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Do environmental performance and disclosure bring financial outcome? Evidence from Indonesia

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Abstract: In some developing countries such as Indonesia, there is a lack of regulatory controls in social responsibility performance and disclosure. Therefore, this paper is conducted to study the level of social responsibility performance and disclosure, as well as to investigate the relationship of environmental performance with a financial outcome, using environmental disclosure as the mediation variable. A firm's environmental performance is measured by PROPER score and the environmental disclosure with GRI index. Results show that firms' financial outcome is significantly affected by their environmental action (PROPER score and GRI Index). However, the findings also indicate that both environmental disclosure and profitability together are able to mediate the relationship between environmental performances and firms. The findings suggest that, in general, the majority of firms need to follow the GRI guidelines for reporting environmental information; therefore the investors should consider this information when making investment decisions.

Keywords: environmental performance; environmental disclosure; financial outcome; profitability; PROPER; GRI index; Indonesia.

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1 Introduction

Over the years, the issue of sustainability has increasingly become an important matter in the business world. Traditionally, it was widely believed that a business' sole purpose was to maximise shareholder's wealth. However, as the business world grows and changes with the passing of time, so does the way society views organisations and how they operate. It became clearly evident, that there are negative social and environmental implications, caused by companies as they try to understand their goals more clearly. As a result, corporations are facing an increased pressure, to serve not only for their own purposes and profits, but to work for the prosperity of the society and the surrounding environment in which they conduct their business. This notion, commonly known as *the stakeholder theory*, changes the manner in which businesses operate and is considered to be the leading alternative to the traditional 'manager serving shareowners' belief. This theory claims that a corporation may improve a firm's image and that productivity, financial outcome, and value creation may be influenced positively by being attentive toward various stakeholders' interests (Donaldson and Preston, 1995).

Social responsibilities in general and environmental management, in particular, are becoming an integral part of firm's activities (Molina et al., 2009; Thiel, 2015). Therefore, it is crucial for corporations to adapt their businesses to be both socially and environmentally responsible to cope with the changes, and survive in the long-term. Henceforth, companies are adopting new strategies to improve their environmental performance in order to enhance their reputation to the public eye (Gallico, 2015). One of the widespread methods adopted is to incorporate the corporate social responsibility (CSR) concept inside their business practices that rest on the concept of *triple bottom lines* (3P), as financial conditions alone are not enough to guarantee that the value of the company will grow in a sustainable manner (Al-Tuwajiri et al., 2008).

The association between companies' environmental performance and a financial outcome has been long argued by both researchers as well as the business society. Questions remain as to not only whether or not a firm's environmental performance impact on its financial outcome, but the nature of the relationship is also debatable. Results from earlier research have been controversial, with many showing a significantly positive relationship between environmental performance and financial outcome (Lawrence and Weber, 2008). Whereas others concluded that the relationship is insignificant (ACCA, 2009). On the other hand, the greater proportion of the previous research regarding this issue is carried out in well-developed economies such as Europe

or the USA. These countries can be regarded as countries with a high level of environmental awareness. Only limited studies have focused on developing countries, such as Indonesia, where CSR is probably more necessary considering the lower social provision. This occurrence may be due to the fact that, compared to developed countries, they suffer a deficiency of established methods to measure environmental performance and the low reliability perceived in the existing measurements.

Inadequate environmental management is still a challenge for Indonesia, as it has harmed the country's economy with a total cost of environmental damages nearing 10% of its GDP per year, as stated by the Indonesia Environmental Analysis Report conducted by the World Bank in 2009 (World Bank, 2009). A number of policies regarding environmental management have been issued by the government to form a balance between the business and the environment. That is aligned with the norm, culture, and society's value in order to reduce the amount of environmental damage, such as pollution, that is commonly found within businesses in Indonesia as well as to encourage companies to increase their compliance in environmental management. The Ministry of Environment has also introduced the Corporate Performance Rating Program in Environmental Management (PROPER) program, which is the first nationwide corporate environmental performance evaluation.

Previous studies have shown inconclusive results (Angelia and Suryaningsih, 2015; Sarumpaet, 2005; Purnomo and Widianingsih, 2012; Saridewi and Koesrindartoto, 2014; Suratno et al., 2006) and the subjects are generally limited to specific industry sectors. Therefore, this paper tries to re-examine the relationship between environmental performance and financial outcome, with environmental disclosure as the mediation variable. From several previous studies in CSR Indonesia, the authors have concluded that there is no research covering:

1 Using the accounts of all companies listed in IDX in order to gain a more comprehensive representation of the general relationship between the variables studied.

2 Utilising two measurements of a firm's environmental actions: Firstly the environmental performance, which measures the level of environmental management in a firm's operational activities. And secondly the environmental disclosure, which evaluates the reporting behaviour of the firms regarding their environmental activities.

3 In addition, both short (profitability) and long-term (firm value) impacts on financial outcome are examined. Thus, the findings of this paper might motivate companies to increase their efforts in environmental management by seeing, the long-term impact, as well as the short-term.

The remainder of this paper is organised into four sections. The second section covers the literature review of variables in this research, with the underlying theory for each variable and the research hypothesis. The third section describes the research methodology of the research and the sample used. The fourth section covers the results with the analysis and discussion. The last section highlights the conclusion and suggestions for business and future research.

