

# The Role of Environmental Information System Mediation on the Effect of Environmental Strategy and Compliance with Government Regulation on Environmental Performance (Pilot Study of Companies in Indonesia)

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## Abstract

The purpose of this study was to examine the effect of environmental strategy and compliance with government regulations on environmental performance mediated by environmental information systems at companies in Indonesia. This study is a quantitative research in the form of causal studies which uses the statistical techniques of Partial Least Square (PLS). Data is analyzed using structural model, the goodness of fit model and hypothesis testing. The findings of the study show that the environmental information system fully mediates the effect of environmental strategies on environmental performance. It also shows that compliance with government regulations directly affect environmental performance. The limitation of this research is in the number of samples collected which amounted to 29. This condition limits the research into a pilot study. In subsequent research, the number of samples can be increased and the use of primary data can be developed using secondary data. The novelty of this research lies in the examination of the role of mediation of environmental information systems for companies in Indonesia, which, to date, have not been found. The results of this study provide practical implications that environmental performance and economic performance can be achieved simultaneously and that good environmental performance will bring a competitive advantage to the company, so the companies should start thinking of implementing this environmental information system. In addition, government regulations supported by advisory program, strict supervision and reward and punishment mechanisms are expected to improve the condition of the natural environment in Indonesia which is vulnerable to pollution and damage.

**Keywords:** Environmental Accounting, Environmental Information Systems, Environmental Performance

## 1. Introduction

### 1.1 Background

In Indonesia, environmental pollution has occurred evenly on the islands throughout Indonesia. Forest fires occur in the forests of Riau and Kalimantan (Sani, 2015, Andwika, 2015). In addition to human factors, El Nino is also one of the reasons for the widespread of forest fires (Andwika, 2015). Currently, Indonesia is one of the largest CO<sub>2</sub> contributor countries in the world besides China and the United States. According to World Resource Institute (WRI) data, the daily average of Indonesia's haze carbon dioxide emissions already exceeds the United States' carbon dioxide emissions (Biantoro, 2015).

Environmental performance is the focus of this research. Environmental performance is one of the goals in order to achieve sustainability. Environmental performance is believed to be a performance that is equally important to the economic performance. Both can be achieved simultaneously to achieve sustainability. Organizations which can achieve good environmental performance are believed to have a competitive advantage. In relation to stakeholder theory, the results of environmental performance are the evidence given by the organization to its stakeholders that the organization can increase the value of its activities to stakeholders and minimize harm to stakeholders.

In recent decades, companies and organizations have felt the impact of pressure from stakeholders, such as consumers, investors, governments, the media, employees and non-governmental organizations. Pressure and attention from stakeholders have led to the environmental performance and has led many institutions to consider implementing social and environmental accounting. The availability of environmental information can help managers and decision makers to improve environmental performance (Theyel, 2000) and support companies in business decision-making and increase environmental responsibility (Brown et al., 2005). Furthermore, the disclosure of environmental performance information to external parties is an important step to show that the company is the citizen's role model. In practice, however, most companies do not have adequate systems to measure and manage environmental costs, or coordinate environmental data collection for managerial decisions. Among them, only a few have invested in developing environmental information systems. This is due to a lack of understanding of environmental accounting resulting in loss of opportunities to improve environmental and

economic performance (Spencer et al., 2013).

Implementation of strategies within the environment is also a critical determinant of the success of environmental performance. Investments by companies to design and implement environmental proactive strategies can lead to the development of company-specific capabilities. Companies which have a proactive environment strategy will always learn to innovate continuously. Furthermore, long-term capabilities will be difficult to identify and emulate by competitors (Sellers, 2009). In addition, companies which have initiatives in implementing proactive environmental strategies (eco-design) have been able to improve their environmental performance (Zailani et al., 2012). However, this initiative is still limited to companies in developed countries; companies in developing countries are still lagging (Gonzales et al., 2010 and Shukla et al., 2009). In the last decade, there has been an increased awareness of social and environmental issues which cause companies to pay more attention to it as their responsibility. The result is that there is a growing number of companies which combine sustainability in their strategies and operations. Environmental awareness embodied in the application of environmental strategies has proven to positively affect the company's competitive advantage (Huang and Kung, 2011).

