Board Characteristics and Disclosure of Environmental Sustainability Reports in Indonesia: Moderation Effects of Political Connection

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Abstract
The purpose of this study is to examine whether the characteristics of the board of commissioners in Indonesia affect the level of corporate environmental sustainability reporting, as well as to examine the moderating effect of political connections on the disclosure of environmental sustainability reports. The sample used was 80 companies listed on the Indonesia Stock Exchange in 2019-2021. The analysis technique used is Moderated Regression Analysis to examine the moderating effect of political connections and the effect of board characteristics on the disclosure of environmental sustainability reports. The results show that the board size variable has a significant positive effect on the disclosure level of environmental sustainability reports. Additionally, this study found that political connections weaken the influence of gender diversity on the disclosure of environmental sustainability reports. These findings provide valuable insights and evaluation for stakeholders aiming to implement good corporate governance practices to enhance environmental sustainability reporting performance. They can also serve as input for the government in developing guidelines for corporate sustainability reporting.

Keywords: board characteristics, political connections, environmental sustainability reports, GRI standards

JEL : M40, M41, Q56
DOI : 10.24002/kinerja.v27i2.6808

Received : 01/09/2023 Reviewed: 05/13/2023 Final Version: 07/27/2023

1. INTRODUCTION

Economic development contributes to several environmental problems, including a decrease in air and clean water quality, damage to ecosystems, climate change, and various other problems. Based on data from The Global Carbon Project (2020), total carbon dioxide emissions in Indonesia from 2010 to 2018 tended to increase due to human activities such as using coal, oil, and gas for combustion and industrial processes, burning gas, and making cement. The impact of increasing
carbon dioxide emissions can cause climate change to the point where it is dangerous for the survival of humans and other living things.

Over the last few decades, issues related to the environment have begun to receive special attention from stakeholders and shareholders. Companies are now required not only to disclose reports containing financial aspects but also non-financial aspects. Reports related to non-financial aspects contain the actions and results of corporate social and environmental responsibility, often referred to as sustainability reports. According to data from KPMG (2020), which surveyed a sample of the 100 largest companies from 52 countries in the world, the number of companies reporting sustainability reports has increased over the past 18 years, where in 2002, the number of companies disclosing sustainability reports was around 18%. In contrast, in 2020, the number of companies reporting was 80%.

Sustainability reports that contain non-financial aspects are often used as a basis for decision-making. Based on data from the EY Global Institutional Investor Survey (2020), 98% of investors evaluate non-financial performance based on disclosures reported by companies, where as many as 72% of investors carry out a structured evaluation of these non-financial reports.

In Indonesia itself, the development of sustainability reports has also increased throughout the year. Based on the National Center for Sustainability Reporting (NCSR), in 2013, there were around 40 companies that made sustainability reports concerning the reporting standards issued by the Global Reporting Initiative (GRI) (SWA, 2013). Then in 2021, there are around 154 companies that disclose sustainability reports (Majalah CSR, 2022).

De Villiers et al. (2011) identified two reasons for the increased environmental sustainability performance in recent decades. First, companies with environmental sustainability are more likely to get better economic performance. Second, environmental sustainability reporting increases the internal and external legitimacy of organizations by implementing recognized standards, such as GRI and ISO 26000. Environmental reporting connects management and society to reduce pressure from environmental activist groups and the government.

Various factors, including corporate governance, can influence the extent of environmental sustainability reports disclosure in a company. The purpose of governance mechanisms is to build trust by ensuring that corporate responsibilities, including environmental responsibilities, are accountably met (Stuebs and Sun, 2014). In addition, voluntary disclosure is one of the most important decisions of top management, which is controlled by the board of commissioners (Dicko et al., 2020). Therefore, it is important to investigate the characteristics of the board of commissioners who can encourage disclosure of environmental sustainability to obtain, manage and improve company legitimacy.

Research related to the relationship between the characteristics of the board of commissioners and the disclosure of environmental sustainability reports has been extensively studied worldwide but has not shown consistent results (Post et al., 2011; Bhatia and Tuli, 2017; Fernandes et al., 2018; Masud et al., 2018; Garcia-Blandon et al., 2019; Nursimloo et al., 2020; Gerged, 2021; Girella et al., 2021; Van Hoang et al., 2021). Research from Masud et al. (2018); Nursimloo et al. (2020); Gerged (2021); and Girella et al. (2021) shows that the greater the number of commissioners,
the greater the disclosure of environmental information that is carried out, but research from Bhatia and Tuli (2017) and Van Hoang et al. (2021) found no effect of board size on sustainability report disclosure. The effect of the board age on the disclosure of environmental sustainability reports also shows mixed results, where Post et al. (2011) found that companies with commissioners who are closer to 56 years old tend to be more transparent in disclosing environmental responsibility, whereas Fernandes et al. (2018) found that the average age of commissioners is below 45 years or above 70 years tends to be less sensitive to environmental issues. Another study by Van Hoang et al. (2021) stated that commissioners at a young age tend to be more sensitive to environmental issues. Therefore, this study adds a moderating variable of political connections in analyzing the effect of board characteristics on environmental sustainability report disclosure performance.

In addition to board characteristics, political connections are also considered to impact corporate disclosure behavior (Muttakin et al., 2018). Political connections can be reflected in the existence of company board members who have special relationships with politicians, the military, and senior government officials (Fisman, 2001; Leuz and Oberholzergee, 2006). Therefore, examining the influence of political connections on the disclosure of environmental sustainability reports is very important.

