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# ENVIRONMENTAL DISCLOSURE INFORMATION: THE ROLE OF ENVIRONMENTAL CERTIFICATION AND FIRM SIZE

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**Abstract**
Activities disclosure reflects corporate accountability, responsibility, and transparency to investors and other stakeholders. Therefore, the objectives of this study are to analyze and empirically test the effect of the board of directors and the environment certification at 36 mining companies listed on the Indonesia Stock Exchange within 2019-2021 with 108 annual reports. The results of multiple linear regression data processing showed that the board of directors could not increase the amount of environmental disclosure information. Meanwhile, environmental certification and firm size can increase the amount of environmental disclosure information. The implication of this research is companies need to disclose enviromental information in order to gain business trust from the public, investors and other stakeholders

## INTRODUCTION

Technological developments and the global economy have made environmental issues one of the most studied. However, many environmental problems occur and requires solutions, especially in Indonesia, a developing country. Unfortunetely, the use of advance technology is not followed with the sufficience attention to the enviromental issues. Unwise use of modern technology could brings negative impact to the surrounding environment, such as environmental pollution, vilurence, desease and the death of living things, which may lead to disaster and catastrophe in the future. Furthermore, company's business activities also produce negative impacts to the environment for example induce climate change (Comyns, 2018), biodiversity extinction (Heniwati & Asni, 2019; Wolff et al., 2017), clean water availability (Molinos-Senante et al., 2017; Walker et al., 2019), and waste problems (Siskawati & Susilawati, 2017).

The phenomenon of environmental damage in Indonesia is as follows: first, data from the Ministry of Environment and Forestry in 2019 showed that the total area of forest and land fires reached 1,649,258 hectares. Meanwhile, in 2020, the area of forest and land burned decreased to 296,942 hectares (Ministry of Environment and Forestry, 2020); second, in 2020, PT Agro Tumbuh Gemilang Abadi (ATGA) paid compensation of Rp.590.5 billion due to forest and land fires covering an area of 1,500 hectares in 2015 (Saputra, 2020); third, the pollution of the Citarum River in West Java caused by the disposal of liquid waste into the Citarum

River Basin, where as many as 86 companies dispose of liquid waste into the Citarum watershed, and 32 companies disposed liquid waste into the Citarum river (Awaluddin, 2020). The companies are engaged in textile, food, chemical, and paper; and fourth, the Indonesia Supreme Audit Institution's findings released the value of environmental losses caused by PT. Freeport Indonesia. It reached Rp 185 trillion, and 48 violations were committed by PT Freeport Indonesia, which was given administrative sanctions, namely 31 findings of violations related to AMDAL, environmental permits; five findings of water pollution violations; five findings of water pollution violations; five findings of air pollution violations; and seven findings of violations of waste and B3 (Hazardous and Toxic Materials) management. Of the 48 sanctions, PT Freeport Indonesia has enforced 35 sanctions, and 13 sanctions have not been implemented (Putri & Zuraya, 2018).

Accordingly, in Indonesia, public companies must make environmental disclosures (Financial Services Authority regulations Number 51/POJK.03/2017). The regulation states that public companies must carry out environmental responsibilities in annual and/or sustainability reports. Environmental disclosure is a medium to inform interested parties regarding environmental investment and company activities (Cormier et al., 2015). The company's board of directors can increase the allocation of company resources to develop environmental strategies (Jizi, 2017). namely through ISO 14001 environmental certification.

Several previous studies showed different results. Akbas (2016); Carvalho et al., (2017); Michelon & Parbonetti (2012) revealed that there is no relationship between the board of directors and the level of environmental disclosure. Meanwhile, Jizi (2017); Jizi et al., (2014); Khan et al., (2013); Welbeck (2017) found that the size of the board of directors has a positive effect on the level of environmental disclosure. Monitoring the board is more effective, thereby encouraging increased voluntary disclosure. Alfraih (2016); Dienes & Velte (2016); Fuente et al., (2017); Ghabayen et al., (2016); Ibrahim & Hanefah (2016); Nasreem et al., (2017); Tamimi & Sebastianell (2017); Trireksani & Djajadikerta (2016) emphasized that education, gender, age, and independence are qualities related to environmental disclosure. Maulia & Yanto (2020); Rahmawati & Budiwati (2018) show that environmental certification affects environmental disclosure. On the other hand, Dianawati (2018); Oktariyani & Meutia (2016) stated that environmental certification does not affect environmental disclosure.

