

**RELATIONSHIP BETWEEN ENVIRONMENTAL PERFORMANCE,  
FIRM SIZE, AND FINANCIAL PERFORMANCE**

**(Empirical Study to Manufacturing Companies Listed in IDX year 2006-  
2010)**

**A THESIS**

**Presented as Partial Fulfillment of the Requirements to Obtain the  
Bachelor Degree in Accounting Department**



By

**UMAN MIFTAH SAJIDIN**

**Student Number : 08312055**

**DEPARTMENT OF ACCOUNTING**

**INTERNATIONAL PROGRAM**

**FACULTY OF ECONOMICS**

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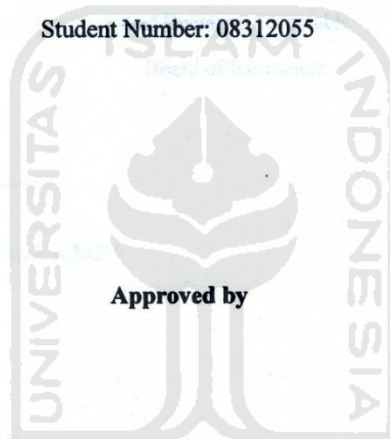
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Approved by

Content Adviser,

*Approved for submission*

(Hadri Kusuma Prof. Dr., MBA.)

Language Adviser,

(Nina Fitriana, MA)

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**A BACHELOR DEGREE THESIS**

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UMAN MIFTAH SAJIDIN

Student Number: 08312055

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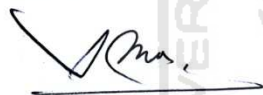
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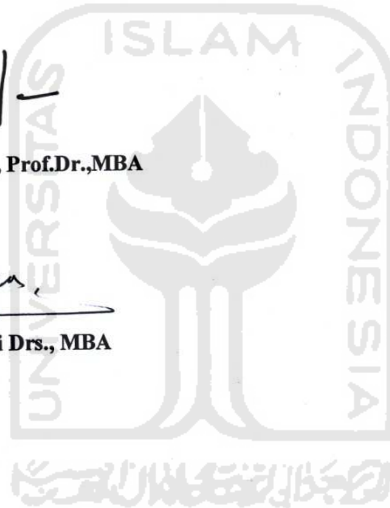


**Hadri Kusuma, Prof.Dr.,MBA**

Examiner II



**Sugeng Indardi Drs., MBA**



Yogyakarta, April 25, 2012

International Program

Faculty of Economics

Universitas Islam Indonesia

Dean,



**Hadri Kusuma, Prof.Dr.,MBA**

## DECLARATION OF AUTHENTICITY

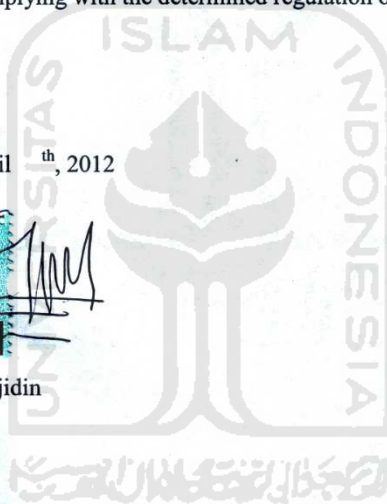
Herein I declare the originality of the thesis; I have not presented anyone else's work to obtain my university degree, nor have I presented anyone else's words, ideas or expression without acknowledgment. All quotations are cited and listed in the bibliography of the thesis.

If in the future this statement is proven to be false, I am willing to accept any sanction complying with the determined regulation or its consequence.

