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and financial performance: evidence from Indonesia".
The paper is interesting, but has many grammar and syntax errors.
The conclusions section needs to be expanded.
The references list needs much attention since many of them are incomplete, i.e. publisher/place of publication or both are missing.
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Environmental performance, environmental disclosure and financial performance: evidence from Indonesia

Abstract: This paper is conducted to study the relationship of environmental performance with financial performance of Indonesian companies, using environmental disclosure as the mediation variable. Firm's environmental action would be measured by both the extent of environmental management in their operations, which is environmental performance with PROPER score as the indicator, and the level of environmental information they disclosed in their reports, which is environmental disclosure measured with disclosure index according to GRI index. While financial performance evaluated using both short and long term measures, with profitability and firm value. Results show that 3 out of 6 hypothesis presented in this paper are accepted. Furthermore it indicates that firms' financial performance is significantly affected by their environmental action. However, findings indicate that different measures of corporation's environmental activities have different impact to financial performance as hypothesizes related to environmental disclosure was rejected since there's low adoption of GRI index in the reporting of sustainable information for most firms. Findings also indicate that while firm's environmental actions significantly impact profitability, it still doesn't show a significant impact on the long term. This study also highlight the prerequisite for companies to report sustainability issues according to the GRI guidelines, as current disclosures vary across companies.

Keywords: Environmental performance, environmental disclosure, profitability, firm value, PROPER, GRI index

Biographical notes: (ABS)

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's sole purpose was to maximize shareholder's wealth. However, as the business world grow and changes with the passing of time, so does the way society view organizations and how they operate. It became more and more apparent that there are negative social and environmental implications caused by the companies as they try to realize their goal. As a result, corporations are facing 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 in. 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 corporation may improve firm's image and that productivity, financial performance, and value creation may be influenced positively by being attentive towards various stakeholders' interests (Donaldson & Preston, 1995).

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

The association between companies' environmental performance and financial performance has been long argued among both researchers as well as the business society. Questions remain not only whether or not firm's environmental performance impact its financial performance, the nature of the relationship is also debatable. Results from earlier research have been controversial, with many showing significant positive relationship between environmental performance and financial performance, whereas

others concluded that the relationship is insignificant. On the other hand, the greater proportion of the previous research regarding this issue are done in well developed economies such as Europe or United States of America, which can be regarded as countries with 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 (Bank Dunia, 2009). A number of policies regarding environmental management has 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 also introduced Corporate Performance Rating Program in Environmental Management (PROPER) program, which is the first nation-wide corporate environmental performance evaluation.

Previous studies have shown inconclusive results (Angelia & Suryaningsih, 2015); (Sarumpaet, 2005); (Purnomo & Widianingsih, 2012); (Saridewi & Koesrindartoto, 2014); (Suratno, Darsono, & Mutmainah, 2006) and the subjects are generally limited to specific industry sectors. Therefore this paper will try to re-examine the relationship between environmental performance and financial performance, with environmental disclosure as the mediation variable. To differ from previous research, this paper will not limit its scope towards a specific sector but instead will take account of all companies that is listed in IDX in order to gain a more comprehensive representation of the general relationship between the variables studied. Two measures are adopted to describe firm's environmental actions: environmental performance, which measures the level of environmental management in firm's operational activities, and environmental disclosure, which evaluate the reporting behaviour of the firms regarding their environmental activities. In addition, both short (profitability) and long (firm value) term impact on financial performance are examined. Thus, the findings of this paper might motivate companies to increase their efforts in environmental management and sustainability reporting.

2 Literature Review

Stakeholder Theory

The *stakeholder theory* proposes that firm's objective should not be limited to serve its own purposes and profits but instead to also assist the interests of other stakeholders. The state of a corporation is heavily influence by the degree of support that stakeholders give towards the firm (Ghozali & Chariri, 2007). This theory also state that all stakeholders have the right to obtain information regarding the firm's activities that could influence their decision making process. Each stakeholders has the discretion to both not using the information that they receive and to not playing an active role towards their relationship to a company. In general, stakeholders can affect the use of various economic resources utilized in the activities of the corporation, therefore they are usually considered in the matter of disclosure of corporate information in the annual report.

Legitimacy Theory

(Ghozali & Chariri, 2007) claimed that legitimacy theory is based on the social contract that exist between the corporation and the society where the company operates and employ economic resources. A social contract here is described as "All social institution without exception operates within society through social contract, whether explicit or implicit, whereby their survival and growth are based on the social outcome that they provide towards the public and the distribution of economic, social, or political benefits towards a group in accordance with the influence that they hold." According to the theory, each

and every company has a contract with the society to conduct their operation in accordance with the values that are uphold by the society in which they operate. By defying this contract, the corporation would face a high cost since the public would then refuse to legitimize 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 legitimize their activities in the eye of the society by using environmental-based performances and social disclosure (Gray, Bebbington, & Walters, 1993). One of the ways for firms to build, maintain, and legitimize corporate contributions, from both economic and political perspective, is to disclose corporate social responsibility information in annual or sustainability reports (Sayekti, Yosefa, & Wondabio, 2007). Hence, the common method adopted by businesses is to incorporate corporate social responsibility 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 the society's values. With a good level of corporate social responsibility disclosure, companies hope to create a harmonious relationship with the public in order to gain the social legitimacy required to maximize its financial strength in gaining profits.

Environmental Performance

According to (Darwin, 2004) environmental performance is defined as corporation's mechanism to intentionally integrate 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 environmental performance can be understood as assessable results of a corporation's Environmental Management System (EMS). The measurement of environmental performance thus is an integral part of environmental management system, as it's a measure of the actual result of the system. Firm's environmental objectives, policies, and targets are used as the basis of corporation's environmental assessment. In this particular research, environmental performance will be measured using PROPER ranking scheme, which is a 5 color-codes-ranking system that assess corporations in Indonesia and rank them according to their environmental performance. The objectives of this program are to urge active response from stakeholders regarding businesses' current level of compliance and to further push organizations to improve their performance in environmental management, hence minimizing the environmental impact from their operation. Despite considerably massive scepticisms over the government rating due to low monitoring and governance in Indonesia, 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 towards 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, a RED or BLACK if it doesn't, according to the extent of their non-compliance. A more detailed explanation can be seen below:

Table 1. PROPER scoring

Color Coding	Description	Score
Gold	Exceptionally Good	5
Green	Extremely Good	4
Blue	Good	3
Red	Bad	2
Black	Extremely Bad	1

Source: (Purnomo & Widianingsih, 2012)

Environmental Disclosure

Corporate social responsibility *disclosure* is defined as the method utilized by management to interact with society in order to influence public's perception towards the organization (Deegan, Craig, & Rankin, 1996). The nature of this disclosure can be categorized into two: mandatory disclosure and voluntary disclosure. The latter term can be described as disclosing any information associated with the organization's activity or state on their own accord. However, in reality not all information would be disclosed to the public, only those that are positive and beneficial towards the company. Businesses would disclose all information that they consider necessary in order to support the running of the capital market (Ghozali & Chariri, 2007). There are numerous reasons that encourage companies to conduct a voluntary disclosure of information regarding their CSR activities. The disclosure helping investors in understanding the strategic business management and increasing the credibility of the firm as examples of the benefits that the company can acquire. Other reasons include gaining competitive advantage through implementing CSR, legitimizing the actions of the corporation, attracting investors, and complying with existing regulations (Sayekti, Yosefa, & 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 are lower ratio of environmental disclosures compared to other categories. This phenomena could be due to the fact that development of social and environmental disclosure practices are still in embryonic stage if compared with financial reporting practices (Ghozali & Chariri, 2007). Though environmental disclosure is an important aspect inside company's annual report, there are still limited CSR papers conducted that concentrate on the aspect of environment (Lindrianasari, 2006). Environmental disclosure here is defined as the disclosure of information associated with environment that is stated inside the organization's annual or sustainability report. The problem may possibly be because of the voluntary nature of disclosure regarding environmental-related info in Indonesia, as there hasn't been any regulation set specific 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 corporation's exposure to future cost associated with environment would be reduced through a good performance in environmental performance, good environmental players should have 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 ought to be higher quantity of disclosure of environmental-related information amongst good environmental performing companies compared to poorer environmental performing companies.

The data for environmental disclosure can be found in the company's sustainability report or in the sustainability section of the annual report or the section that contains information regarding corporate social responsibility 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 & G4-core). The approach to calculate environmental disclosure is through analyzing the GRI indicator section of the sustainability Report or the environmental aspect inside the corporate social responsibility section of 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 & Widianingsih, 2012) and (Sayekti, Yosefa, & 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 & Widianingsih, 2012)

EDI calculation formula is as follow, which is modified from Purnomo & Widianingsih (2012):

$$EDI_j = (\Sigma X_{ij})/n_j$$

Where
EDI_j = Environmental Disclosure Index firm j;
n_j = total item for firm j, $n \leq 34$;
X_{ij} = dummy variable, 1= if item i was disclosed; 0= if item i was not disclosed; Thus $0 \leq ED \leq 1$

Financial Performance

Different measures of financial or economic performance have been used in earlier research regarding environmental performance and corporate social responsibility (Angelia & Suryaningsih, 2015); (Purnomo & Widianingsih, 2012); (Crisóstomo, Freire, & Vasconcellos, 2011). As this particular study only employ data derived from public listed companies, both accounting-based and market-based financial performance measures will be utilized in the hope of generating a more in-depth explanation of the long term impact of environmental and social performance towards a firm's financial performance.

