link between the participation of foreign directors on business boards and corporate environmental reporting, such as Hoang et al. (2018); Ibrahim & Hanefah (2016); Katmon et al. (2019); Kılıç & Kuzey (2019); Muttakin et al. (2015). According to the conclusions of this study, nationality variety promotes independence and transparency, which are likely to improve information disclosure to primary stakeholders. As a result, we suggest the theory below.

Hypothesis 2: Companies with a higher proportion of foreign board members are more likely to report on climate change.

A single board member's several board members are referred to as board bustle. According to Agus & Utama (2023), an overburdened boards

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can damage a company's governance structure. The workload of the board of commissioners might lead to the oversight mechanism being ineffective. According to Ferris & Liao (2019), board members who hold numerous position authority have a negative impact on the accuracy of financial reporting, resulting in uneven information distribution to stakeholders. Busy boards may struggle to find possibilities for social transparency (Mallin & Michelon, 2011). Meanwhile, organizations must improve their performance by providing high-quality information for relevant decision-making (Al Lawati et al., 2021; Shohaieb et al., 2022). Several previous studies have concluded that board busyness is related to poor governance (Fich & Shivdasani, 2006), decreased monitoring effectiveness (Kalelkar, 2017), poor reporting quality (Ferris & Liao, 2019), and decreased financial performance of companies (Daniliuc et al., 2020).

Hypothesis 3: Companies with a higher share of busy board members are less likely to report on climate change.

RESEARCH METHODS

Sample and Data

Information regarding climate change disclosure and the characteristics of the board of commissioners was manually collected from the annual reports of companies listed on the Indonesia Stock Exchange for the period 2018-2022. We included only mining companies as our sample, totaling 44 samples, resulting in 216 observations (unbalanced data). The mining industry's activities bring it into direct contact with nature (Amaliyah & Puspawati, 2022) and It depletes a large number of nonrenewable natural resources. (Indriastuti & Chariri, 2021) as a result, there is a high risk of environmental damage. The annual reports were obtained from the official websites of each respective company.

Variable Measurement

Climate change disclosure is the dependent variable in this study, as measured by the CCD score, which is calculated by dividing the total disclosed items in the annual report by the total items that should be published, according to the index produced by Darus et al. (2020). Climate disclosure data were gathered manually using content analysis. A score of 0 was assigned if the company did not disclose any information, a score of 1 if only general information was presented, a score of 2 if the report contained specific information, a score of 3 if quantitative but non-monetary information was available, and a score of 4 if quantitative monetary information was available.

Furthermore, board independence (BINDEP), foreign commissioners (BFOR), and commissioner activity are variables that function as determinants in this study. BINDEP is calculated by dividing the number of independent commissioners by the total number of board members. The proportion of foreign commissioners (BFOR) is calculated by dividing the total number of board members by the number of foreign-nationality commissioners. If a commissioner holds three or more jobs at the same time, they are termed busy (Trinugroho et al., 2022). In this study, commissioner busyness (BBUSY) is calculated by dividing the number of busy commissioners by the total number of board members.

Control variables in this study include company size (SIZE), financial performance (PROFIT), leverage level (LEV), and auditor type (AUDTYPE). The total assets accessible in natural logarithm are used to estimate the size of a company. Large corporations are under more pressure to reveal more information than small organizations (Shamil et al., 2014), including pressure to preserve and improve their public image (van de Burgwal & José Oliveira Vieira, 2014). Profitability, defined as net profit divided by total assets, is used to calculate company performance. Companies with strong financial success have more resources (Bae Choi et al., 2013), and they invest more in the environment (Luo et al., 2013). The ratio of a company's debt to its assets is referred to as leverage.

Companies with a high degree of debt are more inclined to use their resources to pay off debt as a financial obligation rather than participate in voluntary disclosure programs (Chithambo & Tauringana, 2014; Darus et al., 2020). A dummy variable is used to quantify auditor type, with 1 denoting company audited by Big-4 audit firms and 0 otherwise. Big-4 audited companies place a greater premium on correct information disclosure for decision-making objectives.