Yogyakarta, April<sup>th</sup>, 2012



Uman Miftah Sajidin



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## TABLE OF CONTENT

Page of Title .....	ii
Approval Page .....	iii
Legalization Page .....	iii
Declaration of Authenticity .....	iv
Acknowledgment .....	v
Table of Contents .....	viii
List of Tables .....	xi
List of Figures .....	xii
List of Appendices .....	xiii
Abstract .....	xiv

### CHAPTER I INTRODUCTION

1.1 Background of the Study.....	1
1.2 Problem Formulation .....	6
1.3 Problem Limitation .....	6
1.4 Research Objective .....	7
1.5 Research Contribution .....	7

### CHAPTER II REVIEW OF RELATED LITERATURE

2.1 Green Economy .....	8
2.2 Green Accounting .....	10
2.3 Green Company .....	11



2.3.1	Green Strategy .....	12
2.3.2	Green Process .....	13
2.3.3	Green Product .....	16
2.4	Corporate Social Responsibility .....	18
2.4.1	Stakeholder Concepts .....	20
2.5	Environmental Performance .....	24
2.6	Financial Performance .....	25
2.7	Firm Size .....	27
2.8	Previous Studies .....	27
2.9	Theoretical Framework .....	32
2.10	Relationship Between Environmental Performance and Financial Performance .....	32
2.11	Relationship Between Environmental Performance and Firm Size ..	36
2.12	Relationship Between Firm Size and Financial Performance .....	38

### **CHAPTER III RESEARCH METHOD**

3.1	Research Variables .....	40
3.2	Research Subject .....	40
3.2.1	Environmental Performance .....	40
3.2.2	Firm Size .....	41
3.2.3	Financial Performance .....	42
3.3	Research Setting .....	42
3.4	Type and Data Source .....	43
3.5	Operational Hypotheses .....	43

3.6	Technique and Data Analysis .....	44
3.6.1	Descriptive Statistic .....	45
3.6.2	Validity Test .....	45
3.6.2.1	Determinant Coefficient ( $R^2$ ) .....	45
3.6.3	Testing the Hypotheses .....	45
3.6.3.1	T – Test .....	45

#### **CHAPTER IV RESEARCH FINDING AND DISCUSSION**

4.1	Research Description .....	47
4.2	Validity Test .....	49
4.2.1	Determinant Coefficient ( $R^2$ ) .....	49
4.3	Hypotheses Testing and Discussion .....	50
4.4	Testing Hypotheses .....	51
4.4.1	Testing $H_1$ .....	52
4.4.2	Testing $H_2$ .....	54
4.4.3	Testing $H_3$ .....	55

#### **CHAPTER V CONCLUSIONS AND RECOMMENDATIONS**

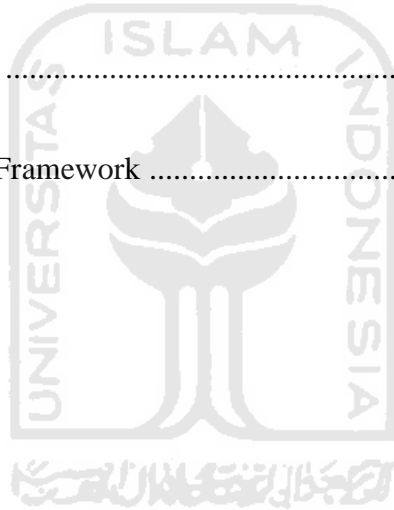
5.1	Conclusion .....	57
5.2	Recommendation .....	57

## LIST OF TABLES

Table 1.1	Environmental Cases .....	1
Table 2.8	Previous Studies .....	28
Table 4.1	Sampling Technique .....	48
Table 4.2.1	Determinant Coefficient .....	49
Table 4.3a	Standardized Regression Weight .....	50
Table 4.3b	Intercepts .....	50
Table 4.4a	Regression Weight .....	51
Table 4.4b	Total Effect .....	51
Table 4.4c	Standardized Direct Effect .....	51
Table 4.4d	Standardized Indirect Effect .....	51

