



Firm Characteristics, Audit Committee, and Environmental Performance: Insights from Indonesian Companies

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ABSTRACT

This study aims to investigate the effect of firm size (FS), profile of industry (PI), independent committee audit, and audit committee meetings (ACMs) on environmental performance (EP). The sample consisted of 136 companies listed on the Indonesia Stock Exchanges and receiving PROPER award issued by the Ministry of Environment, Republic of Indonesia in the year 2009-2015. The data were then analyzed using the ordinal logit regression. The findings indicated that PI, independent committee audit, and ACMs positively affected EP. Meanwhile, FS did not determine EP. The findings imply that companies which want to create EP should consider their profiles of industry and audit committee characteristics (independence and frequency of meetings).

Keywords: Environmental Performance, Indonesia, Firm characteristics

JEL Classifications: M48, Q51, Q56

1. INTRODUCTION

In recent years, the trend of green business grows rapidly along with the paradigm shifts from single bottom line to the triple bottom line. The triple bottom line showed the responsibility of companies for considering three aspects of business namely profit, people and planet (Elkington, 1997). Indeed, stakeholders urge companies to be more responsible for their activities and consider their decisions to include environmental and sustainable development issues (Kassinis and Vafeas, 2006). Furthermore, stakeholders encourage companies to be more responsible for environmental issues such as greenhouse gases, emissions, and waste that have a negative impact on companies' business and environment as whole (Braam et al., 2016)

The growing pressure on environmental issues from shareholders, government regulators, consumers, employees, and the public have motivated companies to pay more attention to the environmental performance (EP) (Ilinitich et al., 1998). Companies are required to increase their financial performance continuously without ignoring environmental impacts (Muhammad et al., 2015). Thus, it is no wonder if accounting scholars has attracted to investigate

the determinants and consequences of environmental issues in business activities.

Increasing numbers of environmental issues have attracted scholars to study the relationship of such issues and business practice. Unfortunately, business scholars are more interested in studying social and environmental disclosures (Akbas, 2014; Banasik et al., 2010; Barbu et al., 2014; Carini and Chiaf, 2015; Hackston and Milne, 1996; Iatridis, 2013; Loh et al., 2015; Milne and Adler, 1999; Neu et al., 1998; O'Donovan, 2002; Pagell et al., 2013). Moreover, previous studies are more concerned with environmental investment (Banasik et al., 2010; Jansson and Biel, 2011; Nakamura, 2014; Power et al., 2015; Sueyoshi and Goto, 2009; Testa et al., 2016). Some studies have also been done to investigate the issues of EP (Rokhmawati et al., 2015; Sun et al., 2012; Wahba, 2010). However, these studies are mostly directed to investigate the relationship of EP and environmental disclosure or firm performance, and have ignored the determinants of companies' EP.

A number of studies concerning environmental issues and business have also been conducted in Asian Countries. However,

such studies are focused on leadership style and environmental uncertainty and firm performance of companies in China (Jung et al., 2013). Meanwhile, previous studies in Taiwan was intended to investigate the relationship of independent outside directors, ownership characteristics, financial performance and corporate social performance (Huang, 2010). Unfortunately, a study found that environmental management practices did not influence company performance in Sweden, China and India (Chen et al., 2015). Meanwhile, previous studies on environment issues in the Indonesia context are concentrated on how forest management certification influence environmental, social, and economic performance (Miteva et al., 2015), and how plant characteristics, regulatory actions, community and market pressures, and government incentives influence plant investment in pollution control (Rock and Aden, 1999). Finally, another study found that CO₂e intensity and social reporting scores have a positive and significant effect on firm performance (Rokhmawati et al., 2015). It is true that the previous studies have contributed the importance of studying environmental issues, but they ignored the determinants of EP, including the role of government regulations.