Environmental issues are a major concern for governments and organizations around the world. The government's concern is largely due to the deteriorating climatic conditions. Global warming, depletion of the ozone layer, increasing waste and pollution levels create problems around the world. Most of the problems believed to be the result of the adverse effects of manufacturing activity. Increased global demand and industrialization lead to pollution of land, water and air, and degradation of natural resources. The presence of regulation and increased pressure from many parties led to organizations beginning to look for ways to reduce environmental impact and develop green products (Zailani et al., 2012). Environmental management has been successful in Australia and China thanks to the enforcement of strict government regulations. Government environmental regulations by the Australian government have been able to improve the management of recycling and accountability for waste reduction (Qian et al., 2011). Similarly, the implementation of environmental regulation by the Chinese government has forced companies to change behavior on their environmental management, especially in reporting environmental pollution (Qian et al., 2015).

The Government as one of the external stakeholders has the power or influence over the operations undertaken by the company. Compliance with government policies and regulations is one of the decisive factors of a company that wants to maintain its legitimacy. In Indonesia, regulations related to the environment include Law number 25 Year 2007 regarding Investment, Law number 40 Year 2007 regarding Limited Liability Company, Government Regulation of the Republic of Indonesia number 47 Year 2012 on Corporate Social and Environmental Responsibility of Limited Liability Companies, and Regulation of the Minister of State Owned Enterprises number 4 year 2007. Government laws and regulations are still limited to limited liability companies which manage natural resources. The Ministry of Environment of the Republic of Indonesia has issued 73 regulations in the field of environmental protection and management. Unfortunately, there is no regulation on its supervision and law enforcement (Ministry of Environment of the Republic of Indonesia, 2016). In relation to the impact of the role of government regulation, especially in environmental sustainability, law enforcement mechanisms are needed in order to increase corporate compliance.

Elements of novelty in this study are on the variables of environmental information systems which mediate the company's internal factor (environmental strategy) and the external one (government regulations). With the application of environmental information systems, companies and organizations will be able to measure and manage environmental costs and coordinate environmental data collection for managerial decision making and will further affect the achievement of environmental performance. For companies which have already had an effective environmental strategy and are adhering to government regulations will begin to consider the existence of environmental information systems within the company. This is conducted so that efforts to achieve the goal of improving environmental performance become more optimal. The other element of novelty is in the research instrument in the form of questionnaires arranged in several stages, namely through the first and second pilot. After being tested for validity and reliability, if there are indicator/s which do not meet the requirements, then said indicator/s will not be used. The stages in the preparation of this questionnaire led to this study's set of questionnaire which is different from the set of questionnaires of previous studies.

## 1.2 Benefits of the research

A strategy is a science, or an art, in which the company uses all its resources to execute the policy in order to achieve the goal. Environmental strategy is one strategy which can be selected by the company to achieve its goal, namely maximum environmental performance. This research will provide empirical evidence for the statement that in order to achieve optimal environmental performance a well formulated and implemented strategy is also needed. This strategy is not limited to a generic strategy, but also to a strategy which is devoted to managing environmental issues. The application of environmental strategies by companies is expected to improve environmental performance and ultimately increase competitive advantage.

Social and Environmental Accounting (SEA) research on government regulation especially in Spain, Australia, Canada and USA from 2000 - 2006 is still very limited. There were only 6 studies conducted on that, namely by Collison and Slomp in 2000, Buhr in 2001, Larrinaga et al. in 2002, Grinnell and Hunt in 2002, Bewley in 2005, and Deegan and Blomquist in 2006, (Euge'nio et al., 2013). In addition, during the period of 2011 - 2015, to the best knowledge of the researcher, there are only 5 international journal articles discussing the effect of government regulation. They are from Qian et al. in 2011, Sindhi and Kumar in 2012, Gemmell and Scott in 2013, Al-Nimer in 2015, and Qian et al. in 2015. This research in Indonesia is expected to be one of the literatures which contribute to the development of research results in the field of social and environmental accounting, especially those associated with government regulations.

The results of the study will also be beneficial to the government as a regulator. Government regulations which favor environmental sustainability will encourage companies to be more serious in carrying out their environmental responsibilities. The current regulation is still limited to public companies whose activities are related to natural resources. In the future, it is expected that there will be generally applicable regulations, especially for companies with high potential for pollution and environmental destruction. Regulations set by the government should also be followed by supervisory mechanisms, precautions, and penalties for companies which violate the regulation. In addition to law enforcement, the regulations should also be accompanied by incentive packages for companies that adhere to government regulations.