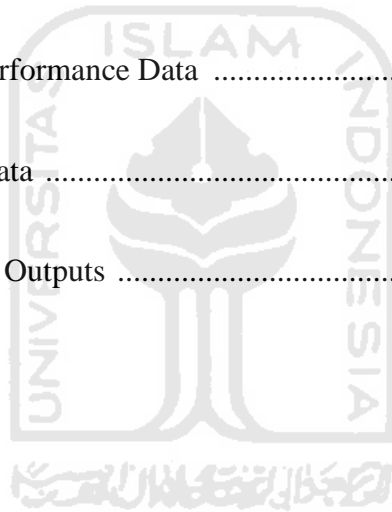
## LIST OF FIGURES

Figure 2.3.2	Cleaner Production Techniques .....	16
Figure 2.4.1a	Stakeholders According to William B.W. and David C .....	21
Figure 2.4.1b	Relationship between Business Firm and Market Stakeholders ...	22
Figure 2.4.1c	Relationship between Business Firm and Nonmarket Stakeholder .....	23
Figure 2.9	Theoretical Framework .....	32



## LIST OF APPENDICES

Appendix 1	List of Company Sample .....	64
Appendix 2	Report of PROPER year 2006-2010 .....	66
Appendix 3	Total Asset Data .....	69
Appendix 4	Total Sales Data .....	71
Appendix 5	Financial Performance Data .....	73
Appendix 6	Firm Size Data .....	75
Appendix 7	AMOS 16.0 Outputs .....	77



## ABSTRACT

This research aims to examine the relationship between environmental performance, firm size, and financial performance of manufacturing companies listed in Indonesia Stock Exchange.

The sample of this research consists of 20 companies from 2006 to 2010. Simple linear regression is used to test the relationship between environmental performance and firm size, while multiple linear regressions are used to test the relationship between environmental performance and firm size toward financial performance. Data analysis technique and hypothesis testing are using AMOS 16.0 software.

The result showed that there is positive relationship between environmental performance and financial performance, then between environmental performance and firm size. However, there is negative relationship between firm size and financial performance.

**Keywords:** Environmental Performance, PROPER (Program Penilaian Peringkat Kinerja Perusahaan dalam Pengelolaan Lingkungan Hidup), Firm Size, Financial Performance



## **ABSTRAK**

*Penelitian ini dilakukan untuk menguji hubungan antara kinerja lingkungan, ukuran perusahaan, dan kinerja keuangan pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia.*

*Adapun sampel yang digunakan terdiri dari 20 perusahaan dari 2006 hingga 2010. Regresi linier sederhana digunakan untuk menguji hubungan antara kinerja lingkungan dengan ukuran perusahaan, sedangkan regresi linier berganda digunakan untuk menguji hubungan antara kinerja lingkungan dan ukuran perusahaan terhadap kinerja keuangan. Teknik analisis data dan pengujian hipotesis menggunakan software AMOS 16.0.*

*Hasil penelitian menunjukkan terdapat hubungan positif antara kinerja lingkungan dengan kinerja keuangan dan antara kinerja lingkungan dengan ukuran perusahaan. Akan tetapi, ada hubungan negatif antara ukuran perusahaan dengan kinerja keuangan.*

**Kata Kunci:** *Kinerja Lingkungan, PROPER (Program Penilaian Peringkat Kinerja Perusahaan dalam Pengelolaan Lingkungan Hidup), Ukuran Perusahaan, Kinerja Keuangan.*



## CHAPTER I

### INTRODUCTION

#### 1.1 Background of the Study

Environmental pollution is a serious problem faced by Indonesia. One of the sectors that cause environmental pollution is companies. Some companies do not care about their environment and produces some pollutant for their environment. Environmental ministries found out that the number of environment pollution is increasing from year to year as shown in the following table:

**Table 1.1**  
**Environmental Cases**

Year	Environmental Cases
2002	38
2003	56
2004	57
2005	76
2006	212

**Source: Environmental Ministries (2008) in BAPPENAS (2011)**

Furthermore, according to WALHI (Wahana Lingkungan Hidup Indonesia), there are 387 environment cases in 2009. It spreads in many sectors such as forestry, mining, sea, plantation, water and food, and others. Based on the research conducted by WALHI, forest sector has 127 cases; mining sector has 120 cases, sea sector has 48 cases, plantation sector has 38 cases, water and food sector has 17 cases, and other environment sector has 37 cases (BAPPENAS, 2011). WALHI also reported that there are 79 environment cases in 2010, and it is



predicted that the cases will increase about 50 to 70 percent in 2011 (Kompas, January 14, 2011)

