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# Company financial performance, company characteristics, and environmental disclosure: evidence from Singapore

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**Abstract.** A company disclosed its environmental disclosure by providing its annual report and sustainability report as a responsibility to society and the environment. This study aims to examine the factors that influence environmental disclosure, consisting of profitability, leverage, company size, industry type and company age. Legitimacy theory and stakeholder theory are used in this study. The population in this study is industrial companies listed on the Singapore Exchange (SGX) in 2018. Purposive sampling is used as a sampling method in order to obtain 61 companies. Multiple linear analysis was used to test the effect between variables. The quantity determination of environmental disclosure is measured using the content analysis method based on GRI Standard 2016. The result showed that company size has a significant positive effect on environmental disclosure. Meanwhile, the relationship between profitability and environmental disclosure has a significant negative. On the other hand, leverage, industry type, and company age have no significant environmental disclosure effect. Based on the resulting test, large companies disclosed environmental disclosures to increase public trust and credibility.

## 1. Introduction

Environmental issues that are currently developing raise various responses from various parties. In order to attract attention to their environment, companies provide their environmental disclosures. Environmental information disclosure has become a topic of discussion due to ecological, environmental damage worsening. Therefore, the need for environmental protection from the government, society and media, and stakeholders to increase attention to the environmental information disclosure of listed companies [1]. Corporate social and environmental responsibility is the company's commitment to operating economically, socially, and environmentally sustainable while maintaining the balance of interests of various stakeholders [2].

In 2016, the Singapore Exchange (SGX) required all registered companies to disclose sustainability reports, starting to affect the financial year ending on or after December 31, 2017. The regulation regarding the disclosure of sustainability reports is described in Practice Note 7.6: Sustainability Reporting Guide and Practice Note 7F: Sustainability Reporting Guide. The sustainability report must include the main components as defined in Listing Rule 711B and paragraph 4.1 of the basic guidelines



"comply or explain" [3]. Based on this, environmental disclosure, which is part of the sustainability report, must be disclosed by companies listed in the SGX.

Global Reporting Initiative (GRI) is one of the sustainability reporting frameworks. A standard disclosure index is used to measure corporate social disclosure. The environmental disclosure indicators from GRI are carried out to ascertain the amount of environmental disclosure in listed companies' annual reports [4]. The GRI framework uses the guidelines for GRI Standard 2016 for the environmental topic consisting of several disclosure themes, including Material, Energy, Water, Biodiversity, Emissions, Effluents and Waste, Environmental Compliance and Supplier Environmental Assessment [5].

Dibia and Onwuchekwa (2015) researched oil and gas companies in Nigeria [2]. The research findings show that the size of the company negatively affects environmental disclosure. Meanwhile, the type of auditor, profitability, and leverage has no significant effect on environmental disclosure. Similar research found that the company's size and industry type positively influence environmental disclosure, while leverage does not affect [6].

Firm size and profitability were positively related to their environmental disclosure [7]. A high environmental disclosure index is shown in companies that show high profitability and capital expenditures, increasing environmental disclosure. Meanwhile, leverage does not affect environmental disclosure. Welbeck et al. (2017) found that age, type of industry and company size positively affect environmental disclosure [4]. On the other hand, the type of auditor profitability and the foreign association does not affect environmental disclosure.

Foreign ownership, membership of the industry's association, profitability, leverage, and company size have significant positive effects on environmental disclosure. Chowdhury et al. (2020) conducted research related to the level of environmental disclosure in Bangladesh [9]. Leverage and company size have significant positive effects on environmental disclosure. Meanwhile, profitability and industry type do not affect environmental disclosure.

Based on several previous studies, the results of research on environmental disclosure have inconsistent results. Hence, this study aims to examine the factors that can influence environmental disclosure. These factors consist of profitability, leverage, firm size, industry type and firm age.

Legitimacy theory states that an organization is constantly trying to find ways to ensure its business activities are within the limits and norms that apply in society [10]. According to Dowling and Pfeffer (1975), legitimacy is an essential thing for organizations. Social values emphasize these boundaries, and norms and actions against these boundaries encourage the importance of analyzing organizational behavior with attention to the environment [11]. Stakeholder theory states that a company is not an entity that only operates for its interests but must provide benefits for its stakeholders (12). Thus, stakeholder support greatly affects the existence of a company.