RESEARCH MODEL

A panel data regression model was used to evaluate the association between the board of commissioners' features and the extent of climate change disclosure. Stata 13.0 software was used to analyze the gathered data. Following a series of testing, the Random Effects Model technique was adopted. For this investigation, the following research model is proposed:

$$CCD = \alpha + \beta_1 BINDEP + \beta_2 BFOR + \beta_3 BBUSY + \beta_4 PROFIT + \beta_5 LEV + \beta_6 SIZE + \beta_7 AUDTYPE + \varepsilon$$

RESULTS AND DISCUSSION

Table 1 displays descriptive statistics for the variables utilized in the study. The average CCD value is 0.16, with a minimum value of 0 and a maximum value of 0.94. This reflects the fact that the majority of businesses provide little information about climate change. This could be due to the lack of rules in Indonesia forcing public firms to report on climate change. The proportion of independent member on the board of commissioners varies between 25% and 75%. Furthermore, foreign commissioners make up 18% of the total. In contrast, the percentage of busy commissioners in businesses can approach 100%, with an average of 30%.

Table 1. Descriptive Statistics Analysis Results

Variables	Obs.	Mean	Std. Dev	Min	Max
CCD	216	0,1632714	0,2269254	0	0.944
BINDEP	216	0,4318857	0,115059	0,25	0,75
BFOR	216	0,1813530	0,2129628	0	1
BBUSY	216	0,2991520	0,2816487	0	1
PROFIT	216	0,0377488	0,2834561	-2,847	0,616
LEV	216	0,4967535	0,2470150	0,088	1,325
SIZE	216	29,175190	1,7245470	24,041	32,758
AUDTYPE	216	0.2325581	0.4234480	0	1

Source: Data processed using Stata 13.0

The Pearson correlation test was employed in this study to assess the relationship between the independent variables. All correlations are considerably below the critical threshold of 0.8 (Gujarati & Porter, 2009), demonstrating that multicollinearity is not a concern in this investigation. Table 2 shows the findings of the correlation analysis.

Table 2. Pearson Correlation Analysis Results

	BINDEP	BINDEP	BBUSY	PROFIT	LEV	SIZE	AUDTYPE
BINDEP	1.0000						
BFOR	-0.1321	1.0000					
BBUSY	0.0408	0.0374	1.0000				
PROFIT	0.0016	0.0652	0,0218	1.0000			
LEV	-0.1036	-0.2521	0,0600	-0,2433	1.0000		
SIZE	0.0636	-0.0520	0,1156	0,3327	-0,0528	1.0000	
AUDTYPE	0.0478	0.1580	0,0871	0,0320	-0.1359	0.2479	1.000

Source: Data processed using Stata 13.0

Table 3 shows the results of the regression analysis used to test the hypotheses. The first finding suggests that board independence improves climate change disclosure (β = 0.355; p-value = 0.008). This implies that the first hypothesis is correct. Companies with a higher share of independent commissioners, according to Khaireddine et al. (2020), will improve their disclosure policies. Independent commissioners have strong ethical standards. They will encourage the corporation to share more environmental information in order to retain its reputation among stakeholders. An independent board is one that is not subject to pressure from management or shareholders, as internal boards are (Hussain et al., 2018). This has an impact on their ability to make decisions, particularly in terms of transparency through reporting.

Table 3. Regression Analysis Results

CCD	Coefficient	Std. Error	Z-statistic	P-value
BINDEP	0,354524	0.1339275	2.65	0.008***
BFOR	-0.0483461	0.0807176	-0.60	0.549
BBUSY	0.1360135	0.065366	2.08	0.037**
PROFIT	0.0109945	0.040312	0.27	0.785
LEV	-0.1307216	0.067402	-1.94	0.042**
SIZE	0.0376274	0.0134142	2.81	0.005***
AUDTYPE	0.0527383	0.053834	0.98	0.327
Adj R^2(overall)	0,2075			
Prob. Chi^2	0,0000			