Companies can solve problems related to environment by implementing their organizational concept called “Green Company”. In this concept, company can manage their management and protect the environment. It is also what can be called as *triple bottom line* (Susilo, 2008). In implementing “green company” concept, they will consider four basic concepts, which aim to build “environment, health, and safety” performance atmosphere. (Salim, 2002)

Actually, company can create some programs which have benefit to their environment, which is called Corporate Social Responsibility (CSR). In this program, company will compensate their fund to be “invested” in the positive social impact. Corporate social responsibility is a form of accountable the company for its stakeholders as well, whether it is *market stakeholders* or *nonmarket stakeholders*. Besides, it will show the performance of the company to the environment (Webber, 2005).

On the other hand, to support company’s environmental performance, government has made many regulations. It is expected that, by making regulations, many parties will concern to manage their environment pollution. The regulations are the Act of Republic Indonesia number 23 year 1997 about Environment Management, and the Act of Republic Indonesia number 18 year 1999. (Darsono *et al*, 2006). Recently, the Act of Republic Indonesia number 32

years 2009 about Environmental Management and Protection was legalized to deal with the environment issue.

Meanwhile, Environmental Ministries also made three programs to solve the case of environment pollution. They are, “Kalpataru program” which aims to force the initiatives of local society in conservation environment; “Adipura program” which aims to force local government in keeping the cleanliness of the cities; finally, (PROPER) “Program Penilaian Peringkat Kinerja Perusahaan dalam Pengelolaan Lingkungan Hidup”, which aims to force companies to be concerned to the environment.

PROPER is a program to force and to structure companies to heed the environment. It was begun since 1997. The mechanism in structuring the awareness of company is by spreading information about their environmental performance to the public and to the stakeholder. By this act, it is hoped that public and stakeholder can value the company in caring the environment based on their capacity.

In order to be understood by the public, the ministry categorized the company’s performance into five color grades. Each grade color shows the performance rating of the company in structuring and caring their environment. Those grade colors are: golden, green, blue, red, and black. In this grading, golden grade is as the best one; however, black grade is the worst one. (Environmental Ministries, 2010)

In accounting perspective, accountant has essential contribution in showing the performance of the company. As a party that manages the information of the company, accounting sector should manage company's information system to show their awareness to their environment. Therefore, accounting sector solves this problem by making accounting concept that support *green movement* that is known as *green accounting* or *environment accounting*. The implementation of this accounting concept is, turning up *Socio Economic Environmental Accounting (SEEC)* concept.

Actually, SEEC is only another description of the term *triple bottom line*. This term said that accounting covers social, economic, and environmental. By implementing this concept, many industries are not only seeing the *financial* or *economic performance*, but also the *employees*. On the other side, it also has the relationship with the flow of total sales of the company (Susilo, 2008; Puji, 2002; Meriana, 2007)

There are many previous researches concerning to this topic, especially the relationship between environmental performance and financial performance. Suratno *et al* (2006) studied the relationship between environmental performance and financial performance. In their study, they examined 19 manufacturing companies joining PROPER from 2002-2005. They measure environmental performance by PROPER, and economic performance by the fluctuation of stock exchange rate. They found that there is positive and significant effect between environmental performance toward economic performance.

However, many other researchers do not support the results found by Suratno *et al* (2006). Amilia and Wijayato (2007) found different finding. In their research, they found that environmental performance does not affect financial or economic performance. It is because environmental performance and predetermined variables are not the only factor that affects financial performance. Researchers presume that the reason why it has no effect is, because Indonesian market is not the same with many west markets. They also stated there are many factors that may influence those relationships. They are financial ratio, firm size and investment types.

