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Identitas Pengusul

Nama : Indah Fajarini Sri Wahyuningrum
NIDN : 0013047803
ID Sinta : 6655706
Surel : i.fajarini@mail.unnes.ac.id

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To: PhD Indah Fajarini Sri Wahyuningrum <i.fajarini@mail.unnes.ac.id>

Mon, Nov 29, 2021 at 10:02 AM

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To: PhD Indah Fajarini Sri Wahyuningrum <i.fajarini@mail.unnes.ac.id>

Wed, Dec 22, 2021 at 6:09 PM

Title: The determinant of environmental disclosure in ASEAN countries
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Bimastyaji Surya Ramadan
Universitas Diponegoro
Phone 082225539719
Fax (024)76918157
bimastyaji@live.undip.ac.id
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Wed, Jan 5, 2022 at 5:24 AM

Title: The determinant of environmental disclosure in ASEAN countries
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Bimastyaji Surya Ramadan
Universitas Diponegoro
Phone 082225539719
Fax (024)76918157
bimastyaji@live.undip.ac.id
Environmental Engineering Department, Faculty of Engineering, Universitas Diponegoro
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To: PhD Indah Fajarini Sri Wahyuningrum <i.fajarini@mail.unnes.ac.id>

Thu, Mar 10, 2022 at 1:25 PM

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Research

The determinant of environmental disclosure in ASEAN countries

Indah Fajarini Sri Wahyuningrum^{1*}, Lisdiana Safitri¹, Shanty Oktavilia²,
Andryan Setyadharma²

¹Accounting Department, Faculty of Economy, Universitas Negeri Semarang

²Economics Department, Faculty of Economy, Universitas Negeri Semarang

* Corresponding Author, email: i.fajarini@mail.unnes.ac.id

Abstract. *The purpose of this study is to examine the effect of firm size, industry type, profitability, firm age, environmental performance, institutional ownership, and gender diversity on environmental disclosure. The quantity of environmental disclosure is measured using disclosure scoring by giving a score of "1" for items disclosed and a score of "0" for items that are not disclosed. The population used in this study are manufacturing companies listed on the Indonesia Stock Exchange (IDX) and Kuala Lumpur Stock Exchange (KLSE) in year of 2019. The sampling technique used was purposive sampling which resulted 74 companies. The analytical technique used in this research is multiple linear regression analysis using IBM SPSS Statistics version 25. The results of this study indicate that company size, company age, and environmental performance have a significant positive effect on environmental disclosure. While the type of industry, profitability, institutional ownership, and gender diversity have no effect on environmental disclosure. Based on the results of the study, it can be concluded that companies that are large in size and mature in age and equipped with ownership of ISO 14001 certification can contribute to making wider environmental disclosures.*

Keywords: *environmental disclosure, Indonesia, Malaysia; Jurnal Presipitasi*

1. Introduction

The issue of the environment is still the top topic in the WEF Annual Meeting held in Switzerland on 22nd – 25th January 2019 (Parker, 2019). Indonesia and Malaysia are developing countries in Southeast Asia that have high levels of pollution. On the other hand, both countries have a low level of environmental disclosure compared to other disclosures. Indonesia has an environmental disclosure level of 31.4 out of 100, while Malaysia has an environmental disclosure level of 36.3 out of 100. The survey conducted by the Air Quality Index (2019) shows Indonesia and Malaysia have pollution levels of 51.7 $\mu\text{g}/\text{m}^3$ and 19.4 $\mu\text{g}/\text{m}^3$. The pollution exceeds the maximum limit set by the World Health Organization that is 10 $\mu\text{g}/\text{m}^3$. According to Greenpeace (2019), air quality in Indonesia has been at the level of PM 2.5 concentration which is the same as Kuala Lumpur.

Indonesia and Malaysia are developing countries that cannot be separated from the problem of environmental pollution. The majority of environmental pollution is caused by air quality and even corporate operational activities. Companies that often cause environmental pollution problems are manufacturing companies. Manufacturing companies are the type of companies that have more attention related to environmental pollution. These companies include PT. Kamarga Kurnia Textile Industri (Indonesia), PT. How Are You Indonesia (Indonesia), WTK Holdings Berhad (Malaysia), and PT. Adei Plantation and Industry (Malaysia). Operational activities from company can impact serious problems on society and environment around of company's area. In addition to serious environmental problems, the company also pays sanctions in the form of fines for environmental pollution.

The number of problems caused causes companies to be responsible for their environment. Environmental disclosure is a form of corporate responsibility to its stakeholders. Environmental disclosure provides benefits for the company and society. Public awareness of environmental issues can encourage companies to conduct environmental reporting more broadly. The level of environmental disclosure in manufacturing companies in 2019 is caused by various factors including firm size, industry type, profitability, firm age, environmental performance, institutional ownership, and gender diversity.

The regulation concerning the disclosure of corporate environmental information in Indonesia is the Law of the Republic of Indonesia Number 40 of 2007 article 66 paragraph 2c concerning Limited Liability Companies. In addition, the Institute of Indonesia Chartered Accountants – IAI in the Statement of Financial Accounting Standards (PSAK) Number 1 (2012) paragraph 9 states that entities can present reports other than financial statements, one of which is a report on the environment used for industries that have a role in which employees are considered as part of report users (Fashikhah et al., 2018).

Environmental reporting guidelines in Malaysia are Malaysia Accounting Standard Board (MASB) 1 and 20 (Fashikhah et al., 2018). MASB 1 paragraph 10 states that economic decisions considered by stakeholders can be assessed through information related to the environment. MASB 20 states that the annual report provides environmental information as a form of recognition of the company's obligations.

Legitimacy theory obliges companies to carry out their operational activities in accordance with norms in society (Fashikhah et al., 2018). The fulfillment of legitimacy can encourage companies to do wider environmental disclosures. Legitimacy theory can contribute to explaining and predicting disclosure practices in the company environment. Information regarding the environment provided by the company aims to minimize the legitimacy gap between the public and company activities. Legitimacy theory explains that the company's sustainable operational activities will follow the boundaries and norms in society so that the company gains legitimacy.

Stakeholder theory relates to the company's interactions with its stakeholders (Freeman & McVea, 2005). The sustainability of a company depends on the relationship with its stakeholders. The extent of environmental information in the company can give stakeholders trust. Stakeholders are divided into two types, namely primary and secondary stakeholders. Primary stakeholders consist of investors, managers, employees, and suppliers. Meanwhile, secondary stakeholders consist of environmental interest groups, organizations, academics, and competitors. Stakeholders can influence the use of economic resources of a company. Company reputation represents stakeholder perceptions of behavior, organization, as evidenced by transparency and credibility through communication and information disclosure.

Signal theory states the importance of companies in issuing information about investment decisions outside the company, one of which is the environment (Brigham & Houston, 2019). Signal theory states the importance of companies in releasing information regarding investment decisions of parties outside the company. The extensive environmental disclosure can be used as a consideration for investors to entrust their capital. Signal given to external parties is one way to minimize information asymmetry. Good environmental disclosure practices and wider transparency are signals that a company has good environmental quality.

The value of a company is described by firm size. Companies that have large sizes carry out more complex activities than companies that have small sizes. Complex activities have the potential to cause a lot of environmental pollution, which will become special concern for stakeholders. On the other hand, large companies have more stakeholders than small companies. Companies with a larger size will be more easily known to the public so that they put more pressure on environmental reporting to avoid obstacles that occur. Large-sized companies are responsible to provide information about environmental disclosure as a form of concern for their stakeholders. Istiqomah & Wahyuningrum, 2020; Wahyuningrum & Budiharjo (2018) said that company size proved to have a positive and significant effect on environmental disclosures reported by companies.

H₁: Firm size affects environmental disclosure.

Every company must have a different industry type. The higher level of sensitivity will affect the wider environmental disclosure. Industry type is divided into two categories, namely high profile and low profile. Companies that include the high profile category, namely agriculture, forestry, fisheries, timber, mining, construction, food and beverage, tobacco producers, paper, cable, chemical, plastic and glass products, automotive, metal, steel, and pharmaceuticals. Meanwhile, the low profiles are textile products, ready-to-wear clothes, footwear, adhesives, cement, ceramics, household appliances, stone, clay, concrete products, electronic and office equipment, photography equipment, transportation services, wholesale trade and retail, banking, credit agencies other than banks, securities, insurance, real estate and property, hotels and travel services. Environmental sensitivity refers to industries which its activities directly affect the environment (Welbeck et al., 2017). Companies that have a high level of sensitivity have a great responsibility in terms of disclosing environmental information. The results of Ohidoa et al. (2016) also proves that the type of industry has an effect on environmental disclosure.

H₂: Type of industry affects environmental disclosure.

Profitability is a company's ability to generate profit which is used to determine the success of the company (Devie et al., 2019). Companies that have high profitability indicate that large profits will not reduce environmental financing. Companies with low profits will have difficulty in environmental financing due to limitations in information disclosure, one of which is related to the environment. A high level of profitability increases investor trust in investing their shares in the company so that the company's obligation regarding information disclosure is getting wider (Chaklader & Gulati, 2015). Santos et al. (2019) said that profitability has a significant positive effect on environmental disclosure. Companies that have a high level of profitability show that large profits will not reduce environmental financing and are more accepted in society. Companies with a high level of profitability can gain legitimacy from the society regarding their operational activities.

H₃: Profitability affects environmental disclosure.

Firm age is the period for a company to be established and carry out its operational activities. The number of companies is increasing and can lead to intense competition between companies. Companies that have been operating for a longer time have experience in carrying out their operational activities and pay attention to environmental impacts, especially for their stakeholders. On the other hand, companies that have been established for a long time can find solutions to every obstacle since mature companies have more experience. This can encourage companies to disclose information regarding the environment more broadly. Firm age is one of the factors that influences the extent or not information disclosure. In their research Istiqomah & Wahyuningrum (2020) and Rahmawati & Budiwati (2018) stated that the age of the company has a significant effect on environmental disclosure.

H₄: Firm age affects environmental disclosure.

Environmental performance is an assessment factor to determine the quality of a company. ISO 14001 is an international certification standard on the environment. The main objective of ISO 14001 is to assist companies in controlling internal processes and increasing environmental impacts which proves that the company commits to stakeholder demands for responsibility to the environment (Orcos & Palomas, 2019). The ISO 14001 standard is a developmental of management aspect that was introduced in 1990. The ISO 14001 standard can encourage companies to improve their performance in accordance with existing resources so that the balance of business and the environment can be aligned. The ownership of ISO 14001 certification indicates that the company has gained legitimacy from related parties, such as the society. The results of Chaklader & Gulati (2015) shows that ISO 14001 as a certification standard on the environment significantly effects on the environmental disclosure.

H₅: Environmental performance affects environmental disclosure.

Institutional ownership is the proportion of share ownership owned by the institution. These institutions include banks, investment companies, foundations, companies in the form of Limited Companies, pension funds, insurance companies, and other institutions both local and foreign (Sari et al., 2013). The higher the percentage of institutional ownership in the company, the better monitoring is

carried out on environmental disclosure so that it can improve institutional investment decisions. Institutional ownership in the company can be used as a signal that the company has good performance and one of which is through environmental disclosure. High institutional ownership in a company can encourage companies to increase wider information. According to research of Qa'dan & Suwaidan (2019) the results showed that Environmental disclosure had significantly affected by institutional ownership of the company.

H₆: Institutional ownership affects environmental disclosure.

Female commissioners are more routine in attend board of commissioners meetings compared to male commissioners (Adams et al., 2005). The Board of female commissioners has active participation, more mature preparation, independence, and quality that allow them to contribute maximally to decision-making (Kathy Rao et al., 2012). According to Solikhah & Winarsih (2016) women are more committed and engaged, more prepared, more diligent in asking questions, and ultimately create a good atmosphere in the board of commissioners. One of the decisions that can be made is regarding environmental disclosure. The board of female commissioners can create a good atmosphere and decisions within the board of commissioners. Similar to previous research, the results of Kathy Rao et al. (2012) and Gohanna Sondang et al. (2021) showed that environmental disclosure can be affected by gender diversity in a company.

H₇: Gender diversity affects environmental disclosure.

2. Methodology

Secondary data with quantitative method are used on this research. Data can be found from listed companies in Indonesia and Malaysia which provide annual and sustainability reports. The manufacturing companies which listed on the Indonesia Stock Exchange (IDX) and Bursa Malaysia (KLSE) in 2019 used as population in this study. The sampling technique used purposive sampling and obtained 74 companies. Table 1 present the criteria of sample used in this study.

Table 1. Sample criteria.

| Criteria | IDX | KLSE |
|---|------------|-------------|
| Manufacturing companies listed on IDX and KLSE in the 2019 period | 122 | 115 |
| Companies that did not publish annual reports and/or sustainability reports 2019 | (0) | (0) |
| Companies that did not have data related to research variables in the annual reports and/or sustainability reports 2019 | (71) | (86) |
| Outliers | (3) | (3) |
| Unit of analysis | 48 | 26 |
| Total | 74 | |

The dependent variable used was environmental disclosure. The measurement of environmental disclosure used a checklist item based on the indicators of GRI Standard 2016. GRI 2016 reporting consist of eight indicators which are material (items), energy (5 items), water (3 items), biodiversity (4 items), emission (7 items), waste and effluent (5 items), compliance (1 items), and harmony (2 items). All indicators have specific items related to environmental aspect and total items are 30.

A multiple regression analysis used in this study to examine the effect of the independent variable on the dependent variable. The regression model as follows:

$$ED = \beta_0 + \beta_1SIZE + \beta_2TYPE + \beta_3ROE + \beta_4AGE + \beta_5EP + \beta_6INSTS + \beta_7GENDER + e(1)$$

Firm size used the natural logarithm of total assets. Assets have economic and social benefits in the future for the company. Total assets are used to assess firm size because it can reflect the wealth of a company both internally and externally. Internal intended is in the form of the company's own capital and external comes from outside the company in the form of liabilities. Industry type was measured using a dummy variable by giving a score of "0" for low profile companies and a score of "1" high profile companies. Profitability is obtained by dividing profit after tax with total equity. ROE is used in this study because it describes the percentage of profits based on the company's capital utilization. Firm age used the natural logarithm of the total months. The use of total months in the study aims to be able to calculate firm age in more detail. Environmental performance was measured using possession of ISO 14001 certification. Institutional ownership was measured based on the ownership of institutional shares divided by outstanding shares. Total board of female directors used in gender measurement diversity.

3. Results and discussion

The level of environmental disclosure based on the number of specific items in Indonesia and Malaysia is presented in Table 2.

Table 2. GRI 2016 in Indonesia and Malaysia.

| No | Indicators | Topics | IDX | KLSE |
|-----|--------------|--|-----|------|
| 301 | Material | Material used by weight or volume | 35% | 15% |
| | | Recycled input materials used | 42% | 4% |
| | | Reclaimed products and their packaging | 31% | 4% |
| 302 | Energy | Energy consumption within the organization | 33% | 46% |
| | | Energy consumption outside of the organization | 25% | 19% |
| | | Energy intensity | 23% | 38% |
| | | Reduction of energy consumption | 35% | 46% |
| | | Reduction in energy requirements of products and services | 19% | 23% |
| 303 | Water | Water withdrawal by source | 6% | 12% |
| | | Water sources significantly affected by withdrawal of water | 4% | 12% |
| | | Water recycled and reused | 4% | 12% |
| 304 | Biodiversity | Operational sites owned, leased, managed in, or adjacent to, protected areas and areas high biodiversity value outside protected areas | 15% | 0% |
| | | Significant impacts of activities, products, and services on biodiversity | 23% | 8% |
| | | Habitats protected or restored | 2% | 0% |
| | | IUCN Red List species and national conservation list species with habitats in areas affected by operations | 4% | 0% |
| 305 | Emission | Direct (scope 1) GHG emissions | 38% | 35% |
| | | Energy indirect (scope 2) GHG emissions | 27% | 19% |
| | | Other indirect (scope 3) GHG emissions | 29% | 15% |
| | | GHG emissions intensity | 17% | 12% |
| | | Reduction of GHG emissions | 35% | 27% |

| No | Indicators | Topics | IDX | KLSE |
|-----|------------------|---|-----|------|
| 306 | Effluent & Waste | Emissions of ozone depleting substances (ODS) | 4% | 8% |
| | | Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions | 6% | 8% |
| | | Water discharge by quality and destination | 60% | 31% |
| | | Waste by type and disposal method | 88% | 85% |
| | | Significant spills | 50% | 27% |
| | | Transport of hazardous waste | 79% | 81% |
| 307 | Compliance | Water bodies affected by water discharges and/or runoff | 35% | 8% |
| | | Non-compliance with environmental laws and regulations | 31% | 4% |
| 308 | Harmony | New suppliers that were screened using environmental criteria | 17% | 27% |
| | | Negative environmental impacts in the supply chain and actions taken | 6% | 15% |

Based on the results of descriptive statistical analysis, the environmental disclosure variable has a mean value of 25.31532 with a minimum value of 3.333 and a maximum value of 66.667. The values indicate that the level of environmental disclosure tends to be low.