2 Literature review

Two notable theories that explain the motivation of organisations for environmental management and disclosure are the stakeholder and legitimacy theories.

2.1 Stakeholder theory

Stakeholders are the focus of stakeholder theory itself. According to Price (2004), stakeholders include a wide range of people with different interests who have some kind of involvement with an organisation. Furthermore, Ghozali and Chariri (2007) argue that the state of a corporation is heavily influenced by the degree of support that stakeholders give to the firm. Stakeholder's theory states that all stakeholders have the right to obtain information regarding the firm's activities that could influence their decision-making processes. Each stakeholder has the discretion to; not use the information that they receive and to not play an active role in their relationship with a company. In general, stakeholders can affect the use of various economic resources utilised in the activities of the corporation. Therefore, they are usually considered in the matter of disclosure of corporate information in the annual report.

2.2 Legitimacy theory

Suchman (1995) defines legitimacy theory as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values and beliefs." Furthermore, Deegan (2002) said that legitimacy theory focuses on various strategies for organisations that may choose to maintain high standards to be legitimate. According to the theory, all companies have a contract with society to conduct their operations according to the values that are upheld by the society in which they operate. By defying this contract, the corporation would face a high cost since the public would refuse to legitimise the existence of the firm in their midst. Consequently, legitimacy from the community is constantly sought out by firms and the general practice is to implement programs that serve the society's interests.

As the public's influence has the power to decide resource allocation, corporations would try to legitimise their activities to society by using environmental-based performances and social disclosure (Gray et al., 1993). One of the ways for firms to build, maintain, and legitimise corporate contributions, from both economic and political perspectives, is to disclose CSR information in annual or sustainability reports (Sayekti and Wondabio, 2007). Hence, the common method adopted by businesses is to in CSR programs inside the company's operation, and disclose the activities in the annual or sustainability report as information that can affect investor's decision-making purposes, related to the company's operation and its accordance with society's values. With a good level of CSR disclosure, companies hope to create a harmonious relationship with the public in order to gain the social legitimacy required to maximise their financial strength in gaining profits.

2.3 Environmental performance

According to Darwin (2004), environmental performance is defined as a corporation's mechanism for intentionally integrating environmental concerns into their operation and stakeholder interaction which exceed their legal obligation. Another definition of environmental performance as stated by Pramudya (2001) is that it can be understood as the assessable results of a corporation's environmental management system (EMS). The measurement of environmental performance is an integral part of an EMS, as it is a measure of the actual result of the system. A firm's environmental objectives, policies, and targets are used as the foundation of a corporation's environmental assessment. In this particular research, environmental performance will be measured using the PROPER ranking scheme, which is a five colour-codes-ranking system that assesses corporations in Indonesia and ranks them according to their environmental performance. The objectives of this program are: to urge an active response from stakeholders regarding business' current levels of compliance and to push organisations further, to improve their performance in environmental management. Hence, minimising the environmental impact from their operations, despite a considerably large skepticism over the government rating due to low monitoring and governance in Indonesia, a previous study conducted by Sarumpaet (2005) concluded that there is in fact, a high consistency between PROPER rating and ISO 14001, which is the international standard of environmental certification. There are various aspects that are considered in the PROPER evaluation, for instance; the compliance toward water pollution control, air pollution control, B3 waste management, EIA, and marine pollution control. To demonstrate the PROPER evaluation, a company would be given a BLUE rank if it complies with the regulations, and a RED or BLACK if it does not, according to the extent of their non-compliance. A more detailed explanation can be seen below:

Table 1 PROPER scoring

Colour coding	*Description*	*Score*
Gold	Exceptional	5
Green	Excellent	4
Blue	Good	3
Red	Bad	2
Black	Poor	1

Source: Purnomo and Widianingsih (2012)

2.4 Environmental disclosure

CSR disclosure is defined as the method utilised by management for interacting with society in order to influence the public's perception of the organisation (Deegan, 2002). The nature of this disclosure can be categorised into two terms: mandatory disclosure and voluntary disclosure. The latter term can be described as disclosing any information associated with the organisation's activity or state on their own accord. However, in reality, not all the information would be disclosed to the public, that are only positive and beneficial for the company. Businesses would disclose all information that they consider necessary in order to support the running of the capital market (Ghozali and Chariri, 2007). There are numerous of reasons that encourage companies to conduct a voluntary

disclosure of information regarding their CSR activities. The disclosure helps investors to understand the strategic business management to increase the credibility of the firm, providing examples of the benefits that the company can acquire. Other reasons include; gaining competitive advantage through implementing CSR, legitimising the actions of the corporation, attracting investors, and complying with existing regulations (Sayekti and Wondabio, 2007).

The concepts of sustainable development and concern for the environment are embedded inside the notion of CSR. Nevertheless, Dahlsrud (2008) stated that there is a lower ratio of environmental disclosures compared to other categories. This phenomenon could be due to the fact that the development of social and environmental disclosure practices is still in the embryonic stage, when compared to financial reporting practices (Ghozali and Chariri, 2007). Though environmental disclosure is an important aspect of a company's annual report, there are still limited CSR papers conducted that concentrate on the aspect of environment (Lindrianasari, 2006). Environmental disclosure is defined as the disclosure of information associated with the environment that is stated inside the organisation's annual or sustainability report. The problem may possibly be because of the voluntary nature of disclosure regarding environmental-related information in Indonesia. As there has not been any regulation set specifically in relation to the environmental aspects of disclosure. The theory of *voluntary/discretionary disclosure*, as stated by Verrecchia (1983) proposes that, if we assume that a corporation's exposure to future costs associated with environment would be reduced through a good performance, then good environmental players should have a higher disclosure level of environmental information (in both quality and quantity). As they believe that their performance would be perceived as good news by the capital market players, i.e., potential/existing investors and the public. Consequently, there needs to be a higher quantity of disclosure of environmental-related information, amongst good environmental performing companies as compared to poorer environmental performing companies.

