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Exploring Contributing Factors to Environmental Disclosures in Islamic Commercial Banks of Indonesia

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Abstract:
This study aims to provide an overview and analysis of the influence of policy and corporate governance, including Sharia supervisory board, firm size, firm age, and leverage on green banking disclosure in Islamic commercial banks in Indonesia from 2017 to 2021. This study uses a quantitative approach with panel data regression analysis to examine the causal relationship between the independent variables (policy, board size, board of commissioners, Sharia Supervisory Board, firm size, firm age, and leverage) and green banking disclosures. Islamic commercial banks registered with FSA and IDX are the study population. The sampling method in this study was purposive sampling, with a total sample of six Islamic commercial banks for five years of research. The results of this study show that the company's age, the size of the company, the size of the board of directors, and the board of commissioners have a significant effect on the disclosure of green banking. Meanwhile, Sharia board and leverage do not significantly affect green banking disclosure. This study implies that applying green banking to overcome environmental problems can only be realized by regulation alone, considering the importance of other factors from the bank's side.

Keywords: Green Banking, Islamic Bank, Corporate Governance, Sharia Supervisory Board, Firm size, Firm Age, Leverage.

JEL Classification Code: E5, G21, G34, Q56, Q59

1. Introduction

The United Nations Environment Programme (UNEP) states that the globe is warming at 2.7°C, higher than the 1.5°C limit agreed on in the 2015 Paris Agreement (United Nations, 2016). It shows that the problem of climate change and the environment requires a more comprehensive solution. Unsustainable human activities are considered to be the main contributor to these problems (Henderson et al., 2017). The Intergovernmental Panel on Climate Change (IPCC) states that emissions can be reduced by up to 40-70 percent through appropriate policies, infrastructure, technology, and lifestyle and behavior changes (United Nations, 2022). The role of finance and its interests in the green transition is also included in Article 2.1c of the Paris Agreement, which states that financial flows must be designed consistent with a low greenhouse gas emission pathway and climate-resilient development (UNFCCC, 2015).

The distribution of finance by banks can indirectly trigger the emergence of activities that impact the environment. Unsustainable operational practices of banks can also lead to excessive resource consumption and carbon emissions that harm the environment (Bukhari et al., 2019). Banks are urged to commit to

achieving sustainable development by giving higher priority to environmental considerations in all operations and financing.

The green banking ideology concept has become the leading and most popular scenario in sustainable banking in recent years (Bukhari et al., 2019; Mir & Bhat, 2022). Green banking refers to a company's efforts to improve environmentally friendly operations and minimize carbon footprint in all banking activities (Handajani, 2019). It is also an effort to install environmental awareness in organizational culture, products and services, and banking operations to reduce the environmental impact on banks and the economy. Green banking policies align with Bank Indonesia Regulation (BIR) No. 14/15/PBI/2012 in Indonesia. However, the Financial Services Authority (FSA) made a new policy to encourage banks to allocate funds to address climate change and support sustainable development, contained in FSA Regulation 51/POJK.03/2017. This policy then continues to develop and encourages banks to carry out and report on their green banking activities.

Nowadays, the business world and Indonesian society are paying attention to green banking. As seen in Figure 1, several linked banks have also taken on the reputation of green banking in society.

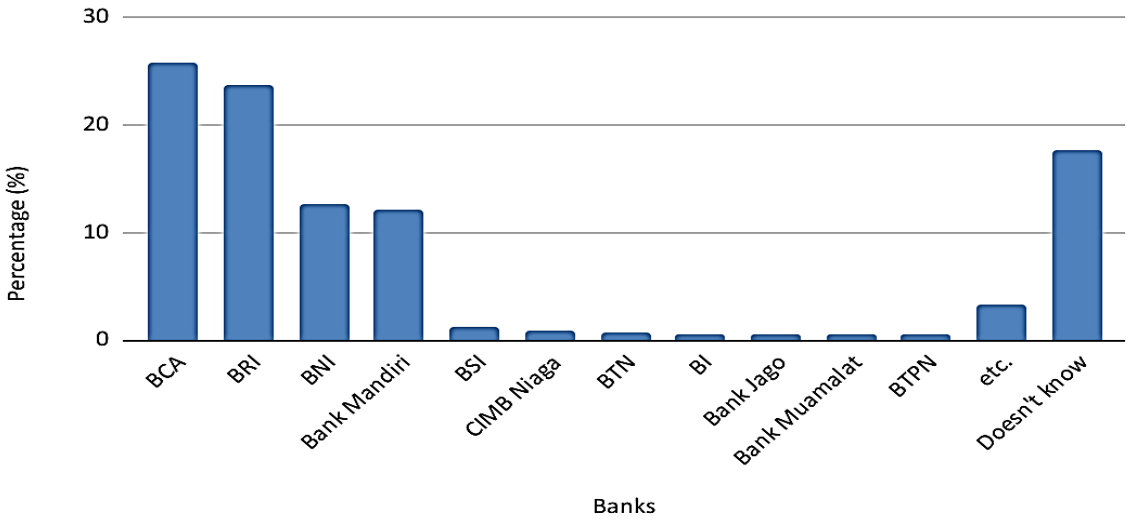

Figure 1: The Bank with the Strongest 'Green Banking' Image
Source: katadata.co.id (2022)

