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Sustainability Disclosure And Green Innovation: Stakeholder Protection Issues

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ABSTRACT: *This study examines the relationship between sustainability disclosure and green innovation in companies listed on the Indonesia Stock Exchange with a sample data of 1155 (company-year). Green innovation is measured based on the number of green patents owned by the company as a real indicator of commitment to sustainability. Sustainability disclosure is analyzed in economic, environmental, and social dimensions. Using a random effect model approach, the results show that economic disclosure has a positive effect on green innovation, while environmental and social disclosures show a negative effect. This finding is reinforced by the robustness test which shows that companies in environmentally sensitive industries are more consistent in showing green innovation commitments. These results support the relevance of sociopolitical theory, which places disclosure as a legitimacy strategy, not merely a reflection of actual environmental performance. This study recommends strengthening sustainability disclosure regulations to prevent greenwashing practices and protect the interests of stakeholders through increased transparency.*

KEYWORDS:- *Sustainability Disclosure, Green Innovation, Socio-Political Theory, Greenwashing, Stakeholder Protection*

I. INTRODUCTION

Sustainability disclosure is a form of company commitment in conveying information about its business practices related to sustainability. This disclosure is a bridge between the company and stakeholders to show how the corporation manages the social, economic, and environmental impacts of their operational activities. In principle, sustainability disclosure has strategic relevance to global sustainability issues and the achievement of sustainable development goals.

Within the framework of sustainable development goals, sustainability disclosure plays a role in aligning corporate strategy with the global development agenda. For example, reporting carbon emissions is closely related to SDG 13 (Addressing Climate Change), reporting industrial waste and energy efficiency contribute to SDG 12 (Responsible Consumption and Production), and reporting on inclusivity and equality reflects contributions to SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth) [1].

Furthermore, sustainability disclosure can theoretically trigger a company's green innovation, namely a series of innovations oriented towards environmental protection through resource efficiency, the use of environmentally friendly technology, and the development of sustainable products [2][3]. When companies realize that transparency of sustainability performance will be evaluated by investors, consumers, governments, and the community, the urge to continue to innovate in a green way becomes stronger, especially to maintain business legitimacy and competitiveness [4][5].

On the other hand, the practice of sustainability disclosure does not necessarily reflect a strong and real commitment to efforts to mitigate environmental damage [6][7]. This is a major challenge, especially in developing countries such as Indonesia, where the regulatory framework related to sustainability reporting is still voluntary. There are no strict rules that require all companies to disclose sustainability information based on certain standards. As a result of these non-binding regulations, the practice of sustainability disclosure in Indonesia is very varied. Each company is free to choose the indicators, scope, and depth of reporting. This makes it difficult to make comparisons between companies, and raises the risk that the reporting submitted is only symbolic and does not necessarily reflect real implementation in the field [8]. In other words, the existence of a sustainability report does not automatically guarantee that the company has, is, or will carry out green innovation as part of mitigating environmental damage.

From the perspective of stakeholder theory, companies do tend to meet stakeholder expectations as a form of achieving social legitimacy [9]. However, based on the perspective of socio-political theory, when regulations are weak and there is no audit system or sanctions for insubstantial reporting, sustainability disclosure has the potential to become an image tool by the company [10][11]. This weakens the main purpose of disclosure itself, namely as a trigger for change and continuous improvement.

On the other hand, there is no legal instrument that explicitly protects stakeholders from the risk of false or misleading information in sustainability disclosure, including greenwashing. As a result, stakeholders are in a vulnerable position to be misled by the sustainability narrative constructed by companies, without having a strong independent comparison mechanism or audit system. This threatens not only the legitimacy of corporate sustainability, but also the credibility of the entire sustainable development agenda in the business sector [12].

This condition indicates a systemic failure in maintaining a balance of interests between the company and external stakeholders. When the regulatory and accountability systems are weak, asymmetric power favors the company, while stakeholders are positioned as passive parties who only receive information without validation. Ideally, healthy and transparent sustainability disclosures should be followed by regulations that protect stakeholders from misinformation and manipulative practices, and encourage real transformation through green innovation and concrete actions that have an impact on the environment [13][14]. In a business environment that is increasingly sensitive to sustainability issues, green innovation is a strategic imperative that allows companies to meet stakeholder expectations, comply with environmental regulations, and respond to market demands for sustainable products and services. Thus, green innovation is not just a technological trend, but rather an important foundation in realizing sustainable and inclusive business transformation, as well as being a catalyst in achieving the SDGs more broadly.