The data for environmental disclosure can be found in the company's sustainability report, also in the sustainability section of the annual report, as well as the section that contains information regarding the CSR actions of the company. The CSR checklist, which is the instrument used in the evaluation, will be based on the GRI guidelines (G3, G3.1 and G4-core). The approach to calculating environmental disclosure is through analysing the GRI indicator section of the sustainability report or, the environmental aspect inside the CSR section of the annual report and scoring them using dummy data. Then adding the scores of each item to obtain the overall score of each company used in the environmental index (EI) calculation, following the method used by Purnomo and Widianingsih (2012) and also Sayekti and Wondabio (2007) which will be explained below:

Table 2 Environmental disclosure scoring

Environment-related disclosure	*Score*
Environmental item not disclosed	0
Environmental item disclosed	1

Source: Purnomo and Widianingsih (2012)

EDI calculation formula as given, which is modified from Purnomo and Widianingsih (2012):

$$EDIj = \left(\sum Xij\right) / nj$$

where

EDIj environmental disclosure index firm j

Nj total item for firm j, $n \leq 34$

Xij dummy variable, 1 = if item i was disclosed; 0 = if item i was not disclosed; thus $0 \leq ED \leq 1$.

2.5 Financial outcome

Different measures of financial or economic performance have been used in earlier research in environmental performance and CSR (Angelia and Suryaningsih, 2015; Purnomo and Widianingsih, 2012; Crisóstomo et al., 2011). As this particular study only employs data derived from public-listed companies, both accounting-based and market-based financial outcome measures will be utilised in the hope of generating a more in-depth explanation of the long-term impact of environmental and social performance toward a firm's financial outcome.

2.6 Profitability

Profitability, defined as the company's ability to generate profit, is commonly used in the criteria to determine the success of a business. It's a tool which demonstrates the relationship between profit and the number of resources invested. Sarumpaet (2005) argued that an organisation's financial outcome is ultimately reflected in its profit, while Al-Tuwajiri et al. (2008) claims that profitability is a factor that gives management the freedom and flexibility to disclose the social responsibility of the company to the stakeholders. This means that high CSR disclosure is parallel with high profitability in the company.

One widely-used instrument for measuring profitability in environmental performance studies is the return on assets (ROA) (Angelia and Suryaningsih, 2015; Sarumpaet, 2005; Saridewi and Koesrindartoto, 2014). ROA is the measurement of the corporation, as a whole, in making profits with the overall number of assets that are available within the organisation (Sabrin et al., 2016). Moreover, profitability measured by ROA will reflect the attractiveness of the business. Return on asset can be defined as earnings after tax divided by the corporation's total assets, which is comprised of current assets, fixed assets, and also other assets. The variable of earnings after tax may also be substituted with other earning measurements, for instance, business' operating income. Though accounting ratio still lacks in some respects such as: being influenced by the accounting method selected, ROA provides information that allows the author to analyse the association between financial and environmental performance. Therefore in this study, the author uses ROA as an instrument for measuring profitability. ROA here is measured as:

Return on Assets = (Net Income) / (Total Assets)

2.7 Firm value

Though rarely examined, this paper also measures the impact of environmental performance toward a firm's value creation. Maximising the value of the organisation is one of the main objectives of financial management. Stock value maximisation is often the purpose of financial management. Hence the value of the stock can be employed as an appropriate indicator for measuring the value of the firm (Copeland et al., 2005). Thus, the higher the stock price, the higher the firm's value and ultimately the higher the wealth of the shareholders. Tobin's Q, which can be defined as the ratio between the organisation's market value and its accounting value, is employed as a tool for measuring firm value, which was developed by Professor James Tobin in 1967. This ratio is a respected concept due to its ability to depict the current estimate of the financial markets on the value of the return on every dollar of incremental investment (Sabrin et al., 2016). Tobin's Q has been broadly used as a firm value measure. For instance in Crisóstomo et al. (2011) and Servaes and Tamayo (2013), portrays how much value is created by the organisation using its assets. The ratio is computed and is given by, consistent with the method used by Sabrin et al. (2016): TBQ = (Market Value of Equity + Debt) / (Total Assets).

This study also employs Tobin's Q measurement, based on market value. As profitability is more of a short-term measure of a company's financial outcome. Considering that environmental efforts and other CSR activities generally affect the organisation over the long-term. It's more appropriate to extend the analysis to include the long-term impact of the firm's financial outcome. In reality, some corporations may deliberately sacrifice their current profitability to engage in CSR activities to serve the long-term interests of the firm (Servaes and Tamayo, 2013).