Profitability

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

One widely used instrument to measure profitability in environmental performance studies is return on assets (ROA) (Angelia & Suryaningsih, 2015), (Sarumpaet, 2005), and (Saridewi & Koesrindartoto, 2014). Return on assets (ROA) is the measurement of the corporation, as a whole, in making profits with the overall number of assets that are available within the organization (Sabrin, Sarita, S, & Sujono, 2016), moreover profitability measured by ROA will reflect the attractiveness of the business. Return on asset can be defined as earnings after tax divided with 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's measurement, for instance business's operating income. Though accounting ratio still lacks in some aspects such as being influenced by the accounting method selected, ROA provides information that allow the author to analyze the association between financial and environmental performance. Therefore, in this study the author uses ROA as the instrument to measure profitability. Return on assets (ROA) here is measured as:

$$\text{Return on Asset} = (\text{Net Income})/(\text{Total Assets})$$

Firm Value

Though rarely examined, this paper also measure the impact of environmental performance towards firm's value creation. Maximizing the value of the organization is one of the main objective of financial management. Stock value maximization is often the purpose of financial management, hence the value of stock can be employed as an appropriate indicator to measure the value of the firm (Copeland, Weston & Shastri, 2005). Thus in other words, 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 organization's market value and its accounting value, is employed as the tool for measuring firm value. 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, Sarita, S, & Sujono, 2016). Tobin's Q has been broadly used as

a firm value measure, for instance in (Crisóstomo, Freire, & Vasconcellos, 2011) and (Servaes & Tamayo, 2013) as it portrays how much value is created by the organization using its assets. The ratio is computed as follows, consistent with method used by (Sabrin, Sarita, S, & Sujono, 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 the company's financial performance. Considering that environmental efforts and other CSR activities' generally affect the organization in the long term, it's more appropriate to extend the analysis to also include the long term impact of the firm's financial performance. In reality, some corporations may deliberately sacrifice its current profitability to engage in CSR activities to serve the long-term interest of the firm (Servaes & Tamayo, 2013).

H_1: Environmental performance positively affect environmental disclosure
H_{2a}: Environmental performance has positive influence on profitability
H_{2b}: Environmental performance has positive influence on firm value
H_{3a}: Environmental disclosure has positive effect on profitability
H_{3b}: Environmental disclosure has positive effect on firm value
H4: Profitability positively affect firm value

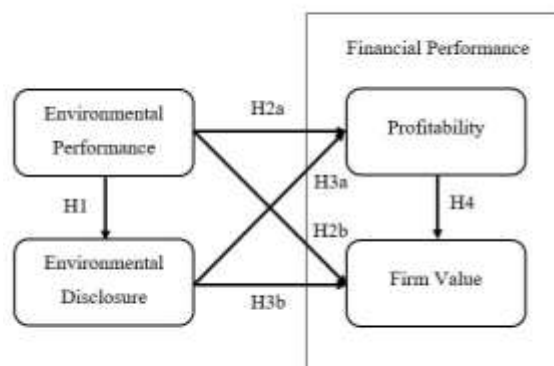
3 Research Methodology

The paper conducts analysis on the variables as follows:

a. Environmental performance as the independent variable with score from PROPER program as the indicator.
b. Environmental disclosure as the mediation variable with indicator of Environmental Disclosure Index (EDI)
c. Profitability, measured by ROA and firm value, with the indicator of Tobin's Q, as the dependent variables used to indicate financial performance

This study uses secondary data obtained from PROPER publication in the official website of the Ministry of Environment (MoE), sustainability reports or annual reports of the companies and Bloomberg. The population used in this research include 536 companies listed on 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, thus resulting in a total sample of 123 reports. However, after data trimming to improve the model fit, the number of sample left is 97 reports. The study using WarpPLS version 5.0 software, one of the SEM analysis software that can be used. Figure 1 presents the conceptual model used in this study.

Figure 1. Model analysis



$ED\ \eta 1 = \gamma 1\ \ EP\xi 1 + \zeta 1$
$PROF\ \eta 2 = \beta 1\ ED\eta 1 + \gamma 2\ \ EP\xi 1 + \zeta 2$
$FV\ \eta 3 = \beta 2\ \ ED\eta 1 + \gamma 3\ \ EP\xi 1 + \zeta 3$

Where:
EP = Environmental Performance
ED = Environmental Disclosure
PROF = Profitability
FV = Firm Value

4 Research Result and Analysis

Overall corporations in Indonesia has managed to achieve the level of basic compliance in their environmental management, as indicated by the PROPER score of 3, which indicates that in general firms have taken actions to minimize their environmental impact from their operation. A phenomena observed where the 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., 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. Though 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 level of disclosure during the periods examined are all below 30%. This indicates that the majority of firms still haven't paid real attention to the GRI guidelines for reporting issues related to sustainability. Therefore showing that there is still room for improvement in the reporting manner of Indonesian firms in terms of environmental-related issues.

Table 3. Descriptive Statistics

	Min	Max	Mean	Std. Dev
EP2013	2	5	2.9	0.64
EP2014	2	4	3	0.42
EP2015	2	4	3	0.35
ED2013	0.03	1	0.27	0.26
ED2014	0.06	0.87	0.28	0.19
ED2015	0.06	0.79	0.285	0.18
PROF2013	0.0014	0.46	0.09	0.10
PROF2014	0.0068	0.42	0.1	0.01
PROF2015	0.00018	0.37	0.08	0.08
FV2013	0.245	15.7	2.26	3.46
FV2014	0.318	17.4	2.54	3.54
FV2015	0.317	18.1	2.19	3.43

Source: Author's Compilation

Goodness-of-fit test

The overall predictive and explanatory quality of the model is represented by the first three criteria, which is APC, ARS, and 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, AVIF and AFVIF index, 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 multi-collinearity problem occur in the model. For the GoF index, the model's explanatory power, showed a value of 0.636, hence the model is considered as having a large explanatory power. This model is free from Simpson's paradox instances, free from problems of negative R-squared contributions as the SPR, RSCR, and SSR indices for show the ideal value of 1. In the case of NLBCDR, this model passed the

acceptable level of 0.7 where it has an index of 0.917. To conclude, the research's model have passed the goodness-of-fit test therefore it is acceptable to be used in this paper.

Profile of Weight Indicator

The strength of each indicator in the variables are 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, however, all of the variable studied consist of only one indicator per variable. Therefore, the indicators in each variable all holds the maximum weight of 1, where each indicator wholly represent each variable as can described in the table below.

Table 4. Weight Indicator

Variable	Indicator Weights
Environmental Performance (EP)	1
Environmental Disclosure (ED)	1
Profitability (PROF)	1
Firm Value (FV)	1

Source: Author's compilation

Hypothesis testing & Analysis

Table 5. Direct Effect Result

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

Source: Author's Compilation

The numbers show the path coefficient of the direct effect, whereas number in parenthesis show the p-values. Coefficients with (*) shows significance at 5% level while (**) shows significance at 10% level

The impact of environmental performance to environmental disclosure

Results from the Indonesian companies' data showed that environmental performance, which is measured by PROPER score, has a positive significant impact towards environmental disclosure index, the measurement of environmental disclosure 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 corporation's exposure to future cost associated with environment would be reduced through a good performance in environmental performance, thus good environmental players would have higher disclosure level of environmental information (in both quality and quantity) as they believe that by disclosing their performance to the public would represent as a good news towards the 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 towards water pollution control, air pollution control, B3 waste management, EIA, and marine pollution control, the higher level of environmentally-related information they would divulged to the market, that is considered in the PROPER program have a higher disclosure level of environmental information in accordance with the GRI index.

The findings of this research supports the research conducted by (Suratno, Darsono, & Mutmainah, 2006) and (Al-Tuwajiri, Christensen, & Hughes II, 2008) whom found a positive significant relationship between environmental performance and CSR disclosure. The object studied however differs, as previous papers have smaller number of sample, for instance (Suratno, Darsono, & Mutmainah, 2006) conducted study on Indonesia but focused only on the manufacture sector, thereby

raising concerns regarding whether the findings can be regarded as an accurate representative of the actual state of Indonesian market which is comprised of various industries. Whereas this study does not limit its sample into a specific industry, instead comprised of corporations from consumer goods, agroindustry, pharmacy, chemical industry, herbal, ceramics, manufacture, paper, cooking oil, automotive, animal feed, metal processing, mining & energy, petrochemical, tobacco, palm oil, cement, mineral mining, and textile industry sectors. Therefore the results provide a more universal picture of the relationship of 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 3 periods are all lower than 30%, which indicate that most Indonesian companies tend to disclose lower than 10 items out of 34 environmental items listed in the *Global Reporting Initiative Index*. This situation point out that majority of Indonesian firms have problems in reporting environmental information, which can be explained by the absence of mandatory requirement established in the disclosure of environmental information. Another observation found in this research is that merely 11 out of 41 sample companies have published sustainability report during the period examined, which means that around 75% of the sample was evaluated through their annual reports which usually doesn't follow the GRI reporting guidelines regarding reporting sustainability issues. Sarwono Kusumaatmadja, an environmental expert, also expresses the necessity for established authority such as the government or IDX to follow the practices of other countries where they require companies to publish sustainability report (Putri, 2017). Therefore, though sample companies with better environmental performance does disclose more in their reports which resulted 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 An example from the data is PT Semen Indonesia (Persero) Tbk., in 2015 where it managed to achieve a green rank in the PROPER program (equivalent to the score of 4), which represents that it has achieved a level of beyond compliance regarding the environmental management of their operation, has an environmental disclosure index value of 0.32, which is considered as low level of disclosure even though it is above the average data.