Table 3. Descriptive Statistics.

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------|----|---------|---------|----------|----------------|
| SIZE | 74 | 21.745 | 33.495 | 28.21431 | 1.760263 |
| TYPE | 74 | 0 | 1 | .66 | .476 |
| ROE | 74 | .015 | 139.966 | 13.39156 | 20.178693 |
| AGE | 74 | 2.639 | 6.271 | 5.23247 | .787760 |
| ISO | 74 | 0 | 1 | .38 | .488 |
| INSTS | 74 | 2.019 | 99.954 | 66.29964 | 28.195048 |
| GENDER | 74 | 0 | 3 | .62 | .753 |
| ED | 74 | 3.333 | 66.667 | 25.31532 | 15.477375 |

The normality test used is Kolmogorov Smirnov with a significance value of 0.200. The multicollinearity test on each variable has a tolerance value >0.1 and VIF <10. The autocorrelation test uses Durbin Watson based on decision-making ($dU < d < 4 - dU$). Value of $k = 7$ and $n = 74$, then the value of dU obtained is 1.8343. Thus, we get equation $1.8343 < 2.115 < 2.1657$. The heteroscedasticity test uses the Glejser test where each variable has a significance value of > 0.05. It can be concluded that the research data the research passes the classical assumption test. The result of hypothesis testing is shown in table 4.

Table 4. Hypothesis test results.

| Model | Prediction | Unstd Coef Std. Error | Std Coef Beta | t | Sig. | Multicollinearity Tolerance VIF |
|------------|------------|--------------------------|------------------|--------|------|------------------------------------|
| (Constant) | | -2.135 | 1.334 | -1.600 | .114 | |

| | | | | | | | | |
|--------|---|-------|------|-------|--------|------|------|-------|
| SIZE | + | .141 | .045 | .330 | 3.122 | .003 | .814 | 1.229 |
| TYPE | + | .177 | .159 | .113 | 1.119 | .267 | .901 | 1.110 |
| ROE | + | -.087 | .062 | -.174 | -1.416 | .161 | .607 | 1.648 |
| AGE | + | .214 | .105 | .225 | 2.038 | .046 | .750 | 1.332 |
| ISO | + | .433 | .161 | .282 | 2.687 | .009 | .828 | 1.208 |
| INSTS | + | .003 | .114 | .003 | .024 | .981 | .562 | 1.780 |
| GENDER | + | -.133 | .100 | -.133 | -1.325 | .190 | .904 | 1.106 |

a. Dependent Variable:ED

R² = 0.398

Adjusted R² = 0.334

Significance at 0.05

N = 74

Table 4 shows that firm size (SIZE) has a t value of 0.003 (<0.05) with a coefficient value of 0.330. It means that firm size has a significant effect on environmental disclosure. Large-sized companies have a role in the wider environmental disclosure. Stakeholders pay more attention to large-sized companies because they have a larger number of workers and have more complex activities so that they can generate positive signals for stakeholders. Large companies also have a significant impact on the environment in which they operate. This proves that large companies have awareness in disclosing information about the environment more. In line with the theory of legitimacy, companies must gain stakeholder legitimacy to maintain their sustainability. Signal theory also supports the assumption that larger companies have an obligation to signal the company's prospects by disclosing information. One of which is information about the environment. This results also showed that related to the research conducted by (Istiqomah & Wahyuningrum, 2020) and (Wahyuningrum et al., 2020)

The second hypothesis is the industry type (TYPE). Industry type has a t value of 0.267 (> 0.05) with a coefficient value of 0.113 so that type of industry does not affect environmental disclosure. It is because, high profile and low-profile companies have the same pressure in their stakeholders. This research is dominated by companies that include in high profile category with a percentage rate of 64.5%. Pressure is placed on companies that do not manage the impact of their operational activities properly. The public will put pressure on companies that have a big impact on the environment due to their business operations so that it does not focus on certain types of industries. This is due to the direct or indirect impact felt by the stakeholders. The theory of legitimacy, which states that the higher the level of sensitivity to the environment, the higher the level of corporate responsibility to stakeholders has not been proven. This is due to the company's responsibility does not only focus on high profile companies. This is in line with the research results (Ismail et al., 2018) and (Chaklader & Gulati, 2015) which states that industry type does not affect environmental disclosure.

The third hypothesis is the effect of profitability (ROE). Profitability in this research has a t value of 0.161 (>0.05) with a coefficient value of -0.174 so there is no effect of environmental disclosure. Companies with high and low profitability must carry out and publish their environmental disclosure. Companies will provide information that is more extensive when the ability to generate profits is above the industry average. This is because the disclosure of information requires big environmental costs. The profitability of a company is used to show a signal for users of financial statements who entrust their capital regardless of the extent or not of environmental disclosure. The result of this study is in related to the research conducted by Wahyuningrum et al. (2020) and Welbeck et al., (2017).

Firm age (AGE) has a t value of 0.046 (<0.05) with a coefficient value of 0.225. It can be concluded that firm age has significantly affected to environmental disclosure. Companies with mature ages have experience in resolving existing barriers and can provide extensive information in terms of the environment compare to younger companies. In addition, mature companies have a larger number of workers so that stakeholders will always pay attention to their operational activities. Legitimacy theory

supports the result of this study which states that mature companies are under pressure caused by complex operational activities. In line with the signal theory which states that a company that has been established longer can be used as a signal for its stakeholders. Older companies will be able to maintain and keep good relations with their stakeholders by disclosing information about the environment. This is consistent with the research results conducted by (Istiqomah & Wahyuningrum, 2020) and (Rahmawati & Budiwati, 2018).

The fifth hypothesis is environmental performance (ISO 14001) which has a t value of 0.009 (<0.05) with a coefficient value of 0.282. This result showed that environmental performance significantly effects on environmental disclosure. Companies that have ISO 14001 certification have performed environmental performance according to the applicable standards. Companies with ISO 14001 certification are able to conduct wider environmental disclosures because the firm values are in accordance with the values contained in the community and the companies have fulfilled environmental management properly to attract sympathy and legitimacy from the society. The signal theory also supports the result of this research, ISO 14001 certification can be used as a signal for stakeholders in making investment decisions in addition to considering financial performance aspects. Based on the results, this study is related to the previous research conducted by (Rahmawati & Budiwati, 2018) and (Wahyuningrum et al., 2020).

The t-value of the institutional ownership variable shows 0.981 (>0.05) with a coefficient value of 0.003. It means that institutional ownership does not have any relation to environmental disclosure. The percentage level of high and low institutional ownership in the company can encourage supervision for the sustainability of a company. Institutional ownership in the company can be used as a signal that the company has good performance and one of which is through environmental disclosure. Institutional ownership in this study, is ownership of shares, mutual funds, pension funds, insurance, as well as a fairly large number of shareholdings (the majority). Some reasons which can be used why majority shareholders are not very interested in voluntary information disclosure in the annual report. This is because the shareholders can access information directly to the company and some information is deliberately withheld by management and/or majority shareholders to avoid the use of that information by competitors. On the other hand, institutional ownership can take place in short-term ownership. Similar to previous research by (Ismail et al., 2018) which shows that institutional ownership does not affect environmental disclosure.

The last hypothesis is gender diversity (GENDER) which shows a t-value of 0.190 (> 0.05) with a coefficient value of -0.133. These results provide evidence that gender does not have any relationship with environmental disclosure. Without female members of the board of commissioners, the company will continue to carry out monitoring of environmental reports. The company's decision to disclose environmental information is not based on the number of women's boards, but is related to interests and responsibilities to the community. Both women's and men's boards have something in common, which is being responsible for and contributing to the disclosure of environmental information. On the other hand, the existence of diverse human resources in terms of gender is less able to influence in obtaining significant results. It can be concluded that this result is related to the research carry out by Solikhah & Winarsih (2016) which shows that gender diversity does not affect environmental disclosure.

4. Conclusion

Based on the results of the hypothesis test, it can be concluded that large and mature companies with ISO 14001 certification can affect the extent of environmental information. This is due to the strong effect of stakeholders. Strong stakeholders have an important effect on the pressure that will be given to the company. Stakeholders will put pressure on companies that cannot control the impact of their operational activities on the environment. Whereas, industry type, profitability, institutional ownership, and gender diversity cannot affect environmental disclosure.

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Research

The determinant of environmental disclosure in ASEAN countries

Indah Fajarini Sri Wahyuningrum^{1*}, Lisdiana Safitri¹, Shanty Oktavilia², Andryan Setyadharma²

¹Accounting Department, Faculty of Economy, Universitas Negeri Semarang

²Economics Department, Faculty of Economy, Universitas Negeri Semarang

* Corresponding Author, email: i.fajarini@mail.unnes.ac.id

Abstract. *The purpose of this study is to examine the effect of firm size, industry type, profitability, firm age, environmental performance, institutional ownership, and gender diversity on environmental disclosure. The quantity of environmental disclosure is measured using disclosure scoring by giving a score of "1" for items disclosed and a score of "0" for items that are not disclosed. The population used in this study are manufacturing companies listed on the Indonesia Stock Exchange (IDX) and Kuala Lumpur Stock Exchange (KLSE) in year of 2019. The sampling technique used was purposive sampling which resulted 74 companies. The analytical technique used in this research is multiple linear regression analysis using IBM SPSS Statistics version 25. The results of this study indicate that company size, company age, and environmental performance have a significant positive effect on environmental disclosure. While the type of industry, profitability, institutional ownership, and gender diversity have no effect on environmental disclosure. Based on the results of the study, it can be concluded that companies that are large in size and mature in age and equipped with ownership of ISO 14001 certification can contribute to making wider environmental disclosures.*

Keywords: *environmental disclosure, Indonesia, Malaysia; Jurnal Presipitasi*

1. Introduction

The issue of the environment is still the top topic in the WEF Annual Meeting held in Switzerland on 22nd – 25th January 2019 (Parker, 2019). Indonesia and Malaysia are developing countries in Southeast Asia that have high levels of pollution. On the other hand, both countries have a low level of environmental disclosure compared to other disclosures. Indonesia has an environmental disclosure level of 31.4 out of 100, while Malaysia has an environmental disclosure level of 36.3 out of 100. The survey conducted by the Air Quality Index (2019) shows Indonesia and Malaysia have pollution levels of 51.7 µg/m³ and 19.4 µg/m³. The pollution exceeds the maximum limit set by the World Health Organization that is 10 µg/m³. According to Greenpeace (2019), air quality in Indonesia has been at the level of PM 2.5 concentration which is the same as Kuala Lumpur.

Indonesia and Malaysia are developing countries that cannot be separated from the problem of environmental pollution. The majority of environmental pollution is caused by air quality and even corporate operational activities. Companies that often cause environmental pollution problems are manufacturing companies. Manufacturing companies are the type of companies that have more attention related to environmental pollution. These companies include PT. Kamarga Kurnia Textile Industri (Indonesia), PT. How Are You Indonesia (Indonesia), WTK Holdings Berhad (Malaysia), and PT. Adei Plantation and Industry (Malaysia). Operational activities from company can impact serious problems on society and environment around of company's area. In addition to serious environmental problems, the company also pays sanctions in the form of fines for environmental pollution.

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Commented [A2]: keywords are words that match the content of the article being discussed

The number of problems caused causes companies to be responsible for their environment. Environmental disclosure is a form of corporate responsibility to its stakeholders. Environmental disclosure provides benefits for the company and society. Public awareness of environmental issues can encourage companies to conduct environmental reporting more broadly. The level of environmental disclosure in manufacturing companies in 2019 is caused by various factors including firm size, industry type, profitability, firm age, environmental performance, institutional ownership, and gender diversity.

The regulation concerning the disclosure of corporate environmental information in Indonesia is the Law of the Republic of Indonesia Number 40 of 2007 article 66 paragraph 2c concerning Limited Liability Companies. In addition, the Institute of Indonesia Chartered Accountants – IAI in the Statement of Financial Accounting Standards (PSAK) Number 1 (2012) paragraph 9 states that entities can present reports other than financial statements, one of which is a report on the environment used for industries that have a role in which employees are considered as part of report users (Fashikhah et al., 2018).

Environmental reporting guidelines in Malaysia are Malaysia Accounting Standard Board (MASB) 1 and 20 (Fashikhah et al., 2018). MASB 1 paragraph 10 states that economic decisions considered by stakeholders can be assessed through information related to the environment. MASB 20 states that the annual report provides environmental information as a form of recognition of the company's obligations.

Legitimacy theory obliges companies to carry out their operational activities in accordance with norms in society (Fashikhah et al., 2018). The fulfillment of legitimacy can encourage companies to do wider environmental disclosures. Legitimacy theory can contribute to explaining and predicting disclosure practices in the company environment. Information regarding the environment provided by the company aims to minimize the legitimacy gap between the public and company activities. Legitimacy theory explains that the company's sustainable operational activities will follow the boundaries and norms in society so that the company gains legitimacy.

Stakeholder theory relates to the company's interactions with its stakeholders (Freeman & McVea, 2005). The sustainability of a company depends on the relationship with its stakeholders. The extent of environmental information in the company can give stakeholders trust. Stakeholders are divided into two types, namely primary and secondary stakeholders. Primary stakeholders consist of investors, managers, employees, and suppliers. Meanwhile, secondary stakeholders consist of environmental interest groups, organizations, academics, and competitors. Stakeholders can influence the use of economic resources of a company. Company reputation represents stakeholder perceptions of behavior, organization, as evidenced by transparency and credibility through communication and information disclosure.

Signal theory states the importance of companies in issuing information about investment decisions outside the company, one of which is the environment (Brigham & Houston, 2019). Signal theory states the importance of companies in releasing information regarding investment decisions of parties outside the company. The extensive environmental disclosure can be used as a consideration for investors to entrust their capital. Signal given to external parties is one way to minimize information asymmetry. Good environmental disclosure practices and wider transparency are signals that a company has good environmental quality.

The value of a company is described by firm size. Companies that have large sizes carry out more complex activities than companies that have small sizes. Complex activities have the potential to cause a lot of environmental pollution, which will become special concern for stakeholders. On the other hand, large companies have more stakeholders than small companies. Companies with a larger size will be more easily known to the public so that they put more pressure on environmental reporting to avoid obstacles that occur. Large-sized companies are responsible to provide information about environmental disclosure as a form of concern for their stakeholders. Istiqomah & Wahyuningrum, 2020; Wahyuningrum & Budiharjo (2018) said that company size proved to have a positive and significant effect on environmental disclosures reported by companies.

H₁: Firm size affects environmental disclosure.

