

# Governance, Regulation, and Green Banking Disclosure: An Empirical Study of Indonesian Banks

*Governance,  
Regulation and  
Green Banking*

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## ABSTRACT

This study examines the effect of corporate governance on green banking disclosure in the Indonesian banking sector, focusing on three key variables: board size, proportion of independent commissioners, and the presence of female directors. It also investigates the moderating role of green banking regulation, particularly after the implementation of Financial Services Authority Regulation No. 51/POJK.03/2017 on Sustainable Finance. The analysis is based on secondary data from 237 observations of banks listed on the Indonesia Stock Exchange during the period 2007–2021, using the Ordinary Least Squares (OLS) method. The results reveal that board size, the proportion of independent commissioners, and the presence of female directors all have a negative effect on green banking disclosure. Interestingly, the introduction of green banking regulation weakens the negative effect of board size, indicating that regulatory frameworks can enhance the positive role of governance in environmental transparency. However, the regulation does not significantly alter the effects of independent commissioners or female directors on disclosure practices. These findings contribute to the literature by providing empirical evidence on the interplay between corporate governance and environmental regulation in shaping sustainability disclosures in emerging markets. The study highlights the importance of regulatory intervention to support and encourage transparency and green initiatives in the banking industry.

**Keywords:** corporate governance, green banking disclosure, green banking regulation

## INTRODUCTION

Green banking policies have become a major focus in the banking industry in recent years. The financial sector is considered to have a strategic role in driving the creation of a more sustainable and environmentally friendly economy (Bhardwaj & Malhotra, 2013; Yadav & Pathak, 2013). One important effort in implementing this policy is through the distribution of credit, financing, and investment to green sectors that make a significant contribution to sustainable development (Islam & Das, 2013; Park & Kim, 2020; Yadav & Pathak, 2013). In addition, the integration of environmental, social, and governance (ESG) principles in credit and investment decision making is a key approach in implementing green banking policies (Gavrillo & Pobochenko, 2021; Inderst & Stewart, 2018; Park & Kim, 2020). By considering ESG aspects, banking companies can identify green investment opportunities and provide financial support for projects that create positive impacts on the environment and society.

The adoption of green banking policies is also a response to global demands for sustainable development. Currently, many central banks and banking authorities in various countries have implemented such policies as part of their national commitment to environmental protection. In the context of implementing these policies, green banking

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disclosure is one of the important aspects that has received public attention. This disclosure serves as a tool to increase transparency and accountability of companies in carrying out environmentally friendly business activities (Gunawan, Permatasari & Sharma, 2022; Mahfuzur & Barua, 2016; Sun et al., 2020). Through adequate disclosure, investors and other stakeholders can identify institutions that are truly committed to reducing environmental impacts and prioritizing green technology (Khalil & Nimmanunta, 2022; Khan, Johl & Johl, 2021). In the Cempaka Putih area, Ciputat Timur District, South Tangerang, Medan stalls can be easily found by the general public. The stall uses a friendly service strategy, 24-hour operation, availability of basic necessities, and provision of products that are often needed routinely, thus creating its own appeal as the main choice in meeting daily needs (Kasmir, 2005). Thus, Medan grocery stores remain the main preference for the community despite competing with the proliferation of modern retail in the surrounding environment (F. Tjiptono, 2015).

In addition, stricter regulations and more effective policies can encourage banks towards more sustainable practices. To assess the success rate of green banking policy adoption, previous studies have used content analysis of green banking disclosures in annual reports or corporate sustainability reports as a proxy for measurement, although the indicators used vary across studies (Bose, Khan, Rashid & Islam, 2018; Dewi & Dewi, 2017; Karyani & Obrien, 2020; Khan et al., 2021). This report serves as a basis for stakeholders to evaluate a company's commitment to sustainable principles.

Banking companies are required to commit to implementing sustainable practices and caring about environmental issues, because if they do not, they risk being abandoned by stakeholders. This can pose a serious threat to the survival and stability of these financial institutions in the future. Based on legitimacy theory, a company's legitimacy is formed through ongoing interaction with the community, thus creating expectations that the company's operations are in line with prevailing social values and norms (Crossley, Elmagrhi & Ntim, 2021; Suchanek, 2020). When these expectations are not met, negative reactions from the community and stakeholders can arise, which ultimately endanger the company's reputation. Reputational damage is not only related to the company's image, but can also threaten overall business prospects.