The impact of environmental performance to financial performance

The impact of environmental performance to 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 to firm value is found to be insignificant with the path coefficient pf 0.030 and $p>0.1$. Therefore, **H2b is rejected**. The findings of this research contributes to the long standing argument regarding the relationship of environmental and financial performance. As the result shows that corporations with good environmental management are associated with higher profitability level, it supported the *win-win theory* proposed by (Porter & Van der Linde, 1995). Otherwise known as the *Porter Hypothesis*, it suggest that corporations with good environmental performance will gain competitive advantages because of the way customers and shareholders view this kind of behavior (Pérez-Calderón, Milanés-Montero, & Ortega-Rossell,, 2012). Porter propositions that managers view pollution as a source of inefficiency, a sign of technological backwardness, poor management and inadequate use of production resources (Porter & 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) supports this theory, as it found that around 75% of millennial generation, the future consumers, are willing to pay a higher price for a product or service that are perceived to be sustainable. This is an increase compared to the previous year, where only 50% of millennials exhibit the same behavior. Another sharp increase of 17% is also found in the willingness of millennial generation to spend more towards product and services that are committed to give positive impact towards the social and environment of their surroundings.

Environmental performance alone, however, failed to show significant impact towards firm value which suggest that the environmental management efforts of the firm haven't shown any significant impact towards the long term measurement of firm's financial performance. The findings of this paper is

consistent with previous studies conducted by (Angelia & Suryaningsih, 2015) whom found environmental performance had significant effect on profitability measured by both ROA and ROE and (Purnomo & Widianingsih, 2012) which discovered that environmental performance has a positive influence towards profitability.

The impact of environmental disclosure to financial performance

Results indicate that in Indonesian firms, profitability is shown to be negatively influenced by environmental disclosure, as the relation has -0.17 path coefficient value with $p < 0.042$, which is below 5% significance level. On the other hand, the impact of environmental disclosure to 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 higher level of environmental information disclosure are associated with lower profitability level, assessed by return on asset ratio. As seen 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 low adoption of GRI guidelines in reporting environmental information, hence the disclosure varies between firms.

The findings of this research does 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 it gave additional insight of the company for stakeholders in making decision. It also does not support the argument of *legitimacy theory* which suggest that good level of CSR disclosure is the goal for firms as it hope to create a harmonious relationship with the public in order to gain social legitimacy required to maximize its financial strength in gaining profit.

Another finding is that environmental disclosure does not have significant impact towards firm value, measured by Tobin's Q. The reason for the miss prediction may due to circumstances in the Indonesian market. Earlier study conducted by (Suad, Mawan, Eduardus, & Mamduh, 2002) found that the Indonesia's capital market has a different characteristics compared to other, particularly western, countries as investors in Indonesia generally behave irrationally and made their investment decisions that are unsupported by rational consideration. It shows that in Indonesia annual report is 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 favorable return for their investment. Therefore the author proposes that there are other variables, which are not included in this research, the market players took into account when making investment decisions.

The findings are, however, in line with research conducted in Indonesia by (Purnomo & Widianingsih, 2012) whom found that the disclosure of corporate social responsibility weakens the influence of environmental performance to financial performance, where CSR disclosure was employed as the moderating variable. They argue that the market may perceived 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, and the firm's profit would be reduced. It also supports findings from (Sarumpaet, 2005) that found in Indonesian companies the disclosure level of environmental accounting, which is associated with firm's concern for the environment, is still low. (Mulyadi & Anwar, 2012) whom 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 (measured by Tobin's Q).

The impact of profitability to firm value

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

The findings is in line with *signaling theory*, which proposes that actions taken by management gave cue for investors on how to look at the firm's prospect. In general, the announcement of issuance of shares is considered as a negative signal by the market, at it denotes that the corporation's prospects

looked 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* suggest, internal capital is always preferred over external capital, with issuance of new shares again in the least preferable choice. Therefore corporations with high level of profitability would have the means to gain new capital through internal source, thus giving out positive signal for the investors as it justifies the payment of dividends. It also supported previous research done by (Sabrin, Sarita, S, & Sujono, 2016) whom found that profitability has a positive impact towards firm value. Whereas previous paper only focused on the manufacturing industry, this paper differs by including other industries in the sample tested, which contributes to the universality of the concept.

Indirect effect

As seen in table 4 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 environmental performance is able to positively affect the profitability level of firms without going through environmental disclosure, as environmental disclosure cannot mediate the relation between environmental performance and profitability.

On the other hand, both environmental disclosure and profitability was able to mediate the relation between environmental performance to firm value, as it has a path coefficient of 0.336 with $p < 5\%$. This 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 positive significant indirect impact to 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 negative significant result with -0.158 value for path coefficient and $p<5\%$. ED however also has a negative direct effect towards profitability. Table 6 show the path coefficient of the indirect effect, whereas number in parenthesis show the p-values.

Table 6. 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)

Source: Author's compilation

5 Conclusion and Suggestion

The result of the research has shown that firms' financial performance is significantly affected by their environmental action. However, different measures of corporation's environmental activities have different impact to financial performance. Moreover, findings indicate that in Indonesia, capital market players still pay more attention to the profitability compared to the environmental actions of the firm regarding investment decisions. Hence, better comprehension regarding the relationship of the variables in this study is hoped to contribute to better decision making in terms of both stakeholder's purchase and investment decisions.

This study also suggested that there is a requirement for a companies to pay attention to the GRI guidelines for reporting environmental related issues, as analysis of the data showed that the guideline is still not followed by the majority of Indonesian companies. An adoption of the GRI index guidelines is required so that the information disclosed in the reports can paint a more accurate and comprehensive picture of the company's environmental actions. Future research regarding this topic can include

additional indicators, additional number of observations, and control variables so that the research can gain a more in depth and comprehensive findings regarding the relationships of the variables studied.

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Date: Saturday, 28 April 2018 at 12:02 pm GMT+7

Dear Editor and Reviewer.
Attached is our revision version. In terms of the non grammar revision, we put on the blue ink. However for grammar revision using track changes. Hope this effort already fulfilled the quality that expected by Editor and Reviewer.
Thanks, Author.

Reviewer A Comments:
==================
Suggestions which would improve the quality of the paper:
Evaluation Report for Paper: WRSTSD_186773 "Environmental performance, environmental disclosure
and financial performance: evidence from Indonesia".
The paper is interesting, but has many grammar and syntax errors.
Author: we have worked with English proofreading and included in thise revision version.

The conclusions section needs to be expanded.
Author: it is been expanded on conclusion sections (blue ink)

The references list needs much attention since many of them are incomplete, i.e. publisher/place of publication or both are missing.
Author: we realised and revised it already.

Changes which must be made before publication:
I believe that the paper, with the proposed modifications, can be of interest to the readership of the journal, providing concepts useful for the readers of the journal.

Reviewer B Comments:
==================
Suggestions which would improve the quality of the paper:
English language review - simplify the title (too many performances?).
Author: We have revised the title with the new one “Do environmental performance and disclosure bring financial outcome? Evidence from Indonesia

Well written and structured paper but missing some key elements - needs more references to support and link the research.
Author: have already added with more relevance reference (the blue ink on referenc list)

The flow of the paper could be improved for the reader to follow - introduce each section for the reader and guide to next section.
Author: the advice has been follow up in revision version, such as on the abstrack, literature review, hypotheses elaboration etc (on the blue ink).

Changes which must be made before publication:
What is happening with reference section - poorly referenced and not in alphabetical order?
Author: we realised and revised it already

Literature review is different to Stakeholder and Legitimacy theories. Theoretical and methodological framing could be better structured and justified.
Author: have revised it on part literature review (the blue ink).

Writing style - use of brackets in referring to authors is not being used correctly. Please see some other published papers.
Author: we have revised it on this revision version

There seems to be a confusion between Lit review and Methodology sections. A proper and broader lit review is needed.
Author: already revised on each section literature review (last part) and methodology (the blue ink).