2.8 Relationship of environmental performance and environmental disclosure

Environmental disclosure is the disclosure of information related to the environment, as detailed in the company's annual report or sustainability report. From a CSR perspective, the correlation between environmental performance and environmental disclosure is an important aspect. Previous empirical studies have tried to examine the relationship between these two variables, resulting in varying outcomes. As an example, Patten (2002) studied the environmental disclosures in the annual report of the companies and found a negative relationship with environmental performance. Meanwhile, a negative relationship between environmental performance and environmental disclosure was also found in the paper conducted by Hughes et al. (2001), in which they observed that firms in the USA with poorer environmental performance tend to disclose more in their state of performance. They were consistent with their obligations to report according to Statement of Financial Accounting Standard/SFAS No. 5 regarding accounting for contingencies. On the contrary, the findings of the research carried out by Suratno et al. (2006) were in line with the discretionary disclosure proposed by Verrecchia (1983) showing that environmental performance has a significantly positive impact on environmental disclosure. This implies that good environmental players tend to have a higher level of disclosure compared to those with poor environmental performance, as they believe that their performance represents good news to the market participants. Therefore, they should disclose them. To further support the theory, previous research conducted by Al-Tuwajiri et al. (2008) finds a statistically significant and positive relationship between

environmental performance and environmental disclosure. Hence, it leads to the hypothesis below:

H1 Environmental performance positively affects environmental disclosure.

2.9 Relationship of environmental performance and financial outcome

Environmental performance should be thought of as an investment for the company, instead of merely an expense, as the cost that the company paid that is associated with environmental aspects becomes exchanged for the positive image that the company gains to the public eye. Thus, it can be regarded the same as the trade-off in an investment. As companies with better environmental performance will acquire a good response from stakeholders, such as; shareholders and consumers, that can result in an increased revenue in the long-term (Angelia and Suryaningsih, 2015). Aside from increased revenue, companies with good environmental performance (proxied with attaining gold ranking in the PROPER program) should have applied the concept of eco-efficiency in their operation. Which is a concept of creating more goods or services, while at the same time reducing the number of resources utilised and producing as little waste and pollution as possible. This would create a positive impact on the company's profitability and more importantly, create value for the company in the long-term. This concept is consistent with the findings of research conducted by Purnomo and Widianingsih (2012) and Suratno et al. (2006), which found that environmental performance has a positive effect on financial/economic performance. However, Sarumpaet (2005) concludes that environmental performance is not significantly associated with financial outcome in Indonesia. Based on the explanation above, the premise proposed regarding the effect of environmental performance on financial outcome in this study is:

H2a Environmental performance has a positive influence on profitability.

H2b Environmental performance has a positive influence on firm value.

2.10 Relationship of environmental disclosure and financial outcome

Environmental efforts conducted by the company would create a beneficial impact on the firm in the form of attracting stakeholders and, specifically, shareholders, as it indicates that the company is fulfilling its responsibility toward the society (Pflieger et al., 2005). In addition, from an economic standpoint, an organisation would disclose information regarding their firm, if they consider that the information would increase the value of the company (Basamalah and Jermias, 2005). Therefore, companies that perform environmental actions would disclose them to the public as they hope to gain appreciation from the market participants. The information disclosed in the annual report or sustainability report is expected to give added value to the decision-making process of investors, as they can get a clearer picture of the company beside the accounting information from financial statements. Results from earlier research that are in line with this idea (carried out by Restuningdiah, 2010 and Almilia and Wijayanto, 2007) found that the disclosure of CSR had a positive impact on the financial outcome measured by financial performance. Consequently, it leads to the hypothesis below:

H3a Environmental disclosure has a positive effect on profitability.

H3b Environmental disclosure has a positive effect on firm value.

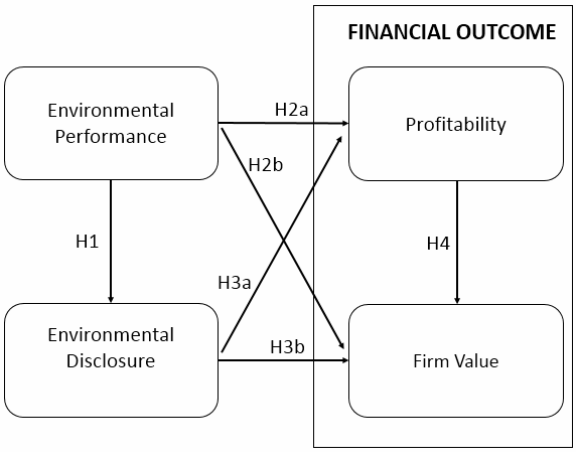
2.11 Relationship of profitability and firm value

Profitability is a measure of a company's ability to generate profits. It is one of the ratios considered by prospective investors and shareholders, due to its role in the fluctuation of share price and level of dividends available for distribution. AlNajjar and Belkaoui (1999) and Osazuwa and Ahmad (2016) conclude that corporations are most likely to follow the notion of pecking-order theory, which suggests internal funding. With the funds derived from retained earnings and cash flow, which are companies preferred choice, followed by low-risk debt and, lastly, the issuance of shares. Therefore, profitability holds an influence toward the value creation of firms, with the achievement of profit justifying the payment of dividends and showing a positive signal for the market, hence the stock price of the corporation will increase. Thus, it leads to the hypothesised relationship below:

H4 Profitability positively affects firm value.