Political connections are said to increase companies’ legitimacy and competitive advantage in the market (Shaffer, 1995; Hillman et al., 2004; Keim and Zeithaml, 1986). Several studies support the above statement that political connections within a company can increase disclosure of environmental sustainability (Cheng et al., 2017; Kuo and Yu, 2017; Bianchi et al., 2019), besides that the board of commissioners has party members in it more active in responding to environmental policy requirements (Gu et al., 2013).

This research was conducted in Indonesia, where Indonesia is a developing country that adheres to the concept of a two-tier system. In the two-tier system concept, the roles of the supervisory board and the executive board are separated. The role of the board of commissioners is not only to oversee the company’s financial reporting but also to be involved in the corporate governance function, building and maintaining an ethical organizational culture to ensure that the company achieves success and can build shareholder value in the long term. Research that was conducted in Indonesia by Usman (2020) and Ekaputri and Eriandani (2022) regarding the determinants that influence the disclosure of sustainability reports has not considered the demographic conditions of the characteristics of the board of commissioners as an important part of a company’s corporate governance. In addition, another study conducted by Trireksani and Djajadikerta (2016) used environmental disclosure measurements based on three dimensions, namely the dimensions of evidence, time frame, and specificity, while this study measured disclosure of environmental sustainability reports using the 2020 GRI Standard. GRI helps to increase transparency of corporate information, the information gathered according to the GRI guidelines can be used for internal management practices, and the information provided in annual reports can reinforce the relationships between companies and stakeholders by explaining the contribution of companies to the community and environment (Dissanayake et al., 2019).
The purpose of this study is to analyze how the influence of corporate governance, especially the characteristics of the board, encourages the disclosure of environmental sustainability reports and analyze the moderating effect of political connections on the influence of board characteristics and disclosure of corporate environmental sustainability reports in Indonesia. This research is one of the studies empirically analyzing the relationship between board characteristics by considering demographic conditions such as gender and age of the board of commissioners. This research is expected to expand research on sustainability reports and provide input to interested parties on the importance of considering the role of the board of commissioners’ characteristics and political connections in making policies related to environmental sustainability reports.

2. LITERATURE REVIEW

2.1. Legitimacy Theory

Sustainability disclosure is a response to pressures placed on companies to carry out their activities in a way acceptable to society (Aguilera, 2005). Legitimacy theory was put forward by Dowling and Pfeffer (1975), in which organizations will take various actions to legitimize their operations. Legitimacy theory was first explored in social reporting studies by Hogner (1982). According to Hogner (1982), the disclosure of information by companies is a response to what society expects from the behavior of the business world. According to Deegan (2014), a company needs to gain legitimacy, which is established as a "license to operate," to achieve the resources needed to carry out its activities. Legitimacy theory expands the role of corporate governance mechanisms to align company activities with the interests of wider stakeholders so that managers are motivated to disclose more information to support their claims about legitimacy (M. Shamil et al., 2014).

If a company fails to meet people's expectations, then the company's legitimacy can be threatened, and the company may get sanctions by the community, for example, resource restrictions, product boycotts, and so on. Therefore, companies publish sustainability reports which can be considered as a tool to legitimize the business and show that the business remains within acceptable boundaries for society (Kuzey and Uyar, 2017). Companies with political connections are more likely to receive attention from the government and society, so this pressure motivates companies to act more responsibly towards the environment (Zhang, 2017), so that environmental reporting is used as a political legitimacy tool to reduce political risk (Qian and Chen, 2021) and legitimacy threat.

2.2. Corporate Governance

The Organization for Economic Cooperation and Development (OECD) (2004) defines corporate governance as a set of relationships between management, the board of commissioners, shareholders, and other parties with an interest in the company. Corporate governance is designed to create a culture of ethical behavior and compliance and to ensure that investors receive accurate, complete, and timely information to make investment and voting decisions (Rezaeae, 2007). Therefore, corporate governance cannot run alone without the help of external mechanisms in the form of regulations or standards. In corporate governance, there must be a set of
rules, regulations, or standards that can direct management to act ethically for the benefit of stakeholders and investors and provide accurate, complete, timely, and useful information in decision-making.

The corporate governance functions, which consist of supervisory, managerial, compliance, internal audit, legal and advisory, external audit, and monitoring, are an important element of the corporate governance structure (Rezaee, 2007). The function of corporate governance must be balanced to achieve the company's main goal of creating value for shareholders. A balanced corporate governance function can contribute to corporate governance effectiveness.

Indonesia is a developing country that adheres to a two-tier corporate governance system in which the supervisory and executive boards' functions are separate. Regulations regarding corporate governance in Indonesia are regulated in Law No. 40 of 2007 about Limited Liability Companies. The law describes the roles and responsibilities of the Board of Commissioners as the supervisory board and the Board of Directors as the executive board.

In Indonesia, effective corporate governance is developed based on the five principles of Good Corporate Governance (GCG) according to the National Committee on Governance Policy (KNKG) (2006), namely transparency, accountability, responsibility, independence, and fairness. These five principles encourage companies to disclose more financial and non-financial information and be more open to gaining public legitimacy.

In a two-tier system, the Board of Directors and Board of Commissioners are important elements in implementing GCG principles. Board of Commissioners are important and more strategic than BODs (Joni et al., 2020b). It is emphasized in Article 1 Number 6 of the Limited Liability Company Law that the role of the board of commissioners is to carry out general and/or special supervision following the articles of association and provide advice to the Board of Directors.