The maturity of policy and regulatory aspects in a country, especially developing countries like Indonesia, can adequately support the achievement of Sustainable Development goals. Research examining the relationship between sustainability disclosure and green innovation is still limited in Indonesia. Previous research by [15] reviewed the relationship between carbon disclosure and green innovation using a stakeholder theory perspective to analyze how companies' efforts to gain stakeholder legitimacy can encourage companies to carry out green innovation. Previous research has not focused on the opportunity for image building by companies when viewed from the aspect of socio-political theory. Through this research, it can be proven whether the disclosure and implementation of sustainability in Indonesian companies have a parallel direction, or vice versa.

II. LITERATURE REVIEW

One manifestation of a company's commitment to sustainability is through sustainability disclosure [16][17]. This disclosure aims to provide transparency to stakeholders regarding the economic, social, and environmental impacts of business activities. On the other hand, green innovation has emerged as a concrete form of company contribution in supporting the Sustainable Development Goals, especially in efforts to mitigate negative impacts on the environment [18][19].

The literature on the relationship between sustainability disclosure and green innovation shows that good disclosure can encourage companies to be more active in developing environmentally friendly innovations [2][3][20]. However, in the Indonesian context, there are concerns about the limited regulation and strong oversight mechanisms, which can cause disclosure practices to become mere legitimacy tools, rather than an impetus for real action. This has the potential to create information asymmetry, especially if companies only convey positive information in their sustainability reports, without being accompanied by substantive efforts in the environmental sector, especially green innovation [21]. Green innovation is defined as innovation in products, processes, or business models that aims to reduce negative impacts on the environment [17][22]. This innovation is an integral part of the strategy of companies that want to contribute to the SDGs agenda, especially in goal 9 (Industry, Innovation and Infrastructure), goal 12 (Responsible Consumption and Production), and goal 13 (Addressing Climate Change). Various studies have shown that companies with high levels of sustainability disclosure tend to be more environmentally innovative [23][13]. This is due to pressure from stakeholders, including investors, customers, regulators, and civil society, which encourages companies to prove their commitment through real innovation.

Several previous studies have shown that sustainability information disclosure has a positive relationship with the Company's environmental innovation efforts [5][4][21][2][3][22]. High disclosure indicates a strong managerial commitment to sustainability issues [24][25]. When companies consistently disclose their sustainability practices, especially in environmental aspects, public expectations and stakeholder pressure will be formed that encourage real realization in the form of green innovation [5][4][26]. However, this relationship is not always linear. On the one hand, disclosure can function as window dressing, namely merely an image for the sake of reputation without substantial efforts towards sustainability. This can happen if there is no strong pressure or monitoring system for honesty and consistency between disclosure and actual implementation [10][15].

Stakeholder Theory explains that companies have responsibilities to all their stakeholders, not only shareholders, but also customers, employees, communities, regulators, and the environment. When companies convey sustainability information transparently, they strive to build legitimacy and trust from stakeholders.

Strong disclosure is expected to encourage real company actions, such as green innovation, to meet the expectations of stakeholders who are increasingly aware of environmental issues [27][28].

However, stakeholder pressure will be effective only if the regulatory system and community involvement are strong enough. In the Indonesian context, weaknesses in supervision and weak legal protection of sustainability information mean that many company disclosures do not reflect the actual conditions [21].

Socio-political theory emphasizes that corporate behavior in disclosing information cannot be separated from strategies to gain social and political legitimacy. Companies often make voluntary disclosures to create a positive image in the eyes of the public, regulators, and investors. In this context, sustainability disclosure can be used as a legitimacy management tool, not as a reflection of true accountability [11].

In situations where regulations are weak such as in Indonesia, there is concern that sustainability reporting only presents good news, while the facts about environmental damage, unresolved emissions, or minimal green innovation are not. This condition causes a fairly sharp information asymmetry between companies and their stakeholders. This information asymmetry can give rise to greenwashing, where companies appear to care about the environment on paper, but are not followed by real actions such as green innovation [9][29]. Green innovation is not only important for a company's reputation or compliance, but also contributes significantly to achieving the SDGs. SDG 9 (Industry, Innovation, and Infrastructure), SDG 12 (Responsible Consumption and Production), and SDG 13 (Addressing Climate Change) are closely related to the implementation of green innovation. Thus, companies that consistently demonstrate sustainability disclosure should also be able to show real results from their commitments through impactful green innovation.