Note: *, **, ***, represent significance at the 10%, 5%, and 1% levels, respectively.Source: Data processed using Stata 13.0

The non-significant results on the relationship between the board's foreign nationality and climate change disclosure (β = -0.048; p-value = 0.549) invalidate the second hypothesis. This finding contradicts the findings of Kılıç & Kuzey (2019), who found that companies with a higher percentage of foreign commissioners are more likely to disclose carbon emission data. According to Frias-Aceituno et al. (2013) certain cultural features can influence a company's business practices. Companies with different cultures understand international market operations with multiple foreign partners (Estélyi & Nisar, 2016), allowing them to fulfill the diverse expectations of shareholders (Masulis et al., 2011).

A positive and substantial link was discovered between the board's workload and climate change disclosure (β = 0.136; p-value = 0.037). As a result, the third hypothesis, that corporations with a higher share of busy commissioners will have poor climate change reporting, is refuted. Instead, the findings show that a busy board has a favorable impact on the degree of reporting. A busy board, according to Cashman et al. (2012); Ferris, Jayaraman, et al. (2018); Ferris, Liao, et al. (2018), has more skills,

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particularly in terms of supervision and advising, acquired from their diverse experiences. The higher the calibre of the board members, the busier they are. Busy commissioners often have a vast network and a wealth of experience (Trinugroho et al., 2022).

Evidence suggests that, among all the control variables employed, company size and leverage are factors impacting a company's motivation to do climate reporting. According to Khaireddine et al. (2020), larger corporations provide more environmental information than smaller companies. According to the legitimacy theory, firms are under societal pressure to publish environmental information in order to obtain legitimacy. Environmental reporting is one approach for larger enterprises to align their performance with public expectations because they receive more exposure (Chithambo & Tauringana, 2014). Larger corporations also have more resources, allowing them to afford disclosure (Rupley et al., 2012). In the influence of leverage on climate change reporting, a negative and significant coefficient was discovered. This finding is congruent with those of Chithambo & Tauringana (2014); Darus et al. (2020); Luo et al. (2013). Companies that are heavily in debt will prioritize meeting their financial obligations over voluntary reporting. This is owing to the significant cash required to fund such reports.

CONCLUSION

The purpose of this study was to see if the qualities of the board of commissioners, such as independence, nationality, and busyness, influence climate change disclosure. The findings demonstrate that the number of independent commissioners has a beneficial impact on the level of climate change disclosure. Meanwhile, the board's bustle, which was thought to have a detrimental impact, instead demonstrated a favorable correlation. This study confirms that increasing board diversity improves a company's ability to better engage multiple stakeholder groups through climate change reporting. Our findings support both agency and legitimacy theories, in which corporations are encouraged to engage in voluntary disclosure as a form of accountability and transparency in order to lower agency costs and increase public legitimacy. The establishment of an independent and experienced board of commissioners encourages the voluntary dissemination of broader information about how the corporation engages in environmental initiatives.

These discoveries have several major theoretical and practical ramifications. The findings in the disclosure literature demonstrate the importance of board diversity in fostering corporate reporting. In countries with a dual board governance arrangement, for example, boards of commissioners are responsible for advising on company performance, including environmental policy. From a business standpoint, the findings help managers and decision-makers understand which board features favorably effect climate change disclosure. This implies that regulators should regulate the composition of commissioner boards, given their effectiveness in promoting non-financial disclosure standards.

Despite providing substantial contributions, this research has numerous shortcomings that open up options for future investigation. To begin, the research was conducted on mining businesses in Indonesia that use a two-tier board arrangement. As a result, caution is required when generalizing the findings, particularly to organizations that use a one-tier board system. Second, unlike in developed nations, where non-financial reporting is mandatory, non-financial reporting in Indonesia is still voluntary. Third, this study solely looked at the traits of independence, foreign nationality, and board busyness. Other factors like as age, tenure, educational background, and even political stance could be studied in the future. Finally, content analysis generates subjective data based on the researcher's viewpoint. To get broader and more valid information, future research could use interview approaches with personnel responsible for company reporting.

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