## **2. Literature Review**

### **2.1 Stakeholder Theory**

Based on stakeholder theory, organizational management is expected to perform activities deemed important by stakeholders and re-report those activities to stakeholders. All stakeholders have the right to get information about how organizational activity affects them, even when they cannot directly play a role in organizational survival (Deegan, 2004). The main objective of stakeholder theory is to help managers understand stakeholders, increase the value of impacts of organizational activities, and minimize losses to stakeholders. Therefore, companies with good environmental performance are expected to safeguard the interests of stakeholders and subsequently it will lead to the positive impacts felt by stakeholders of the company's existence and ultimately to appreciation toward the company.

### **2.2 Legitimacy Theory**

Legitimacy is defined by Lindblom (1994) as a condition or status which exists when an entity's value system is congruent with the value system of the larger social system in which it becomes its part. When there is a difference, both actual and potential, in the existence of the two value systems, there is a threat to the legitimacy of the entity. Tregidga et al. (2006) state that organizations seek legitimacy to ensure commitment and support of both internal and external stakeholders to organizations. The legitimacy of the organization will be seen to exist if the organizational value system and social system are congruent. Legitimacy theory is based on the revelation that there is a social contract between the company and the environment in which it operates. Social contracts are a way of explaining the many expectations people have about how a company should operate (Deegan, 2004). Legitimacy is the company's effort to operate in society on the basis of an agreed social contract. In order to realize a good relationship between the company and the community, the company needs to disclose social and environmental activities to gain legitimacy, enhance image and sustainability. To that end, the company will explain its social and environmental performance through its social report (Guthrie and Parker, 1989).

### **2.3 Environmental Strategy, Environmental Information System and Environmental Performance**

Environmental performance implies positive results for the natural environment, such as reduction of solid/liquid waste, emission reduction, resource depletion, decreased consumption of hazardous materials, decreased frequency of environmental accidents, and increased compliance with environmental standards (Zhu and Sarkis, 2004). The theory of strategic choice explains that the company's strategy will drive performance, and the company chooses a specific strategy if its profits outweigh the costs. Thus, strategy determines performance. Starik and Marcus (2000) also find the theory of strategic choice to be very relevant in the field of environment.

Similarly, in their research, Zailani et al. (2012) explain the relationship between environmental strategy and environmental performance. Their research shows that environmental strategies have an effect on environmental performance. Some literature concludes that companies which have successfully developed environmental strategies have higher levels of environmental performance (Mir and Rahaman, 2011). This increase in environmental performance will not burden financial performance if there are incentives from green economy and a long-term focus on performance appraisal (Russo and Fouts, 1997; Salama, 2005; Clemens, 2006). A proactive environmental strategy relates to future economic performance. Only companies with adequate resources and management capabilities will be able to pursue these proactive environmental strategies. The company's environmental performance will be driven by strategic management options (Sindhi and Kumar,

2012).

H1 : Environmental strategies have a positive effect on environmental performance

In order to provide the environmental information needed to manage current business conditions, accounting information system designers must explicitly consider environmental issues (Brown et al., 2005). From the standpoint of environmental strategy, the environmental information system must be integrated at all levels of the business and is a useful tool for decision making (Masanet-Llodra, 2006).

Benefits obtained by companies which implement environmental accounting systems are (1) their management becomes more aware of business opportunities and risks associated with the environment, so they can better manage opportunities and risks, (2) accounting information systems provide the information the company needs in the implementation of specific environmental strategies, (3) the environmental information matrix can be used as an assessment tool in management decision making, (4) the environmental information matrix is useful as a guide for companies trying to reach their environmental responsibility level (Brown et al., 2005).

H2 : Environmental strategies have a positive effect on the environmental information system

## **2.4 Compliance with Government Regulations, Environmental Information Systems and Environmental Performance**

Research conducted by Zailani et al., (2012) test the drives derived from the organization's external environment, including regulation and incentives, and customer pressure. Both are legitimacy-based activities which provide institutional pressure. Given the institutional pressure (related to environmental issues), the company's desire to improve its environmental performance can be a requirement for the effectiveness of economic performance. Institutional theory suggests that when there is institutional pressure from various parties, increased legitimacy of the environment can be observed by stakeholders. Responses to institutional pressure and consideration of public perceptions may affect the overall environmental performance of the company. Zailani et al.'s research (2012) which examines the effect of government regulations on environmental performance yields out positive and significant results.