The mismatch between disclosure and action is actually a negative signal regarding the quality of corporate governance and the lack of seriousness in addressing the impact of business on the environment [30][31]. Theoretically and empirically, sustainability disclosure is expected to have a positive relationship with green innovation, provided that the disclosure is honest, transparent, and not manipulative. The application of Stakeholder Theory and Sociopolitical Theory provides a richer understanding of how external pressures and socio-political pressures influence corporate disclosure practices and their real actions [32]. In the context of Indonesia, where regulations are not yet firmly binding, the role of stakeholders and strengthening policies are very important to avoid information asymmetry and ensure that sustainability is not just discourse, but real action.

In Indonesia, despite encouragement from OJK through POJK No. 51/POJK.03/2017 concerning the implementation of sustainable finance, its implementation is still limited. Not all companies are required to prepare sustainability reports based on certain standards, and there is no consistent external audit system for the contents of the report. As a result, companies have room to convey positive narratives without being accompanied by concrete evidence such as investment in green innovation.

Based on a review of literature and theory, sustainability disclosure, especially those adopting GRI standards, has the potential to provide encouragement for green innovation, because disclosure of environmental aspects can be a signal of a company's commitment to mitigating ecological impacts through environmentally friendly innovation [29], Disclosure of social aspects encourages companies to create innovations that improve the welfare of communities and workers, Disclosure of economic aspects encourages efficiency and long-term value creation, including in the form of greener products and processes [33].

However, the literature also highlights the gap between disclosure and real action, especially in developing countries such as Indonesia [1]. Empirical research in Indonesia is still limited in testing whether sustainability disclosure is truly relevant to green innovation, or is merely a symbolic form, especially referring to socio-political theory. Therefore, further studies are needed that test the relationship between sustainability reporting and green innovation based on the perspective of stakeholder theory and socio-political theory in a more comprehensive manner that is also controlled by the variables of profitability, industry type, economic growth, media exposure and leverage.

III. HYPOTHESIS DEVELOPMENT

As global awareness of environmental issues and sustainable development increases, companies are required to not only pursue economic profit, but also demonstrate concrete social and environmental responsibility. In this context, sustainability disclosure becomes an important instrument used by companies to convey non-financial performance to stakeholders.

Good sustainability disclosure reflects the company's transparency, accountability, and commitment to sustainability, as measured by global standards such as the Global Reporting Initiative (GRI). GRI classifies sustainability disclosure into three main aspects, namely economic, social, and environmental. These three aspects provide a comprehensive picture of how companies create inclusive and responsible long-term value.

In this context, green innovation is positioned as a dependent variable, because it is one of the real forms of corporate sustainability implementation. Green innovation includes the development of products, processes,

or technologies that aim to reduce negative impacts on the environment, increase resource efficiency, and support the achievement of Sustainable Development Goals targets.

According to Stakeholder Theory, companies have moral and strategic responsibilities to various stakeholders, such as investors, customers, employees, communities, and governments. Disclosure of sustainability information is a form of communication to stakeholders to show that the company cares and acts in accordance with sustainability values. In this framework, companies that adequately implement sustainability disclosure, both in economic, social, and environmental aspects, should not only aim to form a good image, but also reflect their seriousness in implementing real sustainability practices. Therefore, these companies will logically be encouraged to carry out green innovation as a real form of their commitment to sustainability.

Informative and transparent disclosure will increase pressure and expectations from stakeholders, which ultimately becomes a driver for companies to carry out green innovation. In other words, sustainability disclosure is not only a reporting tool, but also an accountability mechanism and strengthening of sustainability strategies. Thus, based on stakeholder theory, it is assumed that the higher the quality of a company's sustainability disclosure, the higher the company's tendency to carry out green innovation.

On the other hand, the approach from Socio-Political Theory provides a more critical perspective on the motivation behind sustainability disclosure. This theory views that corporate reporting behavior is often a strategy to gain political and social legitimacy from the community and government, rather than a reflection of a true sustainability commitment.