In the Indonesian context, the commitment of banking companies to sustainable principles is a challenge in itself, considering the potential for quite large green economic growth, which is estimated at 6.1–6.5% annually (Gianie, 2022). The principle of sustainability not only provides economic benefits such as job creation, but is also an important factor in maintaining support from various stakeholders, including investors, employees, and consumers. Therefore, it is important to conduct further investigations into green banking disclosure practices to strengthen corporate transparency and accountability. Several international studies have examined the relationship between green banking disclosure and firm value and financial performance (Bose et al., 2018; Chen, Mirza, Huang & Umar, 2022; Dewi & Dewi, 2017; Karyani & Obrien, 2020; Khan et al., 2021), while other studies have focused more on its relationship with corporate governance components such as board of commissioners structure, proportion of independent commissioners, participation of female directors, and institutional ownership (Ben-Amar, Chang & McIlkenny, 2017; Bose et al., 2018; Qa'dan & Suwaidan, 2018). In Indonesia, several studies have been conducted on green banking disclosure, both in relation to firm value (Pratiwi, Basyith & Safitri, 2023; Winarto, Nurhidayah & Sukirno, 2021), sustainable growth (Firmansyah & Kartiko, 2024), and with various dimensions of corporate governance such as the size of the board of directors (Farida & Purwanto, 2021), independent commissioners (Farida & Purwanto, 2021; Petro, Octavia & Diarsyad, 2023; Rahmiati & Agustin, 2022), institutional ownership (Farida & Purwanto, 2021; Petro et al., 2023), size of the board of commissioners (Petro et al., 2023), audit committee (Rahmiati & Agustin, 2022), and foreign ownership (Rahmiati & Agustin, 2022).

This study aims to investigate the influence of corporate governance aspects—including board size, proportion of independent commissioners, and presence of female

directors—on green banking disclosure practices in the Indonesian banking sector. Voluntary disclosure is defined as a form of reporting additional information that is not required by accounting standards or mandatory regulations, but is carried out proactively by the company (Alfraih & Almutawa, 2017; Kanakriyah, 2016). This type of disclosure is a form of communication that is not bound by a schedule or format between the company and its stakeholders (Ghio & Verona, 2020; Michael & Dixon, 2019). Good corporate governance is considered to have a significant contribution to organizational performance and transparency in green banking disclosure, which in turn can affect public perception of the company's reputation and environmental commitment in the eyes of investors and stakeholders.

Several studies have shown that board composition has the potential to improve corporate accountability and protect shareholder rights (Adegboye, Ojeka, Alabi, Alo & Aina, 2020; Budiharta & Kacaribu, 2020; Kouaib, Mhiri & Jarboui, 2020; Naciti, 2019; Pozzoli, Pagani & Paolone, 2022). Naciti (2019) stated that companies with higher levels of board diversity and separation between the positions of chairman and CEO tend to record better sustainable performance. Independent commissioners play an important role in maintaining the integrity and transparency of green banking disclosures. Their presence provides an objective external perspective that is free from internal interests, thus helping in the identification of ESG risks and the evaluation of the company's overall performance. In addition, independent commissioners also oversee the disclosure process so that the information conveyed to investors and other stakeholders reflects the reality of the company's operations. The presence of female directors is also an important factor in the implementation of good corporate governance and green banking disclosure (Tauringana & Chithambo, 2015). Previous studies have found that companies with higher female participation at the board level tend to have better ESG disclosure levels (Arayssi, Jizi & Tabaja, 2020; Buallay, Hamdan Barone & Hamdan, 2022). Gender diversity at the board level is believed to increase the company's sensitivity to sustainable issues and influence strategic decision-making related to ESG principles. However, studies on the influence of the presence of female directors on green banking disclosure are still relatively rare, especially in the Indonesian context.