Based on the various studies discussed, the following conceptual analysis is developed as the basis of this study and illustrated in Figure 1

Figure 1 Conceptual analysis



3 Research methodology

This research investigates the relationship between environmental performance and financial outcome using environmental disclosure as the mediation variable. The population used in this research include 536 companies listed in the Indonesia Stock Exchange (IDX) during the financial year of 2013–2015. Purposive sampling is used with the criteria of

1 listed in IDX during 2013–2015

2 consecutive PROPER program participant during 2013–2015

3 publish CSR data in sustainability or annual report during 2013–2015.

In total, there are 41 Indonesian companies that fit the criteria, resulting in a total sample of 123 reports. However, after data trimming to improve the model fit, the number of samples that were left were 97 reports. This research uses the following model to test H1–H3:

$$\text{ED } \eta 1 = \gamma 1 \;\; \text{EP}\zeta 1 + \zeta 1$$

$$\text{PROF } \eta 2 = \beta 1 \; \text{ED}\eta 1 + \gamma 2 \;\; \text{EP}\zeta 1 + \zeta 2$$

$$\text{FV } \eta 3 = \beta 2 \; \text{ED}\eta 1 + \gamma 3 \;\; \text{EP}\zeta 1 + \zeta 3$$

where:

EPζ1	environmental performance (exogenous variable)
EDη1	environmental disclosure (endogenous variable)
PROFη2	profitability (endogenous variable)
FVη3	firm value (endogenous variable)
γ1, γ2, γ3	path coefficients that link endogenous (η) latent variables with exogenous (ξ) latent variable
β1, β2	path coefficients that link endogenous (η) latent variables with endogenous (η) latent variables
ζ1, ζ2, ζ3	residual vector (unexplained variance).

4 Research result and analysis

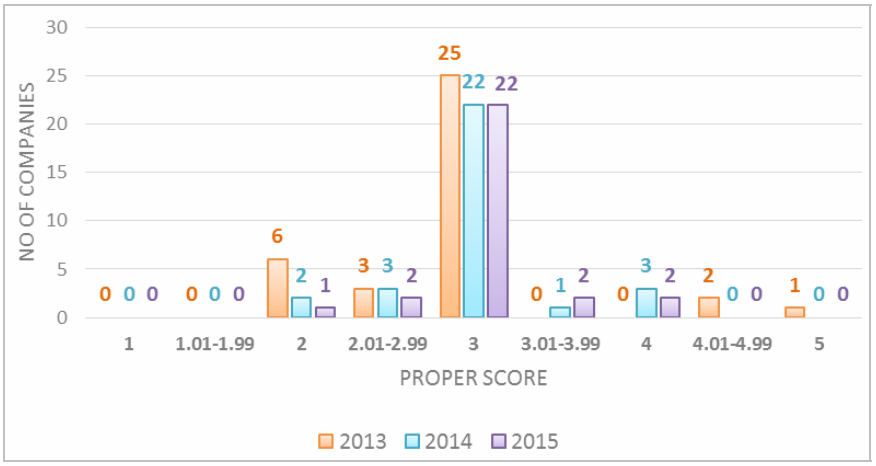
4.1 Descriptive analysis

Overall corporations in Indonesia have managed to achieve the level of basic compliance in their environmental management, as indicated by the PROPER score of 3. This indicates that in general, firms have taken actions to minimise the environmental impact of their operations.

A phenomenon is observed when corporations that attain the highest score in the PROPER program tend to be dominated by mining and cement companies, such as; PT Semen Indonesia (Persero), PT Holcim Tbk., and PT Aneka Tambang Tbk. This trend indicates the probability that mining and cement companies tend to put more effort in improving their environmental performance, as the nature of their industries tend to generate greater environmental damage. Although the average environmental disclosure in Indonesian firms faced an upward trend during the period observed. The increase is too minor to conclude that firms have improved their disclosure over the years. It is observed that the disclosure level of information related to environmental actions found in the reports is still considered as low, since the average levels of disclosure during the periods examined are all below 30%. This indicates that the majority of firms still have not paid real attention to the GRI guidelines for reporting issues related to sustainability. However

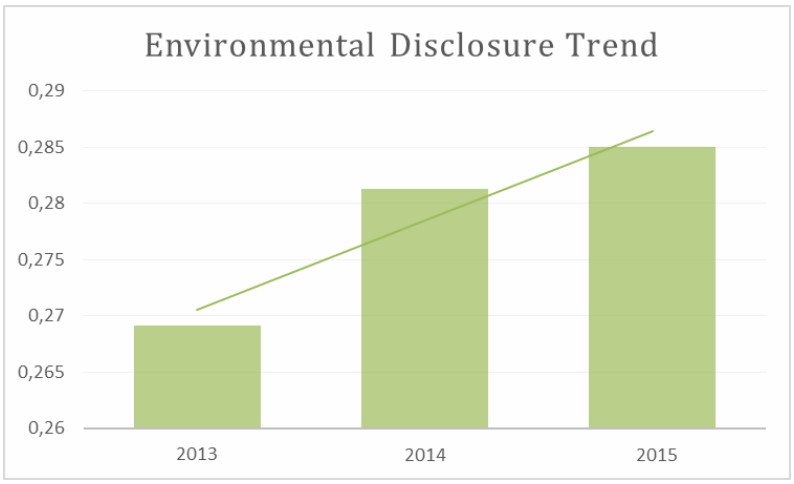
from Figure 3, it can be seen that this variable faces an upward trend since the mean value experienced an increasing movement year by year.