Conventional banks (BCA, BRI, BNI, and Bank Mandiri) dominate the banks with the most potent 'green banking' image compared to Islamic banks such as BSI and Bank Muamalat. In Islamic banking, green banking policies do not contradict the Islamic principles that form the basis of the Islamic banking system (Julia & Kassim, 2020). The principles of green banking are relevant to Islamic teachings regarding the natural environment (Julia et al., 2016). Thus, the Islamic banking sector should be able to take advantage of this green banking-Islam suitability as an efficient management tactic to attract and seize market

share (Bukhari et al., 2019). The low public assessment of the image of 'green banking' in Islamic banks can be caused by several factors, including the disclosure of company information related to social and environmental responsibility. Moreover, Figure 2. shows that the Corporate Social Responsibility (CSR) disclosure of Islamic banks is still considered lower than that of conventional banks, especially in the environmental category. Communities can judge a company well if they get access to the information they need. Therefore, a company needs to report bank activities to external parties. FSA regulation No. 51/POJK.03/2017 Chapter IV Article 10 contains obligations for Financial Services Institutions (FSI) to create a Sustainability Report, which contains environmental responsibility in line with green banking policies. However, even though it has been required by regulation, the implementation of the obligation to prepare sustainability reports by FSI is considered to be lacking. It is likely due to factors besides regulatory pressures that influence bank disclosure.

Banks are motivated by several things approved to carry out green banking disclosures, including regulatory and reputational pressures, stakeholders, sustainability issues, and business ethical needs (Handajani, 2019). The disclosure also motivates banks to improve their environmental performance because it allows them to improve company performance (Qian & Schaltegger, 2017). Green banking disclosures still need empirical evidence related to green banking practices, especially for countries that have just adopted the concept. However, the banking industry's response to green banking practices in the business world has been the subject of many empirical studies through CSR banks and their reporting (Bose et al., 2018).

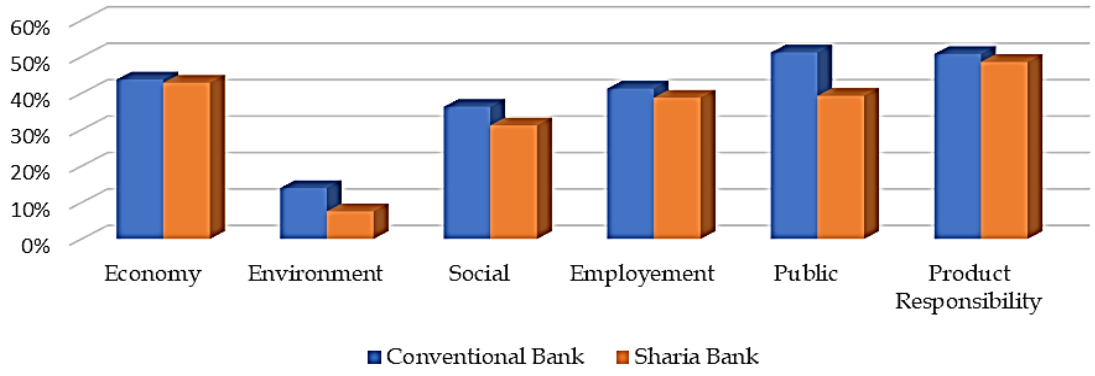

Figure 2: Level of CSR Disclosure of Conventional Banks VS Islamic Banks
Source: Nurrahmawati et al. (2022)

In a previous study, Bose et al. (2018) investigated how banks in Bangladesh disclose their green banking activities; they revealed that the central bank policies, corporate governance, firm size, leverage, and government ownership all have a positive impact on the level of green banking

disclosure, but that the board of independent commissioners, the company's growth prospects, the firm's age, profitability, and salary have no effect. Meanwhile, in Handajani's (2019) research on general banking in Indonesia, only the board of commissioners, as part of corporate governance, significantly influences green banking disclosures.

This study measures the level of disclosure of green banking in the annual reports of Islamic banks based on benchmarks derived from green banking principles. It identifies factors influencing green banking disclosures at Islamic banks. This study explores how the Sharia Supervisory Board influences bank disclosure practices regarding green banking, along with other factors. Islamic banks were chosen as research subjects because the industry is relatively young and has yet to adopt green banking thoroughly compared to conventional banks. Due to their nascent stage in green banking adoption, the decision to focus on Islamic banks indicates a gap in understanding how specific factors, including the Sharia Supervisory Board and others, influence green banking disclosures in this particular context.

2. Literature Review

Green banking was first developed in Western countries and officially started in 2003 to protect the environment. In March 2009, United States Congressman Chris Van Hollen introduced the Green Bank Act to establish a green bank under US government ownership. Green banking has gained significant attention in sustainable banking (Mir & Bhat, 2022). The basis of green banking practices is the principles of the green economy (Bukhari et al., 2019), which aim to minimize the environmental impact of every economic activity. Green banking is an initiative to establish, support, and promote sustainable banking practices and reduce carbon footprints in bank activities. The four pillars of life, nature, well-being, society, and economy, are integrated into green banking to create business principles prioritizing ecosystem preservation, human well-being (Lako, 2014), and long-term economic well-being.