The amount of information presented voluntarily can be increased through corporate governance mechanisms. As part of the mechanism, the board of directors will monitor the company's policies and administration and protect the shareholders' interests (Alfraih, 2016). In addition, the board raises the company's legitimacy, encourages the rational use of resources, and oversees the disclosure strategy and policies for issuing company reports (Habbash, 2016). The number of directors of issuers or public companies consists of at least two members of the Board of Directors, where one is appointed as the principal director or president director (Financial Services Authority regulations Number 33/POJK.04/2014). Ntim et al., (2013) proved that the higher the number of board members, the greater their experience and the better their capacity to monitor company administrators.

Ghabayen et al., (2016) confirmed that a larger board size provides better advice to the CEO regarding environmental information disclosure. Furthermore, Trireksani & Djajadikerta (2016) showed that a higher proportion of board members has a high impact on environmental disclosure. In conclusion, having more board members will help promote knowledge and experience synergies for companies and society (Dienes & Velte, 2016). In addition, the number of board members can influence environmental disclosure policies (Alfraih, 2016; Nasreem et al., 2017); the volume of environmental information reported voluntarily (Ntim et al., 2013); improve company performance (Tamimi & Sebastianell, 2017); determine the company's environmental agenda and also the type of information that should be disclosed voluntarily (Bomfim et al., 2015).

Environmental certification (ISO 14001) is a company management system that ensures that the company's operational activities and products can fulfill its environmental commitments, especially in applying environmental regulations, pollution prevention, and continuous improvement (Sorooshian & Ting, 2018). In line with the legitimacy theory that a company with a good level of environmental management will have an ISO 14001 certificate. It indicates that the company will disclose environmental information more widely because the company's values are aligned with society's values. The company also has complied with environmental management well to gain recognition from the community.

Sorooshian & Ting (2018) explained that the implementation of an environmental management system with the ISO 14001 framework could support the development of company operational procedures, protect nature; reduce the use of raw materials; improve employee safety; motivate employees to be efficient and effective so that they do not only complete tasks and achieve organizational goals, but the company also attracts more potential employees; promote top management obligations and employee empowerment through collaboration, teamwork and mutual trust between executives and staff; improve communication between levels across functions, such as managers, supervisors, and others on the achievement of their environment. Welford (2016) added that an effective environmental management system is implemented by involving employees from the

beginning of the certification procedure, increasing employee responsibility and awareness of environmental issues. Rahmawati & Budiwati (2018) found that companies that have been certified to ISO 14001 have a high reputation and are well accepted by the community, thus making good environmental disclosures. In other words, environmental certification affects environmental disclosure (Maulia & Yanto, 2020).

The phenomena raised in this study and their gaps form the basis for further analysis. Researchers try to analyze and empirically test the effect of the board of directors and environmental certification on environmental disclosure. This research implies that mining companies are not only profit-oriented but also concerned for the environment. This is due to: firstly, the mining companies has an industrial nature and characteristic which different with other companies. Mining sectors is one of the nations economical development support, due to its role as a natural resources providers that highly required to the nations economical growth. The rich potency of natural resources will lead companies to emerge on exploit it. Secondly, stock of mining company sectors are highly interested by the investor. It can be seen on the high volume of stock trades on the mining sector, in which this will encourge the company to provide a better financial report.