Government regulations on waste management in Australia have resulted in the local government of New South Wales in Australia working to improve its environmental performance. Environmental performance is applied primarily to waste management and recycling. There are 25 key performance indicators designed to monitor environmental performance (NSW Department of Local Government, 2005 in Qian et al., 2011). Similarly, with companies in China, the government regulations are implemented strictly in accordance with the 11th Five Year Plan (2006-2010) and have an impact on improving environmental performance. In addition to regulations from the Chinese government, regulations set by the government of origin countries of the company alliance are also factors driving this improved environmental performance (Qian et al., 2015).

H3 : Compliance with government regulations has a positive effect on environmental performance

Next is the result of a study from Theyel (2000) and De Giovanni's research (2012), which explains that the application of environmental management practices will lead to an increase in environmental performance. Government regulations in China during 2006-2010 and the rules of origin countries of alliance companies have led companies to implement information systems related to EMA. The implementation of this information system brings the impact of increasing environmental performance (Qian et al., 2015).

H4 : Compliance with government regulations has a positive effect on environmental information systems

## **2.5 Environmental Information System and Environmental Performance**

Theyel's research on chemical companies in the US shows that there is a significant effect of environmental management practices on environmental performance. Existing environmental management practices include waste audit, TQM for pollution prevention, pollution prevention plans, and employee training programs for pollution prevention (Theyel, 2000). De Giovanni's research on companies listed on the Italian Stock Exchange shows that environmental management has a positive effect on environmental performance. De Giovanni suggested that if the company plans to improve its environmental performance, then the company should first concentrate on the efforts of implementing environmental management (De Giovanni, 2012).

H5 : Environmental information system has a positive effect on environmental performance

## **3. Research Methodology**

### **3.1 Research Design**

This research is a quantitative research in the form of causal study, in which it is designed to explain how a variable can affect other variables. This research is a type of prediction research. Prediction research is a research

which aims to examine the effect of variables to predict cause-and-effect relationships. Testing and measurement are performed at the level of construct or variable. The hypothesis tested is partial hypothesis. The criterion used for the feasibility of the research is the level of significance of the predictive relationship between variables (t-statistics).

The statistical technique used is the statistical technique of Partial Least Squares (PLS). The statistics software statistics used is SmartPLS version 3. This research is a study with primary data acquired using the instrument in the form of questionnaires. The scale used in this questionnaire is a Likert scale (1 to 6).

Table 1. Operational Definition and Variable Measurement

Operational Definition	Statements in the Questionnaire	Measurement Scale (Likert)
<b>Independent Variables</b>		
Environmental Strategy (EST) is a strategy implemented to address environmental concerns (OECD, in Lorentsen, 2004).	EST 1 – EST 13	1= not applied 6 = extensively applied  Zailani <i>et al.</i> (2012), Moini <i>et al.</i> (2014), adapted by the researchers.
Compliance with Government Regulation (CGR) is a guideline (in the form of instruction, rule, and provision) made by the government of a country (Kamus Besar Bahasa Indonesia - Standardized Indonesian Dictionary), 2016).	CGR1 – CGR6	1 = Strongly Disagree 6 = Strongly Agree  Zailani <i>et al.</i> (2012), adapted by the researchers.
<b>Mediating Variable</b>		
Environmental information systems (EIS) are information systems modified and used to monitor environmental practices and outcomes (Green et al., 2012).	EIS1 – EIS17	1 = Never 6 = Always  Spencer <i>et al.</i> (2013), adapted by the researchers.
<b>Dependent Variables</b>		
Environmental performance (ENP) is the company's ability to reduce air emissions, wastewater and solid waste, and the ability to reduce the consumption of hazardous and toxic materials which will provide a competitive advantage for the organization (Green et al., 2012, and Moini et al., 2014).	ENP1 – ENP9	1 = Strongly Disagree 6 = Strongly Agree  Spencer <i>et al.</i> (2013), adapted by the researchers.
	ENP10-ENP15	Zailani <i>et al.</i> (2012), adapted by the researchers.
<b>Controlling Variables</b>		
Industrial Sector (IND) is the division of the company's business type based on the undertaken main business field.	High-profile environmental sensitive industries consists of industries within the following sectors: Agriculture/Forestry, Mining, Basic and Chemicals Industries, Various industries, and Utilities  Low-profile environmental sensitive industries consists of industries within the following sectors: Consumer Goods, Property, Real Estate and Construction, Infrastructure, Transportation, Finance, Trade, Services, Investment, and others	Nominal scale, dummy variabel  1 = High-profile environmental sensitive industries 0 = Low-profile environmental sensitive industries  Wang, et al (2013), adapted by the researchers.
Operation Scale (OPR) is the area of operation of the company/institution.	Local companies/institutions are companies/institutions which operate only in one particular area/region. National companies/institutions are companies/institutions whose business activities are conducted in several regions of a country. Multinational companies/institutions are large companies with many resources, whose operations are carried out by a network of subsidiaries located in various countries (Cavusgil et al., 2014, Daniels et al., 2015)	Nominal scale: 1 = Local 2 = National 3 = Multinational