Figure 2 Trend of environmental performance (see online version for colours)



Source: Author's compilation

Figure 3 Trend of environmental disclosure (see online version for colours)



Source: Author's compilation

However, the increase is too minor to conclude Indonesia firms have improved their disclosure over the years. Therefore, there is still room for improvement in the reporting manner of Indonesian firms in terms of environmental-related issues.

4.2 Goodness-of-fit test

The overall predictive and explanatory quality of the model is represented by the first three criteria, which are: average path coefficient (APC), average R-squared (ARS), and

average adjusted R-squared (AARS) (Knock, 2015). The APC, ARS, and AARS in this model have satisfied the criteria in the model fit and quality indices, with P value < 0.001 (lower than 5% significance level), at 32.4%, 40.4%, and 39.4%. The next criteria which are: average block VIF (AVIF) and average full collinearity VIF (AFVIF) index. This gives a more comprehensive assessment of the model's overall predictive and explanatory quality. The value of AVIF is below the ideal criteria of 3.3 and an acceptable value of 3.4 for AFVIF, which indicates that no multicollinearity problem occurs in the model. For the Tenenhaus GoF (GoF) index, the model's explanatory power, showed a value of 0.636. Hence, the model is considered having a large explanatory power. This model is free from Simpson's paradox instances, free from problems of negative R-squared contributions as the Sympson's paradox ratio (SPR), R-squared contribution ratio (RSCR), and statistical suppression ratio (SSR) indices show the ideal value of 1. In the case of nonlinear bivariate causality direction ratio (NLBCDR), this model passed the acceptable level of 0.7 where it has an index of 0.917. To conclude, the research's model has passed the goodness-of-fit test, therefore, it is acceptable to be used in this paper.

4.3 Profile of weight indicator

The strength of each indicator in the variables is discussed in this section. Generally, the higher the weight of individual indicator signifies the higher that indicator contributes to the variable. In this particular study, all of the variables studied consist of only one indicator per variable. Therefore, the indicators in each variable all hold the maximum weight of 1, where each indicator wholly represents each variable, as can be described in Table 3.

Table 3 Weight indicator

Variable	*Indicator weights*
Environmental performance (EP)	1
Environmental disclosure (ED)	1
Profitability (PROF)	1
Firm value (FV)	1

Source: Author's compilation

4.4 Hypothesis testing and analysis

This particular section will be divided into two parts: the first is the discussion about the direct effects and the second is the indirect effects. The indirect is critical in the evaluation of the downstream effects of latent variables that are mediated by other latent variables (Knock, 2015), especially in a complex model (where there are multiple mediating effects along concurrent paths) like this particular case. Table 4 shows the path coefficient of the direct effect at 5% level significance.

Table 4 Direct effect result

	EP	*ED*	*PROF*	*FV*
EP	-	-	-	-
ED	0.354*	-	-	-
	(< 0.001)			
PROF	0.397*	–0.170*	-	-
	(< 0.001)	(0.042)		
FV	0.030	0.064	0.930*	-
	(0.384)	(0.260)	(< 0.001)	

Notes: The numbers in Table 4 show the path coefficient of the direct effect, whereas number in parenthesis show the p-values. Coefficients with (*) shows significance at 5% level. However for the shaded part was not our hypothesis, therefore, we did not test those directions.

4.5 The impact of environmental performance on environmental disclosure

Results from the Indonesian companies data, showed that environmental performance, which is measured by PROPER score, has a positive significant impact on the environmental disclosure index (EDI), with the coefficient of 0.354 and $p < 0.001$, which is below 5% significance level. Hence H1 is accepted. This finding is in line with the theory of voluntary/discretionary disclosure, which proposes that, if we assume that a corporation's exposure to future costs associated with environment can be reduced through a good performance in environmental performance, then good environmental players would have a higher disclosure level of environmental information (in both quality and quantity). As they believe disclosing their performance to the public would represent good news for capital market players, i.e., potential/existing investors and the public (Verrecchia, 1983). Therefore, the sample companies with better performance in environmental management, as measured by various instances (such as compliance toward water pollution control, air pollution control, B3 waste management, EIA, and marine pollution control) the higher level of environmentally-related information they would divulge to the market, that is considered in the PROPER program, has a higher disclosure level of environmental information in accordance with the GRI index.

The findings of this research support, conducted by Suratno et al (2006) and Al-Tuwajiri et al. (2008) who found a positive significant relationship between environmental performance and CSR disclosure. However, the object studied differs, as previous papers have less numbers of samples. For instance, Suratno et al (2006) conducted a study on Indonesia but focused only on the manufacturing sector, thereby raising concerns regarding whether the findings can be regarded as an accurate representation of the actual state of the Indonesian market, which is comprised of various industries whereas this study does not limit its sample into a specific industry, instead being comprised of corporations from consumer goods, agroindustry, pharmacy, chemical industry, herbal, ceramics, manufacturing, paper, cooking oil, automotive, animal feed, metal processing, mining and energy, petrochemical, tobacco, palm oil, cement, mineral mining, and textile industry sectors. Therefore, the results provide a more universal picture of the relationship between environmental performance and disclosure in Indonesian companies.