As a response to the negative impacts of business on environment, a number of policies have been released by governments around the world. In the context of Indonesia, for example, the Ministry of environment-through the PROPER award-has conducted annual assessment on the extent to which companies comply with environmental standards. However, the participation of publicly listed companies in applying PROPER award is not mandatory. Hence, only companies with good EP will actively apply for the PROPER Award. In fact, the indicators used in the PROPER award are concerned with how companies are committed to create and maintain their EP. As PROPER is a voluntary program, the participation of companies in winning the award indicated that the involvement of companies in creating EP can be affected by a number of factors, especially unique characteristics of the companies (Hrovatin et al., 2016).

Mirroring to the findings from other studies on social and environmental issues, the characteristics may include audit committee (Samaha et al., 2015; Trotman and Trotman, 2015), profiles of industries (Chen and Wu, 2015; Dzikuč and Tomaszewski, 2016; Hackston and Milne, 1996; Lodhia and Hess, 2014) and company size (Barbu et al., 2014; Hart and Ahuja, 1996; Hrovatin et al., 2016; Iatridis, 2013; Lee, 2015; Nawaiseh, 2015; Yu et al., 2016). Considering the inconclusive findings of previous research this study aims to investigate the determinants of EP of companies listed on the Indonesia Stock Exchanges (IDX). More specifically, this study is intended to investigate the effect of company characteristics (audit committee, profiles of industries and firm size [FS]) on EP. Hopefully, the study provides new findings which may enhance previous studies on environmental issues, and provide government with a reference in making rules concerning the responsibilities of companies for environmental problems.

2. LITERATURE REVIEW

Decisions regarding environmental issues, including performance can be seen as a part of a social contract between companies and

their stakeholders. Thus, in regard to theoretical framework, legitimacy theory are perceived as useful in supporting arguments on the predictors of EP. It is believed that in terms of social contracts, companies continuously search for legitimacy by adopting social values and norms into company values and keep such values and norms in harmony with company values (Dowling and Pfeffer, 1975). Hence, to get legitimacy and supports from their stakeholders, all company values or norms should be in congruence with social values (Ashforth and Gibbs, 1990; Deegan, 2002; Dowling and Pfeffer, 1975; O'Donovan, 2002; Oba and Fodio, 2012). This implies that companies with good EP can be seen as legitimate companies.

Appropriate environmental strategies adopted by the companies will help them increase performances, and will finally gain significant supports from their stakeholders (Clarkson et al., 2011; Claver et al., 2007; Epstein and Roy, 1998). Companies can utilize EP as an active strategy to respond stakeholders' claims and to gain legitimacy. EP awards (for example, the PROPER award) reflect how well the companies deal with their environmental issues in response to their stakeholders' needs. Thus, characteristic of companies, including FS, profiles of industries, and audit committee (its meeting and independent members) are believed to influence EP. This implies that better EP is a reflection of company legitimacy and how stakeholders support the legitimacy.

2.1. FS and EP

FS can be perceived as one factor that affects EP. FS refers to total assets (Oba and Fodio, 2012) reflecting the number of economic resources (especially assets) possessed by companies to achieve their objectives. The legitimacy theory claims that a larger company is more likely to be the subject of public scrutiny than smaller ones. Consequently, larger companies will be under greater pressure from the public (Walls, 2011) and tend to report more information on EP to the public in order to gain supports for the continuation of their existence (Guthrie and Parker, 1989) and build their environmentally-responsible image (Oba and Fodio, 2012). Previous studies also indicated that large companies are more transparent in implementing and reporting their environmental policies than smaller ones (Chang and Zhang, 2015; Cho et al., 2012; Tan et al., 2014). The reason for this is that government put more attention on larger companies than smaller ones if business activities are related to environmental issues (Barbu et al., 2014; Borghei-Ghomi and Leung, 2013; Gallego-Álvarez and Quina-Custodio, 2016; Hou et al., 2016; Hourneaux et al., 2014; Yunus et al., 2016). Consequently, larger companies will have better EP than smaller ones. Therefore, this study claims the following hypothesis:

H1: The larger the company, the better the EP.