Recently, Handayani (2010) examined 43 manufacturing companies joining PROPER from year 2005 to 2007. His finding is supported Amilia and Wijayanto (2007). By taking annual return as the measurement of financial performance, he found that there is no relationship between environmental performance and financial performance. It is because the market in Indonesia does not care about what have been done by the companies to the environment. For Indonesian market, the most important thing is whether companies have benefit or not to be invested.

Considering that previous researchers still have ambiguities in the research result, this research is conducted. However, this research is different with the previous researches. For the measurements on the relationship between environmental performance and financial performance, this research uses Return on Equity ratio to measure financial performance. Then, the difference of this research to other previous researches is to test the relationship between firm size

and financial performance. In this test, total assets will be the measurement of firm size.

### **1.2 Problem Formulation**

Paul Munter, Rene Sacasa, and Elaine Garcia (1996: 36-56) as stated in Supriyantoro (2007) stated that the environmental cases, as discussed in the background above, become a serious problem, especially in Indonesia. It forces companies to care their environment not only for big company but also for small company. On the other hand, government supports this issue by giving rate to the company based on their effort to do “green” performance, called PROPER.

Accounting, in this case, also has its own concept to support this issue. It establishes what is called by *Socio Economic Environmental Accounting (SEEC)*. Therefore, this research is going to test how the relationship between environmental performance, firm size, and financial performance.

### **1.3 Problem Limitation**

The object of this study is limited only for manufacturing companies listed in Indonesia Stock Exchange (IDX) joining PROPER year 2006- 2010 that announced their financial statement.

#### **1.4 Research Objective**

The objectives of this research are:

1. To examine the relationship between environmental performance and financial performance of manufacturing companies joining PROPER
2. To examine the relationship between firm size and financial performance of manufacturing companies joining PROPER

#### **1.5 Research Contribution**

1. For Company

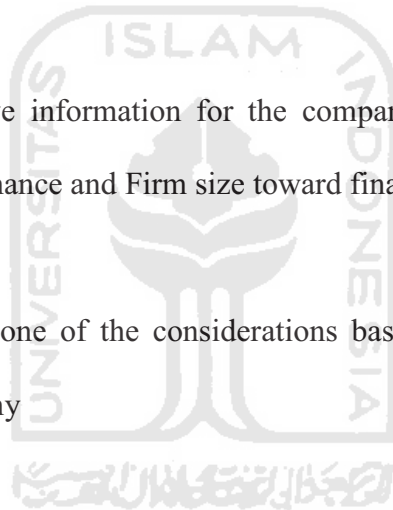
This research can give information for the company on how the effect of environmental performance and Firm size toward financial performance

2. For Investor

This research can be one of the considerations basic in making investment decision in the company

3. For Academia

This research can be one of the references for the next research



## CHAPTER II

### REVIEW OF RELATED LITERATURE

#### 2.1 Green Economy

According to Makmun Syadullah (2010), the concept of green economy is still debatable. There are still different scholars insights in determining the exact definition of this concept. However, some international institutions have defined what green economy is. One of them is according to *United Nation Environmental Program-UNEP* (2009):

“Greening the economy refers to the process of reconfiguring business and infrastructure to deliver better return and natural, human and economic capital investments, while at the same time reducing greenhouse gas emissions, extracting and using less natural resources, creating less waste and reducing social disparities”

Green economy also can be stated as the integration among humanity and economic capital beneficial. This concept is different from the external party's concepts that are carries out their environment. Green economy may be defined as *use values not exchange value; quality not quantity; regeneration from individualism, quality and consistency not accumulation or material.*

UNEP stated that the implementation of green economy can be seen from several aspects:

1. The increasing value of public investment and private investment in greening sector
2. The increasing value of greening sector, not only in the quantity but also in the quality
3. The increasing value of GDP in greening sector
4. There is reduction the utilizing energy per unit production
5. There is reduction the number of Carbon dioxide and pollution per GDP number
6. There is reduction consumption that produce waste

While in the international level, the implementations supporting this concept are:

1. Memorandum of understanding for multilateral and bilateral trading for goods and services related to the environment
2. International assistance for supporting the implementation of green economy
3. Activating global carbon market
4. Developing global market for ecosystem services
5. Development and transfer of environmentally energy
6. International coordination in stimulating the concept of green economy

Moreover, UNEP planned the advantages of green economy concept as:

1. Renewing about 20 million in energy job sectors in year 2030
2. About 658 billion USD for supplying clean water, sanitation, and efficiency in year 2020



3. In EU and US, green building will produce job field for about 2 – 3,5 million
4. Organic agriculture which produce 30% more job per hectare
5. In China, 10 million employment in recycling sector and energy sector will be renewed which is produced about 17 billion USD each year.

## **2.2 Green Accounting**

Green accounting have been known since 1970s. This concept was born caused by there are many forces from nongovernmental institution as well as there are many movement for being efficiency. It means, since those years the concept of accounting is not only consider about economic benefit but also environmental benefit (Ardiami, 2011).

By definition, green accounting is one of the accounting concepts that support green movement in the company or organization by recognizing, quantifying, measuring, and disclosing the contribution of environment to business process. The implementation of green accounting will be modified conventional accounting standard which seems hardly to reflect the environmental contribution. In addition, the core of green accounting is taking environment aspect into consideration factor of economic decision making (Bell & Lehman, 1999; Cairn, 2006) as stated in Arisandi, (n.d.).

In Indonesia, the example of the implementation of green accounting concept is stated in PSAK No. 32 which explains about forestry and mining industry. According to Dessy Arisandi and Diana Friesko (n.d.), the

implementation of green accounting in Indonesia will affect two parties, those are stakeholder and cost.

As the consequences of green accounting issue, another concept of accounting has been developed. This concept is called *Socio Economic Environmental Accounting (SEEC)*. It is another definition of *Triple Bottom Line* concept.

Wiedman and Manfred (2006: 2) in Susilo (2008) stated that “Triple bottom line accounting is a wide-spread concept for firms wishing to realize broader societal and environmental objectives in addition to increase shareholder value. TBI accounts routinely cover social, economic and environmental indicators and enable decision making to quantify trade-offs between different facets of sustainability

In this accounting concept, the calculation of accounts is determined by three perspectives: social perspective, economic perspective, and environmental perspective. In other words, accounting decision is made by engaging cost as well as many parties that have relationship with the company.

### **2.3 Green Company**

According to Emil salim (2002), when company makes decision or creates program, it should consider four main components. These components will be the basic for their activities and it must be implemented well. Those are:

1. Green strategy

2. Green process
3. Green product
4. Green employee

The resultant from those four components will produce “environment, health, and safety” performance, which is accordance with the principle of business, principle of civilization, and principle of citizenship.

### **2.3.1 Green strategy**

Green strategy is strategy that consider their environmental protection, environmental development, health and safety activity, and supported by the attitude of “commitment, involvement, and leadership” in every level of the companies.

One success strategy for implementing green strategy is, deciding to implement and to obey all regulations related to “environment, health, and safety”. Of course, it is not only for national but also for international environment.

Finally, those strategy will be one of competitive advantage for the company in compete the competitors. It will be a strategy to avoid such non-technical barrier to trade like ISO 14001, ecolabel, SMK3, human right issue, etc.

### 2.3.2 Green Process

Company will pollute their environment in their process, from the input, process, and output. They will have negative chain in the production, distribution, or in marketing their product.

However, company with “green process” will always care their operational. It is begun by constructing their stakeholder that will be as the beginning step for decreasing waste and increasing the utilization of natural resources. By implementing green process concept, company will be restrained to reach *cleaner production* for business.

Cleaner production is a strategy to cultivate environment in order to reduce pollutant and to decrease the negative impact from industry process. This environmental cultivating strategy is preventively and integrated to be implemented continuously in the production process and product life cycle process.

Production process means increasing the efficiency using raw material effectively, energy and other resources, and replace or decrease the using of poison. The purpose is to deduct waste or toxicity. While Product means decreasing the impact of production cycle as a whole, starting from purchasing raw material until finishing process after those product used.