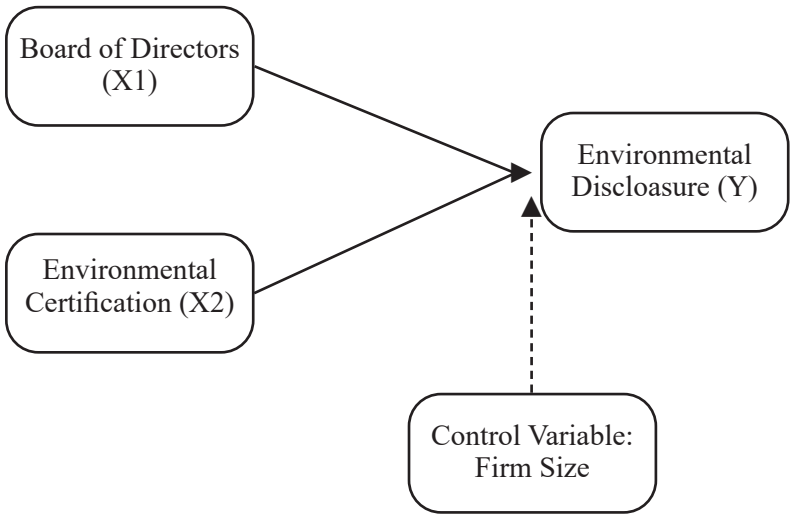


Figure 1. Research Framework

## METHOD

The population in this study are all companies listed on the Indonesia Stock Exchange from 2019-2021. The determination method which used on this research is purposive sampling. The sample criteria in which became the target on the population are as follow:

Table 1. Sample of Research

| No | Criterias | Total |
|---|---|---|
| 1 | The Mining companies active on the Indonesia Stock Exchange during the observation period | 47 |
| 2 | The mining companies which has not published their annual report, financial report and sustainability report over observation period | (7) |
| 3 | The mining companies which did not publish their financial report in rupiah currency | (4) |
| 4 | The mining companies which has no complete data regarding to the variables used in this research | (0) |
| The mining companies which are being used as a sample within 1 year | | 36 |
| The mining companies which are being used as a sample within 3 years | | 108 |

Source: Processed Secondary Data, 2022

The variables of this research consist of 3 types of variables, which include: independent variables (boards of directors and environmental certification), control variables (firm size), and the dependent variable (environmental disclosure). The board of directors variable is responsible for monitoring the company's administration, policies, and guidelines and protecting the interests of shareholders to increase the number of voluntary disclosures (Alfraih, 2016). The measurement of boards of directors uses the number of influential board members. This can be seen on the huge role owned by the board of diretors in managing every resources

withing the company and also determining the policy direction and producing resources strategies over the company both for short term and long term

An environmental certificate (ISO 14001) is a company management system that aims to ensure that the company's operational activities and products have fulfilled their environmental commitments, especially in applying environmental regulations, pollution prevention, and continuous improvement (Phan & Baird, 2015). Environmental certificates (ISO 14001) are measured using a dummy variable (Rahmawati & Budiwati, 2018), where a score of 1 is for companies that have ISO 14001, and a score of 0 is for companies that do not have ISO 14001.

Firm size is the level of a large-scale company as measured by Total LnAssets (Akbas, 2016; Fashikhah et al., 2018; Rahmawati & Budiwati, 2018). To communicate with interested parties, environmental disclosures are used so that information about environmental investments and their activities can be properly disseminated (Cormier et al., 2015). Measurement of environmental disclosure uses the formula (Ong et al., 2016) as follows:

$$ED : \frac{(\text{Total items disclosed})}{(\text{GRI total item })}$$

All hypotheses in this study were processed using multiple linear regression analysis (Ghozali, 2016), with the following equation:

$$\mathbf{ED = \alpha + \beta 1BD + \beta 2EC + \beta 3FS + e}$$

In which ED is environmental disclosure, α is constant, β 1– β3 are regression coefficient, BD is board of directors, EC is environmental certification, FS is firm size, e is error

## RESULTS

### Descriptive statistics

The results of descriptive statistical tests for the board of directors variable, firm size, and environmental disclosure can be seen in table 1. While the results of dummy variable descriptive statistical tests for environmental certification can be seen in table 2.

Table 2. Descriptive Statistic

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Board of Directors | 108 | 2 | 4 | 3.25 | 0.44 |
| Environmental Certification | 108 | 0 | 1 | 0.54 | 0.509 |
| Firm Size | 108 | 18.50 | 22.70 | 20.83 | 1.20 |
| Environmental Disclosure | 108 | 0.07 | 0.75 | 0.27 | 0.18 |
| Valid N (listwise) | 108 | | | | |

Source: Processed Secondary Data, 2022

The mean value of the dependent variable of the study, the extent of environmental disclosure (ED) is 0.27 with a range of 0.07 to 0.75. Based on the available data, it can be concluded that there is a significant variation in the company's annual reports in the volume of environmental disclosures of the sample companies. With regard to the independent variables, Table 2 shows that the mean value of board of directors ranges from a minimum of 2 to a maximum of 4 with a mean of 3.25, about 3 members. On the other hand, the mean value of size that is measured by the natural logarithm of total assets at the end of year 2019-2021 is 18.50, implying that the value of the firm size ratio is above the average number of 60 companies and the increase in firm size is below the average number of 48 companies from the total sample of 108 companies.