Every company must have a different industry type. The higher level of sensitivity will affect the wider environmental disclosure. Industry type is divided into two categories, namely high profile and low profile. Companies that include the high profile category, namely agriculture, forestry, fisheries, timber, mining, construction, food and beverage, tobacco producers, paper, cable, chemical, plastic and glass products, automotive, metal, steel, and pharmaceuticals. Meanwhile, the low profiles are textile products, ready-to-wear clothes, footwear, adhesives, cement, ceramics, household appliances, stone, clay, concrete products, electronic and office equipment, photography equipment, transportation services, wholesale trade and retail, banking, credit agencies other than banks, securities, insurance, real estate and property, hotels and travel services. Environmental sensitivity refers to industries which its activities directly affect the environment (Welbeck et al., 2017). Companies that have a high level of sensitivity have a great responsibility in terms of disclosing environmental information. The results of Ohidoa et al. (2016) also proves that the type of industry has an effect on environmental disclosure.

H₂: Type of industry affects environmental disclosure.

Profitability is a company's ability to generate profit which is used to determine the success of the company (Devie et al., 2019). Companies that have high profitability indicate that large profits will not reduce environmental financing. Companies with low profits will have difficulty in environmental financing due to limitations in information disclosure, one of which is related to the environment. A high level of profitability increases investor trust in investing their shares in the company so that the company's obligation regarding information disclosure is getting wider (Chaklader & Gulati, 2015). Santos et al. (2019) said that profitability has a significant positive effect on environmental disclosure. Companies that have a high level of profitability show that large profits will not reduce environmental financing and are more accepted in society. Companies with a high level of profitability can gain legitimacy from the society regarding their operational activities.

H₃: Profitability affects environmental disclosure.

Firm age is the period for a company to be established and carry out its operational activities. The number of companies is increasing and can lead to intense competition between companies. Companies that have been operating for a longer time have experience in carrying out their operational activities and pay attention to environmental impacts, especially for their stakeholders. On the other hand, companies that have been established for a long time can find solutions to every obstacle since mature companies have more experience. This can encourage companies to disclose information regarding the environment more broadly. Firm age is one of the factors that influences the extent or not information disclosure. In their research Istiqomah & Wahyuningrum (2020) and Rahmawati & Budiwati (2018) stated that the age of the company has a significant effect on environmental disclosure.

H₄: Firm age affects environmental disclosure.

Environmental performance is an assessment factor to determine the quality of a company. ISO 14001 is an international certification standard on the environment. The main objective of ISO 14001 is to assist companies in controlling internal processes and increasing environmental impacts which proves that the company commits to stakeholder demands for responsibility to the environment (Orcos & Palomas, 2019). The ISO 14001 standard is a developmental of management aspect that was introduced in 1990. The ISO 14001 standard can encourage companies to improve their performance in accordance with existing resources so that the balance of business and the environment can be aligned. The ownership of ISO 14001 certification indicates that the company has gained legitimacy from related parties, such as the society. The results of Chaklader & Gulati (2015) shows that ISO 14001 as a certification standard on the environment significantly effects on the environmental disclosure.

H₅: Environmental performance affects environmental disclosure.

Institutional ownership is the proportion of share ownership owned by the institution. These institutions include banks, investment companies, foundations, companies in the form of Limited Companies, pension funds, insurance companies, and other institutions both local and foreign (Sari et al., 2013). The higher the percentage of institutional ownership in the company, the better monitoring is

carried out on environmental disclosure so that it can improve institutional investment decisions. Institutional ownership in the company can be used as a signal that the company has good performance and one of which is through environmental disclosure. High institutional ownership in a company can encourage companies to increase wider information. According to research of Qa'dan & Suwaidan (2019) the results showed that Environmental disclosure had significantly affected by institutional ownership of the company.

H₆: Institutional ownership affects environmental disclosure.

Female commissioners are more routine in attend board of commissioners meetings compared to male commissioners (Adams et al., 2005). The Board of female commissioners has active participation, more mature preparation, independence, and quality that allow them to contribute maximally to decision-making (Kathy Rao et al., 2012). According to Solikhah & Winarsih (2016) women are more committed and engaged, more prepared, more diligent in asking questions, and ultimately create a good atmosphere in the board of commissioners. One of the decisions that can be made is regarding environmental disclosure. The board of female commissioners can create a good atmosphere and decisions within the board of commissioners. Similar to previous research, the results of Kathy Rao et al. (2012) and Gohanna Sondang et al. (2021) showed that environmental disclosure can be affected by gender diversity in a company.

H₇: Gender diversity affects environmental disclosure.

2. Methodology

Secondary data with quantitative method are used on this research. Data can be found from listed companies in Indonesia and Malaysia which provide annual and sustainability reports. The manufacturing companies which listed on the Indonesia Stock Exchange (IDX) and Bursa Malaysia (KLSE) in 2019 used as population in this study. The sampling technique used purposive sampling and obtained 74 companies. Table 1 present the criteria of sample used in this study.

Table 1. Sample criteria.

| Criteria | IDX | KLSE |
|---|-----------|-----------|
| Manufacturing companies listed on IDX and KLSE in the 2019 period | 122 | 115 |
| Companies that did not publish annual reports and/or sustainability reports 2019 | (0) | (0) |
| Companies that did not have data related to research variables in the annual reports and/or sustainability reports 2019 | (71) | (86) |
| Outliers | (3) | (3) |
| Unit of analysis | 48 | 26 |
| Total | 74 | |

The dependent variable used was environmental disclosure. The measurement of environmental disclosure used a checklist item based on the indicators of GRI Standard 2016. GRI 2016 reporting consist of eight indicators which are material (items), energy (5 items), water (3 items), biodiversity (4 items), emission (7 items), waste and effluent (5 items), compliance (1 items), and harmony (2 items). All indicators have specific items related to environmental aspect and total items are 30.

A multiple regression analysis used in this study to examine the effect of the independent variable on the dependent variable. The regression model as follows:

$$ED = \beta_0 + \beta_1 SIZE + \beta_2 TYPE + \beta_3 ROE + \beta_4 AGE + \beta_5 EP + \beta_6 INSTS + \beta_7 GENDER + e(1)$$

Firm size used the natural logarithm of total assets. Assets have economic and social benefits in the future for the company. Total assets are used to assess firm size because it can reflect the wealth of a company both internally and externally. Internal intended is in the form of the company's own capital and external comes from outside the company in the form of liabilities. Industry type was measured using a dummy variable by giving a score of "0" for low profile companies and a score of "1" high profile companies. Profitability is obtained by dividing profit after tax with total equity. ROE is used in this study because it describes the percentage of profits based on the company's capital utilization. Firm age used the natural logarithm of the total months. The use of total months in the study aims to be able to calculate firm age in more detail. Environmental performance was measured using possession of ISO 14001 certification. Institutional ownership was measured based on the ownership of institutional shares divided by outstanding shares. Total board of female directors used in gender measurement diversity.

3. Results and discussion

The level of environmental disclosure based on the number of specific items in Indonesia and Malaysia is presented in Table 2.

Table 2. GRI 2016 in Indonesia and Malaysia.

| No | Indicators | Topics | IDX | KLSE |
|-----|--------------|--|-----|------|
| 301 | Material | Material used by weight or volume | 35% | 15% |
| | | Recycled input materials used | 42% | 4% |
| | | Reclaimed products and their packaging | 31% | 4% |
| 302 | Energy | Energy consumption within the organization | 33% | 46% |
| | | Energy consumption outside of the organization | 25% | 19% |
| | | Energy intensity | 23% | 38% |
| | | Reduction of energy consumption | 35% | 46% |
| | | Reduction in energy requirements of products and services | 19% | 23% |
| 303 | Water | Water withdrawal by source | 6% | 12% |
| | | Water sources significantly affected by withdrawal of water | 4% | 12% |
| | | Water recycled and reused | 4% | 12% |
| 304 | Biodiversity | Operational sites owned, leased, managed in, or adjacent to, protected areas and areas high biodiversity value outside protected areas | 15% | 0% |
| | | Significant impacts of activities, products, and services on biodiversity | 23% | 8% |
| | | Habitats protected or restored | 2% | 0% |
| | | IUCN Red List species and national conservation list species with habitats in areas affected by operations | 4% | 0% |
| | | Direct (scope 1) GHG emissions | 38% | 35% |
| 305 | Emission | Energy indirect (scope 2) GHG emissions | 27% | 19% |
| | | Other indirect (scope 3) GHG emissions | 29% | 15% |
| | | GHG emissions intensity | 17% | 12% |
| | | Reduction of GHG emissions | 35% | 27% |

| No | Indicators | Topics | IDX | KLSE |
|-----|------------------|---|-----|------|
| 306 | Effluent & Waste | Emissions of ozone depleting substances (ODS) | 4% | 8% |
| | | Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions | 6% | 8% |
| | | Water discharge by quality and destination | 60% | 31% |
| | | Waste by type and disposal method | 88% | 85% |
| | | Significant spills | 50% | 27% |
| | | Transport of hazardous waste | 79% | 81% |
| 307 | Compliance | Water bodies affected by water discharges and/or runoff | 35% | 8% |
| 308 | Harmony | Non-compliance with environmental laws and regulations | 31% | 4% |
| | | New suppliers that were screened using environmental criteria | 17% | 27% |
| | | Negative environmental impacts in the supply chain and actions taken | 6% | 15% |

Based on the results of descriptive statistical analysis, the environmental disclosure variable has a mean value of 25.31532 with a minimum value of 3.333 and a maximum value of 66.667. The values indicate that the level of environmental disclosure tends to be low.

Table 3. Descriptive Statistics.

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------|----|---------|---------|----------|----------------|
| SIZE | 74 | 21.745 | 33.495 | 28.21431 | 1.760263 |
| TYPE | 74 | 0 | 1 | .66 | .476 |
| ROE | 74 | .015 | 139.966 | 13.39156 | 20.178693 |
| AGE | 74 | 2.639 | 6.271 | 5.23247 | .787760 |
| ISO | 74 | 0 | 1 | .38 | .488 |
| INSTS | 74 | 2.019 | 99.954 | 66.29964 | 28.195048 |
| GENDER | 74 | 0 | 3 | .62 | .753 |
| ED | 74 | 3.333 | 66.667 | 25.31532 | 15.477375 |

The normality test used is Kolmogorov Smirnov with a significance value of 0.200. The multicollinearity test on each variable has a tolerance value >0.1 and VIF <10. The autocorrelation test uses Durbin Watson based on decision-making ($dU < d < 4 - dU$). Value of $k = 7$ and $n = 74$, then the value of dU obtained is 1.8343. Thus, we get equation $1.8343 < 2.115 < 2.1657$. The heteroscedasticity test uses the Glejser test where each variable has a significance value of > 0.05. It can be concluded that the research data the research passes the classical assumption test. The result of hypothesis testing is shown in table 4.

Table 4. Hypothesis test results.

| Model | Prediction | Unstd Coef Std. Error | Std Coef Beta | t | Sig. | Multicollinearity Tolerance VIF |
|------------|------------|--------------------------|------------------|--------|------|------------------------------------|
| (Constant) | | -2.135 | 1.334 | -1.600 | .114 | |

| | | | | | | | | |
|--------|---|-------|------|-------|--------|------|------|-------|
| SIZE | + | .141 | .045 | .330 | 3.122 | .003 | .814 | 1.229 |
| TYPE | + | .177 | .159 | .113 | 1.119 | .267 | .901 | 1.110 |
| ROE | + | -.087 | .062 | -.174 | -1.416 | .161 | .607 | 1.648 |
| AGE | + | .214 | .105 | .225 | 2.038 | .046 | .750 | 1.332 |
| ISO | + | .433 | .161 | .282 | 2.687 | .009 | .828 | 1.208 |
| INSTS | + | .003 | .114 | .003 | .024 | .981 | .562 | 1.780 |
| GENDER | + | -.133 | .100 | -.133 | -1.325 | .190 | .904 | 1.106 |

a. Dependent Variable:ED

R₂ = 0.398

Adjusted R² = 0.334

Significance at 0.05

N = 74

Table 4 shows that firm size (SIZE) has a t value of 0.003 (<0.05) with a coefficient value of 0.330. It means that firm size has a significant effect on environmental disclosure. Large-sized companies have a role in the wider environmental disclosure. Stakeholders pay more attention to large-sized companies because they have a larger number of workers and have more complex activities so that they can generate positive signals for stakeholders. Large companies also have a significant impact on the environment in which they operate. This proves that large companies have awareness in disclosing information about the environment more. In line with the theory of legitimacy, companies must gain stakeholder legitimacy to maintain their sustainability. Signal theory also supports the assumption that larger companies have an obligation to signal the company's prospects by disclosing information. One of which is information about the environment. This results also showed that related to the research conducted by (Istiqomah & Wahyuningrum, 2020) and (Wahyuningrum et al., 2020)

The second hypothesis is the industry type (TYPE). Industry type has a t value of 0.267 (> 0.05) with a coefficient value of 0.113 so that type of industry does not affect environmental disclosure. It is because, high profile and low-profile companies have the same pressure in their stakeholders. This research is dominated by companies that include in high profile category with a percentage rate of 64.5%. Pressure is placed on companies that do not manage the impact of their operational activities properly. The public will put pressure on companies that have a big impact on the environment due to their business operations so that it does not focus on certain types of industries. This is due to the direct or indirect impact felt by the stakeholders. The theory of legitimacy, which states that the higher the level of sensitivity to the environment, the higher the level of corporate responsibility to stakeholders has not been proven. This is due to the company's responsibility does not only focus on high profile companies. This is in line with the research results (Ismail et al., 2018) and (Chaklader & Gulati, 2015) which states that industry type does not affect environmental disclosure.

The third hypothesis is the effect of profitability (ROE). Profitability in this research has a t value of 0.161 (>0.05) with a coefficient value of -0.174 so there is no effect of environmental disclosure. Companies with high and low profitability must carry out and publish their environmental disclosure. Companies will provide information that is more extensive when the ability to generate profits is above the industry average. This is because the disclosure of information requires big environmental costs. The profitability of a company is used to show a signal for users of financial statements who entrust their capital regardless of the extent or not of environmental disclosure. The result of this study is in related to the research conducted by Wahyuningrum et al. (2020) and Welbeck et al., (2017).

Firm age (AGE) has a t value of 0.046 (<0.05) with a coefficient value of 0.225. It can be concluded that firm age has significantly affected to environmental disclosure. Companies with mature ages have experience in resolving existing barriers and can provide extensive information in terms of the environment compare to younger companies. In addition, mature companies have a larger number of workers so that stakeholders will always pay attention to their operational activities. Legitimacy theory

supports the result of this study which states that mature companies are under pressure caused by complex operational activities. In line with the signal theory which states that a company that has been established longer can be used as a signal for its stakeholders. Older companies will be able to maintain and keep good relations with their stakeholders by disclosing information about the environment. This is consistent with the research results conducted by (Istiqomah & Wahyuningrum, 2020) and (Rahmawati & Budiwati, 2018).

The fifth hypothesis is environmental performance (ISO 14001) which has a t value of 0.009 (<0.05) with a coefficient value of 0.282. This result showed that environmental performance significantly effects on environmental disclosure. Companies that have ISO 14001 certification have performed environmental performance according to the applicable standards. Companies with ISO 14001 certification are able to conduct wider environmental disclosures because the firm values are in accordance with the values contained in the community and the companies have fulfilled environmental management properly to attract sympathy and legitimacy from the society. The signal theory also supports the result of this research, ISO 14001 certification can be used as a signal for stakeholders in making investment decisions in addition to considering financial performance aspects. Based on the results, this study is related to the previous research conducted by (Rahmawati & Budiwati, 2018) and (Wahyuningrum et al., 2020).

The t-value of the institutional ownership variable shows 0.981 (>0.05) with a coefficient value of 0.003. It means that institutional ownership does not have any relation to environmental disclosure. The percentage level of high and low institutional ownership in the company can encourage supervision for the sustainability of a company. Institutional ownership in the company can be used as a signal that the company has good performance and one of which is through environmental disclosure. Institutional ownership in this study, is ownership of shares, mutual funds, pension funds, insurance, as well as a fairly large number of shareholdings (the majority). Some reasons which can be used why majority shareholders are not very interested in voluntary information disclosure in the annual report. This is because the shareholders can access information directly to the company and some information is deliberately withheld by management and/or majority shareholders to avoid the use of that information by competitors. On the other hand, institutional ownership can take place in short-term ownership. Similar to previous research by (Ismail et al., 2018) which shows that institutional ownership does not affect environmental disclosure.