This study uses a longer observation period, namely from 2007 to 2021, with a sample size of 237 observations, allowing for a more comprehensive analysis compared to previous studies, especially in the Indonesian context. In addition, this study adopts *the Green Banking Disclosure Index* (GBDI), a specific proxy developed by Bose et al. (2018), to measure the level of green banking disclosure more precisely. The use of data from Indonesia provides a unique perspective on the regulatory conditions and practices of local banking, so that the results of this study provide an important contribution to both international and national literature. Furthermore, this study also includes a moderating variable in the form of green banking regulations, which has not been widely used in previous studies, both at the global and domestic levels. According to Adu, Al-Najjar & Sitthipongpanich (2022), García-Sánchez, Martínez-Ferrero & García-Meca (2018), and Wang, Li & Wang (2023), environmental regulations play an important role in strengthening the relationship between corporate governance and sustainable performance. This is thought to occur because stricter regulations encourage changes in corporate social and environmental behavior (García-Sánchez et al., 2018). This condition emphasizes the need for integration between internal corporate policies and environmental regulatory frameworks to support the implementation of effective sustainable practices. In Indonesia, the banking supervisory authority has issued regulations related to sustainable practices in the banking sector since 2017.

This study provides several theoretical and practical contributions. First, this study enriches the academic literature on green banking disclosure, particularly in identifying the role of corporate governance as one of its determinants. Second, the findings of this study can be a reference for regulators and banking supervisory institutions in designing policies that encourage banks in Indonesia to be more transparent in reporting their green initiatives. Third, the results of this study can also be utilized by

banking institutions to improve their governance structures and active participation in green banking disclosure. Overall, by filling the existing knowledge gap, this study contributes to driving positive changes in the Indonesian banking industry and supporting the transition to a more inclusive and sustainable green economy.

In addition, this study also provides relevant empirical evidence to test the validity of relevant theories, such as agency theory and legitimacy theory, in the context of green banking disclosure. By considering the moderating role of green banking regulation, this study provides new insights into how formal policies can strengthen or weaken the influence of corporate governance on green disclosure. The results of this study are also relevant in the context of the dynamics of the capital market in Indonesia, where the demand for transparency and accountability continues to increase along with the growth of environmental awareness among investors and stakeholders. Thus, this study is not only beneficial for the academic world, but also for the government, regulators, and business actors in order to support the achievement of sustainable development goals in the financial sector.

## **LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

Legitimacy theory focuses on corporate efforts to provide voluntary disclosure of environmental and social information as a strategy to maintain acceptance and support from the community (Suchman, 1995). This theory explains that social legitimacy is obtained through the adjustment of organizational behavior to the norms and expectations prevailing in society. According to Suchman (1995), legitimacy is defined as the general perception that an organization's actions or practices are considered appropriate, proper, and in line with a socially formed value system. This definition includes a social construction process in which the subject of legitimacy obtains collective approval from the public through social assessments formed from interactions between the organization and its stakeholders.

In the context of green banking disclosure, legitimacy theory explains that banking institutions voluntarily disclose environmental and social information to stakeholders in order to build a positive image while maintaining their social legitimacy (Akhter, Hossain, Elrehail, Rehman & Almansour, 2022; Gunawan et al., 2022; Hossain, Bir, Sadiq, Tarique & Momen, 2016). Banks recognize the importance of social and environmental responsibility and the need to maintain their reputation in the eyes of customers, investors, regulators, and the wider community. By making transparent disclosures, banks intend to demonstrate their commitment to sustainability principles and increase public trust, thereby reducing reputational and non-compliance risks. Any errors or negative news about a bank can create a legitimacy gap that endangers the company's reputation and business continuity (Hossain et al., 2016). This legitimacy gap can trigger serious impacts, such as pressure to stop operations or a significant decline in financial performance. In addition, negative perceptions of banks can encourage consumer boycotts of the services offered, which ultimately affect the institution's profits and market share (Hossain et al., 2016). Therefore, it is important for companies to minimize the legitimacy gap in order to survive and thrive in the long term.