An empirical study will give the best results when using an industry or a set of sectors, in which the industry or sector will experience the same pressure on a common business environment which is certainly not experienced by other sectors (Sellers, 2009). This study uses primary data from respondents of companies

domiciled in Jakarta. The data were obtained through questionnaires distributed directly to the Graduate Program of Accounting and Accounting Profession Program of Trisakti University - Indonesia.

### 3.2 Data Analysis Method

In analyzing the data, the following stages are performed. (1) Assess the measurement model/outer model through confirmatory factor analysis (CFA) by testing the validity and reliability of the latent construct. (2) Evaluation is done on the structural model (inner model) to assess the strength of the prediction of structural model (R-Square). (3) The goodness of fit model is used to know the strength of prediction of the model. (4) Hypothesis testing for one-tailed.

## 4. Discussion

### 4.1 Profile of Respondents

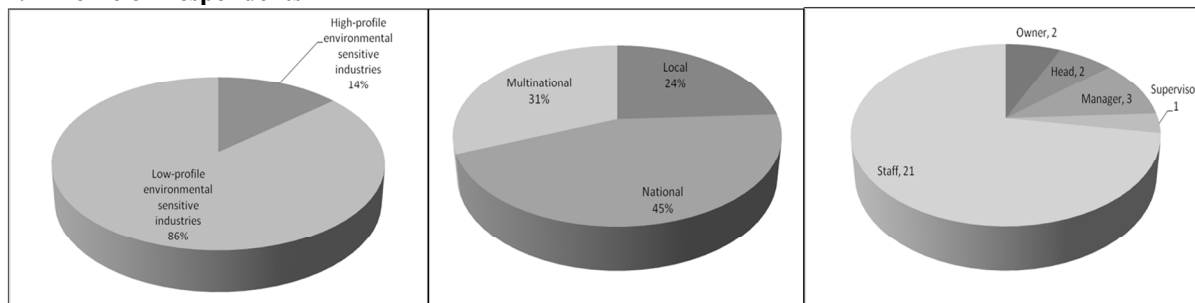


Figure 1. Profile of Respondents

Based on Figure 1 it can be seen that as many as 86% of respondents came from low-profile environmental sensitive industries. Most of the sample institutions come from less risky institutions related to CSR issues or environmental issues. 24% of institutions operate locally, 45% operate nationwide and 31% are multinational. Thus, most of the respondents came from institutions operating nationally. Questionnaire filled by respondents with the position as the owner of 2 respondents, leader of the division of 2 respondents, manager of 3 respondents, supervisor of 1 respondent, and as staffs of 21 respondents. Thus, the profile of respondents is mostly staff. Although most of the questionnaires are filled by those at the staff level, they have knowledge and capabilities in accounting and the environment.

### 4.2 Outer Model Testing

Testing by using discriminant validity (Average Variance Extracted) provides the result that the research instrument meets the validity requirements. Testing using Cronbach Alpha gives the result that the research instrument is qualified in terms of reliability.

Table 2. Validity and reliability of research instruments

Latent Variables	Average Variance Extracted (validity)	Cronbachs Alpha (reliability)
Environmental Strategy (EST)	0,618	0,938
Compliance with Government Regulation (CGR)	0,672	0,837
Environmental Information System (EIS)	0,692	0,968
Environmental Performance (ENP)	0,622	0,939

### 4.3 Inner Model Testing

#### 4.3.1 R-Square

Table 3. Inner model

Variables	R-Square	Prediction Strength of Structural Model
ENP	0,816	Model is Strong
EIS	0,692	Model is Moderately Strong

From table 3 it can be seen that the correlation between models is strong for ENP and moderately strong for EIS variables. This means that the EST, CGR, EIS, IND and OPR variables can explain ENP variability of 81.6% and the rest is explained by other variables. Furthermore, EST, CGR, IND and OPR variables can explain the variability in EIS by 69.2% and the rest is explained by other variables.