The last hypothesis is gender diversity (GENDER) which shows a t-value of 0.190 (>0.05) with a coefficient value of -0.133. These results provide evidence that gender does not have any relationship with environmental disclosure. Without female members of the board of commissioners, the company will continue to carry out monitoring of environmental reports. The company's decision to disclose environmental information is not based on the number of women's boards, but is related to interests and responsibilities to the community. Both women's and men's boards have something in common, which is being responsible for and contributing to the disclosure of environmental information. On the other hand, the existence of diverse human resources in terms of gender is less able to influence in obtaining significant results. It can be concluded that this result is related to the research carry out by Solikhah & Winarsih (2016) which shows that gender diversity does not affect environmental disclosure.

4. Conclusion

Based on the results of the hypothesis test, it can be concluded that large and mature companies with ISO 14001 certification can affect the extent of environmental information. This is due to the strong effect of stakeholders. Strong stakeholders have an important effect on the pressure that will be given to the company. Stakeholders will put pressure on companies that cannot control the impact of their operational activities on the environment. Whereas, industry type, profitability, institutional ownership, and gender diversity cannot affect environmental disclosure.

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Research

The determinant of environmental disclosure in ASEAN countries

Indah Fajarini Sri Wahyuningrum^{1*}, Lisdiana Safitri¹, Shanty Oktavilia², Andryan Setyadharma²

¹Accounting Department, Faculty of Economy, Universitas Negeri Semarang

²Economics Department, Faculty of Economy, Universitas Negeri Semarang

* Corresponding Author, email: i.fajarini@mail.unnes.ac.id

Abstract. The purpose of this study is to examine the effect of firm size, industry type, profitability, firm age, environmental performance, institutional ownership, and gender diversity on environmental disclosure. The quantity of environmental disclosure is measured using disclosure scoring by giving a score of "1" for items disclosed and a score of "0" for items that are not disclosed. The population used in this study are manufacturing companies listed on the Indonesia Stock Exchange (IDX) and Kuala Lumpur Stock Exchange (KLSE) in year of 2019. The sampling technique used was purposive sampling which resulted 74 companies. The analytical technique used in this research is multiple linear regression analysis using IBM SPSS Statistics version 25. The results of this study indicate that company size, company age, and environmental performance have a significant positive effect on environmental disclosure. While the type of industry, profitability, institutional ownership, and gender diversity have no effect on environmental disclosure. Based on the results of the study, it can be concluded that companies that are large in size and mature in age and equipped with ownership of ISO 14001 certification can contribute to making wider environmental disclosures.

Keywords: environmental disclosure, Indonesia, Malaysia; Jurnal Presipitasi

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1. Introduction

The issue of the environment is still the top topic in the WEF Annual Meeting held in Switzerland on 22nd – 25th January 2019 (Parker, 2019). Indonesia and Malaysia are developing countries in Southeast Asia that have high levels of pollution. On the other hand, both countries have a low level of environmental disclosure compared to other disclosures. Indonesia has an environmental disclosure level of 31.4 out of 100, while Malaysia has an environmental disclosure level of 36.3 out of 100. The survey conducted by the Air Quality Index (2019) shows Indonesia and Malaysia have pollution levels of 51.7 µg/m³ and 19.4 µg/m³. The pollution exceeds the maximum limit set by the World Health Organization that is 10 µg/m³. According to Greenpeace (2019), air quality in Indonesia has been at the level of PM 2.5 concentration which is the same as Kuala Lumpur.

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Indonesia and Malaysia are developing countries that cannot be separated from the problem of environmental pollution. The majority of environmental pollution is caused by air quality and even corporate operational activities. Companies that often cause environmental pollution problems are manufacturing companies. Manufacturing companies are the type of companies that have more attention related to environmental pollution. These companies include PT. Kamarga Kurnia Textile Industri (Indonesia), PT. How Are You Indonesia (Indonesia), WTK Holdings Berhad (Malaysia), and PT. Adei Plantation and Industry (Malaysia). Operational activities from company can impact serious problems on society and environment around of company's area. In addition to serious environmental problems, the company also pays sanctions in the form of fines for environmental pollution.

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The number of problems caused causes companies to be responsible for their environment. Environmental disclosure is a form of corporate responsibility to its stakeholders. Environmental disclosure provides benefits for the company and society. Public awareness of environmental issues can encourage companies to conduct environmental reporting more broadly. The level of environmental disclosure in manufacturing companies in 2019 is caused by various factors including firm size, industry type, profitability, firm age, environmental performance, institutional ownership, and gender diversity.

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The regulation concerning the disclosure of corporate environmental information in Indonesia is the Law of the Republic of Indonesia Number 40 of 2007 article 66 paragraph 2c concerning Limited Liability Companies. In addition, the Institute of Indonesia Chartered Accountants - IAI in the Statement of Financial Accounting Standards (PSAK) Number 1 (2012) paragraph 9 states that entities can present reports other than financial statements, one of which is a report on the environment used for industries that have a role in which employees are considered as part of report users (Fashikhah et al., 2018).

Environmental reporting guidelines in Malaysia are Malaysia Accounting Standard Board (MASB) 1 and 20 (Fashikhah et al., 2018). MASB 1 paragraph 10 states that economic decisions considered by stakeholders can be assessed through information related to the environment. MASB 20 states that the annual report provides environmental information as a form of recognition of the company's obligations.

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Legitimacy theory obliges companies to carry out their operational activities in accordance with norms in society (Fashikhah et al., 2018). The fulfillment of legitimacy can encourage companies to do wider environmental disclosures. Legitimacy theory can contribute to explaining and predicting disclosure practices in the company environment. Information regarding the environment provided by the company aims to minimize the legitimacy gap between the public and company activities. Legitimacy theory explains that the company's sustainable operational activities will follow the boundaries and norms in society so that the company gains legitimacy.

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Stakeholder theory relates to the company's interactions with its stakeholders (Freeman & McVea, 2005). The sustainability of a company depends on the relationship with its stakeholders. The extent of environmental information in the company can give stakeholders trust. Stakeholders are divided into two types, namely primary and secondary stakeholders. Primary stakeholders consist of investors, managers, employees, and suppliers. Meanwhile, secondary stakeholders consist of environmental interest groups, organizations, academics, and competitors. Stakeholders can influence the use of economic resources of a company. Company reputation represents stakeholder perceptions of behavior, organization, as evidenced by transparency and credibility through communication and information disclosure.

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Signal theory states the importance of companies in issuing information about investment decisions outside the company, one of which is the environment (Brigham & Houston, 2019). Signal theory states the importance of companies in releasing information regarding investment decisions of parties outside the company. The extensive environmental disclosure can be used as a consideration for investors to entrust their capital. Signal given to external parties is one way to minimize information asymmetry. Good environmental disclosure practices and wider transparency are signals that a company has good environmental quality.

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The value of a company is described by firm size. Companies that have large sizes carry out more complex activities than companies that have small sizes. Complex activities have the potential to cause a lot of environmental pollution, which will become special concern for stakeholders. On the other hand, large companies have more stakeholders than small companies. Companies with a larger size will be more easily known to the public so that they put more pressure on environmental reporting to avoid obstacles that occur. Large-sized companies are responsible to provide information about environmental disclosure as a form of concern for their stakeholders. Istiqomah & Wahyuningrum, 2020; Wahyuningrum & Budiharjo (2018) said that company size proved to have a positive and significant effect on environmental disclosures reported by companies.

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1. Gap analysis (why your paper is really important and worth to read)
2. Aim of the study

H: Firm size affects environmental disclosure.

Every company must have a different industry type. The higher level of sensitivity will affect the wider environmental disclosure. Industry type is divided into two categories, namely high profile and low profile. Companies that include the high profile category, namely agriculture, forestry, fisheries, timber, mining, construction, food and beverage, tobacco producers, paper, cable, chemical, plastic and glass products, automotive, metal, steel, and pharmaceuticals. Meanwhile, the low profiles are textile products, ready-to-wear clothes, footwear, adhesives, cement, ceramics, household appliances, stone, clay, concrete products, electronic and office equipment, photography equipment, transportation services, wholesale trade and retail, banking, credit agencies other than banks, securities, insurance, real estate and property, hotels and travel services. Environmental sensitivity refers to industries which its activities directly affect the environment (Welbeck et al., 2017). Companies that have a high level of sensitivity have a great responsibility in terms of disclosing environmental information. The results of Ohidoa et al. (2016) also proves that the type of industry has an effect on environmental disclosure.

H₂: Type of industry affects environmental disclosure.

Profitability is a company's ability to generate profit which is used to determine the success of the company (Devie et al., 2019). Companies that have high profitability indicate that large profits will not reduce environmental financing. Companies with low profits will have difficulty in environmental financing due to limitations in information disclosure, one of which is related to the environment. A high level of profitability increases investor trust in investing their shares in the company so that the company's obligation regarding information disclosure is getting wider (Chaklader & Gulati, 2015). Santos et al. (2019) said that profitability has a significant positive effect on environmental disclosure. Companies that have a high level of profitability show that large profits will not reduce environmental financing and are more accepted in society. Companies with a high level of profitability can gain legitimacy from the society regarding their operational activities.

H₃: Profitability affects environmental disclosure.

Firm age is the period for a company to be established and carry out its operational activities. The number of companies is increasing and can lead to intense competition between companies. Companies that have been operating for a longer time have experience in carrying out their operational activities and pay attention to environmental impacts, especially for their stakeholders. On the other hand, companies that have been established for a long time can find solutions to every obstacle since mature companies have more experience. This can encourage companies to disclose information regarding the environment more broadly. Firm age is one of the factors that influences the extent or not information disclosure. In their research Istiqomah & Wahyuningrum (2020) and Rahmawati & Budiwati (2018) stated that the age of the company has a significant effect on environmental disclosure.

H₄: Firm age affects environmental disclosure.

Environmental performance is an assessment factor to determine the quality of a company. ISO 14001 is an international certification standard on the environment. The main objective of ISO 14001 is to assist companies in controlling internal processes and increasing environmental impacts which proves that the company commits to stakeholder demands for responsibility to the environment (Orcos & Palomas, 2019). The ISO 14001 standard is a developmental of management aspect that was introduced in 1990. The ISO 14001 standard can encourage companies to improve their performance in accordance with existing resources so that the balance of business and the environment can be aligned. The ownership of ISO 14001 certification indicates that the company has gained legitimacy from related parties, such as the society. The results of Chaklader & Gulati (2015) shows that ISO 14001 as a certification standard on the environment significantly effects on the environmental disclosure.

H₅: Environmental performance affects environmental disclosure.

Institutional ownership is the proportion of share ownership owned by the institution. These institutions include banks, investment companies, foundations, companies in the form of Limited Companies, pension funds, insurance companies, and other institutions both local and foreign (Sari et al., 2013). The higher the percentage of institutional ownership in the company, the better monitoring is

carried out on environmental disclosure so that it can improve institutional investment decisions. Institutional ownership in the company can be used as a signal that the company has good performance and one of which is through environmental disclosure. High institutional ownership in a company can encourage companies to increase wider information. According to research of Qa'dan & Suwaidan (2019) the results showed that Environmental disclosure had significantly affected by institutional ownership of the company.

H₆: Institutional ownership affects environmental disclosure.

Female commissioners are more routine in attend board of commissioners meetings compared to male commissioners (Adams et al., 2005). The Board of female commissioners has active participation, more mature preparation, independence, and quality that allow them to contribute maximally to decision-making (Kathy Rao et al., 2012). According to Solikhah & Winarsih (2016) women are more committed and engaged, more prepared, more diligent in asking questions, and ultimately create a good atmosphere in the board of commissioners. One of the decisions that can be made is regarding environmental disclosure. The board of female commissioners can create a good atmosphere and decisions within the board of commissioners. Similar to previous research, the results of Kathy Rao et al. (2012) and Gohanna Sondang et al. (2021) showed that environmental disclosure can be affected by gender diversity in a company.

H₇: Gender diversity affects environmental disclosure.

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2. Methodology

Secondary data with quantitative method are used on this research. Data can be found from listed companies in Indonesia and Malaysia which provide annual and sustainability reports. The manufacturing companies which listed on the Indonesia Stock Exchange (IDX) and Bursa Malaysia (KLSE) in 2019 used as population in this study. The sampling technique used purposive sampling and obtained 74 companies. Table 1 present the criteria of sample used in this study.

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Table 1. Sample criteria.

| Criteria | IDX | KLSE |
|---|-----------|-----------|
| Manufacturing companies listed on IDX and KLSE in the 2019 period | 122 | 115 |
| Companies that did not publish annual reports and/or sustainability reports 2019 | (0) | (0) |
| Companies that did not have data related to research variables in the annual reports and/or sustainability reports 2019 | (71) | (86) |
| Outliers | (3) | (3) |
| Unit of analysis | 48 | 26 |
| Total | 74 | |

The dependent variable used was environmental disclosure. The measurement of environmental disclosure used a checklist item based on the indicators of GRI Standard 2016. GRI 2016 reporting consist of eight indicators which are material (items), energy (5 items), water (3 items), biodiversity (4 items), emission (7 items), waste and effluent (5 items), compliance (1 items), and harmony (2 items). All indicators have specific items related to environmental aspect and total items are 30.

A multiple regression analysis used in this study to examine the effect of the independent variable on the dependent variable. The regression model as follows:

$$ED = \beta_0 + \beta_1 SIZE + \beta_2 TYPE + \beta_3 ROE + \beta_4 AGE + \beta_5 EP + \beta_6 INSTS + \beta_7 GENDER + e(1)$$

Firm size used the natural logarithm of total assets. Assets have economic and social benefits in the future for the company. Total assets are used to assess firm size because it can reflect the wealth of a company both internally and externally. Internal intended is in the form of the company's own capital and external comes from outside the company in the form of liabilities. Industry type was measured using a dummy variable by giving a score of "0" for low profile companies and a score of "1" high profile companies. Profitability is obtained by dividing profit after tax with total equity. ROE is used in this study because it describes the percentage of profits based on the company's capital utilization. Firm age used the natural logarithm of the total months. The use of total months in the study aims to be able to calculate firm age in more detail. Environmental performance was measured using possession of ISO 14001 certification. Institutional ownership was measured based on the ownership of institutional shares divided by outstanding shares. Total board of female directors used in gender measurement diversity.

3. Results and discussion

The level of environmental disclosure based on the number of specific items in Indonesia and Malaysia is presented in Table 2.

Table 2. GRI 2016 in Indonesia and Malaysia.

| No | Indicators | Topics | IDX | KLSE |
|-----|--------------|--|-----|------|
| 301 | Material | Material used by weight or volume | 35% | 15% |
| | | Recycled input materials used | 42% | 4% |
| | | Reclaimed products and their packaging | 31% | 4% |
| 302 | Energy | Energy consumption within the organization | 33% | 46% |
| | | Energy consumption outside of the organization | 25% | 19% |
| | | Energy intensity | 23% | 38% |
| | | Reduction of energy consumption | 35% | 46% |
| | | Reduction in energy requirements of products and services | 19% | 23% |
| 303 | Water | Water withdrawal by source | 6% | 12% |
| | | Water sources significantly affected by withdrawal of water | 4% | 12% |
| | | Water recycled and reused | 4% | 12% |
| 304 | Biodiversity | Operational sites owned, leased, managed in, or adjacent to, protected areas and areas high biodiversity value outside protected areas | 15% | 0% |
| | | Significant impacts of activities, products, and services on biodiversity | 23% | 8% |
| | | Habitats protected or restored | 2% | 0% |
| | | IUCN Red List species and national conservation list species with habitats in areas affected by operations | 4% | 0% |
| | | Direct (scope 1) GHG emissions | 38% | 35% |
| 305 | Emission | Energy indirect (scope 2) GHG emissions | 27% | 19% |
| | | Other indirect (scope 3) GHG emissions | 29% | 15% |
| | | GHG emissions intensity | 17% | 12% |
| | | Reduction of GHG emissions | 35% | 27% |

| No | Indicators | Topics | IDX | KLSE |
|-----|------------------|---|-----|------|
| 306 | Effluent & Waste | Emissions of ozone depleting substances (ODS) | 4% | 8% |
| | | Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions | 6% | 8% |
| | | Water discharge by quality and destination | 60% | 31% |
| | | Waste by type and disposal method | 88% | 85% |
| | | Significant spills | 50% | 27% |
| | | Transport of hazardous waste | 79% | 81% |
| 307 | Compliance | Water bodies affected by water discharges and/or runoff | 35% | 8% |
| | | Non-compliance with environmental laws and regulations | 31% | 4% |
| 308 | Harmony | New suppliers that were screened using environmental criteria | 17% | 27% |
| | | Negative environmental impacts in the supply chain and actions taken | 6% | 15% |

Based on the results of descriptive statistical analysis, the environmental disclosure variable has a mean value of 25.31532 with a minimum value of 3.333 and a maximum value of 66.667. The values indicate that the level of environmental disclosure tends to be low.