### **Board size and green banking disclosure**

Several studies have shown a positive relationship between board size and the level of corporate information disclosure (Bajahar & Al-Hajili, 2017; Mahmood, Kouser, Ali, Ahmad & Salman, 2018; Qa'dan & Suwaidan, 2018). Mahmood et al. (2018) found that aspects of corporate governance such as a larger board size significantly contribute to increasing disclosure of economic, social, and environmental sustainability. This finding confirms that good governance practices can promote corporate transparency and accountability in the field of sustainability. In addition, Qa'dan & Suwaidan (2018) concluded that board size has a positive effect on the level of corporate social responsibility (CSR) disclosure in the manufacturing sector in Jordan. Research by Birindelli, Dell'Atti, Iannuzzi & Savioli (2018) also shows that board size has a positive effect on sustainability performance, a finding that is in line with Baselga-Pascual,

Trujillo-Ponce, Vähämaa & Vähämaa (2018) for financial companies and Bear, Rahman & Post (2010) in the context of non-financial companies. A larger board size reflects the diversity of backgrounds, skills and perspectives of its members, including a tendency to support a culture of sustainability. Furthermore, larger boards tend to perform oversight functions more effectively, encourage broader discussions of ideas and strategic visions, and strengthen management commitment to achieving non-financial performance.

H1: There is a positive relationship between board size and green banking disclosure

#### **Independent commissioner and green banking disclosure**

From the perspective of corporate social legitimacy, the presence of independent commissioners plays an important role in strengthening the legitimacy that the company already has through the implementation of sustainable practices, especially in the form of green banking disclosure. Commissioners consist of executive commissioners and non-executive commissioners whose independence is a crucial factor in controlling and supervising managerial behavior. The high level of independence on the board of commissioners is manifested through a large proportion of independent commissioners, which contributes to objectivity in the decision-making process (Mahrani & Soewarno, 2018). Various studies have shown that independent commissioners have a positive influence on environmental disclosure, voluntary disclosure of information, and increased transparency (Helfaya & Moussa, 2017; Liao, Luo & Tang, 2015). In addition, they are actively involved in encouraging sustainable disclosure and are more responsive to stakeholder interests related to environmental and social issues (Diamastuti, Muafi, Fitri & Faizaty, 2021; Nasih, Harymawan, Paramitasari & Handayani, 2019). Independent commissioners are not easily influenced by short-term financial performance pressures and are more focused on achieving long-term sustainable development goals (Handoyo, Machmuddah & Sumaryati, 2023; Itan & Khelen, 2022). The presence of more dominant independent commissioners on the board tends to increase the company's participation in social obligations and environmental disclosure. They are also more sensitive to reputational risk and minimize pressure from majority shareholders, so they are able to provide balanced considerations from the perspectives of various stakeholders (Rudyanto & Siregar, 2018). Furthermore, independent commissioners help companies build external relationships and attract valuable strategic resources to support the overall operation and reputation of the institution. H2: There is a positive relationship between independent commissioners and green banking disclosure.

#### **Female directors and green banking disclosure**

The presence of women in the board of directors is considered to contribute to maintaining the social legitimacy of the company, especially through the implementation and disclosure of corporate social responsibility. In recent years, gender diversity at the board level has increasingly become an important focus in global corporate governance. Women's participation not only has a direct impact on decision-making, but also provides an indirect influence as a symbol of opportunity for other women to develop and survive in the corporate environment (Fine, Sojo & Lawford-Smith, 2020; Glass & Cook, 2018). According to Manita, Bruna, Dang & Houanti (2018), there are four reasons why the presence of women on the board of directors is considered significant, namely the communal characteristics they have, different orientations towards stakeholders, increasing the company's reputation, and increasing involvement in strategic issues. Studies conducted by Bhatia & Marwaha (2022) and Wasiuzzaman & Wan Mohammad (2020) show a positive relationship between the number of women on the board of directors and the level of sustainability disclosure. Arayssi et al. (2020) added that the presence of women can act as a balance between the company's financial targets and its social responsibilities, thus supporting the argument that gender diversity increases corporate participation in strategic issues. In addition, Temiz & Acar (2023) found that higher female representation on the board of directors can significantly reduce the restrictive effects of a culture of secrecy on corporate social responsibility disclosure. This means that companies with better levels of gender diversity tend to be able to overcome

normative barriers that reduce transparency in their CSR practices. H3: There is a positive relationship between female directors and green banking disclosure.