2.2. Profile of Industry (PI) and EP

PI is another important variable perceived as affecting EP. PI is concerned with the level of company's sensitivity on the negative impact of company activities on the environment. Some literature point out that, PI can be classified into two groups: High-profile and low-profile industry (Hackston and Milne, 1996). A high-profile industry is an industry with high consumer visibilities,

political risks, and competitions. This consists of petroleum, chemical, forest and paper, automobiles, aircraft, extractive, agricultural, liquor and tobacco, and media and communications companies.

The legitimacy theory argued that to survive, the company seeks to gain legitimacy from all stakeholders (Dowling and Pfeffer, 1975) by implementing appropriate policies (including EP), which are in congruent stakeholders' interests and values. Companies may publish their EP as a medium to gain legitimacy. Companies, which are sensitive to environmental issues are more serious in managing the issues (Chen and Wu, 2015; Cho et al., 2012). Indeed, a company in high profiles of industry has a high degree of sensitivity and eventually will seek to improve its image in the eyes of the public by implementing environmental policies (Chen and Wu, 2015; Xie et al., 2016). It is believed that profiles of industry probably affect EP. Therefore, the hypothesis is proposed as a follow:

H2: PI (high-profile industry) positively influences E .

2.3. Independent Audit Committee (IAC) Independent and EP

Audit committees play important roles in monitoring and reviewing the implementation of financial/accounting and business policies, including those concerning EP. In the Indonesia environment, as stated in the Financial Service Authority (OJK) Regulation No. 55/POJK.04/2015, audit committee should be free from any typed of conflict of interests. This implies that audit committee members should be independent as they are responsible in monitoring risk management policies, including company's risk caused by the negative impacts of company's activities in the environment. Thus, audit committees can be considered as a factor that may influence companies' EP. Indeed, the audit committee can help companies build and maintain their legitimacy in the eyes of external resource providers (Collier and Gregory, 1996; Spira, 1999) by reviewing and monitoring all companies' policies, including those dealing with environmental issues.

Independence can be seen as one of cornerstones of audit committee effectiveness (Carcello and Neal, 2003; Psaros and Seamer, 2004) because such independence enables audit committee members more autonomous and free from any vested interests (Al-Najjar, 2011; Hamid et al., 2015) in reviewing companies' performance. Hence, the more independent the audit committee members, the better the EP. The next hypothesis is proposed as follow:

H3: IACs positively affect EP.

2.4. Audit Committee Meeting (ACM) and EP

ACM is another aspect of audit committee effectiveness. The more meeting the audit committee members hold, the more effective the audit committee. Legitimacy theory pointed out that as companies are bounded by social contracts, companies struggle to gain legitimacy from the society. Audit committees are responsible for ensuring that the implementations of company's policies (including environmental policies) are in congruence with

stakeholders' interests and social contracts. Therefore, the EP is, to some extent, influenced by the effectiveness of audit committees. In the context of Indonesia, audit committee activities are reflected by the frequency of ACMs during one year. The OJK Regulation No. 55/POJK.04/2015 points out that audit committee should hold meetings at least four times a year. As the Regulation claims that audit committee members are responsible in monitoring risk management policies, including company's risk caused by the negative impacts of company's activities on the environment, it is believed that ACM may influence E .

Borrowing previous studies on the role of audit committees in various corporate policies such as compliance with regulations (Bepari and Mollik, 2015; Bryce et al., 2014), financial reporting and disclosure (Abernathy et al., 2015; Ahmed, 2015; Akhtaruddin and Haron, 2010; Tanyi and Smith, 2015), and firm performance (Kallamu and Saat, 2015), it is claimed that the frequency of ACMs determines EP. Studies on the relationship of audit committees and environmental issues can also be traced to study by (Trotman and Trotman, 2015). Based on the argument, this study proposes the following hypothesis:

H4: The frequency of ACMs positively influences E .