In Indonesia, the extent of disclosure of environmentally-related information is quite low, based on the analysis. We can see that the average of EDI in all three periods are all lower than 30%, which indicates that most Indonesian companies tend to disclose lower than ten items out of 34 environmental items listed in the Global Reporting Initiative Index. This situation points out that the majority of Indonesian firms have problems in reporting environmental information, which can be explained by the absence of mandatory requirements established by the disclosure of environmental information. Another observation found in this research is that merely 11 out of 41 sample companies have published sustainability reports during the period examined. Which means that around 75% of the sample was evaluated through their annual reports that do not usually follow the GRI reporting guidelines reporting sustainability issues. Sarwono Kusumaatmadja, an Indonesia environmental expert, also expresses the necessity for an established authority, such as the government or IDX, to follow the practices of other countries where they require companies to publish a sustainability report (Putri, 2017). Therefore, sample companies with better environmental performance do disclose more in their reports, resulting in a positive association between the variables, the analysis of the data showed that the information disclosed in the reports does not entirely reflect the environmental actions of the firm inside their operations. An example from the data is PT Semen Indonesia (Persero) Tbk., in 2015, which managed to achieve a green rank in the PROPER program (equivalent to the score of 4), representing that it has achieved a level of beyond compliance regarding the environmental management of their operations, and has an EDI value of 0.32, which is considered as a low level of disclosure even though it is above the average data.

4.6 The impact of environmental performance on financial outcome

The impact of environmental performance on profitability, measured using ROA, shows a path coefficient of 0.397 with $p < 0.001$, which is below 5% significance level. Hence, H2a is accepted whereas the impact of environmental performance on firm value is found to be insignificant with the path coefficient of 0.030 and $p > 0.1$. Therefore, H2b is rejected. The findings of this research contribute to the long-standing argument regarding the relationship of environmental and financial outcomes. As the results show that corporations with good environmental management are associated with higher profitability levels. This supports the win-win theory proposed by Porter and Van der Linde (1995), otherwise known as the Porter hypothesis. This suggests that corporations with good environmental performance will gain competitive advantages because of the way customers and shareholders view this kind of behaviour (Pérez-Calderón et al., 2012). Porter propositions that manager's view pollution as a source of inefficiency, a sign of technological backwardness, poor management and an inadequate use of production resources (Porter and Van der Linde, 1995). Therefore, by reducing pollution, a firm can reduce environmental cost and production cost, attract environmentally aware customers, and differentiate them from competitors. The findings of a global survey conducted by Nielsen in 2015 discussed by Djatmiko (2017) support this theory, as it found approximately 75% of the millennial generation. The future consumers are willing to pay a higher price for a product or service perceived to be sustainable. This is an increase compared to the previous year, where only 50% of millennials exhibit the same behaviour. Another sharp increase of 17% is also found in the willingness of the

millennial generation to spend more on product and services that are committed to having a positive impact on social life and environment of their surroundings.

However, environmental performance alone, has failed to show a significant impact on firm value, which suggests that the environmental management efforts of the firm have not shown any significant impact on the long-term measurement of the firm's financial outcome. The findings of this paper are consistent with previous studies conducted by Angelia and Suryaningsih (2015), who found that environmental performance, had a significant effect on the profitability measured by both ROA and ROE. Additionally, Purnomo and Widianingsih (2012) also discovered that environmental performance has a positive influence on profitability.

4.7 The impact of environmental disclosure on financial outcome

Results indicate that, in Indonesian firms, profitability is shown to be negatively influenced by environmental disclosure, as the relationship has a –0.17 path coefficient value with $p < 0.042$, which is below the 5% significance level. On the other hand, the impact of environmental disclosure on firm value is found to be insignificant, with the path coefficient of 0.064 and $p > 0.1$. Thus, both H3a and H3b are rejected. This research shows that corporations with a higher level of environmental information disclosure are associated with lower profitability level, assessed by return on asset ratio. This is shown by the contradicting trend of the two variables in the descriptive analysis, where environmental disclosure experienced an upward movement while profitability faced a downward trend. This negative association could perhaps be due to the fact that, there is still a low adoption of GRI guidelines in reporting environmental information; hence the disclosure varies between firms.

The findings of this research do not support basic theories of stakeholder theory and discretionary disclosure theory which proposes a positive relationship between the two variables, as corporations that have higher disclosure of information hoped to gain appreciation from market appreciation as this gives an additional insight on the company for stakeholders to make their decisions. Also, this does not support the argument of legitimacy theory, which suggests that a good level of CSR disclosure is the goal for firms, as it hopes to create a harmonious relationship with the public in order to gain the social legitimacy, required to maximise its financial strength in gaining profit.

Another finding is that environmental disclosure does not have a significant impact on firm value, as measured by Tobin's Q. The reason for this poor prediction may be due to circumstances in the Indonesian market. An earlier study conducted by Suad et al. (2002) found that Indonesia's capital market has different characteristics compared to others, particularly Western countries. As investors in Indonesia generally behave irrationally and make their investment decisions unsupported by rational consideration. It shows that in Indonesia, annual reports are still not comprehensively used as a source of information. Since most Indonesian market players only pay attention to the financial statements section of the annual report, specifically profitability. As investors tend to believe that a company's high profit would denote a more favourable return for their investment. Therefore, the author proposes that there are other variables that are not included in this research, but which the market players took into account when making investment decisions.