#### **The moderating influence of green banking regulation**

Consistency in implementing sustainable finance practices reflects the company's efforts to maintain social legitimacy in the eyes of stakeholders, in line with the principles of legitimacy theory. In the context of the banking industry, banks have an important role in supporting the realization of sustainable development (Yip & Bocken, 2018). One form of contribution made by banks is through innovation in sustainable financial products and services, such as expanding the green financing portfolio and investing in instruments or projects that are in line with sustainability principles. In Indonesia, the Financial Services Authority (OJK) has issued Financial Services Authority Regulation No. 51/POJK.03/2017 (POJK 51/POJK.03/2017), which encourages financial services institutions, issuers, and public companies to implement sustainable finance principles. Utilizing this regulation helps banks and other stakeholders realize that long-term financial stability and the growth of the banking industry depend not only on the operation of the financial system, but also on the ability of banking institutions to manage environmental risks systematically (Didier, Huneus, Larrain & Schmukler, 2021; Taskinsoy, 2019).

Investing in low-emission technologies and financing low-carbon sectors are strategic steps that can advance the concept of green banking. According to Sharma & Choubey (2022) and Ullah & Mia (2020), green banking refers to the operational practices of banks that are proactive in upholding everyday environmental awareness and actively seeking to maintain the sustainability of the ecosystem. Chen & Chen (2021) and Zhang, Hong, Li & Li (2021) emphasize that providing funding for environmentally friendly projects is an integral part of implementing green banking. Bose et al. (2018) found that green banking policy guidelines issued by authorities in Bangladesh have a positive impact on the level of green banking disclosure. These findings provide evidence that financial and environmental sustainability are interrelated and influence each other within the framework of sustainable development.

Several studies have shown that good corporate governance can increase the adoption of sustainable practices in the banking sector. However, the existence of strong environmental regulations is still needed to ensure the implementation and compliance of these principles by financial institutions. Adu et al. (2022) concluded that although effective corporate governance can improve sustainability performance, the existence of strict environmental regulatory mechanisms can strengthen the relationship. The results of this study are in line with García-Sánchez et al. (2018). In addition, Wang et al. (2023) found that environmental regulations also contribute to strengthening the relationship between a company's environmental performance and its economic performance. Thus, green banking disclosure is not only driven by internal companies such as the implementation of good governance, but is also greatly influenced by the external role of environmental regulations that support and strengthen these practices.

H4a: Green banking regulation strengthens the positive relationship between board size and green banking disclosure.

H4b: Green banking regulation strengthens the positive relationship between independent commissioners and green banking disclosure.

H4c: Green banking regulation strengthens the positive relationship between female directors and green banking disclosure.

#### **METHODS**

This study uses secondary data obtained from financial reports, annual reports, and sustainability reports of banking companies listed on the Indonesia Stock Exchange (IDX) during the period 2007–2021. The total number of observations collected was 237. The sampling technique used in this study was purposive sampling, which is the selection of samples based on certain criteria. The criteria set include: banking companies listed on the official IDX website during the study period, publishing audited financial reports and

annual reports for the years 2007–2021, and having complete data needed to support the analysis in this study.

The analysis method used in this study is *Ordinary Least Squares* (OLS), with a multiple linear regression approach. The research model was developed based on the framework of Bose et al. (2018). The model is used to test the effect of corporate governance on green banking disclosure, while also testing the role of green banking regulations as a moderating variable. This approach is designed to provide a comprehensive empirical picture of the relationship between governance structure, green policy implementation, and environmental disclosure transparency in the banking sector in Indonesia.

$$\text{GBDI}_{i,d} = \beta_0 + \beta_1 \text{BRDSIZE}_{i,d} + \beta_2 \text{BRDIND}_{i,d} + \beta_3 \text{FEMDIR}_{i,d} + \beta_4 \text{GREEN\_LAW}_{i,d} + \beta_5 \text{BRDSIZE} * \text{GREEN\_LAW}_{i,d} + \beta_6 \text{BRDIND} * \text{GREEN\_LAW}_{i,d} + \beta_7 \text{FEMDIR} * \text{GREEN\_LAW}_{i,d} + \beta_8 + \epsilon$$

Description:

GBDI = Green Banking Disclosure Index;

BRDSIZE = board size;

BRDIND = independent commissioner;

FEMDIR = female director;

GREEN\_LAW = green banking regulatory guidelines;

The variable is a control variable (FSIZE, FAGE, PBV, ROA, and ROE).