Table 3. Descriptive Statistics.

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------|----|---------|---------|----------|----------------|
| SIZE | 74 | 21.745 | 33.495 | 28.21431 | 1.760263 |
| TYPE | 74 | 0 | 1 | .66 | .476 |
| ROE | 74 | .015 | 139.966 | 13.39156 | 20.178693 |
| AGE | 74 | 2.639 | 6.271 | 5.23247 | .787760 |
| ISO | 74 | 0 | 1 | .38 | .488 |
| INSTS | 74 | 2.019 | 99.954 | 66.29964 | 28.195048 |
| GENDER | 74 | 0 | 3 | .62 | .753 |
| ED | 74 | 3.333 | 66.667 | 25.31532 | 15.477375 |

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The normality test used is Kolmogorov Smirnov with a significance value of 0.200. The multicollinearity test on each variable has a tolerance value >0.1 and $VIF <10$. The autocorrelation test uses Durbin Watson based on decision-making ($dU < d < 4 - dU$). Value of $k = 7$ and $n = 74$, then the value of dU obtained is 1.8343. Thus, we get equation $1.8343 < 2.115 < 2.1657$. The heteroscedasticity test uses the Glejser test where each variable has a significance value of > 0.05 . It can be concluded that the research data the research passes the classical assumption test. The result of hypothesis testing is shown in table 4.

Table 4. Hypothesis test results.

| Model | Prediction | Unstd Coef Std. Error | Std Coef Beta | t | Sig. | Multicollinearity Tolerance VIF |
|------------|------------|--------------------------|------------------|--------|------|------------------------------------|
| (Constant) | | -2.135 | 1.334 | -1.600 | .114 | |

| | | | | | | | | |
|--------|---|-------|------|-------|--------|------|------|-------|
| SIZE | + | .141 | .045 | .330 | 3.122 | .003 | .814 | 1.229 |
| TYPE | + | .177 | .159 | .113 | 1.119 | .267 | .901 | 1.110 |
| ROE | + | -.087 | .062 | -.174 | -1.416 | .161 | .607 | 1.648 |
| AGE | + | .214 | .105 | .225 | 2.038 | .046 | .750 | 1.332 |
| ISO | + | .433 | .161 | .282 | 2.687 | .009 | .828 | 1.208 |
| INSTS | + | .003 | .114 | .003 | .024 | .981 | .562 | 1.780 |
| GENDER | + | -.133 | .100 | -.133 | -1.325 | .190 | .904 | 1.106 |

a. Dependent Variable:ED

R₂ = 0.398

Adjusted R² = 0.334

Significance at 0.05

N = 74

Table 4 shows that firm size (SIZE) has a t value of 0.003 (<0.05) with a coefficient value of 0.330. It means that firm size has a significant effect on environmental disclosure. Large-sized companies have a role in the wider environmental disclosure. Stakeholders pay more attention to large-sized companies because they have a larger number of workers and have more complex activities so that they can generate positive signals for stakeholders. Large companies also have a significant impact on the environment in which they operate. This proves that large companies have awareness in disclosing information about the environment more. In line with the theory of legitimacy, companies must gain stakeholder legitimacy to maintain their sustainability. Signal theory also supports the assumption that larger companies have an obligation to signal the company's prospects by disclosing information. One of which is information about the environment. This results also showed that related to the research conducted by (Istiqomah & Wahyuningrum, 2020) and (Wahyuningrum et al., 2020)

The second hypothesis is the industry type (TYPE). Industry type has a t value of 0.267 (> 0.05) with a coefficient value of 0.113 so that type of industry does not affect environmental disclosure. It is because, high profile and low-profile companies have the same pressure in their stakeholders. This research is dominated by companies that include in high profile category with a percentage rate of 64.5%. Pressure is placed on companies that do not manage the impact of their operational activities properly. The public will put pressure on companies that have a big impact on the environment due to their business operations so that it does not focus on certain types of industries. This is due to the direct or indirect impact felt by the stakeholders. The theory of legitimacy, which states that the higher the level of sensitivity to the environment, the higher the level of corporate responsibility to stakeholders has not been proven. This is due to the company's responsibility does not only focus on high profile companies. This is in line with the research results (Ismail et al., 2018) and (Chaklader & Gulati, 2015) which states that industry type does not affect environmental disclosure.

The third hypothesis is the effect of profitability (ROE). Profitability in this research has a t value of 0.161 (>0.05) with a coefficient value of -0.174 so there is no effect of environmental disclosure. Companies with high and low profitability must carry out and publish their environmental disclosure. Companies will provide information that is more extensive when the ability to generate profits is above the industry average. This is because the disclosure of information requires big environmental costs. The profitability of a company is used to show a signal for users of financial statements who entrust their capital regardless of the extent or not of environmental disclosure. The result of this study is in related to the research conducted by Wahyuningrum et al. (2020) and Welbeck et al., (2017).

Firm age (AGE) has a t value of 0.046 (<0.05) with a coefficient value of 0.225. It can be concluded that firm age has significantly affected to environmental disclosure. Companies with mature ages have experience in resolving existing barriers and can provide extensive information in terms of the environment compare to younger companies. In addition, mature companies have a larger number of workers so that stakeholders will always pay attention to their operational activities. Legitimacy theory

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supports the result of this study which states that mature companies are under pressure caused by complex operational activities. In line with the signal theory which states that a company that has been established longer can be used as a signal for its stakeholders. Older companies will be able to maintain and keep good relations with their stakeholders by disclosing information about the environment. This is consistent with the research results conducted by (Istiqomah & Wahyuningrum, 2020) and (Rahmawati & Budiwati, 2018).

The fifth hypothesis is environmental performance (ISO 14001) which has a t value of 0.009 (<0.05) with a coefficient value of 0.282. This result showed that environmental performance significantly effects on environmental disclosure. Companies that have ISO 14001 certification have performed environmental performance according to the applicable standards. Companies with ISO 14001 certification are able to conduct wider environmental disclosures because the firm values are in accordance with the values contained in the community and the companies have fulfilled environmental management properly to attract sympathy and legitimacy from the society. The signal theory also supports the result of this research, ISO 14001 certification can be used as a signal for stakeholders in making investment decisions in addition to considering financial performance aspects. Based on the results, this study is related to the previous research conducted by (Rahmawati & Budiwati, 2018) and (Wahyuningrum et al., 2020).

The t-value of the institutional ownership variable shows 0.981 (>0.05) with a coefficient value of 0.003. It means that institutional ownership does not have any relation to environmental disclosure. The percentage level of high and low institutional ownership in the company can encourage supervision for the sustainability of a company. Institutional ownership in the company can be used as a signal that the company has good performance and one of which is through environmental disclosure. Institutional ownership in this study, is ownership of shares, mutual funds, pension funds, insurance, as well as a fairly large number of shareholdings (the majority). Some reasons which can be used why majority shareholders are not very interested in voluntary information disclosure in the annual report. This is because the shareholders can access information directly to the company and some information is deliberately withheld by management and/or majority shareholders to avoid the use of that information by competitors. On the other hand, institutional ownership can take place in short-term ownership. Similar to previous research by (Ismail et al., 2018) which shows that institutional ownership does not affect environmental disclosure.

The last hypothesis is gender diversity (GENDER) which shows a t-value of 0.190 (>0.05) with a coefficient value of -0.133. These results provide evidence that gender does not have any relationship with environmental disclosure. Without female members of the board of commissioners, the company will continue to carry out monitoring of environmental reports. The company's decision to disclose environmental information is not based on the number of women's boards, but is related to interests and responsibilities to the community. Both women's and men's boards have something in common, which is being responsible for and contributing to the disclosure of environmental information. On the other hand, the existence of diverse human resources in terms of gender is less able to influence in obtaining significant results. It can be concluded that this result is related to the research carry out by Solikhah & Winarsih (2016) which shows that gender diversity does not affect environmental disclosure.

4. Conclusion

Based on the results of the hypothesis test, it can be concluded that large and mature companies with ISO 14001 certification can affect the extent of environmental information. This is due to the strong effect of stakeholders. Strong stakeholders have an important effect on the pressure that will be given to the company. Stakeholders will put pressure on companies that cannot control the impact of their operational activities on the environment. Whereas, industry type, profitability, institutional ownership, and gender diversity cannot affect environmental disclosure.

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Research Article

The determinant Determinant of environmental disclosure Environmental Disclosure in ASEAN countries Countries

Indah Fajarini Sri Wahyuningrum1*, Lisdiana Safitri2 Safitri, Shanty Oktavilia2, Andryan Setyadharma2

*Accounting

Accounting Department, Faculty of Economy, Universitas Negeri Semarang

2Economics Economics Department, Faculty of Economy, Universitas Negeri Semarang

*Corresponding Author, email: i.fajarini@author, e-mail.unnes.ac.id: i.fajarini@mail.unnes.ac.id



Abstract

The purpose of this study is to examine the effect of firm size, industry type, profitability, firm age, environmental performance, institutional ownership, and gender diversity on environmental disclosure. The quantity of environmental disclosure is measured using disclosure scoring by giving a score of "1" for items disclosed and a score of "0" for items that are not disclosed. The population used in this study are manufacturing companies listed on the Indonesia Stock Exchange (IDX) and Kuala Lumpur Stock Exchange (KLSE) in the year of 2019. The sampling technique used was purposive sampling which resulted in 74 companies. The analytical technique used in this research is multiple linear regression analysis using IBM SPSS Statistics version 25. The results of this study indicate that company size, company age, and environmental performance have a significant positive effect on environmental disclosure. While the type of industry, profitability, institutional ownership, and gender diversity have no effect on does not affect environmental disclosure. Based on the study results of the study, it can be concluded that companies that are large in size and mature in age and equipped with ownership of ISO 14001 certification can contribute to making wider more comprehensive environmental disclosures.

Keywords: environmental Environmental disclosure, Indonesia, Malaysia, Jurnal Presipitasi

1. Introduction

The issue of the environment issue is still the top topic in the WEF Annual Meeting held in Switzerland on 22nd - 25th January 2019 (Parker, 2019) (Parker, 2019). Indonesia and Malaysia are developing countries in Southeast Asia that have with high levels of pollution levels (IOAir, 2019). On the other hand, both countries have a low level of environmental disclosure compared to other disclosures. Indonesia has an environmental disclosure level of 31.4 out of 100, while Malaysia has an environmental disclosure level of 36.3 out of 100. (IOAir, 2019). The survey conducted by the Air Quality Index (2019) shows Indonesia and Malaysia have pollution levels of 51.7 µg/m3 and 19.4 µg/m3. The pollution exceeds the maximum limit set by the World

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organizations, academics, and competitors. Stakeholders can influence the use of the economic resources of a company. Company reputation represents stakeholder perceptions of behavior organization, as evidenced by transparency and credibility through communication and information disclosure.

The signal theory states the importance of companies in issuing information about investment decisions outside the company, one of which is the environment (Brigham & Houston, 2019). The signal theory states the importance of companies in releasing information regarding investment decisions of parties outside the company. (Brigham and Houston, 2019). The extensive environmental disclosure can be used as a consideration for investors to entrust their capital. The signal given to external parties is one way to minimize information asymmetry. Good environmental disclosure practices and wider more comprehensive transparency are signals that a company has good environmental quality.

2. Literature Review

The value of a company is described by firm size. Companies that have with large sizes carry out more complex activities than companies that have with small sizes. Complex activities have the potential to cause a lot of environmental pollution, which will become a particular concern for stakeholders (Fashikhah et al., 2018). On the other hand, large companies have more stakeholders than small companies. Companies with a larger size will be more easily known to the public so that they put more pressure on environmental reporting to avoid obstacles that occur. Large-sized companies are responsible to provide information about environmental disclosure as a form of concern for their stakeholders. Istiqomah & Wahyuningrum, 2020; Wahyuningrum & Budiharjo (2018); Istiqomah and Wahyuningrum, 2020; Wahyuningrum and Budiharjo (2018) said that company size proved to have a positive and significant effect on environmental disclosures reported by companies.

H₁: Firm size affects environmental disclosure.

Every company must have a different industry type. The higher level of sensitivity will affect the wider environmental disclosure. Industry type is divided into two categories, namely high profile and low profile. Companies that include the high profile category, namely agriculture, forestry, fisheries, timber, mining, construction, food and beverage, tobacco producers, paper, cable, chemical, plastic and glass products, automotive, metal, steel, and pharmaceuticals. Meanwhile, the low profiles are textile products, ready-to-wear clothes, footwear, adhesives, cement, ceramics, household appliances, stone, clay, concrete products, electronic and office equipment, photography equipment, transportation services, wholesale trade and retail, banking, credit agencies other than banks, securities, insurance, real estate and property, hotels and travel services. Environmental sensitivity refers to industries which its activities directly affect the environment (Welbeck et al., 2017). Companies that have a high level of sensitivity have a great responsibility in terms of disclosing environmental information. The results of Ohidoa et al. (2016) also proves that the type of industry has an effect on more comprehensive environmental disclosure. The industry type is divided into two categories: high and low profile. Companies include the high profile category, namely agriculture, forestry, fisheries, timber, mining, construction, food and beverage, tobacco producers, paper, cable, chemical, plastic and glass products, automotive, metal, steel, and pharmaceuticals. Meanwhile, the low profiles are textile products, ready-to-wear clothes, footwear, adhesives, cement, ceramics, household

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appliances, stone, clay, concrete products, electronic and office equipment, photography equipment, transportation services, wholesale trade and retail, banking, credit agencies other than banks, securities, insurance, real estate, and property, hotels and travel services. Environmental sensitivity refers to industries whose activities directly affect the environment (Welbeck et al., 2017). Companies with a high level of sensitivity have a great responsibility for disclosing environmental information. The results of Ohidoa et al. (2016) also prove that the type of industry affects environmental disclosure.

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H2: Type of industry affects environmental disclosure.

Profitability is a company's ability to generate profit which is used to determine the success of the company (Devie et al., 2019). Companies that have high profitability indicate that large profits will not reduce environmental financing. Companies with low profits will have difficulty in environmental financing due to limitations in information disclosure, one of which is related to the environment. A high level of profitability increases investor trust in investing their shares in the company so that the company's obligation regarding information disclosure is getting wider (Chaklader & Gulati, 2015). Santos et al. (2019) said that profitability has a significant positive effect on environmental disclosure. Companies that have a high level of profitability show that large profits will not reduce environmental financing and are more accepted in society. Companies with a high level of profitability can gain legitimacy from the society regarding their operational activities.

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Profitability is a company's ability to generate profit to determine success (Devie et al., 2019). Companies with high profitability indicate that large profits will not reduce environmental financing. Companies with low profits will have difficulty in environmental financing due to limitations in information disclosure, one of which is related to the environment. A high level of profitability increases investor trust in investing their shares in the company so that the company's obligation regarding information disclosure is getting wider (Chaklader and Gulati, 2015). Santos et al. (2019) said that profitability has a significant positive effect on environmental disclosure. Companies with a high level of profitability show that large profits will not reduce environmental financing and are more accepted in society. Companies with a high level of profitability can gain legitimacy from society regarding their operational activities.