Reviewer C Comments:
==================
Changes which must be made before publication:
1. The structure of the paper needs attention and the usual rule (introduction-rationale-need for the work/research questions, background-literature review, approach-methods-research performed, results, discussion and then conclusions/concluding remarks) should be followed more closely to facilitate the flow of the paper. Please separate discussion from results & develop further your discussion by drawing on relevant studies and in relation with prior literature - incorporate research and policy recommendations in the conclusion section.
Author: we follow up the feedback in this revision version by added the clearer and more structural sentence in each sections (the blue ink). And also separate the discussion result and development on part 5(Conclusion, suggestion and future research).

2. More references to recent relevant literature/empirical studies in a stand-alone literature review section could increase the quality of the research paper and provide a much clearer message to the reader - these may help you building your discussion which needs to be extended.
Author: have already added with more relevance reference and extend the discussion, especially on the hypoteses elaboration (on the blue ink).

3. The introductory/opening section should communicate the aims, objectives and an short outline of the rest of the paper in order to facilitate the flow of the study.
Author: revised took action for this feedback on the introduction part, include the short outline (on the blue ink).

4. Concluding remarks – authors must elaborate more on what is their contribution to the literature as well as on opportunities for future research. Questions that need to be answered: Why your study is important? and how it extendso existing knowledge on the issue/topic? Conclusions need to be written in a clear and coherent manner and draw the main lessons from the paper. I suggest you to concentrate on the description of the implications of the work, the main findings and its replicability elsewhere. Furthermore, limitations of the study need to be outlined to a greater extent, and so are any potential connections between your study and specific aspects of the Journal's scope.
Author: revised and have already took action for this feedback on abstract, introduction, also conclusion and suggestion part (on the blue ink).

5. Carefully check the references, so as to make sure they are all complete and follow the Guidelines to Authors.
Author: have already revised according to the guideline

6. Finally, when you submit the corrected version, please do check thoroughly, in order to avoid grammar, syntax or structure/presentation flaws - please seek for professional English proofreading services or ask a native English-speaking colleague of yours in order to refine and improve the English in your paper.
Author: we have worked with English proofreading

Dr Josua Tarigan

josuatrg@yahoo.com
for: World Review of Science, Technology and Sustainable Development (WRSTSD)

Do environmental performance and disclosure bring financial outcome? E~~e~~vidence from Indonesia

Abstract: In some developing countries such as Indonesia, there is a lack of regulatory controls regarding~~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 f~~F~~irm's environmental action is measured by both the extent of environmental management in their operations, which is the environmental performance with PROPER score as the indicator, and the level of environmental information they disclose~~d~~ in their reports, which is environmental disclosure measured with disclosure index according to GRI index. While the financial outcome is evaluated using both short and long-~~-~~term measures, with profitability and firm value. Results show that 3 out of 6 hypothese~~e~~is presented in this paper are accepted. Furthermore, it indicates 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 i~~wa~~s able to mediate the relationship between environmental performances and~~to~~ firms. The findings suggest that, in general, the majority of firms need to follow the GRI guidelines for reporting environmental information, therefore the investors sh~~w~~ould consider this~~ese~~ information when making investment decisions.

Keywords: Environmental performance, environmental disclosure, profitability, firm value, PROPER, GRI index

Biographical notes: (ABS)

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's sole purpose was to maximize shareholder's wealth. However, as the business world grows and changes with the passing of time, so does the way society views organizations and how they operate. It became more and more apparent that there are negative social and environmental implications caused by ~~the~~ companies as they try to realize their goals. As a result, corporations are facing 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 ~~in~~. 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~~s~~ various stakeholders' interests (Donaldson and Preston, 1995).

Social responsibilities in general, and environmental management, in particular, are becoming an integral part of firms' activities (Molina et al., 2009; Thiel, 2015). Therefore, it is crucial for corporations to adapt their~~its~~ businesses to be both socially and environmentally responsible to cope with the changes and~~to~~ survive in the long term. Henceforth, companies are adopting new strategies to improve their environmental performance in order to enhance their reputation in 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~~is~~ 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~~among~~ 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

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showing a significant 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~~are done~~ in well-~~-~~developed economies such as Europe or the United States of America, which 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 (Bank Dunia, 2009). A number of policies regarding environmental management have~~s~~ 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 nation-wide 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~~y~~ 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 ~~evidence of a study that analyses~~covering:

1. Using the accounts of all companies~~ that is~~ listed in IDX in order to gain a more comprehensive representation of the general relationship between the variables studied.
2. Utilizing~~ed~~ two measurements of a firm's environmental actions: environmental performance, which measures the level of environmental management in a firm's operational activities, and environmental disclosure, which evaluates the reporting behavio~~u~~r of the firms regarding their environmental activities.
3. In addition, both short (profitability) and long-term (firm value)~~ term~~ 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~~not only~~ the short-~~-~~term.

The remainder of this paper is organized 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~~ in this research~~. The fourth section covers the results with the analysis and discussion. The last section highlights the conclusion and suggestions for business and~~ the~~ future research.

2 Literature Review

Two notable theories that explain~~ing~~ the motivation of organizations for~~in doing~~ environmental management and disclosure are the stakeholder and legitimacy theories~~y~~.

Stakeholder Theory

Stakeholders are the focus of stakeholder theory itself. According to Price (2004), stakeholders include a wide range of~~ group~~ people with~~ a~~ different interests who~~and~~ have some kind of involvement with an organization. Furthermore, Ghozali and Chariri (2007) argue~~d~~ that the state of a corporation is heavily influenced by the degree of support that stakeholders give to~~wards~~ the firm. Stakeholders 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~~s~~ has the discretion to both not use~~ing~~ the

information that they receive and to not play~~ing~~ an active role in~~towards~~ their relationship with~~to~~ a company. In general, stakeholders can affect the use of various economic resources utilized in the activities of the corporation, therefore, they are usually considered in the matter of disclosure of corporate information in the annual report.

Legitimacy Theory

Suchman (1995) defines legitimacy theory as “a generaliz~~s~~ed 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 organizations that~~which~~ may choose to maintain high~~t~~ standards to be legitimate. According to the theory, each and every company has a contract with the society to conduct their operations in accordance with the values that are uphe~~o~~ld by the society in which they operate. By defying this contract, the corporation would face a high cost since the public would then refuse to legitimize 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 legitimize their activities in the eye of~~ the~~ society by using environmental-based performances and social disclosure (Gray et al., 1993). One of the ways for firms to build, maintain, and legitimize corporate contributions, from both economic and political perspectives, is to disclose corporate social responsibility information in annual or sustainability reports (Sayekti et al., 2007). Hence, the common method adopted by businesses is to incorporate ~~corporate ~~social responsibility 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~~ the~~ society’s values. With a good level of corporate social responsibility disclosure, companies hope to create a harmonious relationship with the public in order to gain the social legitimacy required to maximize their~~its~~ financial strength in gaining profits.

Environmental Performance

According to Darwin (2004), environmental performance is defined as a corporation’s mechanism for~~to~~ intentionally integrating~~e~~ 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~~environmental performance~~ can be understood as the assessable results of a corporation’s Environmental Management System (EMS). The measurement of environmental performance, thus, is an integral part of an environmental management system, as it’s a measure of the actual result of the system. A f~~F~~irm’s environmental objectives, policies, and targets are used as the basis of a corporation’s environmental assessment. In this particular research, environmental performance will be measured using the PROPER ranking scheme, which is a 5 color-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 businesses’ current levels of compliance and to further push organizations to improve their performance in environmental management, hence minimizing the environmental impact from their operations. Despite considerably massive sk~~e~~epticism~~s~~ 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~~s~~ 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 doesn’t, according to the extent of their non-compliance. A more detailed explanation can be seen below:

Table 1. PROPER scoring

Color Coding	Description	Score
Gold	Exceptionally Good	5
Green	Extremely Good	4
Blue	Good	3
Red	Bad	2
Black	Extremely Bad	1

Source: (Purnomo and Widianingsih, 2012)

Environmental Disclosure

Corporate social responsibility *disclosure* is defined as the method utilized by management for~~to~~ interacting with society in order to influence the public's perception of~~towards~~ the organization (Deegan, 2002). The nature of this disclosure can be categorized into two terms: mandatory disclosure and voluntary disclosure. The latter term can be described as disclosing any information associated with the organization's activity or state on their own accord. However, in reality, not all the information would be disclosed to the public, only~~ those~~ that which is~~are~~ positive and beneficial for~~towards~~ 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 reasons that encourage companies to conduct a voluntary disclosure of information regarding their CSR activities. The disclosure helps~~ing~~ investors to~~in~~ understand~~ing~~ the strategic business management to~~and~~ increase~~ing~~ the credibility of the firm, providing~~ as~~ examples of the benefits that the company can acquire. Other reasons include gaining competitive advantage through implementing CSR, legitimizing the actions of the corporation, attracting investors, and complying with existing regulations (Sayekti et al., 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~~are~~ lower ratio of environmental disclosures compared to other categories. ~~This phenomena~~This phenomenon could be due to the fact that the development of social and environmental disclosure practices is~~are~~ still in the embryonic stage when~~if~~ compared to~~with~~ financial reporting practices (Ghozali and Chariri, 2007). Though environmental disclosure is an important aspect of~~inside~~ a company's annual report, there are still limited CSR papers conducted that concentrate on the aspect of environment (Lindrianasari, 2006). Environmental disclosure here is defined as the disclosure of information associated with the environment that is stated inside the organization's annual or sustainability report. The problem may possibly be because of the voluntary nature of disclosure regarding environmental-related info in Indonesia, as there hasn't 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~~ in environmental 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 ought 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 or in the sustainability section of the annual report or the section that contains information regarding the corporate social responsibility 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 & G4-core). The approach to calculating~~e~~ environmental disclosure is through analyzing the GRI indicator section of the sustainability r~~R~~eport or the environmental aspect inside the corporate social responsibility 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 I~~i~~ndex (EI) calculation, following the method used by Purnomo and Widianingsih (2012) and also Sayekti et al., (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 is as follows, which is modified from Purnomo & Widianingsih (2012):

$$EDI_j = (\Sigma X_{ij})/n_j$$

Where
EDI_j = Environmental Disclosure Index firm j;
n_j = total item for firm j, $n \leq 34$;
X_{ij} = dummy variable, 1= if item i was disclosed; 0 = if item i was not disclosed; t~~T~~hus $0 \leq ED \leq 1$

Financial outcome

Different measures of financial or economic performance have been used in earlier research regarding environmental performance and corporate social responsibility (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 utilized in the hope of generating a more in-depth explanation of the long-term impact of environmental and social performance toward~~s~~ a firm's financial outcome.