Green banking is also interpreted as a financing concept or banking credit service that simultaneously prioritizes aspects of economic, social, environmental, and technological sustainability. The guidelines for green banking principles are considered capable of strengthening bank risk management, especially those related to the environment, and encouraging banks to expand their green finance portfolios. This effort reflects the bank's perception that the risk of potential environmental problems in bank-financed projects could hurt the bank's creditworthiness and reputation (Hanif et al., 2020).

Green banking and Islam are like two sides of the same coin (Bukhari et al., 2019). Islam views the environment holistically and comprehensively (Nouh, 2016). Protection of the environment and public welfare has been mentioned in

the Qur'an and Hadith, as stated in Q.S. 6:165, which entrusts the maintenance of nature for the sake of life, and Q.S. 28:77, which prohibits corruption in the earth. The principle of responsible consumption and accountable consumption behavior is the foundation of society in Islam (Julia et al., 2016). Bukhari et al. (2019) revealed that research has proven a positive relationship between religiosity and pro-environment attitudes. Numerous researchers have identified Islam as a green religion (Julia et al., 2016; Abdelzaher et al., 2019). Al-Quran and Sunnah also become the ultimate green guides in initiating sustainable development (Julia et al., 2016). Because of this, the green banking ideology adopted by banks worldwide clearly represents Islamic values (Sharmeen and Yeaman, 2020; Bukhari et al., 2019) and fulfills Maqashid Shariah (Julia et al., 2016). From the Islamic viewpoint, a balanced and sustainable increase in human material and non-material welfare through applying Islamic values is sustainable development (Julia & Kassim, 2020).

The New Institutional Sociology (NIS) theory provides a robust theoretical framework for examining some external influences that might act as accelerators for green banking practices in efforts to understand green banking disclosure. This theory emphasizes the social dimension of organizational life by showing how external constraints produce uniformity in green reporting practices through three types of effects, specifically coercive, mimetic, and normative influences (Meyer & Rowan, 1977; DiMaggio & Powell, 1983). Coercive influence is manifested as legal obligations through policies made by powerful bodies such as governments and regulators (Scott, 1995). Additionally, the company's size determines how much coercive pressure can impact it (Yassin & Ali, 2020).

Jensen and Meckling (1976) argue that the number of disclosures required increases with the company's size. This viewpoint is supported by agency theory, which states that large corporations pay higher agency costs due to agency problems caused by information asymmetry. Large corporations typically reveal more information to reduce agency costs. Agency theory also explains that the greater the level of corporate leverage, the more effectively wealth is transferred from creditors to business owners. Firms with a high debt-to-capital ratio will face higher agency costs. As a result, companies with high leverage levels bear a greater responsibility for meeting long-term creditors' information requests. Increasing information through disclosure is one way to solve agency problems.

Finally, the NIS theory defines normative influence as a person's influence on norm compliance. Stakeholder theory, which refers to the moral explanation for why businesses must prioritize stakeholders' interests, elaborates on this normative aspect (Maryatun, 2017). If the interests of various stakeholders are not adequately considered, managerial actions aimed at creating long-term value for shareholders will be jeopardized (Aguilera et al., 2006; Bose et al., 2018). In addition, bank decision-makers must disclose more performance data to the public. And the way banks disclose their green banking practices will be influenced by their corporate governance structure (Bose et al., 2018).

Several studies have supported theories about green banking disclosure. Khan (2017) notes that policies, institutions, and political economy are the three pillars on which the topic of green growth governance is built. Mir and Bhat (2022) argue that external pressure from stakeholders will drive companies to become more interested in environmental issues. Birindelli and Palea (2023) propose management transparency and bank engagement with the external community on sustainable development issues. So, in this case, legitimacy theory is used to justify the existence of social contracts (Ghozali & Chariri, 2014) and social reporting of the company's environment in society (Saha, 2019). Ahmad et al. (2013) revealed that economic, legal, policy, credit, and stakeholder pressure are factors that influence the adoption of green banking by banks to ensure sustainable economic development. Social responsibility is also one of the factors driving the implementation of green banking (Fatonah et al., 2017).

Disclosure of green banking information by Islamic banks will depend on some factors that need to focus on the role of information and disclosure in the relationship between external and internal parties. Factors based on previous theory and research are identified a priori that will affect the level of disclosure of green banking in Islamic banks. Based on the NIS theory, the first factor focuses on external regulators with the most robust authority through issued policies and regulations. Based on stakeholder theory, the second factor is stakeholders, represented by corporate governance variables (board size, board of commissioners, and sharia supervisory board). Other factors, like firm size, firm age, and firm leverage, are considered because there is a relationship according to agency theory.

In Indonesia, Bank Indonesia (BI) and FSA are the state regulators that supervise and enact regulations in the financial sector. BIR No. 14/15/PBI/2012 considers environmental aspects in assessing business opportunities. This regulation is a follow-up to Constitution No. 32 of 2009 concerning Environmental Protection and Management, Government Regulation No. 27 of 2012 concerning Environmental Permits, and Minister of Environment Regulation No. 5 of 2012 concerning the obligation of Environmental Impact Analysis (EIA).