H3: Profitability affects environmental disclosure.

Firm age is the period for when a company to be established and carry out its operational activities. The number of companies is increasing and can lead to intense competition between companies. Companies that have been operating for a longer time have experience in carrying out their operational activities and pay attention to environmental impacts, especially for their stakeholders. On the other hand, companies that have been established for a long time can find solutions to every obstacle since mature companies have more experience. This can encourage companies to disclose information regarding the environment more broadly. Firm age is one of the factors that influences the extent or not information disclosure. In their research Istiqomah & Wahyuningrum (2020) and Rahmawati & Budiwati (2018), Istiqomah and Wahyuningrum (2020) and Rahmawati and Budiwati (2018) stated that the company's age of the company has a significant effect on environmental disclosure.

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H4: Firm age affects environmental disclosure.

Environmental performance is an assessment factor to determine the quality of a company. ISO 14001 is an international certification standard on the environment. The main objective of ISO 14001 is to assist companies in controlling internal processes and increasing environmental impacts which proves that the company commits to stakeholder demands for responsibility to the environment (Oreos & Palomas, 2019). The ISO 14001 standard is a developmental of management aspect that was introduced in 1990. The ISO 14001

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standard can encourage companies to improve their performance in accordance with existing resources so that the balance of business and the environment can be aligned. The ownership of ISO 14001 certification indicates that the company has gained legitimacy from related parties, such as the society. The results of Chaklader & Gulati (2015) shows that ISO 14001 as a certification standard on the environment significantly effects on the. The main objective of ISO 14001 is to assist companies in controlling internal processes and increasing environmental impacts, proving that the company commits to stakeholder demands for responsibility to the environment (Orcos and Palomas, 2019). The ISO 14001 standard is a developmental management aspect introduced in 1990. The ISO 14001 standard can encourage companies to improve their performance following existing resources to align the balance of business and the environment. The ownership of ISO 14001 certification indicates that the company has gained legitimacy from related parties, such as society. Chaklader and Gulati (2015) shows that ISO 14001 as a certification standard on the environment significantly affects environmental disclosure.

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H5: Environmental performance affects environmental disclosure.

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Institutional ownership is the proportion of share ownership owned by the institution. These institutions include banks, investment companies, foundations, companies in the form of Limited Companies, pension funds, insurance companies, and other institutions both local and foreign (Sari et al., 2013). The higher the percentage of institutional ownership in the company, the better monitoring is carried out on environmental disclosure so that it can improve institutional investment decisions. Institutional ownership in the company can be used as a signal that the company has good performance and one of which is through environmental disclosure. High institutional ownership in a company can encourage companies to increase wider more comprehensive information. According to Qa'dan and Suwaidan (2019) research of Qa'dan & Suwaidan (2019), the results showed that Environmental disclosure had significantly affected by institutional ownership of the company.

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H6: Institutional ownership affects environmental disclosure.

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Female commissioners are more routine in attend board of commissioners meetings compared to male commissioners (Adams et al., 2005). The Board of female commissioners has active participation, more mature preparation, independence, and quality that allow them to contribute maximally to decision-making (Kathy Rao et al., 2012). According to Solikhah & Winarsih (2016) women are more committed and engaged, more prepared, more diligent in asking questions, and ultimately create a good atmosphere in the board of commissioners. One of the decisions that can be made is regarding environmental disclosure. The board of female commissioners can create a good atmosphere and decisions within the board of commissioners. Similar to previous research, the results of Kathy Rao et al. (2012) and Gohanna Sondang et al. (2021) showed that environmental disclosure can be affected by gender diversity in a company.

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Female commissioners are more routine in attending board of commissioners meetings than male commissioners (Adams et al., 2005). The Board of female commissioners has active participation, more mature preparation, independence, and quality to contribute maximally to decision-making (Kathy Rao et al., 2012). According to Solikhah and Winarsih (2016), women are more committed and engaged, more prepared, more diligent in asking questions, and ultimately create a good atmosphere in the board of commissioners. One of the decisions that can be made is regarding environmental disclosure. The board of

female commissioners can create a good atmosphere and decisions within the board of commissioners. Similar to previous research, Kathy Rao et al. (2012) and Gohanna Sondang et al. (2021) showed that environmental disclosure could be affected by gender diversity in a company.

H7: Gender diversity affects environmental disclosure.

3.3. Methodology

Secondary data with the quantitative method are used in this research. Data can be found from listed companies in Indonesia and Malaysia which provide annual and sustainability reports. The manufacturing companies which listed on the Indonesia Stock Exchange (IDX) and Bursa Malaysia (KLSE) in 2019 are used as the population in this study. The sampling technique used purposive sampling and obtained 74 companies. Table 1 present the criteria of the sample used in this study.

Table 1. Sample criteria.

| Criteria | IDX | KLSE |
|---|-----------|-----------|
| Manufacturing companies listed on IDX and KLSE in the 2019 period | 122 | 115 |
| Companies that did not publish annual reports and/or sustainability reports 2019 | (0) | (0) |
| Companies that did not have data related to research variables in the annual reports and/or sustainability reports 2019 | (71) | (86) |
| Outliers | (3) | (3) |
| Unit of analysis | 48 | 26 |
| Total | 74 | |

The dependent variable used was environmental disclosure. The measurement of environmental disclosure used a checklist item based on the indicators of GRI Standard 2016. GRI 2016 reporting consists of eight indicators which are material (items), energy (5 items), water (3 items), biodiversity (4 items), emission (7 items), waste and effluent (5 items), compliance (1 items), and harmony (2 items). All indicators have specific items related to the environmental aspect and the total items are 30.

A multiple regression analysis used in this study to examine the effect of the independent variable on the dependent variable. The regression model as follows:

$$ED = \beta_0 + \beta_1SIZE + \beta_2TYPE + \beta_3ROE + \beta_4AGE + \beta_5EP + \beta_6INSTS + \beta_7GENDER + e \quad (1)$$

Firm size used the natural logarithm of total assets. Assets have economic and social benefits in the future for the company. Total assets are used to assess firm size because it can reflect the wealth of a company both internally and externally. Internal intended is in the form of the company's own capital and external comes from outside the company in the form of liabilities. Industry type was measured using a dummy variable by giving a score of "0" for low profile companies and a score of "1" high profile companies. Profitability is obtained by dividing profit after tax with total equity. ROE is used in this study because it describes the percentage of profits based on the company's capital utilization. Firm age used the natural logarithm of the total months. The use of total months in the study aims to be able to calculate firm age in more detail. Environmental performance was measured using possession of ISO 14001 certification. Institutional ownership was measured based on the ownership of institutional shares divided by outstanding shares. Total the entire board of female directors used in gender measurement diversity.

3.4. Results and discussion

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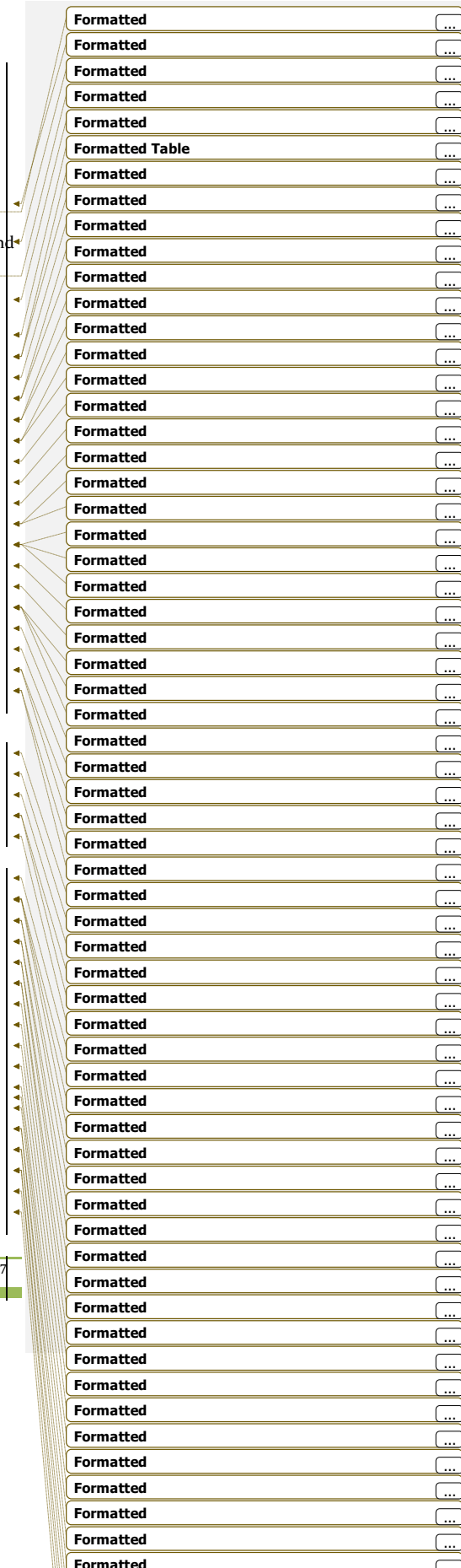
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The level of environmental disclosure based on the number of specific items in Indonesia and Malaysia is presented in Table 2.

Table 2. GRI 2016 in Indonesia and Malaysia.

| No | Indicators | Topics | IDX | KLSE |
|-----|--------------------|--|-----|------|
| 301 | Material | The material used by weight or volume | 35% | 15% |
| | | Recycled input materials used | 42% | 4% |
| | | Reclaimed products and their packaging | 31% | 4% |
| 302 | Energy | Energy consumption within the organization | 33% | 46% |
| | | Energy consumption outside of the organization | 25% | 19% |
| | | Energy intensity | 23% | 38% |
| | | Reduction of energy consumption | 35% | 46% |
| 303 | Water | Reduction in energy requirements of products and services | 19% | 23% |
| | | Water withdrawal by source | 6% | 12% |
| | | Water sources significantly affected by the withdrawal of water | 4% | 12% |
| 304 | Biodiversity | Water recycled and reused | 4% | 12% |
| | | Operational sites owned, leased, managed in, or adjacent to, protected areas and areas high biodiversity value outside protected areas | 15% | 0% |
| | | Significant impacts of activities, products, and services on biodiversity | 23% | 8% |
| | | Habitats protected or restored | 2% | 0% |
| 305 | Emission | IUCN Red List species and national conservation list species with habitats in areas affected by operations | 4% | 0% |
| | | Direct (scope 1) GHG emissions | 38% | 35% |
| | | Energy indirect (scope 2) GHG emissions | 27% | 19% |
| | | Other indirect (scope 3) GHG emissions | 29% | 15% |
| | | GHG emissions intensity | 17% | 12% |
| | | Reduction of GHG emissions | 35% | 27% |
| 306 | Effluent and Waste | Emissions of ozone-depleting substances (ODS) | 4% | 8% |
| | | Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions | 6% | 8% |
| | | Water discharge by quality and destination | 60% | 31% |
| | | Waste by type and disposal method | 88% | 85% |
| | | Significant spills | 50% | 27% |
| | | Transport of hazardous waste | 79% | 81% |
| | | Water bodies affected by water discharges and/or runoff | 35% | 8% |



| No | Indicators | Topics | IDX | KLSE |
|-----|------------|--|-----|------|
| 307 | Compliance | Non-compliance with environmental laws and regulations | 31% | 4% |
| 308 | Harmony | New suppliers that were screened using environmental criteria | 17% | 27% |
| | | Negative environmental impacts in the supply chain and actions taken | 6% | 15% |

Based on the results of descriptive statistical analysis results, the environmental disclosure variable has a mean value of 25.31532 with a minimum value of 3.333 and a maximum value of 66.667. The According to Table 3, the values indicate that the level of environmental disclosure tends to be low.

Table 3. Descriptive Statistics. Environmental disclosure variable

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------|----|---------|---------|----------|----------------|
| SIZE | 74 | 21.745 | 33.495 | 28.21431 | 1.760263 |
| TYPE | 74 | 0 | 1 | .66 | .476 |
| ROE | 74 | .015 | 139.966 | 13.39156 | 20.178693 |
| AGE | 74 | 2.639 | 6.271 | 5.23247 | .787760 |
| ISO | 74 | 0 | 1 | .38 | .488 |
| INSTS | 74 | 2.019 | 99.954 | 66.29964 | 28.195048 |
| GENDER | 74 | 0 | 3 | .62 | .753 |
| ED | 74 | 3.333 | 66.667 | 25.31532 | 15.477375 |

The normality test used is Kolmogorov Smirnov, with a significance value of 0.200. The multicollinearity test on each variable has a tolerance value >0.1 and VIF <10. The autocorrelation test uses Durbin Watson based on decision-making ($dU < d < 4 - dU$). Value of $k = 7$ and $n = 74$, then the value of dU obtained is 1.8343. Thus, we get equation $1.8343 < 2.115 < 2.1657$. The heteroscedasticity test uses the Glejser test, where each variable has a significance value of > 0.05. It can be concluded that the research data the research passes the classical assumption test. The result of hypothesis testing is shown in table 4.

Table 4. Hypothesis test results.

| Model | Prediction | Unstd Coef | | Std Coef | t | Sig. | Multicollinearity | |
|------------|------------|------------|-------|-----------|--------|------|-------------------|-------|
| | | Std. Error | Beta | Tolerance | | | VIF | |
| (Constant) | | -2.135 | 1.334 | | -1.600 | .114 | | |
| SIZE | + | .141 | .045 | .330 | 3.122 | .003 | .814 | 1.229 |
| TYPE | + | .177 | .159 | .113 | 1.119 | .267 | .901 | 1.110 |
| ROE | + | -.087 | .062 | -.174 | -1.416 | .161 | .607 | 1.648 |
| AGE | + | .214 | .105 | .225 | 2.038 | .046 | .750 | 1.332 |
| ISO | + | .433 | .161 | .282 | 2.687 | .009 | .828 | 1.208 |
| INSTS | + | .003 | .114 | .003 | .024 | .981 | .562 | 1.780 |

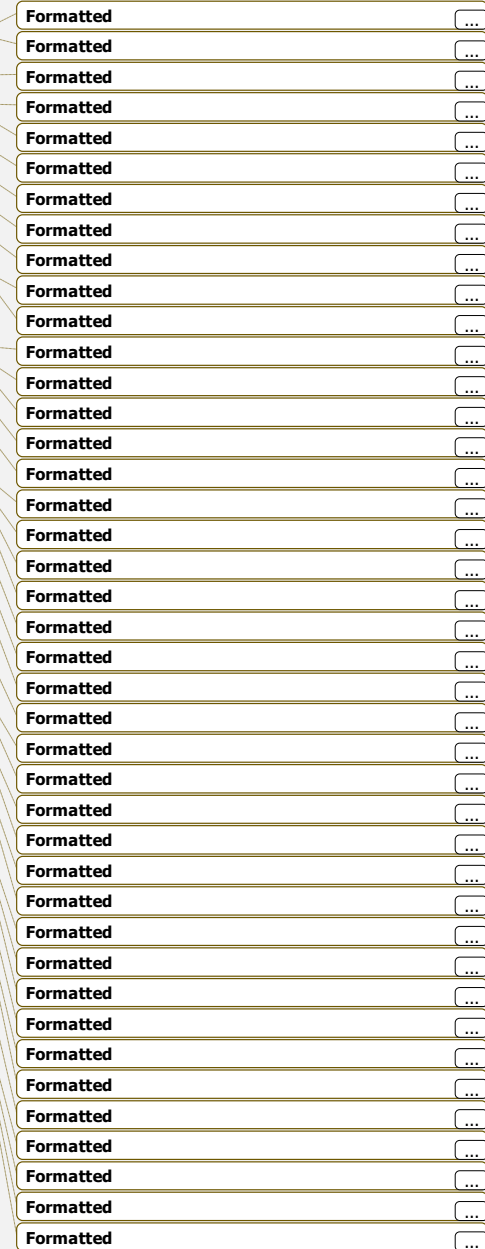
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|---------------------------|---|--------|-------|--------|--------|-------|-------|-------|
| GENDER | + | -0.133 | 0.100 | -0.133 | -1.325 | 0.190 | 0.904 | 1.106 |
| a. Dependent Variable: ED | | | | | | | | |
| R2 = 0.398 | | | | | | | | |
| Adjusted R2 = 0.334 | | | | | | | | |
| Significance at 0.05 | | | | | | | | |
| N = 74 | | | | | | | | |

Table 4 shows that firm size (SIZE) has a t value of 0.003 (<0.05) with a coefficient value of 0.330. It means that firm size has a significant effect on environmental disclosure. Large-sized companies have a role in the wider more comprehensive environmental disclosure. Stakeholders pay more attention to large-sized companies because they have a larger more significant number of workers and have more complex activities so that they can generate positive signals for stakeholders. Large companies also have a significant impact on the environment in which they operate. This proves that large companies have awareness in are more aware of disclosing information about the environment more. In line with the theory of legitimacy theory, companies must gain stakeholder legitimacy to maintain their sustainability. Signal theory also supports the assumption that larger companies have an obligation to should signal the company's prospects by disclosing information. One of which is information about the environment. These results also showed that related to the research conducted by (Istiqomah & Wahyuningrum, 2020) and (Wahyuningrum et al., 2020) Istiqomah and Wahyuningrum (2020) and Wahyuningrum et al. (2020).