Profitability

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

One widely-used instrument for~~to~~ measuring~~e~~ profitability in environmental performance studies is the return on assets (Angelia and Suryaningsih, 2015; Sarumpaet, 2005; Saridewi and Koesrindartoto, 2014). Return on assets (ROA) is the measurement of the corporation, as a whole, in making profits with the overall number of assets that are available within the organization (Sabrin et al., 2016).~~,~~ M~~m~~oreover, profitability measured by ROA will reflect the attractiveness of the business. Return on asset can be defined as earnings after tax divided by~~with~~ 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~~'s~~ measurements, for instance, business's operating income. Though accounting ratio still lacks in some re~~a~~spects, such as being influenced by the accounting method selected, ROA provides information that allows the author to analyze the association between financial and environmental performance. Therefore, in this study, the author uses ROA as an~~the~~ instrument for~~to~~ measuring~~e~~ profitability. Return on assets (ROA) here is measured as:

$$\text{Return on Asset} = (\text{Net Income})/(\text{Total Assets})$$

Firm Value

Though rarely examined, this paper also measures the impact of environmental performance toward~~s~~ a firm's value creation. Maximizing the value of the organization is one of the main objectives of financial management. Stock value maximization is often the purpose of financial management, hence

the value of the stock can be employed as an appropriate indicator for~~to~~ measuring~~e~~ the value of the firm (Copeland et al., 2005). Thus, in other words, 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 organization's market value and its accounting value, is employed as the tool for measuring firm value. 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), as it portrays how much value is created by the organization using its assets. The ratio is computed as follows, 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~~the~~ company's financial outcome. Considering that environmental efforts and other CSR activities[2] generally affect the organization over~~in~~ the long term, it's more appropriate to extend the analysis to also include the long-~~-~~term impact of the firm's financial outcome. In reality, some corporations may deliberately sacrifice their~~its~~ current profitability to engage in CSR activities to serve the long-term interests of the firm (Servaes and Tamayo, 2013).

Relationship of Environmental Performance and Environmental Disclosure

Environmental disclosure is the disclosure of information related to the environment, as detailed in~~in~~ the company's annual report or sustainability report. From a corporate social responsibility perspective, the correlation between environmental performance and environmental disclosure is an important aspect. Previous empirical studies have~~s~~ tried to examine the relationship between these~~is~~ two variables, resulting in varying outcomes. As an example, Patten (2002)~~ whom~~ 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~~ where~~ they observed that firms in the United States of America with poorer environmental performance tend to disclose more regarding their state of performance, 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~~done~~ by Suratno et al. (2006) were~~as~~ in line with the *discretionary disclosure* proposed by Verrecchia (1983),~~ as it~~ showings~~s~~ that environmental performance has a significant positive impact on~~towards~~ 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,~~us~~ 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

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~~is~~ exchanged for~~with~~ the positive image that the company gains in 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) would 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 utilized and producing as littlefewer waste and pollution as possible. This would create a positive impact on the company's profitability, and, at last, 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

Relationship of Environmental. Disclosure and Financial outcome

Environmental efforts conducted by the company would create a beneficial impact ontowards the firm in the form of attracting stakeholders and, specifically, shareholders, as it indicates that the company is fulfilling its responsibility towards the society (Pflieger, 2005). In addition, from an economic standpoint, an organization 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 thatwhom 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 addeditional value towards 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 areis in line with this idea include that carried outis research done by Restuningdiah (2010) and Almilia and Wijayanto (2007), which found that the disclosure of corporate social responsibility had a positive impact ontowards 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

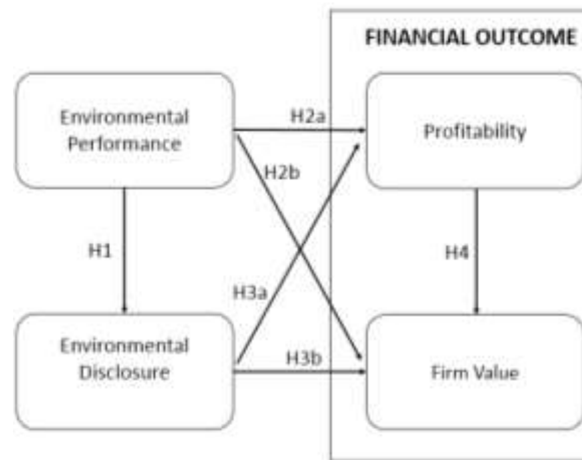
Relationship of Profitability and Firm Value

Profitability, which is a measure of athe company's ability to generate profits, is one of the ratios considered by prospective investors and shareholders because of its role in the fluctuation of share price and level of dividends available for distribution. AlNajjar and Belkaoui (1999) and Osazuwa and Ahmad (2016) concluded that corporations are most likely to follow the notion of pecking--order theory, which suggests that internal funding, with the funds derived from retained earnings and cash flow, is 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 andwhich showings a positive signal for the market, hence the stock price of the corporation will increase. Thus, it leads to the hypothesized relationship below:

H4: Profitability positively affects firm value

Based on the various studiesd 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 on 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, thus, resulting in a total sample of 123 reports. However, after data trimming to improve the model fit, the number of samples left is 97 reports. This research uses the following model to test H1-H3:

$ED\ \eta 1 = \gamma 1\ \ EP\xi 1 + \zeta 1$
$PROF\ \eta 2 = \beta 1\ ED\eta 1 + \gamma 2\ \ EP\xi 1 + \zeta 2$
$FV\ \eta 3 = \beta 2\ \ ED\eta 1 + \gamma 3\ \ EP\xi 1 + \zeta 3$

Where:

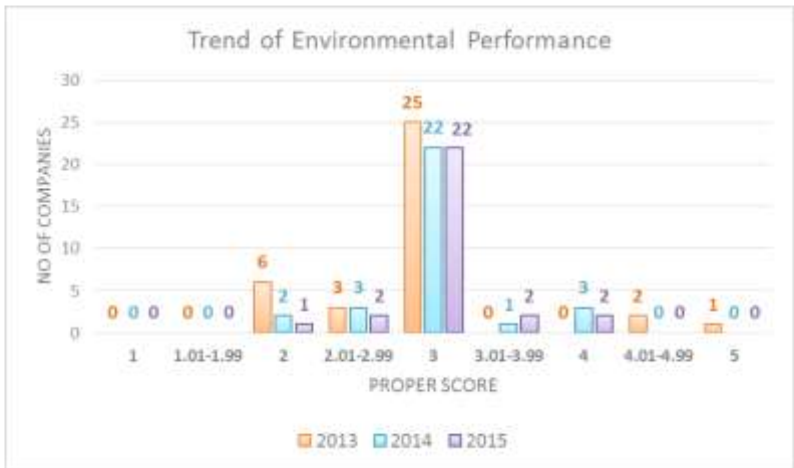
$EP\xi 1$	= Environmental performance (exogenous variable)
$ED\eta 1$	= Environmental disclosure (endogenous variable)
$PROF\eta 2$	= Profitability (endogenous variable)
$FV\eta 3$	= Firm Value (endogenous variable)
$\gamma 1, \gamma 2, \gamma 3$	= Path coefficients that link endogenous (η) latent variables with exogenous (ξ) latent variable
$\beta 1, \beta 2$	= Path coefficients that link endogenous (η) latent variables with endogenous (η) latent variables
$\zeta 1, \zeta 2, \zeta 3$	= R~~r~~esidual vector (unexplained variance)

4 Research Result and Analysis

Descriptive analysis

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

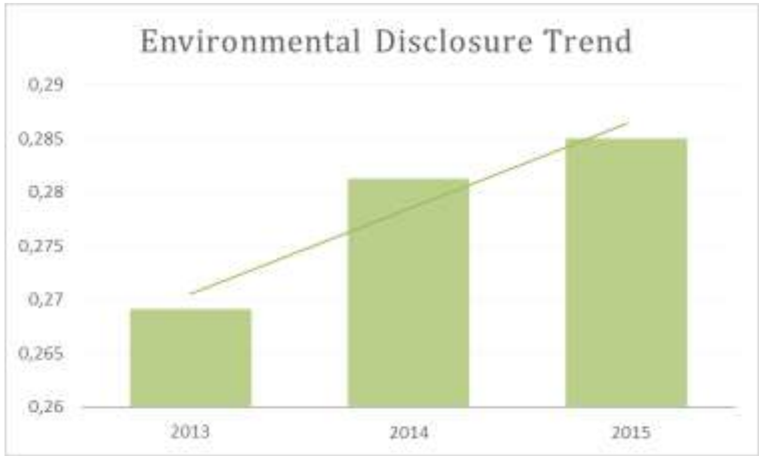
Figure 2. Trend of Environmental Performance



Source: Author's Compilation

A phenomenona observed whenre the 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 into improving their environmental performance as the nature of their industries tend to generate greater environmental damage.- Though 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 haven't paid real attention to the GRI guidelines for reporting issues related to sustainability. However, from the following figure, it, can bee seen that this variable faces an upward trend since the mean value experienced an increasing movement year by year.