## RESULT AND DISCUSSION

The average value for the Green Banking Disclosure Index (GBDI) is 0.3860, with a maximum value reaching 0.9050. This figure shows that there are companies that have succeeded in disclosing green banking information up to 90.50% of the total required items, a significant achievement in the context of sustainable development. The average for corporate governance variables such as BRDSIZE, FEMDIR, and BRDIND are 1.9120; 0.7220; and 0.5820, respectively. Meanwhile, the control variables — including ROA, ROE, PBV, FSIZE, and FAGE — have average values of 0.0060; 0.0730; 2.3640; 30.9978; and 3.7290, respectively.

The results of Ordinary Least Squares (OLS) regression analysis with a robust approach to test the effect of corporate governance on GBDI, with green banking regulations (GREEN\_LAW) as a moderating variable. The results show that the size of the board of directors (BRDSIZE) has a significant negative effect on GBDI, with a coefficient of -0.288 ( $t = -3.96$ ,  $p < 0.01$ ). However, when moderated by GREEN\_LAW, the relationship changes to positive and significant at the  $p < 0.05$  level with a coefficient value of 0.190 ( $t = 2.45$ ). This indicates that green banking policies are able to weaken the negative effect of the size of the board of directors on green banking disclosure.

In addition, the proportion of independent commissioners (BRDIND) also shows a significant negative effect on GBDI with a coefficient of -0.597 ( $t = -3.06$ ,  $p < 0.01$ ). The interaction between BRDIND and GREEN\_LAW (BRDIND\*GREEN\_LAW), however, does not provide a significant effect, with a coefficient value of -0.117 ( $t = -0.43$ ,  $p > 0.1$ ). This finding suggests that green banking regulation does not effectively strengthen or change the relationship between independent commissioners and green banking disclosure. Thus, the moderating role of GREEN\_LAW is not proven in the context of this relationship.

Meanwhile, the presence of female directors (FEMDIR) does not show a significant effect on GBDI, with a coefficient value of -0.0376 ( $t = -0.82$ ,  $p > 0.1$ ). Likewise, its interaction with GREEN\_LAW (FEMDIR \* GREEN\_LAW) does not provide a significant effect, with a coefficient of 0.130 ( $t = -1.88$ ,  $p < 0.1$ ). Although not significant, the direction of the coefficient indicates the possibility of a positive effect if the number is expanded or supported by a conducive work environment. The overall model has an adjusted  $R^2$  of 0.279, meaning that around 27.9% of the variation in GBDI can be explained by this regression model. The F statistic of 43.69 with Prob > F less than 0.000 indicates that the overall model is suitable for explaining the relationship between variables.

Statistical testing of Hypothesis 1 shows that the size of the board of directors (BRDSIZE) has a negative effect on green banking disclosure (GBDI), so Hypothesis 1 is rejected. This result contradicts the findings of several previous studies which state that the larger the size of the board of directors, the greater the transparency and accountability of the company (Bajahar & Al-Hajili, 2017; Farida & Purwanto, 2021; Mahmood et al., 2018). Oba & Fodio (2014) stated that increasing the number of board members can incur additional costs and communication barriers, potentially reducing the effectiveness of the decision-making process. The larger the size of the board of directors, the more difficult it is for members to reach consensus on sustainability disclosure strategies and policies, leading to lower participation in environmental initiatives.

The test results also show that independent commissioners (BRDIND) have a negative effect on GBDI, so Hypothesis 2 is rejected. These results do not support previous findings stating that independent commissioners contribute positively to environmental disclosure, voluntary disclosure, and transparency (Helfaya & Moussa, 2017; Liao et al., 2015). This study is also inconsistent with studies in Indonesia that report a positive influence of independent commissioners on disclosure (Farida & Purwanto, 2021; Petro et al., 2023; Rahmiati & Agustin, 2022). Theoretically, independent commissioners are expected to provide an objective perspective and increase transparency, but empirical results show otherwise. It is possible that factors such as lack of active involvement, inadequate incentives, or limited understanding of sustainability issues are the main causes of the weak contribution of independent commissioners to green banking disclosure.