### *1.1. Profitability*

Chiu et al. (2020) stated that companies with better performance would increase environmental disclosure in annual reports and CSR [13]. Company performance with good financial will show commitment to the community to give intensive attention to the environment through ED reporting. The studies of Ismail et al. (2018) and Chiu et al. (2020) show that there is a positive influence between profitability and environmental disclosure [8,13]. Meanwhile, another research proves that profitability has no significant influence on environmental disclosure [2,4,9,14]. H1 = Profitability positively related to environment disclosure

### *1.2. Leverage*

A high level of leverage indicates that external loans are needed to meet the company's operations' needs. However, several companies still disclose environmental disclosures. Some research finds that leverage has a significant positive effect [8,13,15,16]. Meanwhile, another research state that there is no influence between leverage and environmental disclosure [2,6,14]. H2 = Leverage is positively related to environment disclosure Firm size.

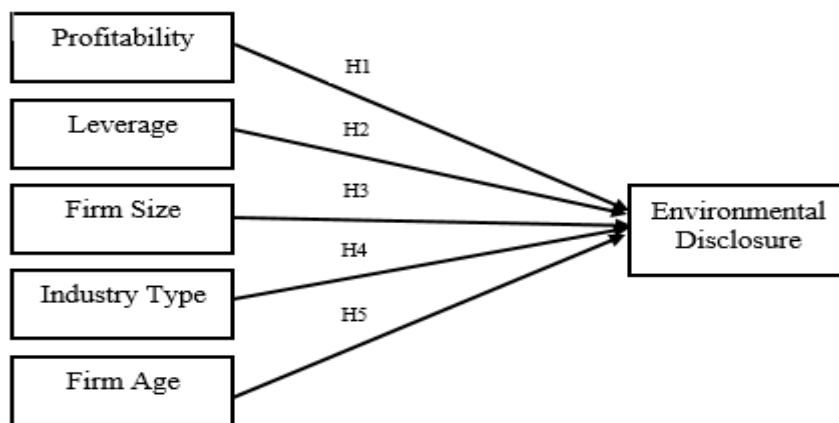
Environmental disclosure is positively affected by company size. Some prior research stated that large companies are compared explicitly to small companies planning and implementing environmental conservation programs supported by healthy financial conditions [4,7,8,9,17]. Meanwhile, a finding states that company size does not affect environmental disclosure [18]. H3 = Company size positively related to environmental disclosure.

*1.3. Industry type*

Industry type in this study categorizes the company into high profile and low-profile industries. The results of the studies that find a significant positive effect between industry type and environmental disclosure are [4,6]. Industry type has no significant effect on environmental disclosure [9,17]. H4 = Industry type positively related to environmental disclosure.

*1.4. Firm age*

Firm age has a significant positive effect on environmental disclosure [4,15,18,19]. Several theoretical reasons assume that older companies will disclose more information than younger companies [19]. The research found that it does not find the effect between firm age and environmental disclosure [17]. H5 = Age of the company positively related to environmental disclosure.



**Figure 1.** Theoretical framework.

**2. Methodology**

This study used the population of industrial sector companies in Singapore. All companies must be listed on the Singapore Exchange (SGX) for 2018 and provide their environmental information. That information can be found in annual reports, sustainability reports and / or disclosed their environmental information on official websites. The sampling technique used purposive sampling. A total of 61 companies become the research sample. Multiple linear regression analysis was used in this study using SPSS v21. The following is a multiple linear regression equation shown in equation (1).

$$ED = \beta_0 + \beta_1PROF + \beta_2LEV + \beta_3SIZE + \beta_4TYPE + \beta_5AGE + \varepsilon \quad (1)$$

**Table 1.** Measurement variables.

Variables	Codes	Measurements
Environmental Disclosure	ED	Content analysis based on criteria from GRI Standards 2016. The following is a detail of the scores used to analyze the topic of disclosure:

Variables	Codes	Measurements
		Score 1: there are one or two sentences of disclose
		Score 2: one paragraph (minimum of three sentences)
		Score 3: half A4 page (three paragraphs)
		Score 4: one A4 page (more than three paragraphs)
		Score 5: more than one A4 page
Profitability		Return on equity (ROA) net income/total equity
Leverage	PROF	Ratio debt to equity (DER) total liabilities/total equity
Company Size	LEV	Log of total assets
Industry Type	SIZE	Dummy variable "1" industry high profile, "0" industry low profile (0)
Firm Age	TYPE	The number of years since a firm was listed in SGX – The number of years observation
	AGE	

### 3. Results and discussion

Based on 61 companies used as research samples, 49 companies (80.3%) report environmental disclosure in the sustainability report. Meanwhile, 12 companies report environmental disclosure in the annual report (19.7%). Based on table 2, the descriptive statistical analysis of the environmental disclosure has an average value of 8.69, with a standard deviation value of 6.278. An average value that is greater than the standard deviation indicates that the data distribution is quite good. However, the minimum value of ED shows 0, meaning that several companies do not report ED.