Boards' roles and responsibilities have been extended from the traditional shareholder-centric one to encompass various stakeholders, and this has been clearly highlighted as being part of the broader perspective of corporate governance (Rao and Tilt, 2016), so the board diversity can be the major factor that influence the extent of environmental sustainability reports disclosure in a company. The diverse characteristics of the board of commissioners contribute to a better understanding (Hafsi and Turgut, 2013) and leads to higher quality problem-solving because of the various perspectives and alternative solutions that they have (Rao and Tilt, 2016). The diversity of characteristics of the board of commissioners can be related to demographic differences between commissioners and differences between boards of commissioners in terms of structure, process, and other characteristics of the board.

Hafsi and Turgut (2013) suggest that the diversity of the board of commissioners can refer to two concepts, namely differences in the attributes of the board of commissioners and differences in the individual attributes of the commissioners. The differences in the attributes of the board of commissioners are related to the formal structure of the board, such as size, leadership structure, independence of the board of commissioners, compensation, and tenure. The next difference is in the individual attributes of the commissioners, usually related to
demographic and cognitive diversity, such as educational background, gender, age, and ethnicity.

2.3. Political Connection

A company is said to be politically connected if at least one member of its board of commissioners or supervisory board is or has been a politician, member of parliament, minister, or other appointed bureaucrat or other appointed bureaucrats in local or central government or military (Boubakri et al., 2008; Joni et al., 2020b). Political connections often occur in developing countries (Faccio, 2006), such as Indonesia, which has weak legal systems and imperfect market-supporting institutions (Bliss and Gul, 2012). Leuz and Oberholzergge (2006) found that 35 percent of Indonesian listed companies had direct political ties to former president Suharto and his family members. Furthermore, Joni et al. (2020a) found that more than 30 percent of Indonesian companies have connections with the government. Political relations in Indonesian companies are most commonly found in the chemical, infrastructure, investment, and various industries (Harymawan et al., 2017). This shows that political connections still affect many companies in various industries in Indonesia because the law has not yet regulated political involvement in the business world.

According to Joni et al. (2020a), two important factors influence the emergence of business and political relations in Indonesia, namely political power and the military's role in the Indonesian political area. During the Suharto era, political power was controlled by the Suharto family (Selin et al., 2022). In the 1990s, many large business groups were founded by the Suharto family and their close relatives. This resulted in many business owners having ties to the military to acquire resources and increase the value of their businesses. After Suharto stepped down, the pattern of political connections shifted from direct to indirect political affiliation. Active military officials were not directly involved in politics (Selin et al., 2022). However, many companies maintain relationships with the government and military to gain easy access to bureaucrats, external resources, and other favorable business policies (Joni et al., 2020a).

2.4. Hypothesis Development

2.4.1. Characteristics of the Board of Commissioners and Disclosure Level of Environmental Sustainability

The structure of the board of commissioners in corporate governance varies from age, ethnicity, and gender to education, which can contribute to the company, especially when making decisions. A diverse board means that there will also be diverse views in solving a problem so that the management perspective is wider because it considers various aspects. A diverse board of commissioners can contribute to a company's legitimacy by approaching a wider group of stakeholders and strengthening the relationship between the company and stakeholders (Ntim and Soobaroyen, 2013).

The board size is the most important part of the corporate governance mechanism. How effective the board of commissioners is determined by its size
According to Berraies and Rejeb (2019), a large board size will bring many advantages where the company will have more different views and ideas to create a better strategy. The larger board size is considered to be able to provide a wider exchange of ideas and experiences, resulting in wider involvement in environmental sustainability performance and disclosure of environmental sustainability reports, and ultimately assist the company in gaining legitimacy. The results of previous research from Nursimloo et al. (2020), Trireksani and D jihadikerta (2016), and Masud et al. (2018) support the statement above, which shows that board size has a positive and significant effect on the disclosure of environmental sustainability reports. In addition, another study by Janggu et al. (2014), Al-Shaer and Zaman (2016), Azman and Rashid (2020), and Gerged (2021) also shows positive results between board size and the level of environmental sustainability report disclosure. Therefore, the hypothesis that is built:

**Hₐ₁:** There is a positive influence between board size and the level of environmental sustainability report disclosure.

Papadimitri et al. (2020) stated that education comes not only from things that have been learned but also from the intellectual abilities of each individual. With a higher level of education, it is expected that the team's ability to find solutions to complex problems will increase. Therefore, the leader's educational background will affect company performance, including environmental responsibility performance. Chang et al. (2017) also stated that the diversity of different educational backgrounds improves the quality of resources to answer various stakeholder interests and improve social responsibility performance more effectively.

According to Rezaee (2007), commissioners must have sufficient understanding and knowledge of the company's business, the competitive environment, and the social, legal, and technological advances that affect the company's business and operations. In addition, commissioners must also have knowledge of internal finance and human resources available to the company in implementing its strategy and achieving its goals. Post et al. (2011) assume that members of the board of commissioners with higher educational backgrounds (masters and doctors) have a broader understanding and are more concerned with environmental issues. This aligns with research conducted by Garcia-Blandon et al. (2019), who found that commissioners with a master's or doctoral educational background have higher ESG performance. Therefore, companies with many board members with master's or doctoral degrees may disclose environmental information in their sustainability reports. As such, the following hypothesis is built:

**Hₐ₂:** There is a positive influence between board education and the level of disclosure of environmental sustainability reports.

