





Environmental disclosure analysis of manufacturing companies to realize sustainable green economy

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Abstract

Purpose: Environmental sustainability is a critical issue for many countries, including Indonesia, whose economy is heavily reliant on natural resource extraction. Profitability, liquidity, capital structure, and environmental performance are investigated as potential factors of environmental disclosure in the Indonesian context.

Design/methodology/approach: Data from a final sample of 235 observations of manufacturing industries were collected and analyzed using a partial least square-structural equation modeling (PLS-SEM).

Findings: The findings reveal that profitability, liquidity, capital structure, and environmental performance all have a role in motivating corporations to disclose their environmental responsibilities. This is because environmental disclosure can be utilized to attract new potential investors. As a result, the higher the score for environmental performance, the greater the voluntary effect of environmental disclosure.

Research limitations/implications: This research is not without limits. This study is exclusively focused on manufacturing enterprises located in Indonesia. Furthermore, this research just relies on a solitary proxy for measurement. Hence, future investigations could employ a larger number of sample firms from other nations or do comparative analysis across firms that implement sustainability reporting. Therefore, the conclusion could be relevant to countries that have implemented sustainability reporting. This relevance extends not just to emerging countries but also to wealthy countries. Subsequent investigations are anticipated to employ a greater amount of measurements of environmental performance and environmental disclosure so that the result is more robust and has more impact. Moreover, utilizing alternative statistical methods can help validate the results of this study and reinforce the relevant theories. Future studies could examine the mediating effects, as they were not examined in the present study.

Practical implications: This research recommends that businesses should view environmental sustainability as a chance to make a positive impact on a more sustainable world for the “well-being of humans as well as the planet” while also improving their financial performance. Businesses that adopt socially and sustainably responsible business practices are likely to see improvements in their financial performance as well as increased credibility and confidence from important stakeholders.

Social implications: Eco-friendly products desired by consumers can be achieved through the combined influence of financial and environmental performance.

Originality/value: The incorporation of an unbiased evaluation carried out by an external organization, together with the transparent distribution of outcomes utilizing a five-color rating scheme (PROPER), provides significant contributions to the current corpus of knowledge.

Keywords: Environmental disclosure, Environmental performance, Profitability, Liquidity, Capital structure

Jel Codes: Q

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1. Introduction

According to do Couto and Rangel (2023) and Fonseca, Carvalho and Santos (2023), the 17 Sustainable Development Goals (SDGs) set forth by the United Nations (UN) aim to achieve greater economic, social, and environmental progress by satisfying the needs of current and future stakeholders and, in the end, guarantee a more prosperous and sustainable future for all. As a party to the Paris Agreement, Indonesia wants to cut its carbon emissions by 41% by the year 2030 (Bappenas, 2017). According to McKinsey and Company (2022), Indonesia is the rising country that contributes the most to global greenhouse gas emissions. As a result, sustainability concerns—more especially, environmental disclosure policies—are important for Indonesia

Corporate environmental disclosure must be implemented as part of the company's commitment to promoting social welfare and environmental preservation. Along with advantages to the community and stakeholders, the firm's implementation of corporate environmental disclosure is also projected to increase firm profitability (Yin, Li, Ma & Zhang et al., 2019). However, businesses frequently neglect the effects on society and the environment. This action could cause ecological impacts such as deforestation, air pollution, and water contamination as a result of industrial waste. Recent academic research highlights that six of the nine planetary boundaries are transgressed, suggesting that Earth is now well outside of the safe operating space for humanity (Richardson, Steffen, Lucht, Bendtsen, Cornell, Donges et al., 2023). Examples of environmental pollution and natural destruction that have had a detrimental effect on the local population near the corporation include cases of river pollution in the Moluccas, deaths from abandoned mining excavations in Kalimantan, and damage to conservation forests in Bengkulu. Public demands for firm actions may result from this, harming the company's brand and obstructing its operations (Dube, 2020). Moreover, companies need to tackle this sustainability challenge. There is a need for stronger action to avoid major challenges such as climate catastrophe (Leal-Filho, Viera-Trevisan, Simon-Rampasso, Anholon, Pimenta-Dinis, Londero-Brandli et al., 2023).

To increase awareness of environmental preservation among Indonesian firms, the Ministry of Environment of the Indonesian government launched the Company Performance Rating Assessment Programme in Environmental Management (PROPER) in 1995. Businesses must improve their efficiency and ability to adapt to the current climate (Lu, Ren, Zhang, Wang, Shahid & Streimikis, 2020). According to Augustia, Sawarjuwono and Dianawati (2019), a company that innovates in the area of environmental protection has a competitive edge over its rivals. By disclosing the results of its environmental performance, the company will gain the public's trust (Ramadhan, Nasih & Iswati, 2019). Furthermore, sustainability incorporates social, environmental, and economic aspects and seeks to meet the requirements of all stakeholders worldwide by balancing social progress

and equity with lucrative economic development and environmental preservation (Fonseca, Silva, Sá, Lima, Santos & Silva, 2022).

There is a substantial association between corporate environmental performance and the number of discretionary environmental disclosures (Acar & Temiz, 2020). The findings support the assertions of the economic disclosure theory, which asserts that environmentally responsible enterprises divulge more information. In contrast, the study conducted by (Doan & Sassen, 2020) revealed a tenuous and adverse correlation between environmental performance and environmental disclosure. This finding lends support to the sociopolitical viewpoint, which posits that organizations with subpar environmental performance exhibit greater incentives to enhance their level of disclosure compared to those with strong performance.

According to the legitimacy theory, businesses and organizations must constantly evaluate how well they adhere to social standards and how respectable they appear to outsiders. In other words, organizations must not only care about investor rights but also public rights in general. The relationship between a company's environmental performance and environmental disclosure can be regarded from two perspectives, namely, signaling and symbolic (Tadros & Magnan, 2019). The bulk of studies support the signaling within the legitimacy theory perspective that businesses willingly disclose more environmental performance as a result of the benefits associated with good news (Dienes, Sassen & Fischer, 2016).

Previous studies have shown that a company's concerns about environmental issues can also be influenced by its attributes, such as capital structure, liquidity, and profitability (Aliyu, 2019; Mahrani & Soewarno, 2018). Highly profitable organizations should be capable of making a greater contribution to their environmental performance than less profitable companies (Aldubhani, Wang, Gong & Maudhah, 2022; Farlinno & Bernawati, 2020; Vinayagamoorathi, Murugesan & Kasilingam, 2015; Widarsono & Hadiyanti, 2015). Lucyanda and Siagian (2012) suggest that companies with large revenues will attract more public attention, leading them to expend costs to address environmental challenges and uphold their reputation. However, research (Salama, 2005) found profitability does not have a significant effect on environmental performance. Other studies indicate environmental performance is also affected by liquidity (Choi, Gam & Shin, 2023; Earnhart & Lizal, 2006). According to (Acero & Alcalde, 2020), a high degree of liquidity demonstrates how well businesses use their working capital. Large corporations will also face significant community pressure; as environmental preservation directly affects the company's reputation, it will receive greater thought and concern. However, the result of this study contradicts the result of (Farlinno & Bernawati, 2020). According to the contradictory result above, this empirical study identifies the assumption that the role of profitability and liquidity in environmental performance is influenced by other factors.

Prior research also examined the effect of capital structure on environmental performance (Al Amosh, Khatib, Alkurdi & Bazhair, 2022; Al Amosh & Khatib, 2022; Al Arussi, Selamat & Mohd-Hanefah, 2009; Dao & Ta, 2020; Joshi, Suwaidan & Kumar, 2011). Highly leveraged organizations are more likely to provide environmental information as their shareholders place importance on the environmental practices and performance of the company (Joshi et al., 2011). Other research also indicates environmental disclosure is affected by environmental performance (Acar & Temiz, 2020; Patten, 2002). Greater environmental performance leads to increased environmental disclosure by the company. Green companies are generally more proficient in revealing their environmental performance. However, more recent research shows that the association between environmental performance and environmental disclosure is still an unresolved question. (Hassan & Romilly, 2018) discovered a generally positive correlation between greenhouse gas emissions and disclosure, indicating a negative correlation between higher levels of reporting and poor environmental performance. (Aragón-Correa, Marcus & Hurtado-Torres, 2016) furthermore found that the sample of multinational corporations discloses more information even though their environmental performance is inferior. On the contrary, the results of (Qian & Schaltegger, 2017) oppose the legitimacy hypothesis. They discovered that a decrease in a company's emissions is linked to an increase in carbon disclosure. They conclude that enterprises' environmental performances may improve as a result of reporting environmental information.

Therefore, this study proposed a question: do profitability, liquidity, and capital structure affect environmental performance? And does environmental performance affect environmental disclosure? especially in light of Indonesia's status as a developing nation. Implementing environmental transparency in a firm is important since it connects to the demand for more sustainable solutions. Because environmental disclosure research is a pertinent topic in the age of sustainability, this study is crucial. The findings of this study contribute to the legitimacy theory literature, as businesses need to make a consistent effort to persuade the public that they have carried out their operations in a way that complies with environmental norms and principles.