In the context of developing countries such as Indonesia, where regulations regarding sustainability disclosure are still voluntary and less strict, and supervision of consistency between reporting and real actions is still weak, sustainability disclosure is at risk of being used only as an image tool. Companies can convey positive sustainability information to avoid public or regulatory pressure, without taking commensurate real action, including in terms of green innovation. As a result, instead of encouraging green innovation, sustainability disclosure can actually become a veil that covers the absence of concrete action. The imbalance between the sustainability narrative and the reality of corporate action creates information asymmetry between the company and its stakeholders. Thus, based on socio-political theory, it is assumed that the higher the symbolic sustainability disclosure that is not followed by real action, the relationship to green innovation can be negative or even insignificant. Based on two different theoretical approaches, the hypothesis developed in this study can be formulated as follows:

H1a (Stakeholder Theory):
Sustainability disclosure has a positive effect on green innovation.
H1b (Sociopolitical Theory):
Sustainability disclosure has a negative effect on green innovation.

These two hypotheses reflect the duality of logic in sustainability reporting practices. On the one hand, disclosure can be a strategic driver for green innovation. However, on the other hand, in the context of weak regulation and minimal control mechanisms, disclosure can also be a legitimation tool that does not always reflect the company's real actions towards sustainability.

IV. RESEARCH METHOD

This study utilizes the Global Reporting Initiative Standards framework as a guideline to assess the level of sustainability disclosure by companies in Indonesia. The disclosure is classified into three main categories, namely the economic aspect consisting of 17 specific indicators, the environmental aspect with 32 indicators, and the social aspect with 38 disclosure indicators. Green innovation is measured based on the number of green patents owned by each company as a real representation of the sustainability efforts made [19][34]. The control variables used in this study include profitability measured using the Return on Equity (ROE) and Return on Investment (ROI) ratios, company size using total assets, company leverage level, and industry type (environmentally sensitive and insensitive industries). The population in this study includes all non-financial companies listed on the Indonesia Stock Exchange (IDX) and consistently publish sustainability reports during the period 2022 to 2024. Based on these criteria, 385 companies were obtained as samples, resulting in a total of 1,155 observations (company-years) in the form of panel data. To analyze the relationship between sustainability disclosure and green innovation, this study adopts a random effect model approach. This model was chosen because it has the advantage of overcoming potential problems of heteroscedasticity and serial correlation in panel data, which are often weaknesses in fixed effect models. As an additional validation step, a robustness test was also carried out to test the consistency and resilience of the research findings. The robustness test was carried out by separating sustainability disclosure into three independent variables that stand alone, namely economic disclosure, environmental disclosure, and social disclosure. This strategy allows researchers to more deeply assess the relative contribution of each disclosure dimension to green innovation performance at the company level. Thus, this study makes a significant contribution to understanding the relevance and effectiveness of sustainability disclosure to companies' commitment to green innovation in Indonesia.

V. RESULTS AND DISCUSSION

5.1 Results of Sustainability Disclosure and Green Innovation

The results of the analysis related to the relationship between sustainability disclosure and green innovation are stated in the following table 1:

Table 1 Analysis Results of Sustainability Disclosure, Green Innovation and Control Variables

Variable	Green Innovation			
	Coef.	std.error	t-value	p-value
Sustainability Disclosure	-1.203	0.235	-4.012	0.002
ROE	-0.808	1.340	-1.331	0.257
ROI	1.059	0.844	1.205	0.194
Leverage	-0.422	0.627	-0.984	0.322
Economic Growth	0.723	0.445	4.334	0.000
Size	1.004	0.157	3.771	0.008
Industry Type	0.512	0.208	3.208	0.017
N	1.155 (Company, Year)			
Adjusted R^2	0.508			
F Value	19.021			
Sig.	0.000			

Source: Data Analyzed (2025)

An increase in the sustainability disclosure variable can decrease the green innovation variable by -1.203. An increase in the economic growth variable can increase the green innovation variable by 0.723. An increase in the size variable can increase the green innovation variable by 1.004. An increase in the industry variable can increase the green innovation variable by 0.512. These results indicate that companies with high sustainability disclosure have the potential to do less green innovation, companies with good economic growth levels have the potential to have more green innovation. Large companies tend to do more green innovation. Companies that are sensitive to the environment tend to do more green innovation.