The most easily observed diversity in board composition is gender. The existence of intrinsic gender inequalities, such as risk aversion, empathy, responsiveness, or social identification, can affect the decision-making process and company priorities (Chams and García-Blandón, 2019). According to García-Sanchez et al. (2019), gender influences how men and women manage companies, and the results of this study confirm that language and communication styles differ in
many ways. Van Hoang et al. (2021) added that gender diversity is important in the decision-making process for better environmental management. Hence, the presence of women on the board of commissioners and top executives’ positions positively influences environmental performance.

Chebbi et al. (2020) confirmed that women members provide a diverse and superior range of skills and experience to the board that result in advancing the environmental reporting. This is in line with research from Post et al. (2011) showed that companies with three or more women on the board [commissioners] tend to disclose more environmental information according to the assessment of Kinder Lydenberg Domini (KLD). Research Garcia-Sanchez et al. (2019) found that female commissioners exhibit greater ethical behavior and commitment to providing higher quality voluntary disclosures so that companies with many female board members disclose sustainability information more balanced, concise, clear, comparable, and reliable.

**Hₐ₃:** There is a positive influence between gender diversity and the level of environmental sustainability report disclosure.

The diversity of boards can integrate a wide range of information to make an informed decision and provide various resources to organizations, such as develop links with bank, customer and supplier (Hillman et al., 2000; Kagzi and Guha, 2018). One form of board diversity is the age diversity of the board of commissioners. In corporate governance, age is related to behavior and possible openness to new ideas about board functions (Zajac and Westphal, 1996). According to Kets de Vries and Miller (1984), a mature board of commissioners is more sensitive to the wider community, while the younger board of commissioners tends to be more sensitive to environmental and ethical issues as a matter of logic and principle. With the age diversity of the board of commissioners, the organization can be more responsible and open in disclosing sustainability reports which ultimately encourages the company to gain legitimacy.

The age of the members of the board of commissioners also reflects their business experience and maturity in directing the business (Hafsi and Turgut, 2013) so that, in the end their best practices can increase the value of the company (Fernandes et al., 2018). Furthermore, Kagzi and Guha (2018) states that boards with younger members will have more relationships with early entrepreneurs, whereas boards with older members will have relationships with senior contacts in established companies. In line with this statement, Jhunjhunwala and Mishra (2012) stated that members of the commissioners who have a more senior age bring valuable experience to the board of commissioners, which has so far been obtained from the industry.

At a young age, members of the board of commissioners tend to be more educated and easily master existing technological developments (Jhunjhunwala and Mishra, 2012). According to Bekiroglu et al. (2011), younger board members view environmental engagement as a question of logic and principle, and because they are more sensitive to this issue than more senior board members, younger board members tend to encourage companies to be more socially responsible and environmentally friendly.
Previous research results from Post et al. (2011) showed a curvilinear shape on the influence of the age of the board of commissioners on environmental responsibility, namely companies where the average age of the board of commissioners is close to 56 years is more transparent in disclosing environmental responsibility. Similar results were shown by Chams and Garcia-Blandón (2019), who also found a curvilinear relationship, where sustainability performance increased at an average age of commissioners who were younger and at a senior age. Thus, the existence of diversity in the age of board members is necessary to complement each other, and the organization can take advantage of this difference to improve its strategic decision-making (Ali et al., 2014).

**Ha₄:** The effect of the age of the board of commissioners on the level of environmental sustainability report disclosure is curvilinear.

### 2.4.2. Board Characteristics, Political Connections, and Disclosure Levels of Environmental Sustainability

Gomez and Jomo (1997) state that companies with political ties have close ties with the government. Political connections are an external dimension of corporate governance mechanisms that influence organizational behavior (Joni et al., 2020b). Companies with political connections are subject to greater government monitoring and pressure for compliance, especially in countries where political and administrative power is strong and political influence on business activities prevails (Qian and Chen, 2021). To repay government financial support, companies with political connections tend to use environmental disclosure to gain political legitimacy and promotion (Li et al., 2015; Shaffer, 1995; Hillman et al., 2004; Keim and Zeithaml, 1986).

The above statement is supported by research from Bianchi et al. (2019), who found that companies with political connections report more CSR because CSR is considered a strategy to gather support from stakeholders and reduce threats to legitimacy. Research results from Zhang (2017) also found that political connections positively affect environmental responsibility. Wu et al. (2022) also show that political connections positively moderate the effect of formal regulatory pressure on green innovation. Research from Cheng et al. (2017) found that the increase in the disclosure of environmental information reports at companies in China was motivated by political connections and top management’s efforts to gain promotions through environmental reports.

Political relations within a company can occur in various positions in the company, such as on the board of commissioners, board of directors, and/or senior management, as well as levels of government related to the company. This is also the case in Indonesia, where company board members have links with politicians, the military, and senior government officials (Fisman, 2001; Leuz and Oberholzerggee, 2006). These executives tend to have different levels of power in decision-making (Qian and Chen, 2021).

The research results from Gu et al. (2013) support the above statement and find that companies with commissioners coming from parties in China tend to respond to government regulations related to the environment, resulting in more environmental disclosures in these companies. Another study by Qian and Chen...
(2021) also found that in companies with politically connected board members where the higher the level of political connection, the greater the increase in their environmental disclosure.