Using observable variables and 235 firm-year observations from 2018 to 2022, this study uses partial least squares-structural equation modelling (PLS-SEM) (Kock, 2016). According to the research, capital structure, profitability, and liquidity all have a favourable and substantial impact on environmental performance. The study's findings further demonstrate the importance of environmental performance in relation to environmental disclosure. The study's conclusions suggest that in order to increase environmental disclosure, environmental performance must play a holistic role.

The following components of the study were conducted in the following manner: Section 2 provides a comprehensive analysis of existing literature and the formation of hypotheses. Section 3 outlines the research methods employed. Section 4 engages in a detailed discussion of the findings. Finally, Section 5 serves as the concluding part of the paper, which includes the contribution, practical implication, and research limitation.

2. Literature Review and Hypotheses

The study's literature review was sourced using the following keywords: profitability, liquidity, capital structure, sustainability, ESG, environmental performance, and disclosure. The article databases used in this study were Elsevier, Springer, and Science Direct. In the identification step, a total of 72 publications were identified. The subsequent step involves the identification of inclusion criteria. The chosen article's inclusion requirements are as follows: research must be related to the variable under discussion, be published within the last five years, and employ quantitative techniques. The study's use of an observational design, a qualitative technique, and publication in a language other than English are the exclusion criteria for the chosen article. A total of 45 publications were identified through this method. An attempt was made to evaluate the 45 journals based on their pertinence in addressing the research inquiries, resulting in the identification of just 32 publications that effectively addressed the research questions in this investigation.

Indonesia is a country adopting voluntary environmental disclosure. Current research trends have mostly focused on examining the level of dedication exhibited by firms towards sustainability practices, with a specific emphasis on environmental disclosure (Doan & Sassen, 2020). The Indonesian government has pledged to participate in the Sustainable Development Goals (SDGs) by implementing a strategy programme aimed at achieving a 41% decrease in emissions by 2030 (Bappenas, 2017). Continued efforts by the authorities are necessary to bolster environmental disclosure campaigns and offer incentives to enterprises who use environmental disclosure practices. Hence, this empirical study holds great importance in assessing the impact of environmental performance on environmental disclosure practices.

The primary objective of the Ministry of Environment in executing the Program for Pollution Control, Evaluation, and Rating (PROPER) is to foster the enhancement of firm performance in environmental management. This is achieved by facilitating the transmission of information about a company's adherence to environmental management standards and regulations. Enhanced compliance performance can be achieved by leveraging the incentive and reputational disincentive effects that result from publicly disclosing PROPER performance ratings.

The company places significance on legitimacy due to the potential positive influence and encouragement of future company growth that may result from the community's belief in the company's credibility. Legitimacy is a critical factor for organizations, as stated by Dowling and Pfeffer (1975). The constraints imposed by social values underscore the significance of conducting an examination of organizational behavior in relation to the environment. According to (O'Donovan, 2002), the theory of legitimacy posits that in order for businesses to

sustain their operations, they must conduct themselves in a manner that is deemed socially acceptable by the general public. The acquisition of legitimacy is contingent upon the congruence between the operational conduct of the organization and the prevailing societal and environmental values. A disparity between the performance of a company and the expectations of the community may result in a legitimacy gap, which has the potential to jeopardise the survival of the company.

2.1. Profitability and Environmental Performance

The assessment of the company's financial performance involves a range of elements, including the company's ability to generate profits. The profitability ratio is a quantitative measure that provides insight into the degree of success a company has attained in generating profits. Companies with strong financial positions are more likely to face increased pressure from external stakeholders to disclose more detailed information about their social and environmental responsibilities (Pramudito, Muwidha & Isrowiyah, 2022). A significant link exists between the level of corporate profitability and the degree of disclosure about environmental and social issues (Vinayagamoorthi et al., 2015).

Companies with good financial standing are more likely to disclose environmental information (Yin et al., 2019). Financial performance capabilities encompass a range of company initiatives aimed at reducing emissions, particularly carbon emissions. These initiatives may involve replacing machinery with more environmentally friendly alternatives or undertaking environmental actions like tree planting to enhance CO₂ sequestration (Ifada & Saleh, 2022). According to a study conducted by Bae-Choi, Lee and Psaros in 2013, organisations that are financially strong have the ability to allocate resources, whether human or financial, towards voluntary reporting. This enables them to better withstand external pressure and disclose their carbon emissions. Companies that have weak financial performance face the risk of incurring more expenditures due to the revelation of new environmental duties or rules in the future. This, in turn, raises worries among creditors, suppliers, and consumers over the company's performance. In contrast, organisations that are very profitable are more likely to reveal information, indicating their ability to effectively respond to environmental constraints and their willingness to promptly address issues (Acar & Temiz, 2020).

According to Suhadak, Kurniaty, Handayani and Rahayu (2019), financial performance shows an organization's effectiveness and efficiency in fulfilling its goals. Company profitability is one method for observing financial success (Hussain, Kot, Thaker & Turner, 2020). Businesses with substantial funding and a high degree of profitability will use their extra cash to boost earnings. Environmental management initiatives that enhance a company's standing with stakeholders have the potential to boost corporate revenues and are therefore more likely to be selected. Therefore, profitability has a substantial influence on environmental performance (Farlinno & Bernawati, 2020; Vinayagamoorthi et al., 2015). Therefore, this research proposes the following hypothesis:

H1. Profitability has a positive effect on environmental performance

2.2. Liquidity and Environmental Performance

Liquidity can serve as an additional metric for evaluating financial performance (Li, Musah, Kong, Adjei-Mensah, Antwi, Bawuah et al., 2020). A higher ratio of current assets to current liabilities can result in increased levels of liquidity. Organisations that exhibit a substantial degree of liquidity are generally proficient in deploying their working capital and are indicative of a sound financial state. Organisations that possess favourable financial circumstances are more equipped to enhance their environmental performance in comparison to those with limited liquidity (Durrah, Rahman, Jamil & Ghafeer, 2016). Therefore, liquidity is a crucial measure utilized in evaluating the financial performance of a company, and it plays a substantial role in the overall operational efficiency of a corporation (Bhunia, 2010).

Companies with high liquidity have more resources to improve their environmental performance than those with weak liquidity. Based on the research conducted by (Choi et al., 2023; Farhan, Almaqtari, Hazaea & Al-ahdal, 2023; Farlinno & Bernawati, 2020), it has been determined that there exists a favorable correlation between a company's liquidity and its ability to invest more resources towards sustainability endeavors regarding

environmental concerns, social issues, and employee compensation. Therefore, this study postulates the following hypothesis:

H2: Liquidity has a positive effect on environmental performance

2.3. Capital Structure and Environmental Performance

The capital structure of a corporation comprises the diverse sources of capital employed in its operations, including debt and internal funds. When organizations make decisions on finance, they engage in an evaluation of the costs and advantages that are linked to various funding options (Beattie, Goodacre & Thomson, 2006). Corporations, fundamentally, aim to have an optimal capital structure level that maximizes organizational value and minimizes costs. Hence, the constituents of the capital structure are likely to exert an impact on the various strategies and practices adopted by the business.

There is a significant level of interest among many stakeholders in the performance of Environmental, Social, and Governance (ESG) elements (Al Amosh et al., 2022). This encompasses investors who display a predisposition to direct their investments toward companies that indicate a robust dedication to social and environmental responsibility. Furthermore, it is common for consumers and customers to assess a firm's success in these domains before deciding to engage with the corporation (Al Amosh & Mansor, 2021). Hence, corporations strive to prioritize and highlight their ESG performance as a means to fulfill the demands of stakeholders and develop their reputation (Choy, 2023). Moreover, a significant relationship can be observed between the capital structure of corporations and their performance. Therefore, it is reasonable to suggest that there may be a potential association between the makeup of a company's capital structure and its environmental performance (Al Amosh et al., 2022; Zhang & Wellalage, 2022).

According to (Xu, Xu & Yu, 2021), voluntary corporate disclosure policies, which encompass social and environmental responsibility, are considered one element of the trade-off between the incremental costs and advantages associated with engaging in these activities. Therefore, it is common for many organizations to assess the effectiveness of their environmental, social, and governance (ESG) initiatives to make well-informed choices (García-Sánchez & Martínez-Ferrero, 2017). On the other hand, other firms view ESG operations as a crucial element of their strategic goals and responsibilities to various stakeholders, to maximize stakeholder value and ultimately improve the total value of the organization. Therefore, it can be argued that the trade-off theory provides a promising framework for examining the relationship between capital structure decisions and environmental performance (Dao & Ta, 2020). Drawing from the empirical research data, this paper formulates the following hypothesis:

H3: Capital structure has a positive effect on environmental performance

2.4. Environmental Performance and Environmental Disclosure

Cheng, Wang, Keung and Bai (2017) defined environmental disclosure as the disclosure of data on all categories of assets, management, investments, and technologies that directly affect the environment and are in compliance with environmental sustainability. (Amosh & Mansor, 2018) argue that environmental disclosure may be advantageous to investors, management, and the government since it allows them to create projections that will help with planning and decision-making. Shareholders and investors intensified the request to incorporate environmental, social, and governance (ESG) factors into their investment process to improve their investment return and manage the related risks. Hence, ESG is relevant to a company's strategy and can significantly impact its performance (Aouadi & Marsat, 2018; Baldini, Maso, Liberatore, Mazzi & Terzani, 2018; Fatemi, Glaum & Kaiser, 2018).