5.2 Robustness Test

The results of the robustness test for the economic, environmental, social disclosure and green innovation variables are stated in table 2 below:

Table 2 Analysis Results of Sustainability Disclosure, Green Innovation and Control Variables

Variable	Green Innovation			
	Coef.	std.error	t-value	p-value
Economic Disclosure	0.808	0.337	3.258	0.015
Environmental Disclosure	-0.713	0.210	-3.766	0.005
Social Disclosure	-1.006	0.428	-3.420	0.010
ROE	-0.364	1.557	-0.966	0.511
ROI	0.433	1.004	0.845	0.402
Leverage	-1.630	0.912	-1.288	0.720
Economic Growth	0.412	0.333	4.101	0.000
Size	0.539	0.471	3.124	0.021
Industry Type	1.205	0.158	3.830	0.002
N	1.155 (Company, Year)			
Adjusted R^2	0.526			
F Value	20.415			
Sig.	0.000			

Source: Data Analyzed (2025)

An increase in the economic disclosure variable has the potential to increase the green innovation variable by 0.808. An increase in the environmental disclosure variable has the potential to decrease the green innovation variable by -0.713. An increase in the social disclosure variable has the potential to decrease the green innovation variable by -1.006. An increase in the economic growth variable has the potential to increase

the green innovation variable by 0.412. An increase in the size variable has the potential to increase the green innovation variable by 0.539. An increase in the industry type has the potential to increase the green innovation variable by 1.205. These results indicate that companies with high economic disclosure have the potential to do more green innovation. Companies with high environmental disclosure have the potential to do less green innovation. Companies with high social disclosure have the potential to do less green innovation. Companies with adequate economic growth have the potential to do more green innovation. Large companies tend to do more green innovation. Companies that are sensitive to the environment tend to do more green innovation.

5.3 Discussion of Sustainability Disclosure and Green Innovation

The results of the analysis show that the sustainability disclosure variable has a negative and significant relationship with green innovation. This means that an increase in sustainability disclosure is actually correlated with a decrease in the company's green innovation practices. This is an interesting finding, because intuitively, companies that are more transparent in disclosing sustainability are expected to be more active in implementing green innovation. However, this finding actually leads to an indication of the greenwashing phenomenon, where companies emphasize their image through sustainability reports rather than real actions through environmentally friendly innovation.

In this context, the results of the analysis have strong relevance to socio-political theory, which emphasizes that sustainability reporting is often used as a legitimation tool to respond to social and political pressures from external companies including the government, community institutions, and the community. Companies may feel compelled to increase sustainability disclosure in order to be viewed positively by stakeholders, without truly internalizing sustainability values in their business practices, including green innovation. Therefore, although sustainability reports have increased, they are not always followed by real actions that support environmentally friendly innovation.

Meanwhile, the results showing that the economic growth variable has a positive effect on green innovation support the premise that in a growing economy, companies have greater resources to allocate to long-term investments, including green innovation. Companies will be better able to absorb the risks of innovation and be more open to more sustainable technological transformations and business models. This finding is also in line with stakeholder theory, which emphasizes the importance of companies in responding to the needs and expectations of stakeholders, including the demand for more environmentally friendly products and processes amid economic growth.

Furthermore, the finding that company size has a positive effect on green innovation reinforces the view that large companies have more adequate resource capacity, both in terms of finance, human resources, and technology, to innovate in a green way. Within the framework of stakeholder theory, large companies also tend to face greater pressure from stakeholders due to higher public visibility and expectations. Therefore, they are more motivated to adopt innovations that support environmental sustainability as a form of social responsibility.

The industry variable also has a positive effect on green innovation, indicating that companies operating in industries with high sensitivity to environmental issues tend to be more proactive in adopting green innovation. This is understandable because sectors such as energy, manufacturing, and chemicals are often under the spotlight of regulators and the public in terms of their environmental impacts. Thus, in order to maintain legitimacy and continuity of operations, they are motivated to carry out green innovation.