#### 4.3.2 Goodness of Fit Model

$$GoF = \sqrt{AVE \times R^2}$$

$$GoF = \sqrt{0,665 \times 0,682} = \sqrt{0,453} = 0,673$$

The above calculations GoF shows the results of the goodness of fit is 'large'. This suggests that a strong

model for doing predictions.

#### 4.4 Hypothesis Testing

Table 4. Testing the Effect of Independent Variables on Dependent Variable.

Hypothesis			<i>t statistic/ t value</i>
H1	:	Environmental strategies have a positive effect on environmental performance	1,807*
H3	:	Compliance with government regulations has a positive effect on environmental performance	3,523***

Table 5. Testing the Effect of Independent Variables on Mediating Variable.

Hypothesis			<i>t statistic/ t value</i>
H2	:	Environmental strategies have a positive effect on the environmental information system	2,385***
H4	:	Compliance with government regulations has a positive effect on environmental information systems	1,504

Table 6. Testing the effect of independent variables on the dependent variable and the effect of the mediating variable on the dependent variable.

Hypothesis			<i>t statistic/ t value</i>	<i>t statistic/ t value</i>
			Direct Impact	Indirect Impact
H5	:	Environmental information system has a positive effect on environmental performance	1,891* (b <sub>3</sub> ) EIS Coefficient = 0,331	
H1	:	Environmental strategies have a positive effect on environmental performance	0,410	1,364 (b <sub>4</sub> ) EST Coefficient = 0,181
H3	:	Compliance with government regulations has a positive effect on environmental performance	2,459**	1,031

From the first step testing (with the exclusion of the mediating variable - EIS), it can be seen that EST and CGR have a positive effect to ENP with t value equal to 1,807\* and 3,523\*\*\*. In the second step of testing, only EST affect EIS with a t value of 2,385\*\*\*. In the third step testing (with the inclusion of mediating variable - EIS), EIS has a positive effect on ENP with a t value equal to 1,891\*, EST effect on ENP become insignificant and CGR has a positive effect on ENP with a t value of 2,459\*\*. Since the significance value of b<sub>4</sub> becomes insignificant, it can be concluded that EIS mediates the effect of EST on ENP completely (fully mediated) and EIS does not mediate the effect of CGR on ENP.

#### 4.5 The Role of Environmental Information System Mediation in Indonesian Companies

After doing the test on the company in Jakarta, it was found that environmental strategy (EST) indirectly affects environmental performance (ENP), i.e. through environmental information system (EIS). In this test, the environmental information system (EIS) mediates the effect of environmental strategy (EST) on environmental performance (ENP) completely (fully mediated). This shows that the company has realized and felt the benefits of implementing environmental information system in realizing its environmental strategy to achieve the expected environmental performance. In addition, compliance with government regulations (CGR) also directly affects environmental performance (ENP). The model of the test results can be seen in Figure 2.