Legitimacy theory postulates that organizations ought to conform their activities to the prevalent societal norms and values to acquire legitimacy from the community. To gain credibility with the broader population, firms must engage in proficient communication with relevant stakeholders (Ashforth, Gibbs & Gibbs, 2013; Rupley, Brown & Marshall, 2012). This measure will motivate the company's management to engage in the public disclosure of the company's environmental actions, so ensuring the maintenance of its social credibility. (Hassan & Lahyani,

2020) claim that companies use a variety of media platforms to inform stakeholders about disclosures, persuade the public that they abide by social norms, and gain social legitimacy.

The effects of environmental performance on environmental disclosure are experimentally supported as well. (Griffin, Lont & Sun, 2017) investigated shareholder reactions to firms' voluntary disclosures of greenhouse gas emissions and found that stockholders appreciated the information. Acar and Temiz (2020) also discover a substantial positive relationship between the level of discretionary environmental disclosures and business environmental performance. The outcome is consistent with the reasoning of economic disclosure theory, which suggests that ecologically good performers disclose more. Therefore, this study postulates the following hypothesis:

H4: Environmental Performance has a positive effect on the Environmental Disclosure

The model of this study is centered around the correlation between profitability, liquidity, capital structure, environmental performance, and environmental disclosure. This relationship is illustrated in Figure 1 of the framework model.

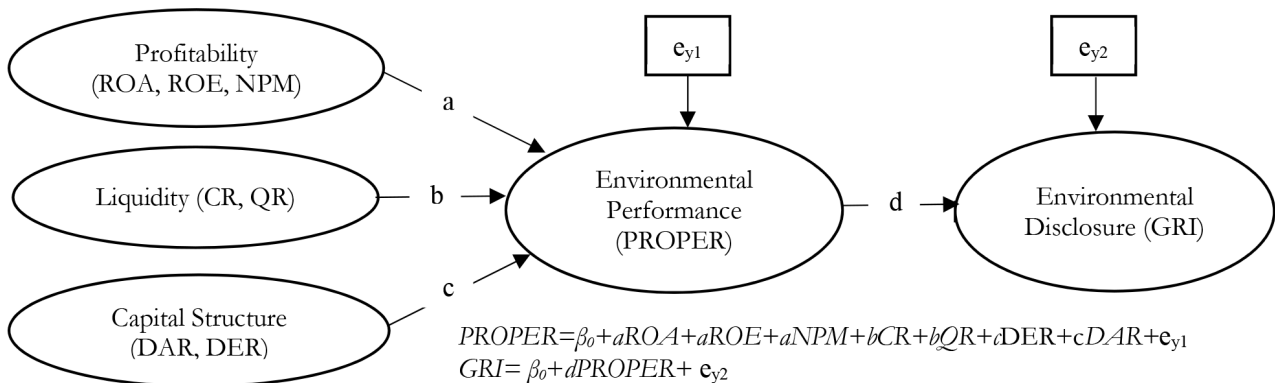


Figure 1. Research Framework

3. Research Method

3.1. Research Model

To examine the effect of profitability, liquidity, and capital structure on environmental performance and the effect of environmental performance on environmental disclosure, this research employs the following models:

Model 1:

$$EPerform_{i,t} = \beta_1 Prof_{i,t} + \beta_2 Liquid_{i,t} + \beta_3 C.Struc_{i,t} + \varepsilon_{i,t}$$

Model 2:

$$EDiscl_{i,t} = \beta_4 EPerform_{i,t} + \varepsilon_{i,t}$$

This study utilizes a Partial Least Squares-Structural Equation Modeling (PLS-SEM) approach. The PLS-SEM approach has two methods: the outer model and the inner model. This study employs Confirmatory Factor Analysis to analyze the relationship between indicators and latent variables, which is reflective. This study utilized the PLS-SEM method for inner model analysis to avoid parametric assumptions from constraining the examination of relationships between latent variables (Effendi, 2017). We conducted hypothesis testing in inner model analysis using P value and confidence interval, as recommended by (Kock, 2016; Burnkrant & Page, 1982). WarpPLS 7.0 package software is used to perform PLS-SEM to examine the model above. The reason for this study using WarpPLS is it can model both formative and reflective models, in addition to providing all important estimates, including confidence intervals (Memon, Ramayah, Cheah, Ting, Chuah & Cham, 2021).

3.2. Operational Definitions and Measurement of Variables

3.2.1. Dependent Variable

Environmental Performance is the first dependent variable in this study. The PROPER Index can be used to assess environmental performance (Sari & Sulfitri, 2023; Pramono & Rohman, 2023; Wahidahwati & Ardini, 2021; Fitri & Pyhälä, 2021). Models for ranking and grading depending on color. The Ministry of Environment of Indonesia uses this as one of the methods for enterprises to disclose environmental management information. Activities that can be carried out include (a) efforts to motivate enterprises to respect existing regulations, and (b) efforts to motivate companies to harm the environment by providing them favorable ratings for their environmental performance (Ministry of Environment and Forestry, 2012). We use the following measurement of the environmental disclosure variable.

The second dependent variable in this study is environmental disclosure, as measured by the Global Reporting Initiative (GRI) index (Giannarakis, Andronikidis & Sariannidis, 2020; Gallego-Álvarez, Lozano & Rodríguez-Rosa, 2018; Pramudito et al., 2022; Choy, 2023; Solikhah & Maulina, 2021). Environmental disclosure is the disclosure of information in the company's annual report relating to the environment. According to the Ministry of Environment and Forestry (2012), environmental disclosure refers to providing audited data on environmental risks, impacts, policies, strategies, targets, costs, liabilities, and performance to interested parties to enhance relationships with institutions or organizations. The GRI index objective is to help organizations manage their own responsible economic, environmental, and social performance, governance, and transparency to build a more sustainable global economy.

$$\text{GRI} = \frac{\text{Total item used by the company}}{\text{Total item GRI disclosure}}$$

| Color Rating | Definition | Score |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Gold: Great | For businesses and/or activities that have continuously exhibited environmental excellence in their manufacturing or service processes, while also engaging in ethical and responsible business practices towards the community. | 5 |
| Green: very good | Businesses and activities that have gone beyond the minimum requirements of environmental management by implementing an environmental management system have effectively used resources and fulfilled their social duties. | 4 |
| Blue: good | For businesses and/or activities that have implemented environmental management measures as mandated by current laws and regulations. | 3 |
| Red: poor | For businesses and/or activities that have implemented environmental management measures that do not fully comply with the laws and regulations. | 2 |
| Black: very poor | If the firm or activity has intentionally engaged in an act or negligence that has caused pollution or environmental harm, as well as violated relevant laws and failed to enforce administrative penalties. | 1 |

Table 1. PROPER Rating Criteria

In this study, we use 34 items of environmental disclosure according to the GRI 4 index, consisting of the following items.

| No | Aspect | Item |
|----|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Material | 1. Material utilized based on its weight or volume. 2. Recycled input material percentage. |
| 2 | Energy | 3. Organizational energy consumption. 4. External energy usage. 5. External energy usage. 6. Decreased energy usage. 7. Reduced energy consumption for goods and services. |
| 3 | Water | 8. Aggregate water collection by origin. 9. Water extraction has a substantial impact on waste generation. 10. Proportion and overall quantity of water that is recycled and utilized again. |
| 4 | Biodiversity | 11. Operational places that are owned, rented, operated within, or in close proximity to protected areas and areas with significant biodiversity outside the protected area. 12. An analysis of the notable effects that activities, products, and services have on biodiversity in both protected areas and regions with high biodiversity values outside of protected areas. 13. Preserved and rehabilitated habitats. 14. Based on the degree of extinction danger, the total number of species on the IUCN Red List and the list of nationally protected species with habitats in operationally impacted areas. |
| 5 | Emission | 15. Emissions of greenhouse gases directly (coverage 1). 16. Greenhouse gas emissions from indirect energy (coverage 2). 17. Additional indirect emissions of greenhouse gases (coverage 3). 18. Intensity of greenhouse gas emissions. 19. Reduction of greenhouse gas emissions. 20. Ozone-depleting chemicals emissions. 21. Nitrogen oxides (NOx), sulfur oxides (SOx), and other notable air pollutants. |
| 6 | Efluen and Waste | 22. The aggregate volume of water released according to its quality and intended use. 23. Aggregate weights of garbage categorized by type and mode of disposal. 24. The aggregate quantity and overall capacity of the substantial spill. 25. The text refers to the weight of trash that is classified as hazardous according to the regulations outlined in Annex I, II, III, and VIII of the Basel 2 agreements. This includes waste that is being carried, imported, exported, or processed. Additionally, it mentions the proportion of garbage that is being transported for international delivery. 26. The organization's wastewater and runoff have a substantial impact on the identity, size, protected status, and biological value of water bodies and their associated habitats. |
| 7 | Products and services | 27. Levels of mitigation affect how confused items and services are perceived. 28. Product sales and packaging reclamation percentage by category. |
| 8 | Compliance | 29. The entire amount of non-monetary sanctions and the monetary worth of substantial fines resulting from violations of environmental laws and regulations. |
| 9 | Transportation | 30. Significant effects on the environment are caused by the transportation of workers, supplies for the organization's operations, and other things in addition to products. |
| 10 | Others | 31. Total investments and expenses for environmental preservation, broken down by kind. |
| 12 | Supplier environmental assessment | 32. Percentage of new suppliers screened by environmental standards. 33. Considerable actual and possible harm to the environment caused by the supply chain and the measures implemented. |
| 13 | Mechanism for complaints about environmental problems | 34. The quantity of environmental impact complaints that are filed, investigated, and settled using official complaint procedures. |