The findings of this study indicate that companies in industries that are inherently sensitive to environmental issues tend to show deeper motivation to adopt green innovation. This is inseparable from the greater external pressure from the public, regulators, and environmental advocacy groups on these companies to act more responsibly. This drive positively influences the tendency of companies to innovate, in order to reduce negative impacts on the environment and at the same time maintain the sustainability of their businesses amidst increasing demands for sustainability. However, it should be noted that not all companies follow up on sustainability issues with an authentic and substantive approach. In practice, there are companies that actually take advantage of loopholes in the sustainability reporting regulatory system, which until now in many jurisdictions is still voluntary, to build an image as an environmentally conscious entity without making real operational changes. These companies prepare sustainability reports as a cosmetic corporate communication strategy, not as a representation of their actual environmental performance. This phenomenon is widely known as greenwashing, which is a practice where companies exaggerate, obscure, or even falsify their environmental commitments for reputational purposes.

This condition shows a serious gap between the form and substance of sustainability disclosure practices. This gap creates the potential for information asymmetry between companies and their stakeholders, including investors, consumers, business partners, and regulators. Stakeholders who only rely on sustainability reports as a basis for decision-making can be deceived by sustainability narratives that are not based on the reality of the company's operations. This can harm stakeholders economically and ethically, and create an imbalance of information that endangers the investment climate and public trust in the business world.

Seeing this urgency, it is time to carry out comprehensive regulatory reform of sustainability disclosure practices in the corporate sector. The government and related authorities need to formulate and implement official regulations that require companies to make consistent, standardized, and verifiable sustainability disclosures. These regulations must be based on widely recognized international standards, such as the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), Task Force on Climate-related Financial Disclosures (TCFD), or local standards that are adjusted to the national and sectoral context.

Sustainability disclosures that are carried out mandatory and based on certain standards will improve the quality of information available to stakeholders. This allows for comparability between companies, reduces the space for manipulation of sustainability narratives, and strengthens the integrity of the corporate reporting system as a whole. Thus, the risk of greenwashing can be significantly minimized, and reporting practices will better reflect the reality of environmental innovation occurring within the company. Furthermore, strong regulations not only function as a control tool, but also as a normative incentive to encourage companies to carry out more responsible business transformations. When honest and comprehensive reporting becomes mandatory, companies will be more motivated to truly carry out green innovation as part of a long-term strategy, not just for public legitimacy purposes. Therefore, policies and standards that require formal, structured, and auditable sustainability reporting are an important step in building sustainability governance that is fairer, more transparent, and more effective for all stakeholders.

5.4 Discussion of Economic, Environmental, Social Disclosures and Green Innovation

The results of the analysis in this study show the complex dynamics between sustainability disclosure and green innovation carried out by companies. Some findings show a positive relationship that is in line with expectations, while others reveal a negative relationship that is unusual but relevant when viewed through a broader theoretical perspective, especially socio-political theory and stakeholder theory.

Specifically, the economic disclosure variable shows a significant positive relationship with green innovation. This finding indicates that companies that communicate their economic performance more openly and accountably tend to also actively carry out green innovation. This can be explained through stakeholder theory, where companies are not only required to create financial profits, but must also maintain social legitimacy in front of stakeholders. Strong economic disclosure reflects transparency and responsibility for the creation of sustainable value, which is often also associated with investment in environmentally friendly innovation for the long term.

However, an interesting result that needs more serious attention is the discovery of a negative relationship between environmental disclosure and green innovation, as well as between social disclosure and green innovation. This result implies that companies that tend to make a lot of disclosures of environmental and social aspects are not followed by real implementation in the form of environmental innovation. This phenomenon reflects the potential for greenwashing where companies try to build an environmentally and socially friendly image through sustainability reports, but are not balanced by real activities that support sustainability. This finding is very relevant when analyzed through socio-political theory, which views that corporate disclosure activities are often carried out not merely as a form of responsibility, but also as a strategic response to external pressures such as public opinion, regulations, and social expectations. In this context, social and environmental disclosures can be used as a legitimation tool by companies to gain political and reputational benefits, although the substance does not necessarily reflect a commitment to green innovation.

This condition is caused by the still weak formal regulation that requires verifiable sustainability disclosure standards. Many companies still utilize the flexibility of voluntary sustainability reporting to form a profitable narrative, even though it does not reflect operational reality. Thus, this finding is an important alarm for the government and regulatory institutions to develop a stronger and more binding sustainability regulatory framework.

In addition, the economic growth variable is also proven to have a positive effect on green innovation, which is consistent with previous literature that economic growth can create fiscal space and capabilities for companies to invest in environmentally friendly technologies. Large companies and companies that are classified as industries that are sensitive to environmental issues are also more likely to carry out green innovation, which indicates the existence of stronger resource capacity and external pressure on these groups of companies.