NIS theory and several studies have proven that central bank intervention can significantly influence the adoption of green banking (Oyegunle & Weber, 2015; Bose et al., 2018). Regulators must be able to encourage bank initiatives to voluntarily join in promoting environmental and sustainability practices so that banks can be aware of their existence in connection with efforts to preserve the environment and combat climate change (Birindellie & Palea, 2022). Bose et al. (2018) encourage commercial banks to adopt green banking practices, a win-win situation must be created by providing them with various rewards. Moreover, they found that bank policies related to green banking by the authorities had a significant positive effect on green banking disclosures by banks.

Corporate governance mechanisms are essential in allocating funds for sustainable initiatives (Birindelli & Palea, 2023). According to KNKG (2006), corporate governance is a set of rules that define the relationship between the rights and obligations of internal and external stakeholders. According to (Kawabata, 2019), corporate governance should consider bank engagement in green finance and sustainable finance more. An effective corporate governance mechanism influences green banking practices and disclosures (Bose et al., 2018; Handajani, 2019). The green banking governance structure ensures that every shareholder knows and understands the bank's commitment to implementing green banking (IFC, 2015).

Board size is another factor influencing disclosure (Grassa et al., 2019). According to agency theory, a large board can cause agency conflict. The existence of two boards in the banking system with separate responsibilities for managing and monitoring (board of directors and board of commissioners) might increase the possibility of agency conflicts due to differences in decision-making and information asymmetry between the two. However, from another point of view, the two boards are considered to be able to jointly work together to encourage more effective green banking activities through proper management by the board of directors under the supervision of the board of commissioners, minimizing agency risk. Studies by Prado-Lorenzo & García-Sánchez (2010) and Bose et. al. (2018) prove that company board size significantly positively affects green banking disclosure.

Among the many roles of stakeholders, the board of commissioners is the leading actor. As the highest internal controller, the board of commissioners supervises, advises, and ensures the implementation of proper corporate governance (KNKG, 2006). Limited Liability Company Regulation No. 40 of 2007 Article 108(5) stipulates that a limited liability company must have at least two directors. Regarding stakeholder theory, the board of commissioners can pressure management to prioritize their interests. Handajani (2019) has proven that the number of commissioners significantly positively affects green banking disclosures at 24 banks registered at IDX.

In addition, by Constitution Number 21 of 2008, Islamic banking institutions are mandated to establish a Sharia Supervisory Board (SSB), which possesses unique authority, especially in overseeing bank compliance with Sharia law. The presence and role of the SSB have been highlighted in various studies. Farook et al. (2011) indicate that increasing the number of Shariah board members can enhance oversight and adherence to Islamic laws, leading to greater disclosure of Shariah-related information in annual reports. Supporting this notion, a study by Ningrum et al. (2013) highlighted a significant positive correlation between Sharia supervisory board (SSB) and Islamic Social Reporting (ISR) Disclosure in Indonesian Islamic commercial banks. However, contrasting findings were presented by Murdiansyah (2021), who reported no significant relationship between SSB and ISR disclosure. The ISR index is a compilation of

standard CSR elements, a foundation shared by empirical research in green banking. Despite these insights, while existing literature explores the influence of various general factors on the Green Banking Disclosure Index, there is limited study of how the Sharia Supervisory Board, as a Islamic Bank's only factor, in conjunction with other factors, collectively influences the disclosure practices of Islamic banks in green banking. Therefore, this study also aims to bridge this gap by investigating the multifaceted influence of the Sharia Supervisory Board and other determinants on green banking disclosures.

According to Scott (2012), organizational services can be measured by context variables such as company size. Company size has a positive relationship with three dimensions of company performance, including environmental, economic, and social (Younis & Sundarakani, 2020). High financial performance is closely associated with high environmental performance (Laguir et al., 2018). The political cost argument claims that large companies tend to grab the public's and government's attention, forcing corporate compliance (Merina & Noviardy, 2015). Because the resources allocated to activities such as green banking practices can increase along with the company's size (De Villiers et al., 2011; Wickert et al., 2016; Younis & Sundarakani, 2020), this statement aligns with research by Bose et al. (2018), who found that firm size significantly positively affects green banking disclosures.

Besides that, Suciati (2015) defines firm age as the time since a company was founded. More senior bank management has the knowledge and resilience to anticipate public expectations due to the bank's extended market presence (Saha, 2019; Santioso and Chandra, 2012). Thus, older companies are considered to understand better the information that needs to be reported. Firm age is related to the quality of information disclosure and voluntary reporting (Hussain et al., 2021). However, contrary to the opinion of Bose et al. (2018) found no effect between company age and green banking disclosures by companies in their study.