Therefore, the existence of political connections in a company can moderate the effect of board characteristics on the level of environmental sustainability report disclosure, so the hypothesis is built as follows:

**Hₐ₅**: Political connection strengthens the influence between the size of the board of commissioners and the level of environmental sustainability report disclosure.

**Hₐ₆**: Political connection strengthens the influence between the board of commissioners’ education and the level of environmental sustainability report disclosure.

**Hₐ₇**: Political connection strengthens the influence between the gender diversity of commissioners and the level of disclosure of environmental sustainability reports.

**Hₐ₈**: Political connection strengthens the curvilinear relationship between the age of the board of commissioners and the level of environmental sustainability report disclosure.

3. **METHODOLOGY**

3.1. **Data and Sample Collection**

The population in this study are all companies listed on the Indonesia Stock Exchange (IDX) in 2019-2021. The sample selection in this study was carried out through purposive sampling.

The sample to be selected must meet the following criteria:

1. The company was listed on the Indonesia Stock Exchange in 2019-2021.
2. The company consistently reported annual reports and sustainability reports in 2019-2021.
3. Annual reports and sustainability reports for the period to be studied must be available and contain the required information.

The final sample in this study was 80 companies from 10 sectors. Sample data can be seen in Table 1.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Material</td>
<td>16</td>
</tr>
<tr>
<td>Consumer Cyclicals</td>
<td>3</td>
</tr>
<tr>
<td>Consumer Non-Cyclicals</td>
<td>11</td>
</tr>
<tr>
<td>Energy</td>
<td>12</td>
</tr>
<tr>
<td>Finance</td>
<td>14</td>
</tr>
<tr>
<td>Health</td>
<td>6</td>
</tr>
<tr>
<td>Industry</td>
<td>6</td>
</tr>
</tbody>
</table>
3.2. Measurement

3.2.1 Dependent Variable

The level of environmental sustainability disclosure as the dependent variable is measured using the 2020 Global Reporting Initiatives (GRI) Standards. The environmental sustainability disclosure index is then calculated for each company with the following equation:

$$TBL = \sum_{j=1}^{n=32} \frac{d_j}{n}$$

Where:

dj = 1 if item j is disclosed, 0 if item j is not disclosed
n = number of items.

The number of items and information disclosed can be seen in Table 2 below:

**Table 2. Disclosure of Environmental Sustainability Report According to GRI Standards 2020**

<table>
<thead>
<tr>
<th>Topic Code</th>
<th>Total Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>301-Materials</td>
<td>3</td>
</tr>
<tr>
<td>302-Energy</td>
<td>5</td>
</tr>
<tr>
<td>303-Water &amp; Effluents</td>
<td>5</td>
</tr>
<tr>
<td>304-Biodiversity</td>
<td>4</td>
</tr>
<tr>
<td>305-Emissions</td>
<td>7</td>
</tr>
<tr>
<td>306-Waste</td>
<td>5</td>
</tr>
<tr>
<td>307-Environmental Compliance</td>
<td>1</td>
</tr>
<tr>
<td>308-Supplier Environmental Assessment</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Environmental Disclosures</strong></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

Source: globalreporting.org (2022)

3.2.2 Independent Variables

The board characteristics used in this study are the board size, board education, gender diversity, and board age. Based on research from et al. (2018), board size is calculated from the total number of members of the board of commissioners. Board education is measured using a dummy variable, in which the main commissioner who has a master's or doctoral educational background is given a value of 1. Conversely, if the main commissioner does not have this educational background, he is given a value of 0 (Papadimitri et al., 2020). Gender diversity, according to research from Amran et al. (2014) and Nursimloo et al. (2020), is measured by the proportion of female board members. Referring to research from Fernandes et al. (2018), the variable board age is measured using the average age of the board members,
whereas to test the hypothesis about the curvilinear effect of the board age, a quadratic calculation of the average age of the board members is performed.

3.2.3 Moderating Variable

The moderating variable used in this study is political connections as measured using a dummy variable where members of the board of commissioners who are currently or have served as politicians, members of parliament, ministers, or other appointed bureaucrats in local or central government or military are given a value of 1, conversely, if members of the board of commissioners are not currently or have served as politicians, members of parliament, ministers, or other appointed bureaucrats in local or central government or military, a score of 0 is given (Boubakri et al., 2008; Joni et al., 2020b)

3.2.4 Control Variable

To mitigate the confounding effect of the external factors, the control variables in the literature are included: the year of the COVID-19 pandemic and industry. The control variable for the year of the COVID-19 pandemic is measured using a dummy variable, where in 2019, before the pandemic, it was given a value of 0, and in 2020 and 2021, during the pandemic was given a value of 1. The control variable for the industry is measured using a dummy variable where companies in the manufacturing industry are given a value of 1. In contrast, companies other than the manufacturing industry are given a value of 0.