However, the findings are, in line with research conducted in Indonesia by Purnomo and Widianingsih (2012) who found that the disclosure of CSR weakens the influence of environmental performance on a financial outcome, where CSR disclosure was employed as the moderating variable. They argued that the market may perceive the existence of disclosures as a waste of resources since the corporation must issue a variety of activities related to the environment which creates further costs so the firm's profit would be reduced. It also supports findings from Sarumpaet (2005) that found the disclosure level of environmental accounting in Indonesian companies, which is associated with a firm's concern for the environment, as still low. Mulyadi and Anwar (2012) studied Indonesian companies, excluding firms in natural-resource related business in the period of 2007–2009. They found no significant relationship between CSR and firm value, which is measured by Tobin's Q.

4.8 The impact of profitability on firm value

This paper also measures the relationship between the aspects of financial outcome that are examined, which is the correlation between profitability and firm value. In Indonesian firms, the data represents a positively, significant impact occurring between profitability and firm value, with 0.930 value for path coefficient and $p < 0.001$. Hence, H4 is accepted.

The findings are in line with signalling theory, which proposes that actions taken by management gave a cue for investors to look at the firm's prospects. In general, the announcement of the issuance of shares is considered as a negative signal by the market, as it denotes that the corporation's prospects look dreary. Therefore, companies will usually undertake other means to gain new capital, thereby avoiding the issue of new shares. Moreover, as per the pecking order theory suggested, internal capital is always preferred over external capital, with the issuance of new shares again the least preferable choice. Therefore, corporations with a high level of profitability would have the means to gain new capital through an internal source. Thus, giving out a positive signal to investors that justifies the payment of dividends. It also supports the previous research carried out by Sabrin et al. (2016), who found that profitability has a positive impact on firm value. Whereas previous papers only focused on the manufacturing industry while this paper differs by including other industries in the sample tested, which contributes to the universality of the concept.

4.9 The indirect effect

As seen in Table 5 for indirect effects in the model, it can be seen that environmental disclosure has failed to become a mediation variable in the relationship of environmental performance to profitability (PROF), due to the insignificance of P-values. This situation indicates that environmental performance is able to positively affect the profitability level of firms without going through environmental disclosure as environmental disclosure cannot mediate the relations between environmental performance and profitability.

On the other hand, both environmental disclosure and profitability was able to mediate the relations between environmental performance and firm value, as it has a path coefficient of 0.336 with $p < 5\%$. These findings support the suggestion that profitability plays a big role in the investment decisions of Indonesia capital market players as environmental performance alone is not able to enhance firm value. However, it has a

positive, significant indirect impact on firm value through environmental disclosure and profitability. Profitability is also able to be the mediation variable in the impact of environmental disclosure to firm value. However, the indirect effect shows a negative significant result with a –0.158 value for path coefficient and p < 5%. ED. However, it also has a negative direct effect on profitability.

Table 5 Indirect effect result

Predictor	*Respondent*	*1st mediation*	*2nd mediation*	*Indirect effect*
EP	PROF	ED	-	–0.060
				(0.199)
EP	FV	ED	PROF	0.336
				(< 0.001)
ED	FV	PROF	-	–0.158
				(0.012)

5 Conclusions, suggestions and future research

The objective of this paper is to examine the impact of corporation's environmental performance on their financial outcome as well as whether environmental disclosure is able to become a mediation variable within relations. The result of the research has shown that firms financial outcome is significantly affected by their environmental action. Nevertheless, different measures of corporation's environmental activities (PROPER score) have a different impact on financial outcome. In case of environmental disclosure (GRI score), the majority of firms still have not followed the GRI guidelines for reporting environmental information. Therefore, it shows that there is still room for improvement in the reporting manner of Indonesian firms, in terms of environmental-related issues. Profitability is found as the variable with the highest contribution to firm value which indicates that in investment decisions, Indonesia's capital market participant still pay more attention to profitability compared to a firm's environmental actions.

This study calls for policymakers to establish a mandatory tone in the report of environmental activities through regulations and reinforcements, given the tendency of Indonesian firms to oblige the existing regulations as indicated by the environmental performance trend. The findings of this paper point out that different measure of environmental-related behaviour for Indonesian companies, result in a contradicting impact on the financial outcome. The problem perhaps lies in the lack of adoption of GRI guidelines for reporting environmental-related issues, as the environmental information varies across companies in both quality and quantity. The adoption of GRI index guidelines is required, so that the information disclosed in the reports across companies can paint a more comprehensive picture of the company's environmental actions.

This research can be utilised as an additional tool for further future research, or act as a confirming tool for previous papers. The examination of the correlation between environmental performance, environmental disclosure and financial outcome (profitability and firm value) for the Indonesia context is found in this paper. As a large number of the previous research only investigated some part of those correlation examination. Furthermore, the model of this research was created in this study, focusing

on environmental performance, environmental disclosure, profitability and firm value. The result of the paper strengthens existing researches and theories. Hence, contributing to the incremental knowledge linked with this topic. The limitations of this research are, that only independent and mediation variables are employed, while future research is expected to also include control variables in the assessment of the impact between environmental activity and the financial outcomes of a company. The example of control variables could be size of company and industry sector.

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