The leverage ratio measures how much of a company's assets are financed by debt. One of the leverage ratios is the debt-to-equity ratio (DER). According to Kasmir (2016), DER is a ratio that accounts for the value of each rupiah of the company's capital used for debt guarantees. DER positively affects firm leverage. Hence, financial leverage will be higher with a higher DER (Harjoto, 2017). Companies with indications of extreme leverage are in a difficult position to reduce debt burdens (Fahmi, 2017). Along with the heavy debt burdens, this may indirectly impact the company's ability to meet its social and environmental obligations. Investors are worried about companies with a strong CSR image but need to be more leveraged. Therefore, the stock market only acknowledges CSR initiatives if the company has perfect financial conditions (Mishra & Modi, 2013). Research reveals that corporations' efforts to practice environmental social responsibility can lower their degree of corporate leverage (Harjoto, 2017), which is therefore viewed by stakeholders as an

implicit commitment to the company's success. Bose et al. (2018) found that leverage significantly positively affected green banking disclosure. These results are the same as the findings of Fatemi et al. (2018) that leverage can affect CSR. However, in Merina & Noviardy's (2015) study, there was no influence of leverage on CSR disclosure.

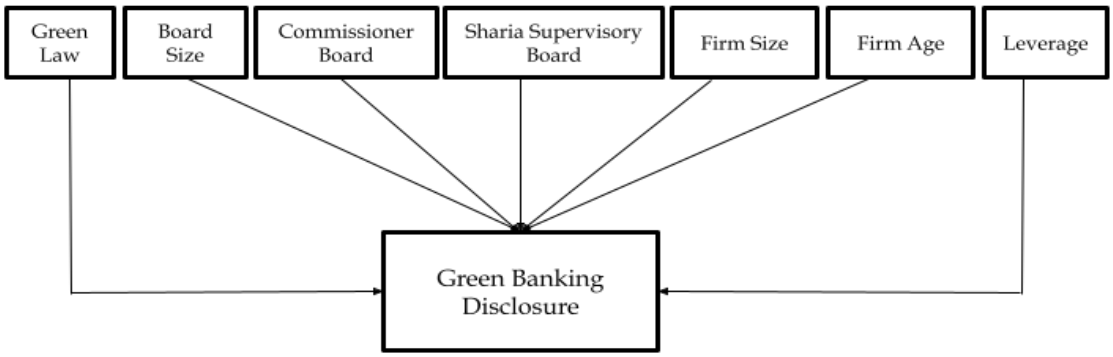

Figure 1: Frameworks

Hypothesis

H1: Policy has a significant effect on green banking disclosure
H2: Board size has a significant effect on green banking disclosure
H3: The board of commissioners has a significant effect on green banking disclosure
H4: The sharia supervisory board has a significant effect on green banking disclosures
H5: Firm size has a significant effect on green banking disclosure
H6: Firm age has a significant effect on green banking disclosure
H7: Leverage has a significant effect on green banking disclosures

3. Research Methods

This study uses a quantitative approach. The objects of this study are Islamic commercial banks registered with the FSA and the Indonesian Stock Exchange (IDX). The sampling technique used in this study is non-probability sampling with a purposive sampling technique. The results of determining samples are based on the specified criteria, specifically Islamic commercial banks that have published sustainability reports within five years since the issuance of FSA Regulation Article 10 No. 51 of 2017, which requires banks to prepare a sustainability report. As a result, six Islamic banks were chosen as samples: Bank Panin Dubai Syariah, Bank Muamalat, Bank Aladin Syariah, Bank Aceh, Bank BTPN Syariah, and Bank Mega Syariah.

The type of data used is secondary data. Data sources come from the official websites of the respective Islamic banks, FSA (ojk.go.id) and IDX

(idx.co.id). Regression analysis on panel data is the analytical technique used in this study. The stages of analysis carried out are identification of Islamic banks that carry out green banking reports during the period 2017–2021 through the bank's Annual Report or Sustainability Report; using the content analysis method, researchers quantify and describe the contents of the bank's reports into aspects of green banking practices concerning the Green Banking Disclosure Index (GBDI) indicator developed by Bose et al. (2018), and the panel data regression as test the causal association between independent variables (policy, board size, board of commissioners, sharia supervisory board, company size, firm age, and leverage) and GBDI with the following research regression equation model:

$$GBDI_{it} = \alpha + \beta_1 LAW_{it} + \beta_2 BRDSIZE_{it} + \beta_3 COM_{it} + \beta_4 SSB_{it} + \beta_5 FSIZE_{it} + \beta_6 FAGE_{it} + \beta_7 LEV_{it} + \varepsilon_{it}$$

Where $GBDI_{it}$ is the dependent variable that represents the GBDI for a specific entity or observation at a particular time, α is the intercept or constant term. It signifies the expected value of GBDIit when all independent variables are equal to zero. β_1, β_2, β_3, β_4, β_5, β_6, β_7 are the coefficients associated with each independent variable, represent the effect of each predictor variable, LAW_{it}, $BRDSIZE_{it}$, COM_{it}, SSB_{it}, $FSIZE_{it}$, $FAGE_{it}$, LEV_{it} are the independent variables, each with a subscript $_{it}$ indicating for a specific entity or observation at a particular time, and ε_{it} is the error term, representing unexplained variance or random fluctuations in the dependent variable $GBDI_{it}$.

The stages of analysis are descriptive statistical test, estimation of the Common Effect model and the Fixed Effect model, Chow test, Classic assumption test (normality test, multicollinearity test, and heteroscedasticity test), Hypothesis test of the panel data regression parameter, which includes the coefficient of determination (Adjusted R-Square), simultaneous test (F test), and partial test (T-test) and Interpretation of analysis results.