The second hypothesis is the industry type (TYPE). Industry type has a t value of 0.267 (> 0.05) with a coefficient value of 0.113 so that type of industry does not affect environmental disclosure. It is because high profile and low-profile companies have the same pressure in on their stakeholders. This research is dominated by companies that include in the high profile category with a percentage rate of 64.5%. Pressure is placed on companies that do not manage the impact of their operational activities properly. The public will put pressure on companies that have a big significant impact on the environment due to their business operations so that it. It does not focus on certain types of industries. This is due to the direct or indirect impact felt by the stakeholders. The theory of legitimacy, which theory states that the higher the level of sensitivity to the environment, the higher the level of corporate responsibility to stakeholders has not been proven. This is due to the company's responsibility does not only focus on high-profile companies. This is in line with the research results (Ismail et al., 2018) and (Chaklader & Gulati, 2015) (Ismail et al., 2018) and (Chaklader and Gulati, 2015), which states that industry type does not affect environmental disclosure.

The third hypothesis is the effect of profitability (ROE). Profitability in this research has a t value of 0.161 (>0.05) with a coefficient value of -0.174 so there is no effect of environmental disclosure. Companies with high and low profitability must carry out and publish their environmental disclosure. Companies will provide information that is more extensive when the ability to generate profits is above the industry average. This is because the disclosure of information requires big environmental costs. The profitability of a company is used to show a signal for users of financial statements who entrust their capital regardless of the extent or not of environmental disclosure. The result of this study is in related to the research conducted by Wahyuningrum et al. (2020) and Welbeck et al., (2017).

The third hypothesis is the effect of profitability (ROE). Profitability in this research has a t value of 0.161 (>0.05) with a coefficient value of -0.174, so there is no effect of environmental disclosure. Companies



with high and low profitability must publish their environmental disclosure. Companies will provide more extensive information when the ability to generate profits is above the industry average. This is because the disclosure of information requires high environmental costs. The company's profitability is used to show a signal for users of financial statements who entrust their capital regardless of the extent or not of environmental disclosure. This study's result concerns the research conducted by Wahyuningrum et al. (2020) and Welbeck et al.

Firm age (AGE) has a t value of 0.046 (<0.05) with a coefficient value of 0.225. It can be concluded that firm age has significantly affected environmental disclosure. Companies with mature ages have experience in resolving existing barriers and can provide extensive information in terms of the environment compared to younger companies. In addition, mature companies have a larger number of more workers so that stakeholders will always pay attention to their operational activities. Legitimacy theory supports the result of this study which states that mature companies are under pressure caused by complex operational activities. In line with the signal theory, which states that a company that has been established longer can be used as a signal for its stakeholders. Older companies will be able to maintain and keep good relations with their stakeholders by disclosing information about the environment. This is consistent with the research results conducted by (Istiqomah & Wahyuningrum, 2020) and (Rahmawati & Budiwati, 2018). (Istiqomah and Wahyuningrum, 2020) and (Rahmawati and Budiwati, 2018).

The fifth hypothesis is environmental performance (ISO 14001) which has a t value of 0.009 (<0.05) with a coefficient value of 0.282. This result showed that environmental performance significantly affects environmental disclosure. Companies that have with ISO 14001 certification have performed environmental performance according to the applicable standards. Companies with ISO 14001 certification are able to conduct wider more comprehensive environmental disclosures because the firm values are in accordance with follow the values contained in the community and the. The companies have fulfilled environmental management properly to attract sympathy and legitimacy from the society. The signal theory also supports the result of this research, ISO 14001 certification can be used as a signal for stakeholders in making investment decisions in addition to considering financial performance aspects. Based on the results, this study is related to the previous research conducted by (Rahmawati & Budiwati, 2018) and (Wahyuningrum et al., 2020). (Rahmawati and Budiwati, 2018) and (Wahyuningrum et al., 2020).

The t-value of the institutional ownership variable shows 0.981 (>0.05) with a coefficient value of 0.003. It means that institutional ownership does not have any relation to environmental disclosure. The percentage level of high and low institutional ownership in the company can encourage supervision for the company's sustainability of a company. Institutional ownership in the company can be used as a signal that the company has good performance and one of which is through environmental disclosure. Institutional ownership in this study is ownership of shares, mutual funds, pension funds, insurance, as well as a fairly relatively large number of shareholdings (the majority). Some reasons which can be used why majority shareholders are not very interested in voluntary information disclosure in the annual report. This is because the shareholders can access information directly to the company, and some information is deliberately withheld by management and/or majority shareholders to avoid the use of using that information by competitors. On the other hand, institutional ownership can take place in short-term ownership. Similar to previous research by (Ismail et al., 2018) which shows that (Ismail et al., 2018), institutional ownership does not affect environmental disclosure.

The last hypothesis is gender diversity (GENDER) which shows a t-value of 0.190 (>0.05) with a coefficient value of -0.133. These results provide evidence prove that gender does not have any relationship with environmental disclosure. Without female members of the board of commissioners, the company will continue to carry out monitoring of monitor environmental reports. The company's decision to disclose environmental information is not based on the number of women's boards, but is related to interests and

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responsibilities to the community. Both women's and men's boards have something in common, which is being responsible for and contributing to the disclosure of environmental information. On the other hand, the existence of diverse human resources in terms of gender is less able to influence in obtaining significant results. It can be concluded that this result is related to the research carry out by Solikhah & Winarsih (2016) cannot influence obtaining significant results. It can be concluded that this result is related to the research carried out by Solikhah and Winarsih (2016), which shows that gender diversity does not affect environmental disclosure.

4. Conclusion

5. Result and Discussion

Based on the results of the hypothesis test results, it can be concluded that large significant and mature companies with ISO 14001 certification can affect the extent of environmental information. This is due to the strong effect of stakeholders. Strong stakeholders have an important a substantial effect on the pressure that will be given to the company. Stakeholders will put pressure on companies that cannot control the impact of their operational activities on the environment. Whereas, industry type, profitability, institutional ownership, and gender diversity cannot affect environmental disclosure. This study has several limitations. First, this study only uses a sample of manufacturing companies in Indonesia and Malaysia, so it cannot be generalized to developed countries. Second, the quantity of environmental disclosure is measured using the checklist item method. This causes no difference in the weight of the scores for companies that disclose environmental disclosure items in the annual report. Future research is expected to use other methods in measuring environmental disclosure.

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Research Article

The Determinant of Environmental Disclosure in ASEAN Countries

Indah Fajarini Sri Wahyuningrum^{1*}, Lisdiana Safitri¹, Shanty Oktavilia², Andryan Setyadharma²

¹Accounting Department, Faculty of Economy, Universitas Negeri Semarang

²Economics Department, Faculty of Economy, Universitas Negeri Semarang

*Corresponding author, e-mail: i.fajarini@mail.unnes.ac.id



Abstract

The purpose of this study is to examine the effect of firm size, industry type, profitability, firm age, environmental performance, institutional ownership, and gender diversity on environmental disclosure. The quantity of environmental disclosure is measured using disclosure scoring by giving “1” for items disclosed and “0” for items that are not disclosed. The population used in this study are manufacturing companies listed on the Indonesia Stock Exchange (IDX) and Kuala Lumpur, Stock. Exchange (KLSE) in the year 2019. The sampling technique used was purposive sampling which resulted in 74 companies. The analytical technique used in this research is multiple linear regression analysis using IBM SPSS Statistics version 25. The results of this study indicate that company size, company age, and environmental performance have a significant positive effect on environmental disclosure. The type of industry, profitability, institutional ownership, and gender diversity does not affect environmental disclosure. Based on the study results, it can be concluded that companies that are large in size and mature in age and equipped with ownership of ISO 14001 certification can contribute to making more comprehensive environmental disclosures.

Keywords: Environmental disclosure; Indonesia; Malaysia

1. Introduction

The environment issue is still the top topic in the WEF Annual Meeting held in Switzerland on 22nd – 25th January 2019 (Parker, 2019). Indonesia and Malaysia are developing countries in Southeast Asia with high pollution levels (IQAir, 2019). On the other hand, both countries have a low level of environmental disclosure compared to other disclosures. Indonesia has an environmental disclosure level of 31.4 out of 100, while Malaysia has 36.3 out of 100 (IQAir, 2019). The survey conducted by the Air Quality Index (2019) shows Indonesia and Malaysia have pollution levels of 51.7 $\mu\text{g}/\text{m}^3$ and 19.4 $\mu\text{g}/\text{m}^3$. The pollution exceeds the maximum limit set by the World Health Organization is 10 $\mu\text{g}/\text{m}^3$. According to Greenpeace (2019), air quality in Indonesia has been at the level of PM 2.5 concentration, the same as in Kuala Lumpur.

Indonesia and Malaysia are developing countries that cannot be separated from the problem of environmental pollution. The majority of environmental pollution is caused by air quality and even corporate operational activities (Bahri and Cahyani, 2017). Companies that often cause environmental

pollution problems are manufacturing companies. Manufacturing companies are the type of companies that have more attention related to environmental pollution. These companies include PT. Kamarga Kurnia Textile Industri (Indonesia), PT. How Are You Indonesia (Indonesia), WTK Holdings Berhad (Malaysia), and PT. Adei Plantation and Industry (Malaysia) (Rahmawati and Budiwati, 2018). Operational activities from the company can impact serious problems on society and the environment around the company's area. In addition to serious environmental problems, the company also pays sanctions in fines for environmental pollution.

The number of problems caused causes companies to be responsible for their environment. Environmental disclosure is a form of corporate responsibility to its stakeholders (Fashikhah et al., 2018). Environmental disclosure provides benefits for the company and society. Public awareness of environmental issues can encourage companies to conduct environmental reporting broadly. The level of environmental disclosure in manufacturing companies in 2019 is caused by various factors, including firm size, industry type, profitability, firm age, environmental performance, institutional ownership, and gender diversity (Wahyuningrum and Budiharjo, 2018).

The regulation concerning corporate environmental information disclosure in Indonesia is the Law of the Republic of Indonesia Number 40 of 2007 article 66 paragraph 2c concerning Limited Liability Companies. In addition, the Institute of Indonesia Chartered Accountants – IAI in the Statement of Financial Accounting Standards (PSAK) Number 1 (2012) paragraph 9 states that entities can present reports other than financial statements, one of which is a report on the environment used for industries that have a role in which employees are considered as part of report users (Fashikhah et al., 2018).

Malaysia's environmental reporting guidelines are Malaysia Accounting Standard Board (MASB) 1 and 20 (Fashikhah et al., 2018). MASB 1 paragraph 10 states that economic decisions considered by stakeholders can be assessed through information related to the environment. MASB 20 states that the annual report provides environmental information as a form of recognition of the company's obligations (Fashikhah et al., 2018).

Legitimacy theory obliges companies to carry out their operational activities following norms in society (Fashikhah et al., 2018). The fulfillment of legitimacy can encourage companies to do more comprehensive environmental disclosures. Legitimacy theory can explain and predict disclosure practices in the company environment. Information regarding the environment provided by the company aims to minimize the legitimacy gap between the public and company activities. Legitimacy theory explains that the company's sustainable operational activities will follow the boundaries and norms in society so that the company gains legitimacy (Wahyuningrum et al., 2020).

Stakeholder theory relates to the company's interactions with its stakeholders (Freeman and McVea, 2005). The sustainability of a company depends on the relationship with its stakeholders. The extent of environmental information in the company can give stakeholders trust. Stakeholders are divided into two types, namely primary and secondary stakeholders. Primary stakeholders consist of investors, managers, employees, and suppliers. Meanwhile, secondary stakeholders consist of environmental interest groups, organizations, academics, and competitors. Stakeholders can influence the use of the economic resources of a company. Company reputation represents stakeholder perceptions of behavior organization, as evidenced by transparency and credibility through communication and information disclosure.

The signal theory states the importance of companies in issuing information about investment decisions outside the company, one of which is the environment (Brigham and Houston, 2019). The signal theory states the importance of companies in releasing information regarding investment decisions of parties outside the company (Brigham and Houston, 2019). The extensive environmental disclosure can be used to consider investors entrusting their capital. The signal given to external parties is one way to

minimize information asymmetry. Good environmental disclosure practices and more comprehensive transparency are signals that a company has good environmental quality.

2. Literature Review

The value of a company is described by firm size. Companies with large sizes carry out more complex activities than companies with small sizes. Complex activities can cause a lot of environmental pollution, which will become a particular concern for stakeholders (Fashikhah et al., 2018). On the other hand, large companies have more stakeholders than small companies. Companies with a larger size will be more easily known to the public so that they put more pressure on environmental reporting to avoid obstacles that occur. Large-sized companies are responsible for providing information about environmental disclosure as a form of concern for their stakeholders. Istiqomah and Wahyuningrum, 2020; Wahyuningrum and Budiharjo (2018) said that company size proved to have a positive and significant effect on environmental disclosures reported by companies.

H1: Firm size affects environmental disclosure.

Every company must have a different industry type. The higher level of sensitivity will affect the more comprehensive environmental disclosure. The industry type is divided into two categories: high and low profile. Companies include the high profile category, namely agriculture, forestry, fisheries, timber, mining, construction, food and beverage, tobacco producers, paper, cable, chemical, plastic and glass products, automotive, metal, steel, and pharmaceuticals. Meanwhile, the low profiles are textile products, ready-to-wear clothes, footwear, adhesives, cement, ceramics, household appliances, stone, clay, concrete products, electronic and office equipment, photography equipment, transportation services, wholesale trade and retail, banking, credit agencies other than banks, securities, insurance, real estate, and property, hotels and travel services. Environmental sensitivity refers to industries whose activities directly affect the environment (Welbeck et al., 2017). Companies with a high level of sensitivity have a great responsibility for disclosing environmental information. The results of Ohidoa et al. (2016) also prove that the type of industry affects environmental disclosure.

H2: Type of industry affects environmental disclosure.

Profitability is a company's ability to generate profit to determine success (Devie et al., 2019). Companies with high profitability indicate that large profits will not reduce environmental financing. Companies with low profits will have difficulty in environmental financing due to limitations in information disclosure, one of which is related to the environment. A high level of profitability increases investor trust in investing their shares in the company so that the company's obligation regarding information disclosure is getting wider (Chaklader and Gulati, 2015). Santos et al. (2019) said that profitability has a significant positive effect on environmental disclosure. Companies with a high level of profitability show that large profits will not reduce environmental financing and are more accepted in society. Companies with a high level of profitability can gain legitimacy from society regarding their operational activities.

H3: Profitability affects environmental disclosure.