The results of the hypothesis testing show that green banking regulations weaken the negative effect of board size on green banking disclosure, or in other words, strengthen the positive effect of board size on environmental transparency carried out by banks. Thus, Hypothesis 4a is accepted. On the other hand, the results of the analysis also show that green banking regulations do not strengthen the influence of independent commissioners (BRDIND) or the presence of female directors (FEMDIR) on green banking disclosure, so Hypothesis 4b and Hypothesis 4c are rejected. Financial Services Authority (OJK) Regulation No. 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies is an important framework that encourages the implementation of transparency and sustainability principles in the banking sector. This regulation not only reflects the relationship between financial and environmental sustainability but also emphasizes the importance of systematic environmental risk management (Didier et al., 2021; Taskinsoy, 2019). Based on the research findings, green banking regulations are more effective in generating positive responses from the board of directors compared to independent commissioners or female directors. This indicates that the board of directors tends to be more sensitive to mandatory regulations and seeks to increase green disclosure as part of an adaptation strategy to these policies. The performance of banking companies, including in environmental aspects, is highly dependent on the overall performance of the board of directors. In contrast, independent commissioners seem to focus more on the economic aspects and long-term viability of the company, and hand over responsibility for environmental activities to the board of directors. Female directors also tend to view the implementation of green banking regulations as a collective responsibility of all board members, not just an individual responsibility, so their role in strengthening green disclosure has not been seen significantly in this study.

#### **Corporate Governance and Green Banking Disclosure Prior to POJK 51/POJK.03/2017 on the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies**

The results of statistical testing before the implementation of POJK No. 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies revealed important findings related to the influence of corporate governance factors on the Green Banking Disclosure Index (GBDI). In this analysis, the four regression models tested showed significant results and

provided an overview of the variables that had an influence before the regulation was implemented (see Table 6). The results of multiple linear regression analysis showed that FEMDIR did not have a significant influence on GBDI, both in the first model with a coefficient of -0.0177 ( $t = -0.37$ ,  $p > 0.1$ ) and in the fourth model with a coefficient value of 0.0273 ( $t = 0.56$ ,  $p > 0.1$ ). This finding confirms that the presence of female directors on the board of directors has not had a significant impact on the level of green banking disclosure before the mandatory regulation. In contrast, BRDSIZE showed a consistent negative influence in the second and fourth models, indicating that the larger the size of the board of directors, the lower the level of green disclosure made. In addition, BRDIND is proven to have a stronger influence on GBDI, with a coefficient of -0.564 and a t-statistic of -2.88, indicating a significant negative relationship. The adjusted  $R^2$  values of the four models range from 0.0954 to 0.120, meaning that the independent variables are able to explain around 9.54% to 12% of the variation in GBDI. The significant F-statistic values for all models ( $\text{Prob} > F < 0.000$ ) prove that the overall model is statistically valid.

Robust OLS estimation results to test the effect of corporate governance — including BRDSIZE, BRDIND, and FEMDIR — on GBDI before the enactment of POJK No. 51/POJK.03/2017. The control variables used in this study include FSIZE, FAGE, PBV, ROA, and ROE. The numbers shown in the table are regression coefficients and t-statistic values. All models have been adjusted to be robust to heteroscedasticity and autocorrelation issues to ensure the validity of the analysis results. These regression results provide an empirical basis for understanding how corporate governance structures affect environmental transparency practices in the banking sector before the mandatory green banking regulation.

#### **Corporate Governance and Green Banking Disclosure Post POJK 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies.**

After the implementation of POJK No. 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies, there is a change in the dynamics of the influence of corporate governance variables on the Green Banking Disclosure Index (GBDI). The analysis shows a difference in patterns between the periods before and after the regulation was implemented (see Table 5). One important finding is that FEMDIR has a negative effect on GBDI in both the first and fourth models, in contrast to the results before the regulation which did not show a significant relationship. BRDSIZE and BRDIND also continue to have a negative effect on GBDI, consistent with the results of the overall sample test and before the implementation of the green POJK. The adjusted  $R^2$  values of the three models range from 0.211 to 0.260, indicating that the independent variables are able to explain around 21.1% to 26% of the variation in GBDI. All regression models show significant F-statistic values ( $\text{Prob} > F < 0.000$ ), proving that the overall model is worthy of use for further analysis.

Robust Ordinary Least Squares (OLS) regression results to test the effect of corporate governance — namely BRDSIZE, BRDIND, and FEMDIR — on GBDI after the implementation of POJK No. 51/POJK.03/2017. The control variables used in this study include FSIZE, FAGE, PBV, ROA, and ROE. The figures in the table include regression coefficients and t-statistic values. The model has been estimated under robust conditions against heteroscedasticity and autocorrelation to increase the reliability of the estimation results. This approach is designed to provide strong empirical evidence on how corporate governance structures affect bank environmental transparency after the implementation of mandatory sustainability policies in Indonesia.