Table 1: Variables Definition

Variables		**Definitions**	**Measurement**
Green Banking Disclosure Index	GBDI	21 green banking disclosure indices developed by Bose et al. in 2018.	Measured with a dummy variable: Index fulfilled is 1, and Index unfulfilled is 0
Green Law	LAW	BI / FSA policies related to green banking have been implemented by the company	Measured with a dummy variable: Policy has been implemented is 1, and Policy has not been implemented is 0
Board Size	BRDSIZE	Number of Commissioners and Directors working in the company	Ln (The total number of Commissioners + Directors)

Commissioner Board	COM	Number of Commissioners working in the company	Ln The total number of Commissioners.
Sharia Supervisory Board	SSB	Number of Shariah Supervisory Boards working in the company	Ln The total number of Shariah Supervisory Boards.
Firm Size	FSIZE	Firm size is used as a log of total assets.	Ln Total Assets
Firm Age	FAGE	Firm age is measured as number of years the company has been operating	Ln Total years
Leverage	LEV	Debt to Equity Ratio	(Total Debt / Total Equity)

4. Finding and Discussion

The identification results of the GBDI are presented in Table 3, showing the average percentage of green banking disclosures by the six Islamic commercial banks during the period 2017 to 2021. The identification results show that Islamic banks have disclosed information about initiatives for environmental protection and combating climate change through their policies (93%), throughout 2017–2021. More than 50% of the banks have disclosed information regarding the actual amount allocated to green banking activities and reported these activities on a separate page in the annual report.

Most Islamic banks have also carried out environmentally friendly activities by paying attention to energy consumption (87%), reducing paper waste (90%), and utilizing technology (100%) in order to reduce carbon emissions in operational activities. The bank's high initiatives on supporting environmental preservation were also realized through green movement training (70%), environmentally friendly projects (57%), and sponsorship facilities for environmental activities (40%). However, on the other hand, related Islamic banks have only partially contributed to fostering community environmental awareness through green marketing, organizing activities that can increase public awareness, and so forth. The bank sample also needs to disclose information on awards received by banks and bank partners and information on the allocation of funds by banks for green banking activities in the context of environmental and climate preservation.

Table 2: GBDI Analysis Results

Green Banking Disclosure Index		
Index	Indicator	%
1	The bank's policies on preservation of the natural environment and climate change.	93.33%
2	Eco-friendly project financing.	56.67%
3	Reduction of paper waste through encouraging internal communication by email, using double-sided printouts and recycling paper.	90.00%
4	Utilization of technology to reduce wastage of water and gas in bank's internal operations.	86.67%

5	Use of environmentally friendly materials.	40.00%
6	Energy conservation in conducting business operations.	86.67%
7	The bank's strategy to combat climate change and reduce emissions.	66.67%
8	Introduction of green products such as online banking, ATMs, and mobile banking to reduce carbon emissions.	100.00%
9	Bank's initiatives and engagement in building networks on environmental issues.	30.00%
10	The bank has undertaken studies on the impact that its potential client's business has on the environment.	30%
11	Plans to hold seminars, workshops, or training to raise citizens' environmental awareness.	23.33%
12	Bank awards for environmentally friendly activities or its contributions to environmental restoration, as well as bank environmental reporting excellence.	10.00%
13	Clients or bank partners receive awards for initiatives in environmental preservation.	0.00%
14	Sponsor activities that are harmonious with the environment.	40.00%
15	Establishment of a climate change fund.	0.00%
16	Setting up green branches.	23.33%
17	Internalizing green marketing such.	10.00%
18	Bank employee green movement training.	70.00%
19	Information on the amount of budget allocated annually for green banking practices.	3.33%
20	Information on the actual amount spent on different green banking activities.	60.00%
21	Use of separate pages for green banking reporting in the annual report.	63.33%

Source: Data processed by researches

The study's dependent variable is GBDI, which was developed by Bose et al. (2018). Meanwhile, the independent variables related to the dependent variable include green banking policy, board size, board of commissioners, sharia supervisory board, company size, company age, and leverage. The results of descriptive statistical tests are presented in Table 3.

Table 3: Descriptive Statistical Test Results

Variables	Mean	SD	Max	Min
GBDI	0.459	0.198	0.810	0.050
LAW	0.766	0.430	1.000	0.000
BRDSIZE	2.050	0.246	2.480	1.610
COM	1.235	0.306	1.610	0.000
SSB	0.749	0.218	1.100	0.000
FSIZE	16.233	1.430	18.000	13.000
FAGE	2.735	0.639	3.870	1.950
LEV	1.070	0.911	3.270	0.060

Source: Data processed by researches

Based on the results of the descriptive test, the average GBDI was 0.459, which indicates that 46.9% of the banking sample during the study period had

implemented green banking disclosure practices. This rate explains that many green banking activities have not been initiated by Islamic banking in Indonesia. About 76.6% of companies in the observed sample have complied with regulations related to green banking (LAW). According to the natural logarithm, the average board size of the observed sample (BRDSIZE) is 2,050, equivalent to 8 directors. The average board of commissioners (COM) is 1,235, or 3, whereas the sharia supervisory board (SSB) is 0,749, or 2 boards. Besides, the average firm size (FSIZE) and firm age (FAGE) in the observation sample are 16.23 and 2.73, respectively, and these figures indicate that the average firm in the sample is a large merger banking company and has been around for less than 15 years. Moreover, the average for the variable (LEV) is 1.07, which is still classified as a safe category because it does not exceed 2 times or 200%.