Table 3. Dummy Variable Descriptive Statistics Results

| Variable | Dummy 0 | | Dummy 1 | | Observation | |
|---|---|---|---|---|---|---|
| | Total | Percentage | Total | Percentage | Total | Percentage |
| Environmental Certificaion | 50 | 46% | 58 | 54% | 108 | 100% |

Source: Processed Secondary Data, 2022

Mining companies listed on the Indonesia Stock Exchange in 2019-2021 show that 58 companies have environmental certification or 54%, and 50 companies or 46% do not have environmental certification from 108 companies.

**Classic Assumption Test Results**

The results of the normality test (Kolmogrov-Smirnov) in table 4 show a value of 0.520 (sig. value > 5%). It indicates that the data is normally distributed. The results of the multicollinearity test show that the board of directors, environmental certification, and firm size variables have a tolerance value of 0.10 and the value of variance inflation factor (VIF) of 10. Thus the regression model in this study does not have multicollinearity between independent variables. The heteroscedasticity (Glejser test) showed a significant value above 5%. In conclusion, the regression model did not find heteroscedasticity. The results of the autocorrelation test (runs test) show a significance value of 0.158 (sig. > 5%). Hence regression model in this study does not occur autocorrelation.

Table 4. Resume of Asumption Classic Test

| Dependent Variable | Variable | Normality Test | Multicollinearity Test | | Heteroscedasticity Test | | Autocorrelation Test |
|---|---|---|---|---|---|---|---|
| | | | Sig | Tolerance | VIF | t | Sig | Runs Test |
| Environmental Disclosure | Independent: Board of Directors | 0.860 | 0.520 | 0.854 | 1.456 | 1.141 | 0.407 | 0.158 |
| | Environmental Certification | | | 0.748 | 1.670 | 1.365 | 0.804 | |
| | Control: Firm Size | | | | 1.300 | 1.255 | 0.229 | |

Source: Processed Secondary Data, 2022

**Multiple Linear Regression Analysis**

The multiple linear regression analysis results in table 4 show that the f-count is 2,784 with a significance value of 0.001 (sig < 5%). Accordingly, the variables of boards of directors, environmental certification, and firm size affect environmental disclosure. The results of the coefficient of determination test show a value of 0.187. it means that the variables of boards of directors, environmental certification, and company size can explain the dependent variable (environmental disclosure) by 18.7%, and the remaining 81.3% is explained by other factors outside the model in this study. The results of the t-test indicate that the boards of directors do not affect environmental disclosure. Meanwhile, environmental certification and firm size positively affect environmental disclosure.

Table 5. Multiple Linier Regression

| Dependent Variable | Variable | B Unstandardized | t | Sig | Decision |
|---|---|---|---|---|---|
| Environmental Disclosure | Independent: Board of Directors | -0.043 | -0.770 | 0.272 | Rejected |
| | Environmental Certification | 0.116 | 2.102 | 0.000 | Accepted |
| | Control: Firm Size | 0.042 | 2.304 | 0.002 | Accepted |
| F count | 2.784 | | | 0.001 | |
| Adj. R square | 0.187 | | | | |

Source: Regression Output, 2022

## DISCUSSION

The findings show that the board of directors have no effect on environmental disclosure. It means the board of directors at mining companies listed on the Indonesia Stock Exchange in 2019-2021 do not guarantee that these companies make environmental disclosures. The hypothesis which states that the size of the board of directors has a positive effect on environmental disclosure is not supported by the data generated in the testing of this study. This is caused by the bigger the size of the board of director then its getting harder to perform the good coordination among them. The more members on the board of directors may generate a potential conflic in term of decision making, especialy that related to the environtmental disclosure activities. It shows that the bigger the size of the board of directors will result to ineffectiveness of coordination, communication, decicion making and control form the CEO. On the contrary the smaller the size of the board of directors will result ot positif impact of participation in doing monitoring function toward environtmental disclosure information.