Table 2. Environmental Disclosure of GRI Index (Global Report Initiative)

3.2.2. Independent Variable

The independent variable I represents profitability as determined by the return on asset (ROA), return on equity (ROE), and net profit margin (NPM) (Aldubhani et al., 2022; Hai, Tu & Toan, 2019; Farlinno & Bernawati, 2020; Vinayagamoorthi et al., 2015). Return on assets (ROA), which management in firms commonly employs, is the most crucial indicator. The majority of organizations use a variety of measures, including return on equity, return on assets, and return on sales, to determine the contribution of profit required from new investments. Therefore, determining ROA is crucial, at the very least, to preserving company performance.

$$\text{ROA} = \frac{\text{Earning after Interest and Tax}}{\text{Total Assets}}$$

Since one of the company's objectives is to benefit shareholders, return on equity (ROE), a profitability ratio that displays the rate of return that investors will receive, is a key indicator of the financial performance of the business. It is a crucial metric for shareholders since it assesses how well management can use available funds to generate a profit.

$$\text{ROE} = \frac{\text{Earning after Interest and Tax}}{\text{Equity}}$$

When comparing earnings after interest and sales tax to sales volume, a ratio known as "net profit margin" (NPM) is utilized. NPM also shows how successfully management controls the company's operations and sales. Falling sales prices, declining production costs, and declining consumer demand can all cause problems for businesses, but those with high NPM can manage them.

$$\text{NPM} = \frac{\text{Earning after Interest and Tax}}{\text{Sales}}$$

Liquidity is the second independent variable in this study, and liquidity may be assessed using the current ratio (CR) and quick ratio (QR) (Kontuš & Mihanović, 2019; Li et al., 2020; Durrah et al., 2016). The ability of a corporation to fulfill its obligations is often determined by looking at its current ratio. The lower value of CR, which denotes the company's inability to pay its immediate liabilities, may affect the company's profitability. Companies that are unable to fulfill their obligations will have further requirements placed on them. A company's degree of liquidity, as measured by the CR, can be raised by employing specific current debt, attempting to increase current assets, and attempting to decrease the amount of current debt using specific current assets.

$$\text{CR} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

To compare current assets minus inventory and current debt, we use the quick ratio (QR). The ratio of current debt to the sum of cash on hand, in banks, incoming receivables, and easily tradable securities. In a shorter time frame, this ratio is used to assess the company's capacity to satisfy short-term obligations.

$$\text{QR} = \frac{\text{Current Assets-Inventory}}{\text{Current liabilities}}$$

Capital Structure is the third independent variable in the research. Indicators of financial ratios utilized in this study's measurement of leverage include Debt to Equity Ratio and Debt to Asset Ratio (Judge & Korzhenitskaya, 2022; Dao & Ta, 2020). The debt-to-equity ratio (DER) is a metric used to compare a company's total shareholder equity to its level of debt utilization. The greater the DER, the greater the company's financial burden will be because the company's capital is dependent on outside sources.

$$DER = \frac{\text{Debt}}{\text{Equity}}$$

The debt-to-asset ratio (DAR) compares current and long-term debt to total known assets. This ratio shows how debt consumes a percentage of total assets.

$$DAR = \frac{\text{Total Debt}}{\text{Total Assets}}$$

| Variable type | Variable name | Measurement | Reference | Sources |
|----------------------|------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Dependent variable | Environmental Disclosure (GRI) | Total item used by the company/Total item GRI disclosure | (Giannarakis et al., 2020; Gallego-Álvarez et al., 2018; Pramudito et al., 2022; Choy, 2023; Solikhah & Maulina, 2021) | GRI Index Report |
| | Environmental Performance (PROPER) | PROPER Index | (Sari & Sulfitri, 2023; Pramono & Rohman, 2023; Wahidahwati & Ardini, 2021; Fitri & Pyhälä, 2021) | Ministry of Environment and Forestry |
| Independent Variable | Profitability (ROA, ROE, NPM) | Return on Asset, Return on Equity, Net Profit Margin | (Aldubhani et al., 2022; Farlinno & Bernawati, 2020; Vinayagamoorthi et al., 2015) | Annual report, Indonesia Stock Exchange website |
| | Liquidity (CR, QR) | Current Ratio, Quick Ratio | (Durrah et al., 2016; Kontuš & Mihanović, 2019) | |
| | Capital Structure (DER, DAR) | Debt to Equity Ratio, Debt to Asset Ratio | (Dao & Ta, 2020; Judge & Korzhenitskaya, 2022) | |

Table 3. Operational definitions and measurement of variables

3.3. Sample

Three datasets are used in this study to create the sample: the Ministry of Environment database, the Indonesia Stock Exchange (IDX) database, and the GRI report database for the years 2018, 2019, 2020, 2021, and 2022. This study uses a sample of 47 manufacturing companies with the following characteristics, selected from a population of 168 manufacturing companies registered on the Indonesia Stock Exchange, using the purposive sampling technique. (1) Manufacturing companies with IDX listings from 2018 to 2022; (2) manufacturing companies with PROPER participation during 2018-2022; (3) Manufacturing companies that between 2018 and 2022 release thorough financial statements and sustainability reports; and (4) Manufacturing companies that provide Rupiah-based financial accounts.

| No. | Information | Total |
|-----|-------------------------------------------------------------------------------------------------------------------|-------|
| 1 | Manufacturing firms listed on the IDX from 2018 to 2022 | 168 |
| 2 | Manufacturing firms that are not PROPER participants from 2018 to 2022 | (100) |
| 3 | Manufacturing firms that do not submit complete financial statements and sustainability reports from 2018 to 2022 | (4) |
| 4 | Manufacturing firms that present financial statements in currencies other than Rupiah | (17) |
| | Number of firms that meet the criteria | 47 |
| | Number of data observations 2018-2022 (5 years x 47) | 235 |

Table 4. Research Sample

The primary rationale for choosing manufacturing sectors was because the firm value of the manufacturing firms publicizing the environmental information is larger than that in other manufacturing firms (Tang, Wang, Pan & Li, 2023). Considering the five years, the 235 observations comprise this study's balanced panel dataset.

The research employs financial data analysis to determine the profitability of the firm, using ROA, ROE, and NPM as indicators; CR and QR serve as surrogates for liquidity; and DER and DAR represent the capital structure of the firm. The financial information was obtained from the database of the Indonesia Stock Exchange. In the context of non-financial data, the environmental performance variable obtained from the Ministry of Environment and Forestry is represented by the PROPER proxy, while the environmental disclosure variable is represented by the GRI index proxy obtained from the GRI index report database.

4. Result and Discussion

4.1. Outer Model

4.1.1. Convergent and Discriminant Validity Test

| Variable | Profitability | Liquidity | Capital Structure | Environmental Performance | Environmental Disclosure | AVE |
|---------------------------|---------------|--------------|-------------------|---------------------------|--------------------------|-------|
| Profitability | 0.918 | 0.864 | 0.782 | 0.683 | 0.784 | 0.842 |
| Liquidity | 0.864 | 0.899 | 0.707 | 0.657 | 0.754 | 0.809 |
| Capital Structure | 0.782 | 0.707 | 0.911 | 0.685 | 0.725 | 0.830 |
| Environmental Performance | 0.683 | 0.657 | 0.685 | 1.000 | 0.837 | 1.000 |
| Environmental Disclosure | 0.784 | 0.754 | 0.725 | 0.837 | 0.942 | 0.887 |

Note: Square roots of average variances extracted (AVEs) are shown on diagonal.