Figure 3. Trend of Environmental Disclosure



Source: Author's Compilation

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

Goodness-of-fit test

The overall predictive and explanatory quality of the model is represented by the first three criteria, which is APC (Average path coefficient), ARS (Average R-squared), and AARS (Average adjusted R-squared) (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, AVIF (Average block VIF) and AFVIF (Average full collinearity VIF) index, 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 multi~~-~~collinearity 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 as having a large explanatory power. This model is free from Simpson's paradox instances, free from problems of negative R-squared contributions as the SPR (Sympson's paradox ratio), RSCR (R-squared contribution ratio), and SSR (Statistical suppression ratio) indices~~ for~~ show the ideal value of 1. In the case of NLBCDR (Nonlinear bivariate causality direction ratio), this model passed the acceptable level of 0.7 where it has an index of 0.917. To conclude, the research's model has~~ve~~ passed the goodness-of-fit test, therefore, it is acceptable to be used in this paper.

Profile of Weight Indicator

The strength of each indicator in the variables is~~are~~ 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, however, all of the variables studied consist of only one indicator per variable. Therefore, the indicators in each variable all hold~~s~~ the maximum weight of 1, where each indicator wholly represents each variable, as can be described in the T~~t~~able below.

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

Hypothesis T~~t~~esting & 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 effect~~ results~~s. 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) such as this particular case. Table 4 shows the~~ 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* (<0.001)	-0.170* (0.042)	-	-
FV	0.030 (0.384)	0.064 (0.260)	0.930* (<0.001)	-

The impact of environmental performance on~~to~~ environmental disclosure

Results from the Indonesian companies' data showed that environmental performance, which is measured by PROPER score, has a positive significant impact on~~towards~~ the environmental disclosure index, ~~the measurement of environmental disclosure~~ 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/ D~~d~~iscretionary disclosure*, which proposes that, if we assume that a corporation's exposure to future costs associated with environment can~~would~~ be reduced through a good performance in environmental performance, then~~us~~ good environmental players would have a higher disclosure level of environmental

information (in both quality and quantity) as they believe that~~ by~~ disclosing their performance to the public would represent~~ as a~~ good news for~~towards~~ the 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~~s~~ water pollution control, air pollution control, B3 waste management, EIA, and marine pollution control)~~,~~ the higher level of environmentally-related information they would divulge~~d~~ to the market, that is considered in the PROPER program, has~~ve~~ a higher disclosure level of environmental information in accordance with the GRI index.

The findings of this research support~~s~~ that~~e research~~ conducted by Suratno et al (2006) and Al-Tuwajiri et al (2008) who~~m~~ found a positive significant relationship between environmental performance and CSR disclosure. The object studied~~ however~~ differs, however, as previous papers have smaller numbers of sample, for instance, Suratno et al (2006) conducted a study on Indonesia but focused only on the manufacturing~~e~~ sector, thereby raising concerns regarding whether the findings can be regarded as an accurate representation~~ve~~ 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~~e~~, paper, cooking oil, automotive, animal feed, metal processing, mining & energy, petrochemical, tobacco, palm oil, cement, mineral mining, and textile industry sectors. Therefore, the results provide a more universal picture of the relationship between~~of~~ environmental performance and disclosure in Indonesian companies.

In Indonesia, the extent of disclosure of environmentally-related information is quite low as, based on the analysis, we can see that the average of EDI (Environmental Disclosure Index) in all 3 periods are all lower than 30%, which indicates that most Indonesian companies tend to disclose lower than 10 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~~in~~ 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~~which~~ usually~~ doesn't~~ follow the GRI reporting guidelines regarding 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, though sample companies with better environmental performance do~~es~~ disclose more in their reports,~~ which~~ resulting~~ed~~ 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~~ere it~~ managed to achieve a green rank in the PROPER program (equivalent to the score of 4),~~ which~~ representings~~s~~ that it has achieved a level of beyond compliance regarding the environmental management of their operations, and has an environmental disclosure index value of 0.32, which is considered as a low level of disclosure even though it is above the average data.

The impact of environmental performance on~~to~~ financial outcome

The impact of environmental performance on~~to~~ 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~~to~~ firm value is found to be insignificant with the path coefficient o~~p~~f 0.030 and $p>0.1$. Therefore, **H2b is rejected**. The findings of this research contribute~~s~~ to the long-~~-~~standing argument regarding the relationship of environmental and financial outcomes. As the results show~~s~~ that corporations with good environmental management are associated with higher profitability levels, this~~it~~ supports~~ed~~ the *win-win theory* proposed by Porter and Linde (1995). Otherwise known as the *Porter Hypothesis*, this~~it~~ suggests that corporations with good

environmental performance will gain competitive advantages because of the way customers and shareholders view this kind of behavior (Pérez-Calderón et al, 2012). Porter propositions that managers view pollution as a source of inefficiency, a sign of technological backwardness, poor management and an inadequate use of production resources (Porter and 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) supports this theory, as it found that around 75% of the millennial generation, the future consumers, are willing to pay a higher price for a product or service~~ that are~~ perceived to be sustainable. This is an increase compared to the previous year, where only 50% of millennials exhibit the same behavior. Another sharp increase of 17% is also found in the willingness of the millennial generation to spend more on~~towards~~ product and services that are committed to having a~~give~~ positive impact on~~towards~~ the social life and environment of their surroundings.

Environmental performance alone, however, has failed to show a significant impact on~~towards~~ firm value, which suggests that the environmental management efforts of the firm haven't shown any significant impact on~~towards~~ the long-~~-~~term measurement of the firm's financial outcome. The findings of this paper are~~is~~ consistent with previous studies conducted by Angelia and Suryaningsih (2015), who~~m~~ 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~~towards~~ profitability.

The impact of environmental disclosure on~~to~~ 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~~to~~ 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~~As seen~~ 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~~es~~ 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, because this~~ as it~~ gi~~a~~ves an additional insight on~~f~~ the company for stakeholders to~~in~~ make~~ing~~ their decisions. A~~It a~~lso, 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 maximize its financial strength in gaining profit.

Another finding is that environmental disclosure does not have a significant impact on~~towards~~ firm value, as measured by Tobin's Q. The reason for the ~~miss~~ poor prediction may be due to circumstances in the Indonesian market. An e~~E~~arlier study conducted by Suad et al. (2002) found that~~ the~~ Indonesia's capital market has~~ a~~ different characteristics compared to other, particularly W~~w~~estern, countries, as investors in Indonesia generally behave irrationally and mak~~d~~e their investment decisions ~~that are~~ unsupported by rational consideration. It shows that, in Indonesia, annual reports are~~is~~ 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 favorable return for their investment. Therefore, the author proposes that there are other variables that~~, which~~ are not included in this research, but which the market players took into account when making investment decisions.

The findings are, however, in line with research conducted in Indonesia by Purnomo and Widianingsih (2012), who~~m~~ found that the disclosure of corporate social responsibility weakens the influence of environmental performance on~~to~~ a financial outcome, where CSR disclosure was employed as the moderating variable. They argue that the market may perceive~~d~~ 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~~, and~~ the firm's profit would be reduced. It also supports findings from Sarumpaet (2005) that found~~ in Indonesian companies~~ the disclosure level of environmental accounting in Indonesian companies, which is associated with a firm's concern for the environment, a~~i~~s still low. Mulyadi and Anwar (2012),~~ whom~~ studied Indonesian companies, excluding firms in natural-resource related business in the period of 2007–~~-~~2009.~~,~~ T~~t~~hey found no significant relationship between CSR and firm value,~~-~~ which is measured by Tobin's Q.