Table 4: Regression Test Results (Fixed-Effect Model)

Variables	Coefficient	Standard Error	Prob.
C	-3.6770	0.4717	0.0000
LAW	0.1692	0.0431	0.0011
BRDSIZE	-0.3338	0.1291	0.0192
COM	0.2185	0.0928	0.0308
SSB	0.1454	0.0727	-0.1109
FSIZE	0.1516	0.0302	0.0001
FAGE	0.7227	0.1331	0.0000
LEV	0.0020	0.0222	0.9284
R-Squared	0.962054		
Adj. R-Squared	0.935268		
F-Statistics	35.91681		
Prob(F-Statistics)	0.000000		

Source: Data processed by researches

Based on the output of the regression test results in Table 5, the equation model formed is as follows:

$$GBDI_{it} = -3.67 + 0.17LAW_{it} - 0.33BRDSIZE_{it} + 0.22COM_{it} - 0.11SSB_{it} + 0.15FSIZE_{it} + 0.72FAGE_{it} + 0.002LEV_{it} + \varepsilon_{it}$$

The intercept (α) of the model formed shows a negative sign, so if all independent variables are zero, then the average GBDI percentage is -3.67. The regression coefficient of the LAW variable (β1) is 0.17, which means that every increase of one LAW unit will increase the GBDI value by 17%. The regression coefficient of the BRDSIZE variable (β2) is -0.33, which means that every increase of one BRDSIZE unit will reduce the GBDI value by 33%. The regression coefficient of the KOM variable (β3) is 0.22, which means that every increase of one COM will increase the GBDI value by 22%. The regression coefficient of the SSB variable (β4) is -0.11, which means that every increase of one SSB unit will reduce the GBDI value by 11%. The regression coefficient of the FSIZE variable

(β5) is 0.15, which means that every increase of one FSIZE unit will increase the GBDI value by 15%. The regression coefficient of the FAGE variable (β6) is 0.72, which means that every increase of one LAW unit will increase the GBDI value by 72%. The LEV variable regression coefficient (β7) is 0.002, which means that every increase of one LEV unit will increase the GBDI value by 0.2%. The coefficient of determination (R-squared) obtained is 0.962. This shows that the independent variables in the model can account for 96.2% of the variation in the dependent variable. While other factors out of the model can explain the remaining 3.8%. The test result obtained by prob (F-statistic) or p-value is 0.00 < 0.05 or less than 0.5. So, it can be said that at least one independent variable has a significant effect on the dependent variable. Five of the seven independent variables in the output above have a p-value of less than 5%. It can be concluded that the Regulatory Policy variables related to LAW, BRDSIZE, COM, FSIZE, and FAGE have a significant effect on GBDI. Meanwhile, the SSB and LEV variables have no significant effect on GBDI.

Table 5: Classical Assumption Test Results

Normality Test							
Jarque-Bera	0.511980						
Multicollinearity Test							
	LAW	BRDSIZE	COM	SSB	FSIZE	FAGE	LEV
LAW	1.000						
BRDSIZE	0.223	1.000					
COM	0.020	0.773	1.000				
SSB	0.152	0.486	0.653	1.000			
FSIZE	0.372	0.429	0.240	0.240	1.000		
FAGE	0.506	0.359	-0.048	0.185	0.648	1.000	
LEV	0.182	0.233	0.257	0.217	0.636	0.457	1.000
Heteroscedasticity Test							
	LAW	BRDSIZE	COM	SSB	FSIZE	FAGE	LEV
Prob.	0.980	0.950	0.548	0.162	0.780	0.134	0.806

Source: Data processed by researches

The Jarque-Bera value for the normality test is 0.511 > 0.05 or greater than the 5% significance level, indicating that the errors have been normally distributed. The seven independent variables all have values below 0.8 in the multicollinearity test, which indicates that the data is accessible from multicollinearity problems. Moreover, in the Heteroscedasticity Test, each independent variable's p-value shows a more excellent value of 5% alpha, so it is free from heteroscedasticity problems.

The test results show that the regulator policy variable LAW has a coefficient value of 0.17 with a significance level of 0.001<0.05, indicating a significant favourable influence between regulatory policies and green banking disclosures in Islamic banking in Indonesia. Thus, this result supports the first hypothesis (H1). This finding is to the statement of NIS theory regarding the

existence of coercive influence that comes from legal obligations. Policies and regulations issued by regulators on commercial banks have considerable influence as a driver and source of motivation for Islamic banking to implement green banking activities (Oyegunle & Weber, 2015; Bose et al., 2018). So, it is proven that BI and FSA, as regulators, can also play an essential role in successfully implementing green banking policies and guidelines in Islamic banking in Indonesia. The findings of this analysis corroborate those of Bose et al.'s (2018) study, which also states that central bank policies significantly affect green banking disclosures.