Table 5. Correlations among latent variables

To test the convergent and discriminant validity of the measures of profitability, liquidity, capital structure, environmental performance, and environmental disclosure, we adopted the procedures recommended by (Chin, 1995; Burnkrant & Page, 1982; Anderson & Gerbing, 1988). Burnkrant and Page (1982) and Chin (1995) recommended that to establish adequate convergent validity, the average variance extracted (AVE) and loading factor should exceed 0.5. This criterion was met for each of the latent constructs as shown in Table 6 and Table 7. To establish discriminant validity between latent constructs, Chin (1995) suggests that the squared correlation between the constructs should be less than each of the constructs' AVEs; and cross-loading should exceed 0.5 as shown in Table 5 and Table 7. This criterion was met for each of the comparisons between the profitability, liquidity, capital structure, environmental performance, and environmental disclosure measures, providing evidence for discriminant validity. According to the test results in Table 5, the Cronbach alpha and composite reliability results on the variables profitability, liquidity, capital structure, environmental performance, and environmental disclosure reveal a satisfactory value, namely a Cronbach alpha and composite reliability value are more than 0.70. In other words, all of the variables in this investigation were reliable.

| Variable | Average Variance Extracted (AVE) | Cronbach Alpha | Composite Reliability |
|---------------------------|----------------------------------|----------------|-----------------------|
| Profitability | 0.842 | 0.907 | 0.941 |
| Liquidity | 0.809 | 0.764 | 0.894 |
| Capital Structure | 0.830 | 0.796 | 0.907 |
| Environmental Performance | 1.000 | 1.000 | 1.000 |
| Environmental Disclosure | 0.887 | 0.873 | 0.940 |

Table 6. Outer Model

4.1.2. Confirmatory Factor Analysis

The findings of this study's Confirmatory Factor Analysis indicate that all five latent variables were included in the analysis. This conclusion is drawn from Table 6 and Table 7, which display that the loading factor of each variable is greater than 0.7 and the average variance extracted (AVE) is greater than 0.5. It indicates that all

indicators can measure latent variables, namely profitability, liquidity, capital structure, environmental performance, and environmental disclosure.

| Indicator | Variable | | | | |
|-----------|---------------|-----------|-------------------|---------------------------|--------------------------|
| | Profitability | Liquidity | Capital Structure | Environmental Performance | Environmental Disclosure |
| ROA | 0.917 | -0.339 | -0.252 | -0.171 | 0.383 |
| ROE | 0.921 | -0.062 | 0.139 | 0.081 | -0.027 |
| NPM | 0.916 | 0.402 | 0.112 | 0.090 | -0.356 |
| QR | -0.178 | 0.899 | -0.241 | 0.202 | 0.053 |
| CR | 0.178 | 0.899 | 0.241 | -0.202 | -0.053 |
| DAR | 0.192 | -0.220 | 0.911 | 0.224 | -0.372 |
| DER | -0.192 | 0.220 | 0.911 | -0.224 | 0.372 |
| PROPER | 0.000 | 0.000 | -0.000 | 1,0000 | -0.000 |
| GRI | 0.357 | -0.162 | -0.081 | 0.209 | 0.942 |

Notes: ROA is Return on Asset; ROE is Return on Equity; NPM is Net Profit Margin; QR is Quick Ratio; CR is Current Ratio; DAR is Debt to Asset Ratio; DER is Debt to Equity Ratio

Table 7. Loading Factor

4.2. Inner Model

"Do profitability, liquidity, and capital structure influence environmental performance?" and "Do environmental performance and environmental disclosure influence one another?" are the research inquiries that this study seeks to answer. This investigation employs SEM-PLS to test the hypothesis of the subsequent model:

a) Model A (Y1)

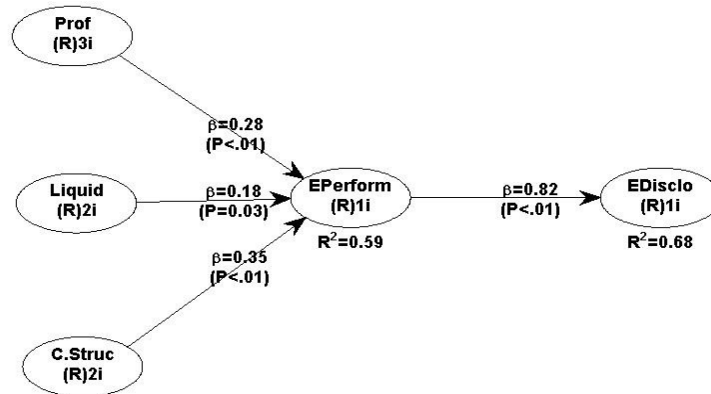
$$EPerform = 0.276 Prof + 0.185 Liquid + 0.347 C.Struc + \varepsilon$$

b) Model B (Y2)

$$EDiscl = 0.824 EDiscl + \varepsilon$$

The hypothesis testing in this study using p value from path analysis model and confidence interval as suggested by (Burnkrant & Page, 1982; Kock, 2016). The result of model A and model B, the path analysis model as presented in Figure 2 and Table 8 shows the direct effect of the main analysis, for hypotheses H1, H2, H3, and H4. Model A (a: 0.276, $q = 0.002^{**} < 0.01$, $0 \notin CI$) indicates that this research found a positive and substantial effect of Prof (profitability) on Eperform (environmental performance). Consequently, hypothesis H1 is accepted. Therefore, the performance of the environment is positively and significantly impacted by profitability. This study supports other studies (Widarsono & Hadiyanti, 2015; Aldubhani et al., 2022; Farlinno and Bernawati, 2020; Vinayagamoorthi et al., 2015) that found a favorable and significant relationship between profitability and improved environmental performance. However, this study's findings are not the same as those of (Salama, 2005). The results of this investigation confirm the notion that a company's smooth operation and increased revenue are directly related to its contribution to the community and the environment, which motivates it to continually monitor its environmental sustainability efforts. Companies that exhibit strong financial performance are likely to demonstrate a corresponding commitment to enhancing their transparency practices related to the environment. The company's disclosure practices are undertaken to garner support and elicit empathy from stakeholders. Additionally, this study supports the notion that a composite of organizations exhibiting a significant degree of profitability have the requisite financial resources to adequately address the expenses connected with environmental disclosure (Brammer & Pavelin, 2006). However, firms with poor profitability may have reduced motivation among their management to disclose environmental performance. This could be because their main priority is to implement strategies that improve profitability (Luo, Guo, Zhong & Wang, 2019). **This findings has important implications** because, in manufacturing firms, there is a significant

contribution of companies' profit towards protecting the environment. **This discovery adds to the body of research** indicating that a combination of companies with strong financial positions is more likely to face increased pressure from external stakeholders to disclose more detailed information about their social and environmental responsibilities. Moreover, this study would help the policymakers to frame workable regulations to improve the activities of corporates for ecology protection.



Note: Prof is Profitability; Liquid is Liquidity; C. Struc is Capital Structure; Eperform is Environmental Performance; Edisclo is Environmental Disclosure

Figure 2. Path Analysis Model

The empirical findings of this study indicate a positive and statistically significant relationship between liquidity (liquid) and environmental performance (Eperform), as shown in Figure 2 and Table 8 ($b=0.185$; $\rho=0.027^{**}$; $0 \notin CI$). Thus, hypothesis H2 is corroborated, indicating that liquidity has a favorable and substantial impact on environmental performance. This finding is corroborated by the research of (Barbu & Boitan, 2020; Earnhart & Lizal, 2006; Farhan et al., 2023) stated liquidity has a positive and significant effect on environmental performance. However, the result of this study contradicts the result of (Farlinno & Bernawati, 2020). This result also indicates a high level of liquidity in a company affects the company in making decisions on its environmental performance. In other words, companies frequently increase liquidity and take part in pro-social activities to show investors that they are superior to other companies and that they are concerned about the environment (Bonagura, D’Amico, Iacopino, Prosperi & Zicchino, 2021). **This result supports the theory of legitimacy**, suggesting that companies can continue to operate successfully by adhering to socially acceptable practices. Legitimacy can be obtained if there is a match between the company’s performance with the values that exist in society and the environment (O’Donovan, 2002). The primary finding of this study is that firms will develop a greater understanding of the significance of environmental performance, aided by the financial stability of companies, which aims to enhance the company's reputation.

| Path | Path Coefficient | T ratio | P value | Confidence interval 95% | | Hypothesis Remark |
|-------|------------------|---------|-----------|-------------------------|-------------|-------------------|
| P>EP | 0.276 | 2.973 | 0.002** | 0.094 | 0,318055556 | H1 Supported |
| L>EP | 0.185 | 1.943 | 0.027** | -0.002 | 0,257638889 | H2 Supported |
| CS>EP | 0.347 | 3.813 | <0.001*** | 0,117361111 | 0,364583333 | H3 Supported |
| EP>ED | 0.824 | 10.624 | <0.001*** | 0,478472222 | 1.000 | H4 Supported |

Note: *** $q<0.001$; ** $q<0.01$; P is Profitability; L is Liquidity; CS is Capital Structure; EP is Environmental Performance; ED is Environmental Disclosure

Table 8. Hypothesis testing with P value and confidence interval

Figure 2 and Table 8 also portray the hypothesis testing on the effect of capital structure on environmental performance. This study found that the effect of capital structure on environmental performance is significant ($c=0.347$, $q<0.001^{**}$; $0 \notin CI$). Therefore, H3 is supported. The research is consistent with the studies conducted by Al Arussi et al. (2009), Dao and Ta (2020), and Joshi et al. (2011), which indicate that capital structure has a major impact on environmental performance. Because their shareholders value them based on their performance and adopted environmental behaviors, companies with more debt tend to provide more environmental information than small-leverage companies, according to the positive and significant effect of capital structure on environmental performance found in this research (Pahuja, 2009). **This result supports the theory of agency**, suggesting that various stakeholders, including suppliers, employees, and customers, exert a substantial impact on the process of making decisions related to the environment. Therefore, organizations have the opportunity to optimize their capital structure decisions by strategically aligning them with their current and future objectives, thereby strengthening their relationships with various stakeholders (Bae, El Ghoul, Guedhami, Kwok & Zheng, 2019).