This result is not in line with the legitimacy theory, where the number of board of directors in mining companies is less effective in monitoring and protecting the amount of environmental disclosure information. Consequently, cannot improve the image and recognition from the public. The findings of this study are in line with Akbas (2016); Amran et al., (2014); Carvalho et al., (2017); Michelon & Parbonetti (2012); Sartawi et al., (2014) revealed that there is no relationship between the board of directors and the level of environmental disclosure. On the other hand, in contrast to the findings of Alfraih (2016); Dienes & Velte (2016); Fuente et al., (2017); Ghabayen et al., (2016); Ibrahim & Hanefah (2016); Jizi (2017); Jizi et al., (2014); Khan et al., (2013); Nasreem et al., (2017); Tamimi & Sebastianell (2017); Trireksani & Djajadikerta (2016); Welbeck (2017) that the size of the board of directors has a positive effect on the level of environmental disclosure.

The environmental certification variable has a significant positive effect on environmental disclosure. Mining companies listed on the Indonesia Stock Exchange in 2019-2021 have environmental certifications that automatically make extensive environmental disclosures. The results of this test support the second hypothesis, which states that environmental certification has a positive effect on environmental disclosure. This is because by having the international certification ISO 14001, the companies has perform environtmental refinement and companies image. Besides, this also indicate that the companies involvement in environtmental disclosure has became a necessity for the companies and be able to give lots of benefit to the companies themself.

This outcome is in line with the legitimacy theory, where ownership of environmental certificates (ISO 14001) will encourage mining companies to expand the amount of environmental disclosure information to show the public that the company's environmental management level is excellent. This study's results align with the findings of Maulia & Yanto (2020); Rahmawati & Budiwati (2018) that environmental certification affects environmental disclosure. The company commits to continuous, gradual, and non-performance improvement. However, the results of this study differ from Dianawati (2018); Oktariyani & Meutia (2016), that environmental certification does not affect environmental disclosure. It means that companies with environmental certifications do not always make extensive environmental disclosures, so there is no difference in the level of environmental disclosure issued by companies that have environmental certifications with companies that do not have environmental certifications.

Firm size, the control variable, has a significant positive effect on environmental disclosure. Mining companies listed on the Indonesia Stock Exchange in 2019-2021 have large company sizes, so companies will make extensive environmental disclosures. It is in line with the legitimacy theory, where the more extensive the Firm Size, the higher the environmental disclosure. It is because firm size is one of the controls for increasing voluntary disclosure. In addition, large companies have more significant pressure to disclose their environmental actions. Modugu & Eboigbe (2017) asserted that large companies require more outstanding external financing.

Additionally, to boost investor confidence, these companies increase the amount of voluntary disclosure of information. The results of this study are in line with research by Adriana & Uswati Dewi (2019); Fahad & Nidheesh (2020); Maulia & Yanto (2020); Nur et al., (2019); Orazalin & Mahmood (2020); Solikhah & Winarsih (2016) that firm size has a positive effect on environmental disclosure. Firm size also partially possitively affect of CSR disclosure (Octarina et al., 2018). Nur et al., (2019) added that companies with high total assets would have increased market capitalization and have a high social impact on the management of company assets so that companies will carry out extensive environmental disclosures. Unfortunately, this study's results differ from Fashikhah et al., (2018); Oktariyani & Meutia (2016) found that company size does not affect environmental disclosure. It indicates that the firm size does not determine the high or low environmental disclosure because the company views the environmental disclosure policy as advantageous. Faizah and Ediraras (2021) believed that firm value no effected by economic, environmental, and social performance.

## CONCLUSION

Test results gained from 36 mining companies listed on the Indonesia Stock Exchange within 2019-2021 with 108 annual reports show that board of directors have an insignificant negative effect on environmental disclosure. On the other hand, environmental certification and firm size significantly and positively affect environmental disclosure. The implications of this research theoretically expand knowledge about environmental disclosure and add references for further research. Practically speaking, mining companies are not only profit-oriented but also care more about the impact of their mining waste on the surrounding environment. However, this study has several limitations, including (1) the low ability of the independent variables (board of directors, environmental certification, and firm size) in explaining the dependent variable (environmental disclosure), which is still below 50%; (2) the lack of literature related to environmental certification; and (3) the results of this study cannot be generalized to different companies. Accordingly, the plan for future research: (1) further research can add other independent variables such as profitability, leverage, ownership structure, and company age; (2) increase research on environmental certification; and (3) expand the research sample (e.g., all manufacturing companies).

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