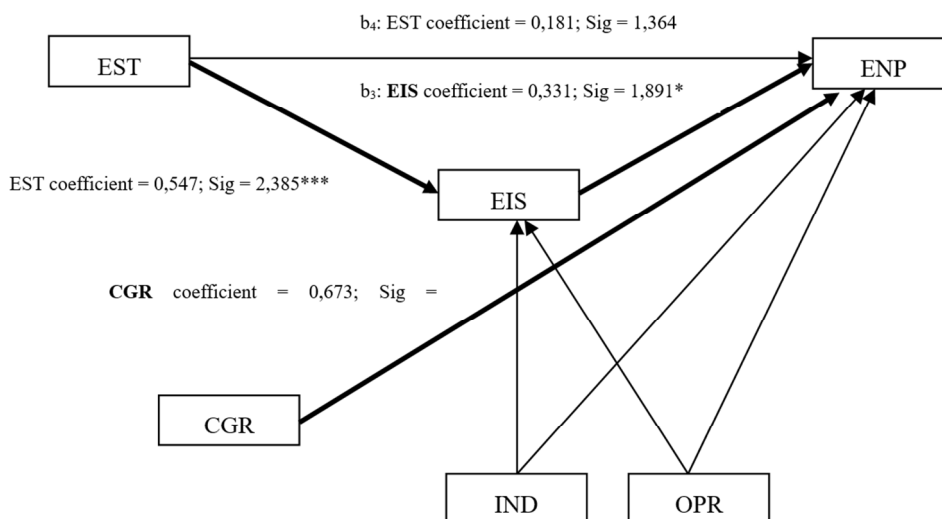


Figure 2. Model of Research Results

Table 7. Hypothesis Test Results

	EIS		ENP	
	Coefficient	Sig	Coefficient	Sig
EST	0,547	2,385***	0,181	1,364
CGR	0,366	1,504	0,673	3,523***
EIS			0,331	1,891*
Conclusion	EIS fully mediated the effect of EST on ENP			

For the respondents of companies in Jakarta who are mostly included in the category of low-profile environmental sensitive industries, environmental strategies have gained attention to apply in institutions. The application of environmental strategy has been proven to have an effect on the environmental performance. In line with this, environmental information systems have an important role in the implementation of environmental strategies. Institutions that have the ability to develop environmental strategies will encourage institutions to implement an environmental information system. The company's seriousness in implementing environmental strategies treat environmental strategies as a central aspect of routine institutional operations so that institutions will think of a system that will optimize the provision of environmental information. This system is an environmental information system. Environmental information systems can expand the ability of institutions to share information, especially information related to environmental improvement programs. In this paper also proved that environmental information system has a significant effect on environmental performance. This can be realized because the environmental information system is a system that can monitor processes that can ensure environmental sustainability. Information is used to track environmental information, reduce energy use and monitor production of emissions and waste. Institutional progress in achieving environmental performance can not be monitored and remedial actions are difficult to succeed without the availability of specific information.

A series of actions taken by institutions to manage the environment appropriately is to take systematic action to improve sustainable performance and sustainable performance improvements. Environmental performance can only be enhanced through the identification stage, changes in the internal culture and implementation of the action. In order to carry out this strategic role requires the ability of the institution to manage information in a transparent and effective manner. To make it happen, systems and processes are needed that can support appropriate feedback and information flow, so that this strategic role can take action in a timely manner. Along with the need to improve environmental performance, the division responsible for fostering facilities and environmental maintenance can continue to develop its strategic capabilities. The process of integrating environmental information systems can be done in line with strategic planning, because in it there is a process of mapping and integrating knowledge in the institution. In carrying out this process, institutions can identify knowledge gaps and make continuous improvements in order to achieve superior environmental performance (Walker et al., 2007).

Compliance with government regulations is implemented by companies due to stringent environmental standards, government oversight of compliance with environmental laws and laws, the existence of government regulations for the industries in which the company is located, the efforts of companies to reduce threats from the law environment and environmental awards from the Indonesian government.



## 5. Conclusion

This research has proven that environmental information system mediates the influence of environmental strategy on environmental performance, and compliance with government regulation has a direct effect on environmental performance. This study provides evidence that environmental information system mediates the effect of environmental strategies on environmental performance. This shows that the company has realized and felt the benefits of implementing environmental information system in realizing its environmental strategy to achieve the expected environmental performance. Companies which have realized that environmental performance and economic performance can be achieved simultaneously and good environmental performance will bring a competitive advantage to the company can start thinking of implementing this environmental information system in it.

This study provides evidence that compliance with government regulations has an effect on environmental performance. This indicates that the existence of government regulations regulating the environment imposed on the company and accompanied by the company's compliance in running it, has encouraged the company to achieve good environmental performance. This condition should be immediately received a serious response from the Indonesian government, given Indonesia is a country which will become a member of the OECD. It is about time that Indonesia has a goal in the field of environment which is in harmony with OECD objectives. OECD's environmental objectives are a focus on climate, clean water, biodiversity, agriculture, transportation, energy, environmental improvement, improvement in the quality of life, and improving governance and cooperation (Lorensen, 2004). The enactment of government regulations supported by advisory program, strict supervision and reward and punishment mechanisms are expected to improve the condition of the natural environment in Indonesia which is vulnerable to pollution and damage.

The limitation of this research is in the number of samples collected which amounted to 29. This condition limits the research into a pilot study. In subsequent research, the number of samples can be increased and the use of primary data can be developed using secondary data.

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