The test results in this study provide a comprehensive picture of the dynamics of the influence of corporate governance on green banking disclosure. The main findings show that the size of the board of directors (BRDSIZE) and the proportion of independent commissioners (BRDIND) have a negative effect on the level of green disclosure, while female directors (FEMDIR) do not show a significant effect before the regulation, but become negative after the regulation is implemented. Although in theory the corporate

governance structure such as the size of the board of directors and independent commissioners is considered to support corporate accountability, in practice these two factors tend to hinder the disclosure of environmental information. Green banking regulations are proven to weaken the negative effect of the size of the board of directors on GBDI, indicating that mandatory policies can increase the responsibility of financial institutions to environmental issues. This indicates that regulations act as an external mechanism that helps internalize sustainability principles in banking operations.

The findings of this study also confirm the consistency of the negative influence of BRDSIZE and BRDIND on GBDI, both before and after the implementation of the regulation. In contrast, FEMDIR experienced a change in direction of influence, from insignificant before the regulation to significantly negative after the regulation was implemented. These results imply that although the regulation is intended to encourage participation in sustainable initiatives, it is possible that female directors respond to the regulation in a way that does not always support increased disclosure. The implication of this finding is the need to re-evaluate the composition and role of the board of directors and board of commissioners to be more effective in supporting transparency and sustainability. Overall, the success of POJK No. 51/POJK.03/2017 in increasing awareness and practice of green banking can be seen from the relative increase in environmental information disclosure by the banking sector. This study confirms that regulation has a strategic role in shaping organizational behavior, because the response of company leaders is more effective in mandatory rules than voluntary rules, including in the context of implementing green banking policies in Indonesia.

## **CONCLUSION**

This study found that the size of the board of directors (BRDSIZE) and the proportion of independent commissioners (BRDIND) have a negative effect on green banking disclosure (GBDI), while the presence of female directors (FEMDIR) does not show a significant effect. This finding indicates that the current structure of the board of directors and commissioners does not fully support increased transparency in environmental issues. However, with the existence of green banking regulations - especially POJK No. 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies - it was found that larger boards of directors responded positively to the disclosure obligation. In contrast, the response from independent commissioners and female directors did not show a significant effect. Mandatory regulations act as an important catalyst in increasing bank participation in green disclosure. However, the test results still show consistency in the negative effects of BRDSIZE and BRDIND before and after the enactment of the regulation. Meanwhile, FEMDIR began to show an effect after the regulation was enacted.

In the context of policy implications, especially for banking sector supervisory authorities such as the Financial Services Authority (OJK), this study provides several strategic recommendations. First, OJK can expand its supervisory framework by integrating corporate governance aspects more deeply into the evaluation of the implementation and reporting of green banking practices. This will help ensure that banks are not only formally compliant with regulations, but also implement sustainability principles substantively through the corporate decision-making process. Second, the results of this study indicate the need for further encouragement from OJK so that banks in Indonesia implement more holistic governance, which not only meets regulatory requirements but also increases transparency and corporate social and environmental responsibility. Thus, it is hoped that the quality of green banking disclosure will increase and contribute to the formation of a more inclusive and sustainable financial system in Indonesia.

## **LIMITATIONS AND SUGGESTIONS**

This study has several limitations that need to be considered as a basis for developing future research. One of the main limitations is the limited corporate

governance variables used, which only include the size of the board of directors, the proportion of independent commissioners, and the presence of female directors. To gain a broader understanding of the dynamics of corporate governance in the context of green banking disclosure, further research is recommended to add other variables such as board of directors diversity, specific expertise of board members, and company ownership structure that can provide more comprehensive insights. In addition, the need to adjust green banking disclosure indicators to be more in line with local regulations and conditions in Indonesia is an important aspect to increase the validity and relevance of research results. The results of the analysis also show that corporate social legitimacy, which is manifested through green banking disclosure, is not significantly influenced by corporate governance aspects, but is more driven by government regulations. This indicates that external factors, especially mandatory policies, have a more dominant role in encouraging environmental transparency in the Indonesian banking sector.

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