Figure 2 and Table 8. also present the effects of Eperform (environmental performance) on Edisclo (environmental disclosure) as positive and significant ($d=0.824$, $q<0.001^{**}$; $0 \notin CI$). Hence, H4 is supported. This result is aligned with previous research done by (Acar & Temiz, 2020; Patten, 2002). The positive and significant relationship between environmental performance and environmental disclosure indicates that the higher the environmental performance, the more the company to have environmental disclosure. In other words, green firms tend to be better at disclosing environmental performance. This result is consistent with the reasoning of economic disclosure theory, which suggests that ecologically good performers will disclose more. Moreover, incorporating environmental disclosure inside a company's activities facilitates adherence to globally acknowledged standards for environmental sustainability (Adedoyin, Alola & Bekun, 2020; Danso, Adomako, Amankwah-Amoah, Owusu-Agyei & Konadu, 2019). Thus, **this finding implies** that companies need to enhance their financial and environmental performance as an effective tool to execute environmental sustainability. Therefore, the government should impose a policy mandating the disclosure of environmental responsibility across all sectors of companies in Indonesia.

5. Conclusion and Suggestion

This research examines the effect of profitability on environmental performance. This research finds the positive and significant effect of profitability on environmental performance. It indicates strong financial performance in organizations is often associated with a dedication to improving transparency standards regarding the environment. It is possible that this study will conclude that a combination of companies with robust financial standings is more prone to heightened demands from external stakeholders to provide more comprehensive information regarding their social and environmental obligations. This research also discovers the high liquidity of a firm impacts its decision-making about environmental performance. **This finding implies** that companies will increasingly prioritize environmental performance with the backing of their liquidity, aiming to enhance the company's reputation. Thus, policymakers should establish effective regulations to enhance corporate actions for environmental preservation.

This research also finds evidence that capital structure has a positive and significant effect on environmental performance. It indicates those with higher levels of debt tend to provide more environmental information compared to those with lower leverage. This is because their shareholders place importance on the environmental practices and performance of the company. **The conclusion drawn from this research is** that the composite stakeholders have a significant influence on environmental decision-making processes. Therefore, companies can enhance their capital structure decisions by aligning them strategically with their present and future goals, thus enhancing their relations with various stakeholders. The role of environmental performance is found to be positive and significant for environmental disclosure. **This result implies** that higher environmental performance leads to increased environmental disclosure by companies. Therefore, this discovery suggests that organizations must improve their financial and environmental performance as a powerful method to achieve environmental sustainability.

Therefore, this study's practical recommendation is that businesses should view environmental sustainability as a chance to make a positive impact on a more sustainable world for the "well-being of humans as well as the planet" while also improving their financial performance. Businesses that adopt socially and sustainably responsible business practices are likely to see improvements in their financial performance as well as increased credibility and confidence from important stakeholders like the community, the employees, and customers. To put it briefly, environmental performance in the corporate sector should be seen as an investment that promotes improved financial health and a more sustainable world rather than as a cost. This study adds to the body of knowledge regarding the role of profitability, liquidity, and capital structure in improving both environmental performance and environmental disclosure. **The legitimacy theory perspective** implies that businesses can thrive by following socially responsible guidelines. Legitimacy is attained when a company's performance is in accordance with the prevailing values in society and the environment. The research suggests that the desire for eco-friendly items among consumers can be reached by considering both economical and environmental performance.

This research is not without limits. Initially, this study is restricted to manufacturing companies located in Indonesia. Furthermore, this research just relies on a solitary proxy for measurement. Hence, future investigations could incorporate a larger number of sample companies from various nations or do a comparative analysis across enterprises that implement sustainability reporting. Therefore, the inference could be relevant to countries that have implemented sustainability reporting, including both emerging and developed nations. Subsequent investigations are anticipated to incorporate a greater number of assessments of environmental performance and environmental disclosure in order to enhance the reliability and significance of the findings. Moreover, utilizing alternative statistical methods can help validate the results of this study and reinforce the relevant theories. Future studies could examine the mediating effects, as they were not examined in the present study.

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References

- Acar, M., & Temiz, H. (2020). Empirical analysis on corporate environmental performance and environmental disclosure in an emerging market context: Socio-political theories versus economics disclosure theories. *International Journal of Emerging Markets*, 15(6), 1061-1082. <https://doi.org/10.1108/IJOEM-04-2019-0255>
- Acero, I., & Alcalde, N. (2020). Directors' compensation. What really matters? *Journal of Business Economics and Management*, 21(1), 180-199. <https://doi.org/10.3846/jbem.2020.11788>
- Adedoyin, F.F., Alola, A.A., & Bekun, F.V. (2020). The nexus of environmental sustainability and agro-economic performance of Sub-Saharan African countries. *Heliyon*, 6(9), e04878. <https://doi.org/10.1016/j.heliyon.2020.e04878>
- Agustia, D., Sawarjuwono, T., & Dianawati, W. (2019). The mediating effect of environmental management accounting on green innovation - Firm value relationship. *International Journal of Energy Economics and Policy*, 9(2), 299-306. <https://doi.org/10.32479/ijcep.7438>
- Al Amosh, H., & Khatib, S.F.A. (2022). Ownership structure and environmental, social and governance performance disclosure: the moderating role of the board independence. *Journal of Business and Socio-Economic Development*, 2(1), 49-66. <https://doi.org/10.1108/jbsed-07-2021-0094>

- Al Amosh, H., Khatib, S.F.A., Alkurdi, A., & Bazhair, A.H. (2022). Capital structure decisions and environmental, social and governance performance: insights from Jordan. *Journal of Financial Reporting and Accounting*. <https://doi.org/10.1108/JFRA-12-2021-0453>
- Al Amosh, H., & Mansor, N. (2021). Disclosure of integrated reporting elements by industrial companies: evidence from Jordan. *Journal of Management and Governance*, 25(1), 121-145. <https://doi.org/10.1007/s10997-020-09541-x>
- Al Arussi, A.S., Selamat, M.H., & Mohd-Hanefah, M. (2009). Determinants of financial and environmental disclosures through the internet by Malaysian companies. *Asian Review of Accounting*, 17(1), 59-76. <https://doi.org/10.1108/13217340910956513>
- Aldubhani, M.A.Q., Wang, J., Gong, T., & Maudhah, R.A. (2022). Impact of working capital management on profitability: evidence from listed companies in Qatar. *Journal of Money and Business*, 2(1), 70-81. <https://doi.org/10.1108/jmb-08-2021-0032>
- Aliyu, U.S. (2019). Board characteristic and corporate environmental reporting in Nigeria. *Asian Journal of Accounting Research*, 4(1), 2-17. <https://doi.org/10.1108/AJAR-09-2018-0030>
- Amosh, A., & Mansor, H. (2018). Sustainability and Corporate Reporting: A Review on Environmental and Social Accounting Disclosure: A conceptual paper. *International Journal of Accounting, Finance and Business*, 3(8), 78-87. Available at: <http://www.ijafb.com>
- Anderson, J.C., & Gerbing, D.W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, 103(3), 411-423. <https://doi.org/10.1037/0033-2909.103.3.411>
- Aouadi, A., & Marsat, S. (2018). Do ESG Controversies Matter for Firm Value? Evidence from International Data. *Journal of Business Ethics*, 151(4), 1027-1047. <https://doi.org/10.1007/s10551-016-3213-8>
- Aragón-Correa, J.A., Marcus, A., & Hurtado-Torres, N. (2016). The natural environmental strategies of international firms: Old controversies and new evidence on performance and disclosure. *Academy of Management Perspectives*, 30(1), 24-39. <https://doi.org/10.5465/amp.2014.0043>
- Ashforth, B.E., Gibbs, B.W., & Gibbs, B.W. (2013). *The double-edge of organizational*, 1(2), 177-194. <https://doi.org/10.1287/orsc.1.2.177>
- Bae-Choi, B., Lee, D., & Psaros, J. (2013). An analysis of Australian company carbon emission disclosures. *Pacific Accounting Review*, 25(1), 58-79. <https://doi.org/10.1108/01140581311318968>
- Bae, K.H., El Ghouli, S., Guedhami, O., Kwok, C.C.Y., & Zheng, Y. (2019). Does corporate social responsibility reduce the costs of high leverage? Evidence from capital structure and product market Interactions. *Journal of Banking and Finance*, 100, 135-150. <https://doi.org/10.1016/j.jbankfin.2018.11.007>
- Baldini, M., Maso, L.D., Liberatore, G., Mazzi, F., & Terzani, S. (2018). Role of Country- and Firm-Level Determinants in Environmental, Social, and Governance Disclosure. *Journal of Business Ethics*, 150(1), 79-98. <https://doi.org/10.1007/s10551-016-3139-1>
- Bappenas (2017). *Indonesia Green Growth Program*. <http://greengrowth.bappenas.go.id/investasi-hijau/>
- Barbu, T.C., & Boitan, I.A. (2020). Financial system performance in European union countries: Do country's governance indicators matter? *Journal of Business Economics and Management*, 21(6), 1646-1664. <https://doi.org/10.3846/jbem.2020.13633>
- Beattie, V., Goodacre, A., & Thomson, S.J. (2006). Corporate financing decisions: UK survey evidence. *Journal of Business Finance and Accounting*, 33(9-10), 1402-1434. <https://doi.org/10.1111/j.1468-5957.2006.00640.x>