3.3. Research Model

This study uses regression analysis to test the effect described in the two-equation models. The first model is used to analyze the influence of the characteristics of the board of commissioners on the disclosure of environmental sustainability reports, including to analyze the curvilinear relationship between the age of the board of commissioners and the disclosure of sustainability reports. The second model is used to analyze the influence of political connections as a moderating variable. The two-equation models are formulated as follows:

\[ SR = \beta_0 + \beta_1 BSize + \beta_2 BEdu + \beta_3 BGend + \beta_4 BAge + \beta_5 BAge^2 + \beta_6 PC + \beta_7 Covid19 + \beta_8 Industry + e \] ........ (1)

\[ SR = \beta_0 + \beta_1 BSize + \beta_2 BEdu + \beta_3 BGend + \beta_4 BAge + \beta_5 BAge^2 + \beta_6 PC + \beta_7 BSize * PC + \beta_8 BEdu * PC + \beta_9 BGend * PC + \beta_10 BAge * PC + \beta_11 BAge^2 * PC + \beta_12 Covid19 + \beta_13 Industry + e \] ........ (2)

where:
SR = environmental sustainability disclosure index
\( \beta_0 \) = constant
\( \beta_1-\beta_{13} \) = regression coefficient
BSize = size of the board of commissioner
BEdu = chief commissioner of education
BGend = proportion of female board members
BAge = average age of members of the board of commissioner
RESULT AND DISCUSSION

Table 3 shows a description of the descriptive statistics based on the final sample in this study. The table shows each variable's mean, mode, standard deviation, minimum and maximum values.

Table 3. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Modus</th>
<th>Min</th>
<th>Max</th>
<th>St. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Size</td>
<td>5.696</td>
<td>6.000</td>
<td>2.000</td>
<td>14.000</td>
<td>2.175</td>
</tr>
<tr>
<td>Board Education</td>
<td>0.508</td>
<td>1.000</td>
<td>0.000</td>
<td>1.000</td>
<td>0.501</td>
</tr>
<tr>
<td>Gender Diversity</td>
<td>0.101</td>
<td>0.000</td>
<td>0.000</td>
<td>0.670</td>
<td>0.142</td>
</tr>
<tr>
<td>Board Age</td>
<td>60.773</td>
<td>55.000</td>
<td>42.000</td>
<td>74.600</td>
<td>5.255</td>
</tr>
<tr>
<td>Political Connection</td>
<td>0.729</td>
<td>1.000</td>
<td>0.000</td>
<td>1.000</td>
<td>0.445</td>
</tr>
<tr>
<td>Environmental Sustainability Disclosure</td>
<td>0.371</td>
<td>0.375</td>
<td>0.000</td>
<td>0.969</td>
<td>0.228</td>
</tr>
<tr>
<td>Covid-19</td>
<td>0.667</td>
<td>1.000</td>
<td>0.000</td>
<td>1.000</td>
<td>0.472</td>
</tr>
<tr>
<td>Industry</td>
<td>0.339</td>
<td>0.000</td>
<td>0.000</td>
<td>1.000</td>
<td>0.474</td>
</tr>
</tbody>
</table>


Based on Table 3, data is obtained that the board size varies with a minimum number of 2 members and a maximum of 14 members with an average of 5 members. The minimum number of existing board members follows the provisions in Article 20 of the Financial Services Authority Regulation (POJK) No 33 of 2014 concerning The Board of Directors and Board of Commissioners of Issuer or Public Company. The mode data on the board of commissioners’ education variable refers to number 1, the main commissioner with a master’s or doctoral degree. This shows that many companies are starting to prioritize main commissioners with a master's or doctoral degree. However, no regulation specifically requires main commissioners to have a master's or doctoral degree.

In the variable gender diversity, most of the board of commissioners’ members are male, with an average value of 89.9%, while the average female commissioners are only around 10.1%. This may be influenced by the absence of regulations governing the number of women occupying board of commissioners' positions. Data on the age of commissioners shows that the average age of commissioners is 60 years, with the youngest member being 42 years old and the senior member being 74 years old. Article 21 of POJK No. 33 of 2014 concerning the Board of Directors and Board of Commissioners of Issuer or Public Company has not specifically regulated the age limit for members of the board of commissioners so that a person
can officiate as a member of the board of commissioners at any age if he meets the requirements.

Descriptive statistics show that many samples were obtained for the year during the pandemic because the observation period was 2019-2021. From 240 samples collected, it is known that 66.25% of companies are included in industries other than manufacturing (finance, infrastructure, property, etc.). This happened because 2014 Indonesia published the 2015-2019 Sustainable Finance Roadmap. The roadmap contains a work plan for the sustainable finance program of the financial services industry under OJK authority, namely banking, capital markets, and the Non-Bank Financial Industry (IKNB) (OJK, 2016).

4.1. Hypothesis Testing and Discussion

The research model was analyzed using moderated regression analysis, so before the regression, it is necessary to test the classical assumptions of this model. The results of the classic assumption test show that the residuals are not normally distributed, as shown in Figure 1. Even so, the regression model in this study did not find a high correlation between the independent variables, as indicated by the VIF value of each variable below 10 (Table 4). There is no heteroscedasticity (Table 5), and no autocorrelation (Table 6) occurs, as indicated by a probability value of Chi-Square > 0.05.