The impact of profitability on~~to~~ 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 positive 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~~is~~ in line with *signaling theory*, which proposes that actions taken by management gave a cue for investors~~ on how~~ 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~~st~~ it denotes that the corporation's prospects look~~ed~~ 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 ~~in~~ 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~~for the~~ investors that~~as it~~ justifies the payment of dividends. It also supports the~~ed~~ previous research carried out~~done~~ by Sabrin et al. (2016), who~~m~~ found that profitability has a positive impact on~~towards~~ firm value. Whereas previous papers only focused on the manufacturing industry, this paper differs by including other industries in the sample tested, which contributes to the universality of the concept.

The Indirect effect

As seen in T~~t~~able 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 to firm value, as it has a path coefficient of 0.336 with p < 5%. These~~is~~ 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.~~,~~ H~~h~~owever, it has a positive significant indirect impact on~~to~~ 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, also has a negative direct effect on~~towards~~ 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)

Source: Author's compilation

5 Conclusion, suggestions and future research

The~~is~~ objective of this paper is to examine the impact of corporations' environmental performance on~~towards~~ their financial outcome, as well as whether environmental disclosure is able to become a mediation variable ~~to the~~ within relations. The result of the research has shown that firms' financial outcome is significantly affected by their environmental action. However, different measures of corporation's environmental activities (PROPER score) have a different impact on~~to~~ the financial outcome. In case of environmental disclosure (GRI score), the majority of firms still haven't followed ~~to~~ the GRI guidelines for reporting environmental information. Therefore, showing 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 ~~the~~ 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 ~~to~~ the existing regulations as indicated by the environmental performance trend. The findings of~~n~~ this paper point out that different measures of environmental-related behavio~~u~~r for Indonesian companies result in a contradicting impact on~~to~~ 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~~y~~ 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 utilized 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 ~~original~~originally~~lay can be~~ found i~~o~~n this paper. As a large number of the previous research generally only investigated ~~only~~ 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 results of the paper strengthen existing researches and theories, hence, ~~it~~ contributing~~es~~ to the incremental knowledge linked with this topic. The limitations of this research are~~is~~ that ~~it~~ only ~~employs~~ independent and mediation variables are employed, while future research is expected to also include ~~also~~ control variables in the assessment of the impact between environmental activity and the financial outcomes of a company. The ~~instance~~ example of control variables could be size of company and industry sector.

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Dear Editor and Reviewer.
Attached is our revision version. In terms of the non grammar revision, we put on the blue ink. However for grammar revision using track changes. Hope this effort already fullfill the quality that expected by Editor and Reviewer.
Thanks, Author.

Reviewer A Comments:
==================
Suggestions which would improve the quality of the paper:
Evaluation Report for Paper: WRSTSD_186773 "Environmental performance, environmental disclosure and financial performance: evidence from Indonesia".
The paper is interesting, but has many grammar and syntax errors.
Author: we have worked with English proofreading and included in thise revision version.
The conclusions section needs to be expanded.
Author: it is been expanded on conclusion sections (blue ink)
The references list needs much attention since many of them are incomplete, i.e. publisher/place of publication or both are missing. **Author: we realised and revised it already.**
Changes which must be made before publication:
I believe that the paper, with the proposed modifications, can be of interest to the readership of the journal, providing concepts useful for the readers of the journal.

Reviewer B Comments:
==================
Suggestions which would improve the quality of the paper:
English language review - simplify the title (too many performances?).
Author: We have revised the title with the new one "Do environmental performance and disclosure bring financial outcome? Evidence from Indonesia
Well written and structured paper but missing some key elements - needs more references to support and link the research.
Author: have already added with more relevance reference (the blue ink on referenc list)
The flow of the paper could be improved for the reader to follow - introduce each section for the reader and guide to next section. **Author: the advice has been follow up in revision version, such as on the abstrack, literature review, hypotheses elaboration etc (on the blue ink).**

Changes which must be made before publication:
What is happening with reference section - poorly referenced and not in alphabetical order?
Author: we realised and revised it already
Literature review is different to Stakeholder and Legitimacy theories. Theoretical and methodological framing could be better structured and justified. **Author: have revised it on part literature review (the blue ink).**
Writing style - use of brackets in referring to authors is not being used correctly. Please see some other published papers. **Author: we have revised it on this revision version**
There seems to be a confusion between Lit review and Methodology sections. A proper and broader lit review is needed. **Author: already revised on each section literature review (last part) and methodology (the blue ink).**

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==================
Changes which must be made before publication:
1. The structure of the paper needs attention and the usual rule (introduction-rationale-need for the work/research questions, background-literature review, approach-methods-research performed, results, discussion and then conclusions/concluding remarks) should be followed more closely to facilitate the flow of the paper. Please separate discussion from results & develop further your discussion by drawing on relevant studies and in relation with prior literature - incorporate research and policy recommendations in the conclusion section.

Author: we follow up the feedback in this revision version by added the clearer and more structural sentence in each sections (the blue ink). And also separate the discussion result and development on part 5 (Conclusion, suggestion and future research).

2. More references to recent relevant literature/empirical studies in a stand-alone literature review section could increase the quality of the research paper and provide a much clearer message to the reader - these may help you building your discussion which needs to be extended. **Author: have already added with more relevance reference and extend the discussion, especially on the hypoteses elaboration (on the blue ink).**

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

Abstract: In some developing countries such as Indonesia, there is a lack of regulatory controls regarding 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 action is measured by both the extent of environmental management in their operations, which is the environmental performance with PROPER score as the indicator, and the level of environmental information they disclose in their reports, which is environmental disclosure measured with disclosure index according to GRI index. While the financial outcome is evaluated using both short and long-term measures, with profitability and firm value. Results show that 3 out of 6 hypotheses es presented in this paper are accepted. Furthermore, it indicates 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 is 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, profitability, firm value, PROPER, GRI index

Biographical notes: (ABS)

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's sole purpose was to maximize shareholder's wealth. However, as the business world grows and changes with the passing of time, so does the way society views organizations and how they operate. It became more and more apparent that there are negative social and environmental implications caused by companies as they try to realize their goals. As a result, corporations are facing 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 corporation may improve 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 firms' 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 in 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

Commented [E1]: Should this be 'cooperation'? – if not 'a corporation may improve a firm's'

Commented [E2]: Happy with this as a term?

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a significant 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 United States of America, which 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 (Bank Dunia, 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 evidence of a study that analyses:

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. Utilizing two measurements of a firm's environmental actions: environmental performance, which measures the level of environmental management in a firm's operational activities, and environmental disclosure, which evaluates the reporting behavior 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 organized 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.

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2 Literature Review

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

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 organization. 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. Stakeholders 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 both 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 utilized in the activities of the corporation, therefore, they are usually considered in the matter of disclosure of corporate information in the annual report.

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 organizations that may choose to maintain high standards to be legitimate. According to the theory, each and every company has a contract with the society to conduct their operations in accordance with 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 then refuse to legitimize 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 legitimize their activities in the eye of society by using environmental-based performances and social disclosure (Gray et al., 1993). One of the ways for firms to build, maintain, and legitimize corporate contributions, from both economic and political perspectives, is to disclose corporate social responsibility information in annual or sustainability reports (Sayekti et al., 2007). Hence, the common method adopted by businesses is to incorporate corporate social responsibility programs inside the company's operation and disclose the activities in the annual or sustainability report as information that can affect investors' decision-making purposes related to the company's operation and its accordance with society's values. With a good level of corporate social responsibility disclosure, companies hope to create a harmonious relationship with the public in order to gain the social legitimacy required to maximize their financial strength in gaining profits.

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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, thus, is an integral part of an environmental management system, as it's a measure of the actual result of the system. A firm's environmental objectives, policies, and targets are used as the basis of a corporation's environmental assessment. In this particular research, environmental performance will be measured using the PROPER ranking scheme, which is a 5 color-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 businesses' current levels of compliance and to further push organizations to improve their performance in environmental management, hence minimizing the environmental impact from their operations. Despite considerably massive 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 doesn't, according to the extent of their non-compliance. A more detailed explanation can be seen below:

Commented [E5]: Unclear whether it is the 'concerns' or the 'interactions' that are being 'exceeded'?

Table 1. PROPER scoring

Color Coding	Description	Score

Gold	Exceptionally Good	5
Green	Extremely Good	4
Blue	Good	3
Red	Bad	2
Black	Extremely Bad	1

Source: (Purnomo and Widianingsih, 2012)

Environmental Disclosure

Corporate social responsibility *disclosure* is defined as the method utilized by management for interacting with society in order to influence the public's perception of the organization (Deegan, 2002). The nature of this disclosure can be categorized into two terms: mandatory disclosure and voluntary disclosure. The latter term can be described as disclosing any information associated with the organization's activity or state on their own accord. However, in reality, not all the information would be disclosed to the public, only that which is 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 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, legitimizing the actions of the corporation, attracting investors, and complying with existing regulations (Sayekti et al., 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 here is defined as the disclosure of information associated with the environment that is stated inside the organization's annual or sustainability report. The problem may possibly be because of the voluntary nature of disclosure regarding environmental-related info in Indonesia, as there hasn't 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 ought 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 or in the sustainability section of the annual report or the section that contains information regarding the corporate social responsibility 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 & G4-core). The approach to calculating environmental disclosure is through analyzing the GRI indicator section of the sustainability report or the environmental aspect inside the corporate social responsibility 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 et al., (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 is as follows, which is modified from Purnomo & Widianingsih (2012):

$$EDIj = (\Sigma Xij)/nj$$

Where
EDI_j = Environmental Disclosure Index firm j;
n_j = total item for firm j, $n \leq 34$;
X_{ij} = dummy variable, 1= if item i was disclosed; 0 = if item i was not disclosed; thus $0 \leq ED \leq 1$

Financial outcome

Different measures of financial or economic performance have been used in earlier research regarding environmental performance and corporate social responsibility (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 utilized 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.