The main implementation of cleaner production is preventing, deducting, and leaving formation of the Poisson or other pollutant. This strategy is more

effective than processing waste after it is formed. It is because cleaner production strategy is not only can repair the quality of environment but also reach the economy efficiency.

Cleaner production strategy is one of dominant issues to anticipate the decreasing number of resources and avoid contamination happen too. It offers alternative strategy to combine business goal and environmental interest. By implementing *cleaner production*, society is not only doing efforts for minimizing contamination but also doing efficiency by realizing *refine, reduce, reuse, recycle, recovery, and retrieve energy* principles.

1. Refine

Refine means find out alternative material or process which have environmental hospitalize

2. Reduce

Reducing the number of waste produced. It is done by maximize the process or the operational which has wasteful

3. Reuse

This process is using again waste for different process

4. Recycle

Cycling the waste for the same process

5. Recovery

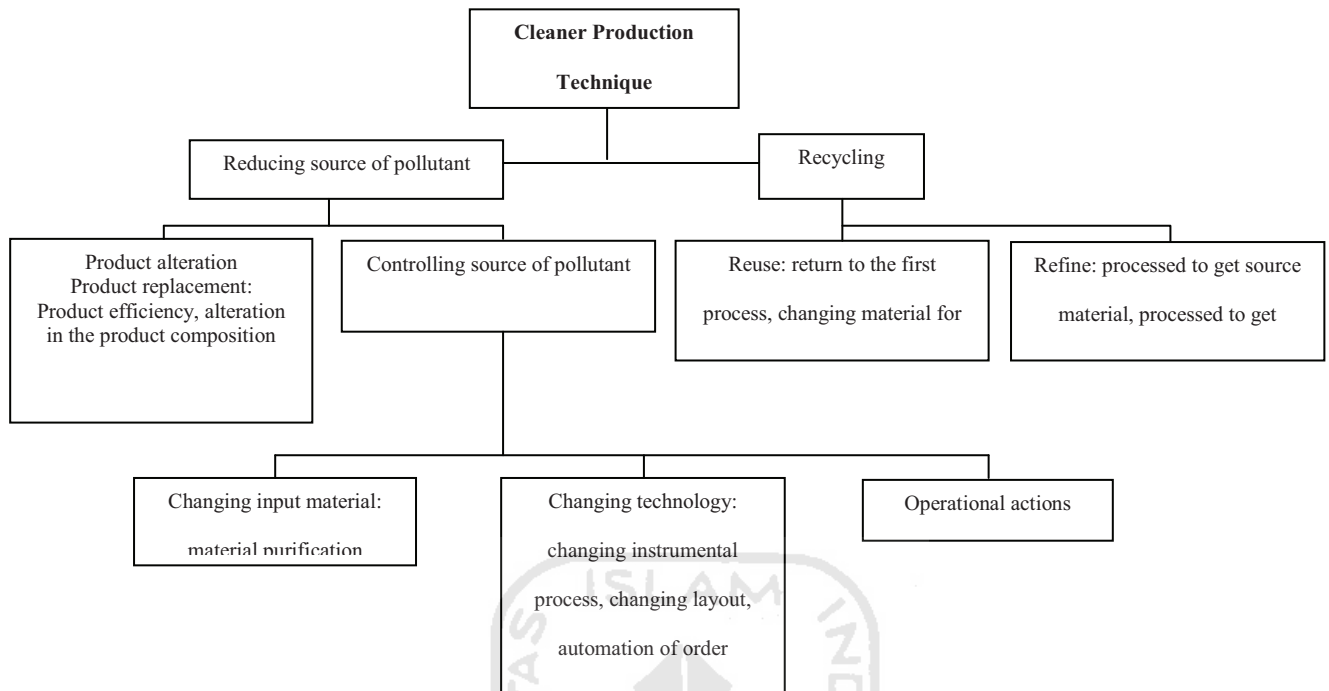
Selecting the important material in the waste to be used again in the same or in the different process

6. Retrieve to energy

Processing the waste to be fuel or to be energy.