Firm age is when a company is established and carries out its operational activities. The number of companies increases and can lead to intense competition between companies. Companies that have been operating for a longer time have experience carrying out their operational activities and paying attention to environmental impacts, especially for their stakeholders. On the other hand, companies that have been established for a long time can find solutions to every obstacle since mature companies have more experience. This can encourage companies to disclose information regarding the environment more

broadly. Firm age is one factor that influences the extent or not information disclosure. In their research, Istiqomah and Wahyuningrum (2020) and Rahmawati and Budiwati (2018) stated that the company's age has a significant effect on environmental disclosure.

H4: Firm age affects environmental disclosure.

Environmental performance is an assessment factor to determine the quality of a company. ISO 14001 is an international certification standard on the environment. The main objective of ISO 14001 is to assist companies in controlling internal processes and increasing environmental impacts, proving that the company commits to stakeholder demands for responsibility to the environment (Orcos and Palomas, 2019). The ISO 14001 standard is a developmental management aspect introduced in 1990. The ISO 14001 standard can encourage companies to improve their performance following existing resources to align the balance of business and the environment. The ownership of ISO 14001 certification indicates that the company has gained legitimacy from related parties, such as society. Chaklader and Gulati (2015) shows that ISO 14001 as a certification standard on the environment significantly affects environmental disclosure.

H5: Environmental performance affects environmental disclosure.

Institutional ownership is the proportion of share ownership owned by the institution. These institutions include banks, investment companies, foundations, companies in the form of Limited Companies, pension funds, insurance companies, and other local and foreign institutions (Sari et al., 2013). The higher the percentage of institutional ownership in the company, the better monitoring is carried out on environmental disclosure to improve institutional investment decisions. Institutional ownership in the company can be used as a signal that the company has good performance through environmental disclosure. High institutional ownership in a company can encourage companies to increase more comprehensive information. According to Qa'dan and Suwaidan (2019) research, the results showed that Environmental disclosure had significantly affected institutional ownership of the company.

H6: Institutional ownership affects environmental disclosure.

Female commissioners are more routine in attending board of commissioners meetings than male commissioners (Adams et al., 2005). The Board of female commissioners has active participation, more mature preparation, independence, and quality to contribute maximally to decision-making (Kathy Rao et al., 2012). According to Solikhah and Winarsih (2016), women are more committed and engaged, more prepared, more diligent in asking questions, and ultimately create a good atmosphere in the board of commissioners. One of the decisions that can be made is regarding environmental disclosure. The board of female commissioners can create a good atmosphere and decisions within the board of commissioners. Similar to previous research, Kathy Rao et al. (2012) and Gohanna Sondang et al. (2021) showed that environmental disclosure could be affected by gender diversity in a company.

H7: Gender diversity affects environmental disclosure.

3. Methodology

Secondary data with the quantitative method are used in this research. Data can be found from listed companies in Indonesia and Malaysia that provide annual and sustainability reports. The manufacturing companies listed on the Indonesia Stock Exchange (IDX) and Bursa Malaysia (KLSE) in 2019 are used as the population in this study. The sampling technique used purposive sampling and obtained 74 companies. Table 1 present the criteria of the sample used in this study.

Table 1. Sample criteria

| Criteria | IDX | KLSE |
|---|-----------|-----------|
| Manufacturing companies listed on IDX and KLSE in the 2019 period | 122 | 115 |
| Companies that did not publish annual reports and/or sustainability reports 2019 | (0) | (0) |
| Companies that did not have data related to research variables in the annual reports and/or sustainability reports 2019 | (71) | (86) |
| Outliers | (3) | (3) |
| Unit of analysis | 48 | 26 |
| Total | 74 | |

The dependent variable used was environmental disclosure. The measurement of environmental disclosure used a checklist item based on the indicators of GRI Standard 2016. GRI 2016 reporting consists of eight indicators which are material (items), energy (5 items), water (3 items), biodiversity (4 items), emission (7 items), waste and effluent (5 items), compliance (1 item), and harmony (2 items). All indicators have specific items related to the environmental aspect, and the total items are 30. A multiple regression analysis used in this study to examine the effect of the independent variable on the dependent variable. The regression model as follows:

$$ED = \beta_0 + \beta_1SIZE + \beta_2TYPE + \beta_3ROE + \beta_4AGE + \beta_5EP + \beta_6INSTS + \beta_7GENDER + e \quad (1)$$

Firm size used the natural logarithm of total assets. Assets have economic and social benefits in the future for the company. Total assets are used to assess firm size because they can reflect the wealth of a company both internally and externally. Internal intended is in the form of the company's capital and externally comes from outside the company in liabilities. Industry type was measured using a dummy variable by giving a score of "0" for low profile companies and a "1" high profile companies. Profitability is obtained by dividing profit after tax by total equity. ROE is used in this study because it describes the percentage of profits based on its capital utilization. Firm age used the natural logarithm of the total months. The use of full months in the study aims to calculate firm age in more detail. Environmental performance was measured using possession of ISO 14001 certification. Institutional ownership was measured based on institutional shares divided by outstanding shares—the entire board of female directors used in gender measurement diversity.

4. Result and Discussion

The level of environmental disclosure based on the number of specific items in Indonesia and Malaysia is presented in Table 2.

Table 2. GRI 2016 in Indonesia and Malaysia.

| No | Indicators | Topics | IDX | KLSE |
|-----|------------|---|-----|------|
| 301 | Material | The material used by weight or volume | 35% | 15% |
| | | Recycled input materials used | 42% | 4% |
| | | Reclaimed products and their packaging | 31% | 4% |
| 302 | Energy | Energy consumption within the organization | 33% | 46% |
| | | Energy consumption outside of the organization | 25% | 19% |
| | | Energy intensity | 23% | 38% |
| | | Reduction of energy consumption | 35% | 46% |
| | | Reduction in energy requirements of products and services | 19% | 23% |

| No | Indicators | Topics | IDX | KLSE |
|-----|--------------------|--|-----|------|
| 303 | Water | Water withdrawal by source | 6% | 12% |
| | | Water sources significantly affected by the withdrawal of water | 4% | 12% |
| | | Water recycled and reused | 4% | 12% |
| 304 | Biodiversity | Operational sites owned, leased, managed in, or adjacent to, protected areas and areas high biodiversity value outside protected areas | 15% | 0% |
| | | Significant impacts of activities, products, and services on biodiversity | 23% | 8% |
| | | Habitats protected or restored | 2% | 0% |
| | | IUCN Red List species and national conservation list species with habitats in areas affected by operations | 4% | 0% |
| 305 | Emission | Direct (scope 1) GHG emissions | 38% | 35% |
| | | Energy indirect (scope 2) GHG emissions | 27% | 19% |
| | | Other indirect (scope 3) GHG emissions | 29% | 15% |
| | | GHG emissions intensity | 17% | 12% |
| | | Reduction of GHG emissions | 35% | 27% |
| | | Emissions of ozone-depleting substances (ODS) | 4% | 8% |
| | | Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions | 6% | 8% |
| 306 | Effluent and Waste | Water discharge by quality and destination | 60% | 31% |
| | | Waste by type and disposal method | 88% | 85% |
| | | Significant spills | 50% | 27% |
| | | Transport of hazardous waste | 79% | 81% |
| | | Water bodies affected by water discharges and/or runoff | 35% | 8% |
| 307 | Compliance | Non-compliance with environmental laws and regulations | 31% | 4% |
| 308 | Harmony | New suppliers that were screened using environmental criteria | 17% | 27% |
| | | Negative environmental impacts in the supply chain and actions taken | 6% | 15% |

Based on the descriptive statistical analysis results, the environmental disclosure variable has a mean value of 25.31532 with a minimum value of 3.333 and a maximum value of 66.667. According to Table 3, the values indicate that environmental disclosure tends to be low.

Table 3. Environmental disclosure variable

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-------|----|---------|---------|----------|----------------|
| SIZE | 74 | 21.745 | 33.495 | 28.21431 | 1.760263 |
| TYPE | 74 | 0 | 1 | .66 | .476 |
| ROE | 74 | .015 | 139.966 | 13.39156 | 20.178693 |
| AGE | 74 | 2.639 | 6.271 | 5.23247 | .787760 |
| ISO | 74 | 0 | 1 | .38 | .488 |
| INSTS | 74 | 2.019 | 99.954 | 66.29964 | 28.195048 |

| | | | | | |
|--------|----|-------|--------|----------|-----------|
| GENDER | 74 | 0 | 3 | .62 | .753 |
| ED | 74 | 3.333 | 66.667 | 25.31532 | 15.477375 |

The normality test used is Kolmogorov Smirnov, with a significance value of 0.200. The multicollinearity test on each variable has a tolerance value >0.1 and VIF <10. The autocorrelation test uses Durbin Watson based on decision-making ($dU < d < 4 - dU$). Value of $k = 7$ and $n = 74$, then the value of dU obtained is 1.8343. Thus, we get equation $1.8343 < 2.115 < 2.1657$. The heteroscedasticity test uses the Glejser test, where each variable has a significance value of > 0.05. It can be concluded that the research data the research passes the classical assumption test. The result of hypothesis testing is shown in table 4.

Table 4. Hypothesis test results.

| Model | Prediction | Unstd Coef Std. Error | Std Coef Beta | t | Sig. | Multicollinearity Tolerance VIF | |
|------------|------------|--------------------------|------------------|--------|------|------------------------------------|-------|
| (Constant) | | -2.135 1.334 | | -1.600 | .114 | | |
| SIZE | + | .141 .045 | .330 | 3.122 | .003 | .814 | 1.229 |
| TYPE | + | .177 .159 | .113 | 1.119 | .267 | .901 | 1.110 |
| ROE | + | -.087 .062 | -.174 | -1.416 | .161 | .607 | 1.648 |
| AGE | + | .214 .105 | .225 | 2.038 | .046 | .750 | 1.332 |
| ISO | + | .433 .161 | .282 | 2.687 | .009 | .828 | 1.208 |
| INSTS | + | .003 .114 | .003 | .024 | .981 | .562 | 1.780 |
| GENDER | + | -.133 .100 | -.133 | -1.325 | .190 | .904 | 1.106 |

a. Dependent Variable: ED
 $R^2 = 0.398$
Adjusted $R^2 = 0.334$
Significance at 0.05
 $N = 74$

Table 4 shows that firm size (SIZE) has a t value of 0.003 (<0.05) with a coefficient value of 0.330. It means that firm size has a significant effect on environmental disclosure. Large-sized companies have a role in the more comprehensive environmental disclosure. Stakeholders pay more attention to large-sized companies because they have a more significant number of workers and have more complex activities to generate positive signals for stakeholders. Large companies also have a significant impact on the environment in which they operate. This proves that large companies are more aware of disclosing information about the environment. In line with the legitimacy theory, companies must gain stakeholder legitimacy to maintain their sustainability. The signal theory also supports the assumption that larger companies should signal the company's prospects by disclosing information. One of which is information about the environment. These results also showed that related to the research conducted by Istiqomah and Wahyuningrum (2020) and Wahyuningrum et al. (2020)

The second hypothesis is the industry type (TYPE). Industry type has a t value of 0.267 (> 0.05) with a coefficient value of 0.113 so that industry does not affect environmental disclosure. It is because high-profile and low-profile companies have the same pressure on their stakeholders. This research is dominated by companies in the high profile category with a percentage rate of 64.5%. Pressure is placed on companies that do not manage the impact of their operational activities properly. The public will pressure companies that have a significant impact on the environment due to their business operations. It does not focus on certain types of industries. This is due to the direct or indirect impact felt by the stakeholders. The legitimacy theory states that the higher the level of sensitivity to the environment, the higher the level of

corporate responsibility to stakeholders has not been proven. This is due to the company's responsibility does not only focus on high-profile companies. This is in line with the research results (Ismail et al., 2018) and (Chaklader and Gulati, 2015), which states that industry type does not affect environmental disclosure.

The third hypothesis is the effect of profitability (ROE). Profitability in this research has a t value of 0.161 (>0.05) with a coefficient value of -0.174, so there is no effect of environmental disclosure. Companies with high and low profitability must publish their environmental disclosure. Companies will provide more extensive information when the ability to generate profits is above the industry average. This is because the disclosure of information requires high environmental costs. The company's profitability is used to show a signal for users of financial statements who entrust their capital regardless of the extent or not of environmental disclosure. This study's result concerns the research conducted by Wahyuningrum et al. (2020) and Welbeck et al..

Firm age (AGE) has a t value of 0.046 (<0.05) with a coefficient value of 0.225. It can be concluded that firm age has significantly affected environmental disclosure. Companies with mature ages have experience resolving existing barriers and can provide extensive information in terms of the environment compared to younger companies. In addition, mature companies have more workers so that stakeholders will always pay attention to their operational activities. Legitimacy theory supports the result of this study which states that mature companies are under pressure caused by complex operational activities, in line with the signal theory, which states that a company that has been established longer can be used as a signal for its stakeholders. Older companies will maintain and keep good relations with their stakeholders by disclosing information about the environment. This is consistent with the research results (Istiqomah and Wahyuningrum, 2020) and (Rahmawati and Budiwati, 2018).

The fifth hypothesis is environmental performance (ISO 14001) which has a t value of 0.009 (<0.05) with a coefficient value of 0.282. This result showed that environmental performance significantly affects environmental disclosure. Companies with ISO 14001 certification have performed environmental performance according to the applicable standards. Companies with ISO 14001 certification can conduct more comprehensive environmental disclosures because the firm values follow the values contained in the community. The companies have fulfilled environmental management properly to attract sympathy and legitimacy from society. The signal theory also supports the result of this research, ISO 14001 certification can be used as a signal for stakeholders in making investment decisions in addition to considering financial performance aspects. Based on the results, this study is related to the previous research conducted by (Rahmawati and Budiwati, 2018) and (Wahyuningrum et al., 2020).

The t-value of the institutional ownership variable shows 0.981 (>0.05) with a coefficient value of 0.003. It means that institutional ownership does not have any relation to environmental disclosure. The percentage level of high and low institutional ownership in the company can encourage supervision for a company's sustainability. Institutional ownership in the company can be used as a signal that the company has good performance through environmental disclosure. Institutional ownership in this study is ownership of shares, mutual funds, pension funds, insurance, and a relatively large number of shareholdings (the majority). Some reasons which can be used why majority shareholders are not very interested in voluntary information disclosure in the annual report. This is because the shareholders can access information directly to the company, and some information is deliberately withheld by management and/or majority shareholders to avoid using that information by competitors. On the other hand, institutional ownership can take place in short-term ownership. Similar to previous research by (Ismail et al., 2018), institutional ownership does not affect environmental disclosure.

The last hypothesis is gender diversity (GENDER) which shows a t-value of 0.190 (> 0.05) with a coefficient value of -0.133. These results prove that gender does not have any relationship with environmental disclosure. Without female members of the board of commissioners, the company will

continue to monitor environmental reports. The company's decision to disclose environmental information is not based on the number of women's boards but is related to interests and responsibilities to the community. Both women's and men's boards have something in common: being responsible for and contributing to the disclosure of environmental information. On the other hand, the existence of diverse human resources in terms of gender cannot influence obtaining significant results. It can be concluded that this result is related to the research carried out by Solikhah and Winarsih (2016), which shows that gender diversity does not affect environmental disclosure.

5. Result and Discussion

Based on the hypothesis test results, it can be concluded that significant and mature companies with ISO 14001 certification can affect the extent of environmental information. This is due to the strong effect of stakeholders. Strong stakeholders have a substantial effect on the pressure given to the company. Stakeholders will pressure companies that cannot control the impact of their operational activities on the environment. Industry type, profitability, institutional ownership, and gender diversity cannot affect environmental disclosure. This study has several limitations. First, this study only uses a sample of manufacturing companies in Indonesia and Malaysia, so it cannot be generalized to developed countries. Second, the quantity of environmental disclosure is measured using the checklist item method. This causes no difference in the weight of the scores for companies that disclose environmental disclosure items in the annual report. Future research is expected to use other methods in measuring environmental disclosure.

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