Profitability

Profitability, defined as the company's ability to generate profit, is commonly used as the criteria to determine the success of a business. It's a tool that demonstrates the relationship between profit and the number of resources invested. Sarumpaet (2005) argued that an organization's financial outcome is ultimately reflected in its profit, while Al-Tuwajiri et al (2008) claim that profitability is a factor that gives management the freedom and flexibility to disclose the social responsibility of the company to 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 (Angelia and Suryaningsih, 2015; Sarumpaet, 2005; Saridewi and Koesrindartoto, 2014). Return on assets (ROA) is the measurement of the corporation, as a whole, in making profits with the overall number of assets that are available within the organization (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's 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 analyze the association between financial and environmental performance. Therefore, in this study, the author uses ROA as an instrument for measuring profitability. Return on assets (ROA) here is measured as:

$$\text{Return on Asset} = (\text{Net Income})/(\text{Total Assets})$$

Firm Value

Though rarely examined, this paper also measures the impact of environmental performance toward a firm's value creation. Maximizing the value of the organization is one of the main objectives of financial management. Stock value maximization 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, in other words, 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 organization's market value and its accounting value, is employed as the tool for measuring firm value. 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), as it portrays how much value is created by the organization using its assets. The ratio is computed as follows, 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 organization over the long term, it's more appropriate to extend the analysis to also 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).

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 corporate social responsibility 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 United States of America with poorer environmental performance tend to disclose more regarding their state of performance, 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 significant 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

Commented [E6]: Be specific? 'Indonesian companies'?

Relationship of Env. Performance and Financial outcome

Commented [E7]: Happy with abbreviation?

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 in 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) would 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 utilized and producing as little waste and pollution as possible. This would create a positive impact on the company's profitability

and, at last, 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

Relationship of Env. Disclosure and Financial outcome

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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, 2005). In addition, from an economic standpoint, an organization 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 include that carried out by Restuningdiah (2010) and Almilia and Wijayanto (2007), which found that the disclosure of corporate social responsibility 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

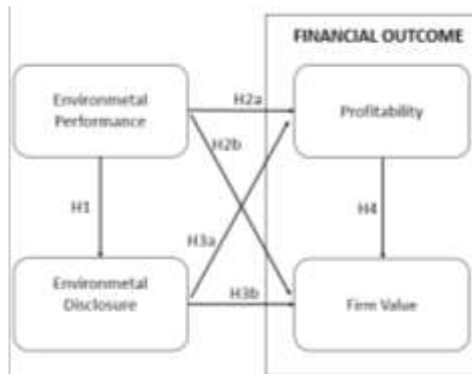
Relationship of Profitability and Firm Value

Profitability, which is a measure of a company's ability to generate profit, is one of the ratios considered by prospective investors and shareholders because of 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 that internal funding, with the funds derived from retained earnings and cash flow, is 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 hypothesized 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

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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 on 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, thus, resulting in a total sample of 123 reports. However, after data trimming to improve the model fit, the number of samples left is 97 reports. This research uses the following model to test H1-H3:

$$ED\ \eta_1 = \gamma_1\ EP\xi_1 + \zeta_1$$
$$PROF\ \eta_2 = \beta_1\ ED\eta_1 + \gamma_2\ EP\xi_1 + \zeta_2$$
$$FV\ \eta_3 = \beta_2\ ED\eta_1 + \gamma_3\ EP\xi_1 + \zeta_3$$

Where:

$EP\xi_1$	= Environmental performance (exogenous variable)
$ED\eta_1$	= Environmental disclosure (endogenous variable)
$PROF\eta_2$	= Profitability (endogenous variable)
$FV\eta_3$	= Firm Value (endogenous variable)
$\gamma_1, \gamma_2, \gamma_3$	= Path coefficients that link endogenous (η) latent variables with exogenous (ξ) latent variable
β_1, β_2	= Path coefficients that link endogenous (η) latent variables with endogenous (η) latent variables
$\zeta_1, \zeta_2, \zeta_3$	= Residual vector (unexplained variance)

4 Research Result and Analysis

Descriptive analysis

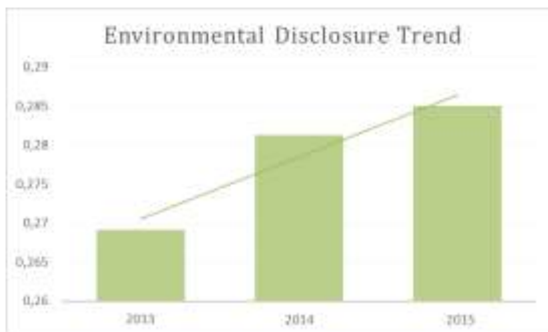
Overall corporations in Indonesia have managed to achieve the level of basic compliance in their environmental management, as indicated by the PROPER score of 3, which indicates that, in general, firms have taken actions to minimize the environmental impact of their operations.

Figure 2. Trend of Environmental Performance

Source: Author’s Compilation

A phenomenon observed when the 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 into improving their environmental performance as the nature of their industries tend to generate greater environmental damage. Though 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 haven’t paid real attention to the GRI guidelines for reporting issues related to sustainability. However, from the following figure, it can be seen that this variable faces an upward trend since the mean value experienced an increasing movement year by year.

Figure 3. Trend of Environmental Disclosure



Source: Author’s Compilation

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

Goodness-of-fit test

The overall predictive and explanatory quality of the model is represented by the first three criteria, which is APC (Average path coefficient), ARS (Average R-squared), and AARS (Average adjusted R-squared) (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, AVIF (Average block VIF) and AFVIF (Average full collinearity VIF) index, 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 as having a large explanatory power. This model is free from Simpson's paradox instances, free from problems of negative R-squared contributions as the SPR (Sympson's paradox ratio), RSCR (R-squared contribution ratio), and SSR (Statistical suppression ratio) indices show the ideal value of 1. In the case of NLBCDR (Nonlinear bivariate causality direction ratio), 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.

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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, however, 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 the Table below.

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

Hypothesis Testing & 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) such as 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* (<0.001)	-0.170* (0.042)	-	-
FV	0.030 (0.384)	0.064 (0.260)	0.930* (<0.001)	-

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, the measurement of environmental disclosure 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

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information (in both quality and quantity) as they believe that disclosing their performance to the public would represent good news for the 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.

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The findings of this research support that conducted by Suratno et al (2006) and Al-Tuwajiri et al (2008) who found a positive significant relationship between environmental performance and CSR disclosure. The object studied differs, however, as previous papers have smaller numbers of sample, 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 & 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 as, based on the analysis, we can see that the average of EDI (Environmental Disclosure Index) in all 3 periods are all lower than 30%, which indicates that most Indonesian companies tend to disclose lower than 10 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 regarding 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, though 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 environmental disclosure index value of 0.32, which is considered as a low level of disclosure even though it is above the average data.

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 pf 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 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 behavior (Pérez-Calderón et al, 2012). Porter propositions that managers view pollution as a source of

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inefficiency, a sign of technological backwardness, poor management and an inadequate use of production resources (Porter and 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) supports this theory, as it found that around 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 behavior. 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 the social and environment of their surroundings.

Commented [E14]: 'the social life'?

Environmental performance alone, however, has failed to show a significant impact on firm value, which suggests that the environmental management efforts of the firm haven't 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.

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, because 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 maximize 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 the miss 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 other, 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 favorable 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.

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The findings are, however, in line with research conducted in Indonesia by Purnomo and Widianingsih (2012), who found that the disclosure of corporate social responsibility weakens the influence of environmental performance on a financial outcome, where CSR disclosure was employed as the moderating variable. They argue 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.

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 positive 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 *signaling 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, this paper differs by including other industries in the sample tested, which contributes to the universality of the concept.

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 to 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, also has a negative direct effect on profitability.

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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)

Source: Author's compilation

5 Conclusion, suggestions and future research

The objective of this paper is to examine the impact of corporations' environmental performance on their financial outcome, as well as whether environmental disclosure is able to become a mediation variable to the relation. The result of the research has shown that firms' financial outcome is significantly affected by their environmental action. However, different measures of corporation's environmental activities (PROPER score) have a different impact on the financial outcome. In case of environmental disclosure (GRI score), the majority of firms still haven't followed the GRI guidelines for reporting environmental information. Therefore, showing 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 measures of environmental-related behavior 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 utilized 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 originally found in this paper. As a large number of the previous research generally only investigated some part of those examination. Furthermore, the model of this research was created in this study, focusing on environmental performance, environmental disclosure, profitability, and firm value. The results of the paper strengthen 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 instance of control variables could be size of company and industry sector.

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