According to the results of partial data analysis, the effect of corporate governance on the green banking disclosure of Islamic banks in Indonesia can be seen by the p-value of the variables BRDSIZE, COM, and SSB. Although the relationship between board size and green banking disclosure is negative, with a coefficient value of -0.33 and a significance value of 0.019 <0.05, which is known to be significant, this finding still supports the second hypothesis (H2). In other words, the study backs up Hussain et al.'s (2021) claim that larger boards tend to expose companies to higher agency risk than smaller ones. It is because a giant board demands more control and expenses, which can reduce the organization's profitability. This study's findings align with research that claims that board size significantly affects social responsibility disclosures in general, as well as green banking disclosures (Bose et al., 2018; Hussain et al., 2021).

Furthermore, with a coefficient value of 0.22 and a significance value of 0.0300.05, the board of commissioners has a substantial positive relationship with green banking disclosures. As a result, this finding supports the third hypothesis (H3). It shows that the larger the board of commissioners, the more influential the supervision and control of disclosure management by the company (Singh & Basu, 2004). The findings of this study concur with Handajani's research (2019), which also found that the board of commissioners has a significant effect on green banking disclosure. She believes that the ability of the board of commissioners to communicate with outsiders and diverse and broader interest groups, both in financial and non-financial aspects such as environmental initiatives by banks, could improve as the number of boards that reflect diverse expertise and experience increases.

Answering the nuanced interplay of various factors with the SSB in influencing GBDI. Contrary to expectations and prior research by Ningrum et al. (2013) and Farook et al. (2011), our findings reveal an insignificant negative relationship between the SSB and GBDI, as evidenced by a coefficient value of -0.11 and a significant value of 0.14 > 0.05. This result then refutes the fourth hypothesis (H4). This lack of influence suggests that the SSB's role, primarily focused on ensuring compliance with Sharia principles, only extends to managing or influencing green banking activities in Islamic banks. This result aligns with the perspectives presented by Garas (2012), who argues that the size of SSB does not have a substantial impact on its control over Islamic banks'

initiatives, and Murdiansyah (2021), who similarly found no substantial impact of the SSB on ISR. Thus, our study emphasizes the need for further research to explore the complex interactions among the SSB and other variables, such as policies, board composition, and firm characteristics, to comprehensively understand their collective influence on green banking disclosures in the Islamic banking sector.

According to the results, the GBDI of Islamic banks in According to the results, the GBDI of Islamic banks in Indonesia is significantly influenced by the size and age of the company. It is indicated by the firm age variable's coefficient value of 0.72 and the firm size variable's coefficient value of 0.15, with significance levels of 0.00 and 0.0001<0.05. This finding supports the fifth (H5) and sixth (H6) hypotheses. Large companies are generally better known by the public. At this point, the company receives more significant political and social pressure to engage in green behaviors because of demands for legitimacy and reputation indirectly in society (Bagus et al., 2016). Larger companies are also considered to have a sufficient budget for social and environmental responsibilities.

Older companies are more professional in presenting information because they have more experience and capabilities than new companies. Older companies disclose more information concerning green banking because they are also considered to disclose more social information voluntarily (Rahman et al., 2009). Contrary to Bose et al. (2018) and Sharmeen and Yaeman (2020), the findings of their study show that only firm size has a significant positive impact on green banking. Meanwhile, Saha's research (2019) found that only firm age had a significant effect on CSR disclosure.

According to the data analysis results, the leverage variable coefficient LEV is 0.002, with a significance level of 0.92 > 0.05. These findings indicate that the sample bank's leverage does not affect GBDI. Therefore, this finding does not support the last hypothesis (H7). It leads to the conclusion that the company's DER ratio does not directly guarantee the implementation of Islamic banking obligations for green banking activities. Murdiansyah (2021) argues that the size of corporate debt does not necessarily have a significant impact on the size of the disclosure of the social performance of Islamic banking. Moreover, it should be noted that debt to Islamic banks is the most crucial source of profit distribution in the profit-sharing system. On the other hand, non-Sharia banks are investing to maximize profits. It shows that the disclosure of social performance in Islamic banking has become a liability in both low and high-leverage conditions. This finding differs from those of Bose et al. (2018) and Fatemi et al. (2018), who found a significant effect of leverage on disclosure, but consistent with the research of Merina and Noviardy (2015) and Murdiansyah (2021), who found no significant effect of leverage on disclosure in Islamic banking.

5. Conclusions

Based on observations of green banking through the GBDI in this study, Islamic banking in Indonesia has yet to initiate many green banking initiatives. This study studied several factors that affect green banking disclosure at six Indonesian Islamic Commercial Banks from 2017–2021. The findings show that for corporate governance, only the board size and commissioners substantially impact green banking disclosure. Factors like firm size and firm age also significantly influence GBDI. Besides, the SBB and leverage through the DER ratio do not show a significant relationship to GBDI.

This study still has many limitations, including a limited research period (5 years) with a small sample size (6 banks) and research limitations in measuring variables for corporate governance only by looking at the number of members. Therefore, further research could use a larger sample and determine a better proportion of corporate governance parameters. Further research is also needed to explore the complex interactions among the SSB and other variables to understand their collective influence on green banking disclosures.

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