![Figure 1. Normality Test Results](image)

Table 4. Multicollinearity Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant (C)</td>
<td>N/A</td>
</tr>
<tr>
<td>Board Size</td>
<td>1.673260</td>
</tr>
<tr>
<td>Board Education</td>
<td>1.392952</td>
</tr>
<tr>
<td>Gender Diversity</td>
<td>1.902563</td>
</tr>
<tr>
<td>Board Age</td>
<td>1.511821</td>
</tr>
<tr>
<td>Board Age (square)</td>
<td>4.009430</td>
</tr>
<tr>
<td>Political Connection</td>
<td>1.757400</td>
</tr>
<tr>
<td>Board Size*Political Connection</td>
<td>2.510390</td>
</tr>
</tbody>
</table>
Table 5. Heteroscedasticity Test Results

<table>
<thead>
<tr>
<th></th>
<th>F-statistic</th>
<th>Prob. F(37,202)</th>
<th>Prob. Chi-Square(37)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Education*Political Connection</td>
<td>1.330483</td>
<td>0.0766</td>
<td></td>
</tr>
<tr>
<td>Gender Diversity*Political Connection</td>
<td>76.29424</td>
<td>0.1047</td>
<td></td>
</tr>
<tr>
<td>Board Age*Political Connection</td>
<td>61.66900</td>
<td>0.4880</td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Autocorrelation Test Results

<table>
<thead>
<tr>
<th></th>
<th>F-statistic</th>
<th>Prob. F(2,226)</th>
<th>Prob. Chi-Square(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Education</td>
<td>0.963066</td>
<td>0.3833</td>
<td></td>
</tr>
<tr>
<td>Gender Diversity</td>
<td>2.046118</td>
<td>0.3595</td>
<td></td>
</tr>
</tbody>
</table>

Table 7 shows the results of the regression analysis, where it is seen that the board size variable has a positive and significant effect on the disclosure of environmental sustainability reports (p < 0.05) with a significance value of 0.0415. Therefore, H1 is supported. This finding is in line with the research of Masud et al. (2018), Nursimloo et al. (2020), Gerged (2021), and Girella et al. (2021). The larger board size has the different skills and competencies acquired from each member so that they can encourage more disclosure of information such as strategies, policies, and actions related to the environment (Girella et al., 2021; Masud et al., 2018).

The next variable is board education. The results of the regression analysis show that board education does not affect the disclosure of environmental sustainability reports (p > 0.05), so H2 is not supported and the results of this study confirm the research from Post et al. (2011) and Fernandes et al. (2018). 50.8% board education in Indonesian companies is dominated by master's or doctoral educational background, but this does not affect the level of disclosure of sustainability reports. The high educational background of the commissioners may provide extensive knowledge and insight regarding the risks and consequences, but the experience that the commissioners have, especially in sustainability practices, can provide knowledge that may not be obtained in formal education. The experience mainly related to sustainability practices can be used by commissioners to understand the condition of the company so that the oversight function can be more effective and efficient.

The results of the regression analysis for the variable gender diversity show that gender diversity has a negative effect on the disclosure of environmental sustainability reports (p < 0.10). The result is contrary to the concluded hypothesis, so H3 is not supported. This result contradicts the research of Post et al. (2011), Garcia-Sanchez et al. (2019), and Van Hoang et al. (2021). The results of this study may be because the average number of female members on the board of commissioners in Indonesian companies is still relatively small, which is only around 10.1% of the total number of commissioners. The absence of regulations in Indonesia
that regulate the number of female members is also one of the causes of gender diversity in the structure of the board of commissioners.

The independent variable board age does not show a curvilinear relationship to the disclosure level of the environmental sustainability report, as evidenced by the coefficient value of the board age and the board age (squared) being positive and the value of $p > 0.05$, so H4 is not supported. The results of this study contradict the results from Fernandes et al. (2018) and Post et al. (2011), which could be due to the age range of commissioners in Indonesian companies that the youngest and the seniors are not far adrift, and most commissioners are found to be 55 years old. In addition, regulations in Indonesia regarding the productive age limit when serving as a commissioner member have not been regulated.

The political connection is not a moderator for the relationship between board size, board education, and the curvilinear shape of board age with the disclosure level of environmental sustainability because the political connection has no significant interaction with board size, board education, and board age, even though the political connection is related to the disclosure level of environmental sustainability variable. Therefore, H5, H6, and H8 are not supported. Data shows that as many as 72.92% of companies in Indonesia have commissioners who are politically connected. So according to the neo-pluralist society, companies can use political connections to avoid potential pressure from society, especially regarding environmental issues (Muttakin et al., 2018). Therefore, the disclosures related to the environment can be ignored or reduced while still being able to maintain legitimacy.

Furthermore, this study also shows that political connection acts as a quasi-moderator which moderates the influence of the board characteristics for the gender diversity variable on the disclosure level of environmental sustainability reports (Sharma et al., 1981). It can be seen in Table 7 that political connection has significant interactions with gender diversity variables. Then in model 1, the political connection is related to the disclosure level of environmental sustainability. However, based on the study’s results, the political connection variable weakens the effect of gender diversity on the disclosure level of environmental sustainability reports, so H7 cannot be supported. Even though companies with political connections have female board members, the environmental sustainability report disclosure level is lower. The presence of female commissioners who have political connections, such as politicians or members of parliament, may even feel that they are not as pressured by society to act transparently because of their connections.