**Table 2.** Result of descriptive statistics

Variables	N	Minimum	Maximum	Mean	Std. Dev
PROF	61	-2.117	1.145	0.052	0.431
LEV	61	0.001	2.565	0.383	0.533
SIZE	61	14.731	24.029	18.304	1.584
TYPE	61	0	1	0.570	0.499
AGE	61	30	542	198.07	112.386
ED	61	0	29	8.690	6.278

The normality test using One-Sample Kolmogorov-Smirnov shows the level of Sig.  $0.474 > 0.05$ , meaning that the data is normally distributed. The multicollinearity test shows the VIF value  $< 10$  and tolerance  $> 0.10$  so that the regression model of this study is free from multicollinearity symptoms. The gletsjer test is used to test heteroscedasticity; each variable has a Sig. value  $> 0.05$ . The autocorrelation test uses Durbin Watson. The DW value of 1.874 is located at  $DU < DW < 4-DU$  ( $1.7671 < 1.874 < 2.223$ ), indicating that the data is free from autocorrelation. The simultaneous test using ANOVA shows the sig. Value of 0.001, it can be concluded that PROF, LEV, SIZE, TYPE and AGE simultaneously affect ED.

Table 3 shows the hypothesis's results in the research examined using an individual parametric statistical test (t-test). Profitability measured using ROE is known to have a sig. level (0.014) and  $\beta$  value (-0.293), which indicates that ROE has a significant negative effect on environmental disclosure, the first hypothesis (H1) is rejected. (16) supported the results of this study, according to him, that the higher

the level of company profitability, the smaller the costs of environmental impacts that arise and will provide benefits for environmental disclosure and vice versa. For the companies, it is felt that reporting environmental disclosure will burden the companies and can make changes in the results on the profits earned. Thus, the companies will choose not to disclose environmental disclosure.

**Table 3.** Result of a statistical test.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	$\beta$	Std. Error	Beta		
(Constant)	-13.344	8.936		-1.493	0.141
PROF	-4.273	1.684	-0.293	-2.538	0.014
LEV	1.070	1.447	0.091	0.739	0.463
SIZE	1.234	0.512	0.311	2.413	0.019
TYPE	1.575	1.552	0.125	1.015	0.315
AGE	-0.008	0.006	-0.149	-1.312	0.195

The second hypothesis (H2) proves that leverage has no significant effect on environmental disclosure with a sig. value  $> 0.05$  ( $0.463 > 0.05$ ). The high level of leverage encourages companies to rely on external loans to finance their operations. Therefore, companies with high leverage will get more monitoring by stakeholders. This is supported by research conducted by (2), (6) and (14).

SIZE shows the significance value ( $0.019 < 0.05$ ). This result indicated that environmental disclosure was affected by company size. It can be said that certain variables from political economy, stakeholder and legitimacy theories can explain the quality of CED in annual reports, standalone reports and company websites [8]. Research that supports this finding is Welbeck et al. (2017), Ahmadi and Bouri (2017), Ismail et al. (2018), Chowdhury et al. (2020) and Khalid et al. (2017) [4,7,8,9,14]. Large companies will respond more to environmental disclosure as a form of accountability to interested parties.

The fourth hypothesis that explains the effect of industry type on environmental disclosure is rejected with a sig. value  $0.315 > 0.05$ . Based on the stakeholder theory perspective, the expected level of environmental disclosure practice depends on the variety of company activities [17]. It was proven that there is no effect between industry type and environmental disclosure [9,17]. The pressure given by external parties has not been able to influence the company to increase environmental disclosure. The AGE significance value of  $0.195 > 0.05$  proves that the fifth hypothesis (H5) is rejected. Firm age has no significant effect on environmental disclosure. Not all companies with older age disclose environmental information. On the other hand, companies with younger age will respond more to environmental disclosure. Some researchers state that firm age does not have a significant effect on environmental disclosure [17,18].

#### 4. Conclusions

This study examines the factors that influence environmental disclosure in industrial companies listed on the Singapore Exchange in 2018. Environmental disclosure is measured using content analysis following the criteria of GRI Standard 2016. Based on the test results, it shows that profitability has a significant negative effect on environmental disclosure. Companies with high profitability value are profit oriented, so they do not need to disclose information that can hinder company profits. Company size has a significant positive effect on environmental disclosure. Large companies report environmental disclosure as a form of accountability to the public. Meanwhile, leverage, industry type and firm age do not have a significant effect on environmental disclosure. This study's limitation lies in the population, which only includes the industrial sector and the small number of research samples because it only takes one year of observation. Suggestions that can be given to further research related to population selection are in the industrial sector and all sectors in SGX and increasing the number of observation periods.

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