- Bhunja, D.A. (2010). A trend analysis of liquidity management efficiency in selected private sector Indian steel industry. *International Journal of Research in Commerce & Management*, 1(4), 48-53.
- Bonagura, G., D'Amico, L., Iacopino, A.C., Prosperi, L., Zicchino, L. (2021). Stock's liquidity and Environmental Performance. *Bancaria*, 6.
- Brammer, S.J., & Pavelin, S. (2006). Corporate reputation and social performance: The importance of fit. *Journal of Management Studies*, 43(3), 435-455. <https://doi.org/10.1111/j.1467-6486.2006.00597.x>
- Burnkrant, R.E., & Page, T.J. (1982). An Examination of the Convergent, Discriminant, and Predictive Validity of Fishbein's Behavioral Intention Model. *Journal of Marketing Research*, 19(4), 550. <https://doi.org/10.2307/3151726>
- Cheng, Z., Wang, F., Keung, C., & Bai, Y. (2017). Will Corporate Political Connection Influence the Environmental Information Disclosure Level? Based on the Panel Data of A-Shares from Listed Companies in Shanghai Stock Market. *Journal of Business Ethics*, 143(1), 209-221. <https://doi.org/10.1007/s10551-015-2776-0>
- Chin, W.W. (1995). Partial Least Squares Is To Lisrel As Principal Components. *Technology Studies*, 2(1995), 315-319.
- Choi, D., Gam, Y.K., & Shin, H. (2023). Environmental reputation and bank liquidity: Evidence from climate transition. *Journal of Business Finance and Accounting*, 50(7-8), 1274-1304. <https://doi.org/10.1111/jbfa.12669>
- Choy, L.Y. (2023). Application of the Global Reporting Initiative Standards and Sustainability Disclosure Performance: An Analysis of the Largest Chinese Companies Listed in Hong Kong. *Accounting, Economics and Law: A Convivium*, 1-78. <https://doi.org/10.1515/acl-2022-0082>
- Danso, A., Adomako, S., Amankwah-Amoah, J., Owusu-Agyei, S., & Konadu, R. (2019). Environmental sustainability orientation, competitive strategy and financial performance. *Business Strategy and the Environment*, 28(5), 885-895. <https://doi.org/10.1002/bse.2291>
- Dao, B.T.T., & Ta, T.D.N. (2020). A meta-analysis: capital structure and firm performance. *Journal of Economics and Development*, 22(1), 111-129. <https://doi.org/10.1108/jed-12-2019-0072>
- Dienes, D., Sassen, R., & Fischer, J. (2016). What are the drivers of sustainability reporting? A systematic review. *Sustainability Accounting, Management and Policy Journal*, 7(2), 154-189. <https://doi.org/10.1108/SAMPJ-08-2014-0050>
- do Couto, A.B.G., & Rangel, L.A.D. (2023). Corporate governance aspects in sustainability and performance assessment models for energy companies: a systematic review of the literature. *Gestao e Producao*, 30. <https://doi.org/10.1590/1806-9649-2022V29E4322>
- Doan, M.H., & Sassen, R. (2020). The relationship between environmental performance and environmental disclosure: A meta-analysis. *Journal of Industrial Ecology*, 24(5), 1140-1157. <https://doi.org/10.1111/jiec.13002>
- Dowling, J., & Pfeffer, J. (1975). Pacific Sociological Association Organizational Legitimacy: Social Values and Organizational Behavior. *Source: The Pacific Sociological Review*, 18(1), 122-136. Available at: <https://journals.sagepub.com/doi/abs/10.2307/1388226>
- Dube, K. (2020). Tourism and sustainable development goals in the African context. *International Journal of Economics and Finance Studies*, 12(1), 88-102. <https://doi.org/10.34109/ijefs.202012106>
- Durrah, O., Rahman, A.A.A., Jamil, S.A., & Ghafeer, N.A. (2016). Exploring the relationship between liquidity ratios and indicators of financial performance: An analytical study on food industrial companies listed in Amman Bursa. *International Journal of Economics and Financial Issues*, 6(2), 435-441.
- Earnhart, D., & Lizal, L. (2006). Effects of ownership and financial performance on corporate environmental performance. *Journal of Comparative Economics*, 34(1), 111-129. <https://doi.org/10.1016/j.jce.2005.11.007>

- Effendi, M.B. (2017). Environmental Performance Analysis of Mining Companies in Indonesia with SEM-PLS. *Journal of Advanced Management Science*, 6(1), 45-49. <https://doi.org/10.18178/joams.6.1.45-49>
- Farhan, N.H.S., Almaqtari, F.A., Hazaea, S.A., & Al-ahdal, W.M. (2023). The moderating effect of liquidity on the relationship between sustainability and firms' specifics: Empirical evidence from indian manufacturing sector. *Heliyon*, 9(4), e15439. <https://doi.org/10.1016/j.heliyon.2023.e15439>
- Farlinno, A., & Bernawati, Y. (2020). The company characteristics and environmental performance. *Polish Journal of Management Studies*, 22(2), 111-126. <https://doi.org/10.17512/pjms.2020.22.2.08>
- Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, 38, 45-64. <https://doi.org/10.1016/J.GFJ.2017.03.001>
- Fitri, I., & Pyhälä, A. (2021). How participatory is corporate environmental performance rating An assessment of Indonesia's PROPER program. *International Journal of Environmental Policy and Decision Making*, 3(1), 54. <https://doi.org/10.1504/ijepdm.2021.119519>
- Fonseca, L., Carvalho, F., & Santos, G. (2023). Strategic CSR: Framework for Sustainability through Management Systems Standards—Implementing and Disclosing Sustainable Development Goals and Results. *Sustainability (Switzerland)*, 15(15). <https://doi.org/10.3390/su15151904>
- Fonseca, L., Silva, V., Sá, J.C., Lima, V., Santos, G., & Silva, R. (2022). B Corp versus ISO 9001 and 14001 certifications: Aligned, or alternative paths, towards sustainable development? *Corporate Social Responsibility and Environmental Management*, 29(3), 496-508. <https://doi.org/10.1002/csr.2214>
- Gallego-Álvarez, I., Lozano, M.B., & Rodríguez-Rosa, M. (2018). An analysis of the environmental information in international companies according to the new GRI standards. *Journal of Cleaner Production*, 182, 57-66. <https://doi.org/10.1016/J.JCLEPRO.2018.01.240>
- García-Sánchez, I.M., & Martínez-Ferrero, J. (2017). Independent Directors and CSR Disclosures: The moderating effects of proprietary costs. *Corporate Social Responsibility and Environmental Management*, 24(1), 28-43. <https://doi.org/10.1002/csr.1389>
- Giannarakis, G., Andronikidis, A., & Sariannidis, N. (2020). Determinants of environmental disclosure: investigating new and conventional corporate governance characteristics. *Annals of Operations Research*, 294(1-2), 87-105. <https://doi.org/10.1007/s10479-019-03323-x>
- Griffin, P.A., Lont, D.H., & Sun, E.Y. (2017). The Relevance to Investors of Greenhouse Gas Emission Disclosures. *Contemporary Accounting Research*, 34(2), 1265-1297. <https://doi.org/10.1111/1911-3846.12298>
- Hai, P. T., Tu, C. A., & Toan, L. D. (2019). Research on factors affecting organizational structure, operating mechanism and audit quality: An empirical study in vietnam. *Journal of Business Economics and Management*, 20(3), 526–545. <https://doi.org/10.3846/jbem.2019.9791>
- Hassan, M.K., & Lahyani, F.E. (2020). Media, independent non-executive directors and strategy disclosure by non-financial listed firms in the UAE. *Corporate Governance (Bingley)*, 20(2), 216-239. <https://doi.org/10.1108/CG-01-2019-0032>
- Hassan, O.A.G., & Romilly, P. (2018). Relations between corporate economic performance, environmental disclosure and greenhouse gas emissions: New insights. *Business Strategy and the Environment*, 27(7), 893-909. <https://doi.org/10.1002/bse.2040>
- Hussain, H.I., Kot, S., Thaker, H.M.T., & Turner, J.J. (2020). Environmental Reporting and Speed of Adjustment to Target Leverage: Evidence from a Dynamic Regime Switching Model. *Organizacija*, 53(1), 21-35. <https://doi.org/10.2478/orga-2020-0002>