Concerning the control variables, the control variable COVID-19 presents a positive and significant sign ($p < 0.05$), while the control variable industry is not significant ($p > 0.10$). The study results show that the COVID-19 pandemic has increased the disclosure of information related to environmental sustainability to gain legitimacy and survive. The type of industry does not affect the disclosure level of environmental sustainability reports because there is no requirement for manufacturing companies to disclose more information than other industries as a contributor to environmental issues.
Table 7. Regression Analysis Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant (C)</td>
<td>Coefficient 49.79493</td>
<td>Coefficient 39.90057</td>
</tr>
<tr>
<td></td>
<td>Prob 0.0000</td>
<td>Prob 0.0000</td>
</tr>
<tr>
<td>Board Size</td>
<td>Coefficient 4.494275</td>
<td>Coefficient 4.826773</td>
</tr>
<tr>
<td></td>
<td>Prob 0.0479**</td>
<td>Prob 0.0415**</td>
</tr>
<tr>
<td>Board Education</td>
<td>Coefficient 1.323113</td>
<td>Coefficient 1.664802</td>
</tr>
<tr>
<td></td>
<td>Prob 0.5475</td>
<td>Prob 0.4520</td>
</tr>
<tr>
<td>Gender Diversity</td>
<td>Coefficient -1.486898</td>
<td>Coefficient -4.088446</td>
</tr>
<tr>
<td></td>
<td>Prob 0.4905</td>
<td>Prob 0.0846*</td>
</tr>
<tr>
<td>Board Age</td>
<td>Coefficient 2.768381</td>
<td>Coefficient 1.948410</td>
</tr>
<tr>
<td></td>
<td>Prob 0.2017</td>
<td>Prob 0.3692</td>
</tr>
<tr>
<td>Board Age (square)</td>
<td>Coefficient 0.699730</td>
<td>Coefficient 3.736716</td>
</tr>
<tr>
<td></td>
<td>Prob 0.6411</td>
<td>Prob 0.0524</td>
</tr>
<tr>
<td>Political Connection</td>
<td>Coefficient -5.218962</td>
<td>Coefficient -8.626480</td>
</tr>
<tr>
<td></td>
<td>Prob 0.0213**</td>
<td>Prob 0.0013**</td>
</tr>
<tr>
<td>Board Size*Political Connection</td>
<td>Coefficient -0.110859</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prob 0.9683</td>
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</tr>
<tr>
<td>Board Education*Political Connection</td>
<td>Coefficient -2.185991</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prob 0.3408</td>
<td></td>
</tr>
<tr>
<td>Gender Diversity*Political Connection</td>
<td>Coefficient -4.293013</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prob 0.0279**</td>
<td></td>
</tr>
<tr>
<td>Board Age*Political Connection</td>
<td>Coefficient -1.382281</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prob 0.5001</td>
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</tr>
<tr>
<td>Board Age (square)*Political Connection</td>
<td>Coefficient 3.528710</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prob 0.0098</td>
<td></td>
</tr>
<tr>
<td>Covid19 (Control)</td>
<td>Coefficient 10.29410</td>
<td>Coefficient 8.742368</td>
</tr>
<tr>
<td></td>
<td>Prob 0.0184</td>
<td>Prob 0.0433**</td>
</tr>
<tr>
<td>Industry (Control)</td>
<td>Coefficient 5.285965</td>
<td>Coefficient 3.025320</td>
</tr>
<tr>
<td></td>
<td>Prob 0.2236</td>
<td>Prob 0.4943</td>
</tr>
<tr>
<td>R-squared</td>
<td>Coefficient 0.037875</td>
<td>Coefficient 0.118047</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>Coefficient 0.013099</td>
<td>Coefficient 0.067315</td>
</tr>
<tr>
<td>F-statistic</td>
<td>Coefficient 1.528705</td>
<td>Coefficient 2.326878</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>Coefficient 0.169511</td>
<td>Coefficient 0.006400**</td>
</tr>
</tbody>
</table>

Notes: N = 240 observation. Significance level: *p < 0.10, **p < 0.05.

5. CONCLUSION

This study analyzes the influence of the board characteristics as measured by the perspective of board size, board of commissioners’ education, gender diversity, and board of commissioners’ age on disclosure of environmental sustainability reports by including political connection as a moderating variable. The research was conducted at 80 companies in Indonesia, a developing country that adheres to the two-tier system concept for a 3-year observation period, from 2019 to 2021.

The results of the study show that the board size has a positive influence on the disclosure level of environmental sustainability reports. The larger the board size, the greater the oversight of environmental issues, so the entity gains legitimacy. Another result of this study shows that the moderating variable of political connections weakens the effect of the board of commissioners’ gender diversity on the disclosure level of environmental sustainability reports. The absence of regulations in Indonesia that regulate political relations in the business world is one of the reasons why political connections weaken the disclosure level of environmental sustainability reports. The political connections company provides many advantages and benefits, including avoiding punishment related to environmental pollution cases. This results in companies involved in environmental issues that tend to use their political connections to solve problems instead of disclosing environmental sustainability.

This research makes several contributions. First, the results of the study can assist stakeholders in compiling and determining guidelines for the characteristics of
the board of commissioners so the disclosure of financial and non-financial information can be more transparent. The size of the board of commissioners is proven to increase the disclosure of sustainability reports in the environmental sector. Defining the board characteristics can assist management in enhancing the company's image and ultimately gaining legitimacy. Second, this research also contributes to the government considering and forming regulations related to political connections in the business so that companies with political connections do not use their political relations to legalize actions that are inconsistent with societal norms.

In addition to the research benefits already mentioned, this research also has some limitations. The limitation of the study is the number of short observation periods which is only three years. In future research, it is expected that it will be able to expand the observation period and examine other variables related to the board characteristics, which may influence the disclosure of sustainability reports. Another limitation is that this study only measures one sector in the sustainability report: the environmental sector. In future research, it is expected to be able to measure the disclosure of sustainability reports from all sectors, both economic, environmental, and social.

REFERENCES