3. RESEARCH METHOD

The methodology of this study is to develop a multivariate regression model to test the proposed hypotheses and identify the key determinants of EP among companies listed on the IDX.

3.1. Research Variables

The dependent variable used for this study is EP. EP is measured by the rank of PROPER Award received by companies with measurement scales as follows: Five (5) for gold (excellent), four (4) for green, three (3) for blue, two (2) for red, and one (1) for black (very poor). Table 1 shows the meaning of each category.

The independent variables consist of FS, PI, IAC and ACM. FS shows total numbers of economic resources (assets) owned by a company that make the company different from other companies. As previous studies, FS is measured by Ln total assets of the company (Chang et al., 2015; Cho et al., 2012; Nakamura, 2014). Meanwhile, PI refers to the level of company sensitivity to environmental issues. This variable is considered as a dummy variable which refers to low profile or high profile industry. Companies in high profile industry will be scored one (1), otherwise zero (0). IAC (IAC) represents the number of audit committee members who do not have a special relationship to the company (insiders, ownership, and other vested of interest). Finally, ACM shows the numbers of meeting held by audit committee members yearly.

3.2. Population and Sample

Population of this study consists of all companies listed on the IDXs in the year 2009-2015. Samples are determined based on purposive sampling method with the following criteria: (a) They published annual reports in the year 2009-2015, (b) they received PROPER award in the observation year, and c) they have complete

Table 1: PROPER award category

PROPER ranks	Notes
Gold	Management has consistently demonstrated superior environmental management (environmental excellence) in the production process and/or services, and implemented ethical business and are responsible to society;
Green	Management has managed environmental activities beyond the regulation (beyond compliance) through the implementation of environmental management systems, used resources efficiently through the 4 (reduce, reuse, recycle and recovery), and performed social responsibility (CSR/community development) well;
Blue	Management has managed environmental activities as required by the rules/regulations;
Red	Management has managed environmental activities that do not conform with the requirements stipulated in the legislation;
Black	Management has deliberately act or been involved in any activities that resulted in pollution and/or environmental damage and violated laws and regulations or does not impose administrative sanction

Red and black categories mean the company is not in compliance with environmental regulation, CSR: Corporate social responsibility

data for this study. Data were then analysed using ordinal logistic regression based on the following model.

$$EP = \alpha + \beta_1 FS + \beta_2 PI + \beta_3 IAC + \beta_4 ACM + e \quad (1)$$

Where α is intercept; β_1 shows regression coefficient; FS is firm size; PI represents profiles of industry; IAC is independent audit committee; ACM shows audit committee meeting, EP indicates environmental performance; and e is errors.

4. FINDINGS AND DISCUSSION

Based on the availability of data, 172 companies have received PROPER Awards from 2009 to 2015. However, only 136 companies meet all criteria of the required sample. Indeed, 27 companies receiving the PROPER Award were not those listed on the IDXs and the others nine companies did not qualify the required data. The descriptive statistics of empirical data can be seen in Table 2.

Table 2 showed that sample of this study is dominated by companies (59.60%) obtaining blue category of PROPER award. This indicated that the companies have moderate EP resulted from the minimum level of environmental management. In other words, the finding implies that the companies tend to adopt environmental policies just to meet the minimum requirements of PROPER programs. Thus, the initiative of companies to implement voluntarily environmental management surpassing the minimum requirements (especially gold category of PROPER award) was low. Indeed, the number of companies receiving gold and green category of PROPER awards are only 8.82% and 25.74% of the total sample respectively.

In line with the description of FS, Table 2 indicated that the average of FS (Ln Assets) was 28.96 or equivalent to Rp 9 trillion. From the perspective of the industry profiles, the samples were dominated by high profile companies (63.97%). In addition, it can be seen that on average, there are two independent members of the audit committee possessed by the companies (total number of IAC ranges from one to three members). Finally, the average number of ACMs are eight times a year.