This finding supports the stakeholder theory framework, because large companies and environmentally sensitive companies have a broad stakeholder base and demand higher accountability for the environmental impacts of the company's operations. They face more intense pressure from civil society, the media, regulators, and institutional investors to innovate and demonstrate a real commitment to sustainability.

The results of the robustness test conducted in this study consistently strengthen the previous main findings, namely that companies operating in industries that are sensitive to environmental issues show a higher tendency to carry out green innovation. This indicates that high external pressure, whether in the form of public

expectations, sectoral regulations, or global market dynamics, is a strong driver for companies to innovate in real environmental aspects, not just to meet administrative demands or image alone. However, this finding also opens up room for criticism of sustainability disclosure practices that are still dominated by voluntary nature. The robustness test shows that not a few companies take advantage of regulatory loopholes that are still loose, where they choose to disclose sustainability information narratively and symbolically to form a positive public perception, even though it is not accompanied by concrete environmental innovation practices. This phenomenon reflects the practice of greenwashing, namely the delivery of sustainability information that does not reflect the reality of the company's operations.

This condition emphasizes the importance of policy reform efforts and the preparation of mandatory, standardized, and verifiable sustainability regulations. In this context, sustainability reporting should no longer be optional, but rather a normative obligation bound by a regulatory framework that refers to international standards such as the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), or IFRS Sustainability Disclosure Standards. With uniform standards, reporting between companies can be compared objectively, both across sectors and across countries. Information transparency increases, thereby reducing the risk of asymmetric information which has been a major challenge for stakeholders in assessing a company's sustainability commitment. Manipulative actions such as greenwashing can be systematically suppressed, because companies will face stronger monitoring and accountability mechanisms.

The urgency of this regulatory reform is very important in order to protect the interests of stakeholders, especially investors, consumers, and the wider community from the possibility of misleading decision-making due to inaccurate or deceptive information. Strengthening sustainability reporting regulations is not only aimed at increasing corporate accountability, but also as a form of social responsibility of the state and regulatory institutions in creating a healthy, transparent, and long-term-oriented business ecosystem. Within the framework of stakeholder theory, clarity and comparability of sustainability information are the basic rights of every stakeholder to be able to assess the risks and opportunities inherent in their business decisions. Meanwhile, from a socio-political theory perspective, disclosure policy reform becomes a state tool in creating an incentive structure that encourages companies to behave in accordance with developing social values, including issues of sustainability and environmental preservation.

VI. CONCLUSSION

This study indicates that economic disclosure has a significant positive relationship with green innovation, while environmental and social disclosure actually shows a negative relationship. In addition, companies with high economic growth, large size, and as environmentally sensitive industries tend to have a stronger drive to carry out green innovation. This finding indicates that companies do not necessarily carry out green innovation because of the high level of sustainability disclosure, especially in environmental and social aspects. On the contrary, there is an indication that most companies may use sustainability disclosure as a means of image building alone, without being accompanied by real innovative actions towards the environment, a practice known as greenwashing. This finding is in line with the perspective of socio-political theory, which views that sustainability disclosure is often influenced by institutional pressures and the need for legitimacy in front of the public and regulators. Meanwhile, from the perspective of stakeholder theory, this result emphasizes the importance of delivering accurate, relevant, and verifiable sustainability information, so that stakeholders can make more rational and non-misleading decisions. The results of the robustness test conducted in this study strengthen that companies in industries that are sensitive to environmental issues tend to have a more real commitment to green innovation. However, this situation also highlights the weaknesses in the current sustainability reporting system, which is still voluntary and not yet fully uniform. Therefore, official regulations and policies are needed that require companies to make sustainability disclosures that follow certain standards, in order to encourage more accountable reporting and reduce the risk of greenwashing in the future. The limitations of this study are the limited access to non-public information that may represent the company's internal strategy more fully. In addition, this study still relies on formal documentary data and may not fully reflect the real managerial motivations. For future development, researchers are advised to consider data triangulation, for example by comparing the results of content analysis with online questionnaire surveys or independent media data that review real company actions related to environmental issues. This method remains feasible on a large scale and can strengthen the validity of the findings. Future research can also explore cross-sector or cross-country comparisons to see how the regulatory context affects the relationship between sustainability disclosure and green innovation.

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