- Ifada, L.M., & Saleh, N.M. (2022). Environmental performance and environmental disclosure relationship: the moderating effects of environmental cost disclosure in emerging Asian countries. *Management of Environmental Quality: An International Journal*, 33(6), 1553-1571. <https://doi.org/10.1108/MEQ-09-2021-0233>
- Joshi, P.L., Suwaidan, M.S., & Kumar, R. (2011). Determinants of environmental disclosures by Indian industrial listed companies: empirical study. *International Journal of Accounting and Finance*, 3(2), 109. <https://doi.org/10.1504/ijaf.2011.043843>
- Judge, A., & Korzhenitskaya, A. (2022). Do Credit Ratings Determine Capital Structure? *International Journal of the Economics of Business*, 29(1), 89-118. <https://doi.org/10.1080/13571516.2021.1961563>
- Kock, N. (2016). Hypothesis testing with confidence intervals and P values in PLS-SEM. *International Journal of E-Collaboration*, 12(3), 1-6. <https://doi.org/10.4018/IJeC.2016070101>
- Kontuš, E., & Mihanović, D. (2019). Management of liquidity and liquid assets in small and medium-sized enterprises. *Economic Research-Ekonomska Istraživanja*, 32(1), 3247-3265. <https://doi.org/10.1080/1331677X.2019.1660198>
- Leal-Filho, W., Viera-Trevisan, L., Simon-Rampasso, I., Anholon, R., Pimenta-Dinis, M.A., Londero-Brandli, L. et al. (2023). When the alarm bells ring: Why the UN sustainable development goals may not be achieved by 2030. *Journal of Cleaner Production*, 407, 137108. <https://doi.org/10.1016/J.JCLEPRO.2023.137108>
- Li, K., Musah, M., Kong, Y., Adjei-Mensah, I., Antwi, S. K., Bawuah, J. et al. (2020). Liquidity and Firms' Financial Performance Nexus: Panel Evidence From Non-Financial Firms Listed on the Ghana Stock Exchange. *SAGE Open*, 10(3). <https://doi.org/10.1177/2158244020950363>
- Lu, J., Ren, L., Zhang, C., Wang, C., Shahid, Z., & Streimikis, J. (2020). The influence of a firm's CSR initiatives on brand loyalty and brand image. *Journal of Competitiveness*, 12(2), 106-124. <https://doi.org/10.7441/joc.2020.02.07>
- Lucyanda, J., & Siagian, L.G. (2012). The Influence of Company Characteristics Toward Corporate Social Responsibility Disclosure. *The 2012 International Conference on Business and Management*, Viii, 601-619.
- Luo, W., Guo, X., Zhong, S., & Wang, J. (2019). Environmental information disclosure quality, media attention and debt financing costs: Evidence from Chinese heavy polluting listed companies. *Journal of Cleaner Production*, 231, 268-277. <https://doi.org/10.1016/j.jclepro.2019.05.23717>
- Mahrani, M., & Soewarno, N. (2018). The effect of good corporate governance mechanism and corporate social responsibility on financial performance with earnings management as mediating variable. *Asian Journal of Accounting Research*, 3(1), 41-60. <https://doi.org/10.1108/AJAR-06-2018-0008>
- Memon, M.A., Ramayah, T., Cheah, J.H., Ting, H., Chuah, F., & Cham, T.H. (2021). PLS-SEM Statistical Programs: A review. *Journal of Applied Structural Equation Modeling*, 5(1), i-xiv. [https://doi.org/10.47263/JASEM.5\(1\)06](https://doi.org/10.47263/JASEM.5(1)06)
- McKinsey & Company (2022). The McKinsey Platform for Climate Technologies Indonesia aims to help end carbon dependency in Southeast Asia's largest economy. <https://www.mckinsey.com/id/our-insights/indonesia-takes-the-lead-in-sustainable-inclusive-growth>
- Ministry of Environment and Forestry (2012). *Socialization of PP No. 27 of 2012 About Environmental Permit*. March 16, 2012. From: (<https://peraturan.bpk.go.id/Details/5239/pp-no-27-tahun-2012>, On access July 27, 2023).
- O'Donovan, G. (2002). Environmental disclosures in the annual report: Extending the applicability and predictive power of legitimacy theory. *Accounting, Auditing & Accountability Journal*, 15(3), 344-371. <https://doi.org/10.1108/09513570210435870>

- Pahuja, S. (2009). Relationship between environmental disclosures and corporate characteristics: A study of large manufacturing companies in India. *Social Responsibility Journal*, 5(2), 227-244. <https://doi.org/10.1108/17471110910964504>
- Patten, D.M. (2002). The relation between environmental performance and environmental disclosure: a research note. *Accounting, Organizations and Society*, 27(8), 763-773. [https://doi.org/10.1016/S0361-3682\(02\)00028-4](https://doi.org/10.1016/S0361-3682(02)00028-4)
- Pramono, H., & Rohman, A. (2023). The role of environmental performance to strengthen firm values to financial performance. *Kompartemen: Jurnal Ilmiah Akuntansi*, 21(2), 188. <https://doi.org/10.30595/kompartemen.v21i2.17445>
- Pramudito, A., Muwidha, M., & Isrowiyah, A. (2022). Analysis Of Profitability On Sustainability Report Disclosure Based On GRI Index. *International Journal of Environmental, Sustainability, and Social Science*, 3(1), 189-195. <https://doi.org/10.38142/ijess.v3i1.134>
- Qian, W., & Schaltegger, S. (2017). Revisiting carbon disclosure and performance: Legitimacy and management views. *British Accounting Review*, 49(4), 365-379. <https://doi.org/10.1016/j.bar.2017.05.005>
- Ramadhan, D., Nasih, M., & Iswati, S. (2019). Environmental performance analysis on mining and agricultural company listed in Indonesia syariah share index (ISSI) for year 2011-2016. *Journal of Advanced Research in Dynamical and Control Systems*, 11(5 Special Issue), 1264-1269.
- Richardson, K., Steffen, W., Lucht, W., Bendtsen, J., Cornell, S.E., Donges, J.F. et al. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, 9(37), 1-16. <https://doi.org/10.1126/sciadv.adh2458>
- Rupley, K.H., Brown, D., & Marshall, R.S. (2012). Governance, media and the quality of environmental disclosure. *Journal of Accounting and Public Policy*, 31(6), 610-640. <https://doi.org/10.1016/J.JACCPUBPOL.2012.09.002>
- Salama, A. (2005). A note on the impact of environmental performance on financial performance. *Structural Change and Economic Dynamics*, 16(3), 413-421. <https://doi.org/10.1016/J.STRUECO.2004.04.005>
- Sari, N.M., & Sulfitri, V. (2023). The Effect of Media Exposure, Environmental Performance, and ISO 14001 Certification on Carbon Emission Disclosure. *Journal of Economics, Finance and Management Studies*, 06(08), 3662-3671. <https://doi.org/10.47191/jefms/v6-i8-13>
- Solikhah, B., & Maulina, U. (2021). Factors influencing environment disclosure quality and the moderating role of corporate governance. *Cogent Business and Management*, 8(1). <https://doi.org/10.1080/23311975.2021.1876543>
- Suhadak, Kurniaty, Handayani, S. R., & Rahayu, S. M. (2019). Stock return and financial performance as moderation variable in influence of good corporate governance towards corporate value. *Asian Journal of Accounting Research*, 4(1), 18-34. <https://doi.org/10.1108/AJAR-07-2018-0021>
- Tadros, H., & Magnan, M. (2019). How does environmental performance map into environmental disclosure?: A look at underlying economic incentives and legitimacy aims. *Sustainability Accounting, Management and Policy Journal*, 10(1), 62-96. <https://doi.org/10.1108/SAMPJ-05-2018-0125>
- Tang, Y., Wang, B., Pan, N., & Li, Z. (2023). The impact of environmental information disclosure on the cost of green bond: Evidence from China. *Energy Economics*, 126. <https://doi.org/10.1016/j.eneco.2023.107008>
- Vinayagamoorthi, V., Murugesan, S., & Kasilingam, L. (2015). Impact of firms' profitability on environmental performance: evidence from companies in india. *Mediterranean Journal of Social Sciences*, 6(1), 109-119. <https://doi.org/10.5901/mjss.2015.v6n1p109>
- Wahidahwati, W., & Ardini, L. (2021). Corporate Governance and Environmental Performance: How They Affect Firm Value. *Journal of Asian Finance, Economics and Business*, 8(2), 953-962. <https://doi.org/10.13106/jafeb.2021.vol8.no2.0953>

- Widarsono, A., & Hadiyanti, C.P. (2015). Pengaruh profitabilitas, leverage dan likuiditas terhadap kinerja lingkungan (Studi pada Badan Usaha Milik Negara (BUMN) Sektor Manufaktur Periode 2009-2013). *Jurnal Riset Akuntansi dan Keuangan*, 3(3). https://doi.org/10.17509/jrak.v3i3.6624_
- Xu, H., Xu, X., & Yu, J. (2021). The Impact of Mandatory CSR Disclosure on the Cost of Debt Financing: Evidence from China. *Emerging Markets Finance and Trade*, 57(8), 2191-2205. <https://doi.org/10.1080/1540496X.2019.1657401>
- Yin, H., Li, M., Ma, Y., & Zhang, Q. (2019). The relationship between environmental information disclosure and profitability: A comparison between different disclosure styles. *International Journal of Environmental Research and Public Health*, 16(9). <https://doi.org/10.3390/ijerph16091556>
- Zhang, D., & Wellalage, N.H. (2022). Comparative analysis of environmental performance measures and their impact on firms' financing choices. *Journal of Cleaner Production*, 375. <https://doi.org/10.1016/j.jclepro.2022.134176>

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