As this study is interested in the causal effects of the variables, ordinal logit regression is then applied to estimate the predictors of EP. Table 3 presents the main results.

Table 2: Descriptive statistics

Variables	Proper rank	N (%)	
EP	Gold	12 (8.82)	
	Green	35 (25.74)	
	Blue	81 (59.56)	
	Red	7 (5.15)	
	Black	1 (0.74)	
PI	Low profil	49 (36.03)	
	High profil	87 (63.97)	
	Valid	136 (100.00)	
	Minimum	Maximum	Mean±SD
IAC	1.00	3.00	2.47±0.58
ACM	3.00	33.00	7.51±3.97
LnFS	21.97	32.08	28.96±1.66

EP: Environmental performance, PI: Profile of industr , IAC: Independent audit committee, ACM: Audit committee meetings, FS: Firm size, SD: Standard deviation

Table 3: Ordinal logistic regression (dependent=EP)

Variables	Coefficient	Standard error	p > t
PI	3.9884	1.0379	0.000*
lnFS	-0.0095	0.1078	0.929
ICA	0.7104	0.3303	0.032*
ACM	0.1889	0.0549	0.001*

N=136; Wald Chi-square (4) = 75.38; Prob >Chi-square=0.0000; Pseudo R²=0.2612.

*Significant at 5%. EP: Environmental performance, PI: Profile of industr ,

IAC: Independent audit committee, ACM: Audit committee meetings, FS: Firm size

Table 3 clearly demonstrated that the empirical results are in line with the proposed hypotheses. The finding showed that FS is not positively associated with EP (P = 0.929). The second hypothesis is confirmed that the PI positively affected EP (P = 0.000). Moreover, the third hypothesis is confirmed by the result that IAC determined EP (P = 0.032). Finally, the empirical finding supported the fourth hypothesis that ACMs positively influenced EP (P = 0.001, supported).

We then performed a robustness check to confirm the consistency of empirical results. The robustness check is undertaken by running our model using random effects. Table 4 indicated that our results remained unchanged. Indeed, our model showed that PI, IAC and ACMs still positively influenced E .

This study aimed to investigate the effect of FS, profiles of industry, IACs, and ACMs on EP. The findings show interesting results in which most of the companies listed on the Indonesian Stock Exchange have moderate EP. This reveals that the companies were only concerned with environmental issues due to coercive

Table 4: Random effect: Ordinal logistic regression

Variables	Coefficient	Robust standard error	P > t
PI	3.9884	1.0587	0.000*
lnFS	-0.0095	0.1109	0.931
ICA	0.7104	0.3454	0.040*
ACM	0.1889	0.0801	0.018*

N=136; Wald Chi-square (4) = 31.91; P > Chi-square=0.0000; Pseudo R²=0.2612.

*Significant at 5%. PI: Profile of industry, IAC: Independent audit committee,

ACM: Audit committee meetings, FS: Firm size

regulations. Low number of companies receiving gold or green categories of PROPER Award implied that the companies were not voluntarily aware of the environmental issues. This description means that the companies employed environmental strategies just to symbolically impress stakeholders and to gain legitimacy (Ashforth and Gibbs, 1990; Deegan, 2002; Dowling and Pfeffer, 1975; O'Donovan, 2002). In fact, companies used EP as a medium to convince the public that the companies are legitimate (Gray et al., 1995; Ullmann, 1985). EP awards (the PROPER award) reflected how the companies symbolically deal with their environmental issues in response to their stakeholders' needs (Clarkson et al., 2011; Claver et al., 2007; Epstein and Roy, 1998).

The findings also showed that empirical data supported three of four proposed hypotheses. The first hypothesis claimed that FS positively influenced environmental investment. The findings did not support the hypothesis, and concluded that the large companies were not the determinant of EP. Although companies have larger assets, but their EPs were not better than the smaller ones. This finding did not support legitimacy theory pointing out that larger companies put their attention more on environmental issues than smaller ones (Nawaiseh, 2015; Youn et al., 2015; Yu et al., 2016). Moreover, the findings are not consistent with previous research that relates FS to social and environmental issues (Bao, 2009; Bourlakis et al., 2014; Nawaiseh, 2015; Youn et al., 2015).

The second hypothesis claims that profiles of industry positively affect EP. The finding concluded that the empirical data supported this hypothesis. This suggested that companies, which are environmentally sensitive (high profile industry), tend to have better EP. This is the reason why the Ministry of Environment and Forestry Republic of Indonesia intensively oversees companies, which operate in palm oil, oil and gas, and textile industry (PROPER Assessment Report, 2011). This finding is in line with legitimacy theory stating that to gain legitimacy, companies must be able to identify any activities, which are consistent with stakeholders or public expectations (Dowling and Pfeffer, 1975). These include activities related to EP. Furthermore, the finding supported previous studies insisting that business activities, which are sensitive to the environmental issues determine companies to formulate more policies on environmental issues (Cho et al., 2012; Giannarakis et al., 2014; Xie et al., 2016).

In line with the third hypothesis predicting that IACs positively influence EP, the findings showed that this hypothesis was also supported by empirical evidence. This finding supported claims that the role of audit committees in monitoring companies' policies cannot be separated from the independence of its members (Hamid et al., 2015; Spira, 1999). Their independence enables

audit committees works more effective, autonomous and free from any vested interests (Carcello and Neal, 2003; Psaros and Seamer, 2004; Spira, 1999) in reviewing companies' performance, including environmental one.

The last hypothesis states that the ACMs positively influence the EP. The empirical results showed that the hypothesis was supported. This finding means ACMs play an important role in monitoring the implementation of company's policies on EP. It can be seen that the average meeting held each year reached eight times. These meetings could be used to discuss any policies related to environmental issues. This finding supports previous studies concerning the roles of ACM in overseeing company's policies such as accounting and financial reporting policies (Akhtaruddin and Haron, 2010; Spira, 1998) and firm performance (Kallam and Saat, 2015). This finding is also in congruence with another study claiming that audit committees play important roles in monitoring company policies on environmental issues (Trotman and Trotman, 2015).

5. CONCLUSION

Studies on environmental issues, including their determinants have been conducted in many countries. However, such studies are mostly conducted in developed countries and tend to focus on environmental disclosure and employ performance measurement, which is suitable for the specific countries. To enhance the finding of previous studies, this study aims to examine the determinants of EP of companies listed on the IDXs (IDX). By using the PROPER award as a measure of EP, this study resulted in some interesting findings

The findings showed that on average the level of companies' EP is on the moderate level (in compliance with minimum standards). The result revealed that companies deal with EP just to fulfill the environmental requirement set by the regulations. Moreover, this study found that PI, IAC, and ACMs determined the companies' EP. Meanwhile, FS did not influence E .

The findings of this study provide us with fruitful contributions. Firstly, profiles of industry, IAC and ACMs are important determinants of EP. Hence, this study enriches prior findings which are focused on the determinants of social and environmental disclosures and tend to ignore the effect of these variables on EP. Secondly, the government can utilize the findings as reference in making regulations dealing with environmental issues on business, especially for the environmentally-sensitive companies. Finally, the results of this provide accounting academicians with views on the importance of including environmental issues as part of accounting research and teaching

Even though this study contributed to some interesting findings, it suffers from shortcomings. Firstly, this research only used limited samples (companies receiving PROPER awards and were listed on the Jakarta Stock Exchanges). Thus, the findings cannot be generalized to all companies listed on the IDXs. The future studies should include more companies listed in wider markets, for example, ASEAN emerging markets. Secondly, this study

only revealed three variables as determinants of EP. The next studies should consider more variables such as audit committee expertise, ISO management certification, and ownership structure as determinants of EP.

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