The advantages of implementing *cleaner production* in the company are:

1. It can be used as guidelines for reparation product or process
2. Utilizing natural resources will be more effective and efficient
3. Reduce or avoid forming waste material or waste
4. Avoid moving waste material from one environment media to another
5. Reduce risk for human and environment
6. Force to develop technology for reducing waste in its source, and technology for cleanliness and environmental hospitalize product
7. Avoid clean-up cost
8. Increasing competitiveness product in the international market through implementation of newest technology and/or repairing technology
9. Increasing cooperation among government, industry, and society
10. Reducing cost as the alternative solution for pipe management



**Figure 2.3.2**  
**Cleaner Production Techniques**

The basic point in developing *green process* in the company is obeying all regulations applicable in “environment, health, and safety” area wisely, tactically, systematically.

By developing the implementation of *green process* consistently, company will get high operational efficiency, as what stated in the spirit of *zero emission* and *zero accident*.

### 2.3.3 Green Product

Green products means goods and services that are distributed to the consumer by the company are free of environmental pollution. These products have been produced by considering the healthiness and safety, not only for the product itself but also for the employees producing these products. Every employee in their

companies has its own understanding and attitude. They are also forced to have “green mindset” and accordance with norm of health and safety. It will have more result if it is implemented and organized well.

Besides, these products are produced by considering the society and the value of the usefulness. In this context, the term “life cycle analysis” may be essential. Then, to protect the quality of the product, industry sector that take raw material from the nature is required to apply “ecolabel” program. This program guaranteed that all products taken from sustainable natural resources, not the opposite.

This program also will be expanded to other industry sectors. For instance, in Europe market, all children toys should have brand “CE Mark”. This brand is to show if the product is free from toxicity. It is one of the implementation of *green product*. Therefore, that, by implementing green product concept, company also has created new differentiation market for their product.

While on the other side, the concept of green company also stated by Makmun syadullah (2010). He called this concept as *green industry*.

According to him, the concept of Green industry is the term known through “*International conference on green industry in Asia*” in Manila, Philippine, 2009. This international conference was done because of cooperation among *economic and social commission for Asia and the pacific, united nation environment program, and International labor organization*, that joined by 22 countries, including Indonesia.



Rahmad Gobel (2010) which is stated in Makmun Syadullah (2010) stated that there are four main aspects which should be considered in implementing the concept of green productivity, green technology, and green industry:

1. Integrated people-based approach. It means, the implementation of green industry must have support from the employees. They must have good teamwork in implementing the standard operational procedure (SOP) system to support environmental movement. Then, they also must care in avoiding pollutant material and reducing the utilizing CO<sub>2</sub>.
2. Productivity Improvement. This aspect stated that how far the continuity step for reducing product fail can be integrated by environmental criteria
3. Information driven improvement. It means how much the repairing in the production process documentation in management quality system, in reducing the product failure and increasing product quality, can be integrated through recalculated cycle.
4. Environmental compliance. In this aspects the concept of green productivity, green technology, and green industry, are certified.

#### **2.4 Corporate social Responsibility**

According to James Webber *et al* (2005), corporate social responsibility (CSR) means that corporation or firm should be held accountable for any of its actions that affect people, their communities, and their environment. It implies that harm to people and society should be acknowledged and corrected if at all possible. It may require a company to forgo some profits of its social impacts

seriously hurt some of its stakeholders or if its funds can be used to have positive social impact.

It also can be defined as, about businesses and other organizations going beyond the legal obligation to manage the impact they have on the environment society. In particular, this could include how organizations interact with their employees, suppliers, customers, and the communities in which they operate, as well as the extent they attempt to protect the environment (The Institute of directors, UK, 2002) as stated in William B. Werther and David Chandler (2006)

From the definition above, it can be inferred that there are three important points in defining corporate social responsibility.

*First*, corporate social responsibility is about how the companies interact and socialize with their environment. Corporate or firm should accountable or responsible of what they have done for their environment which where the company interact with.

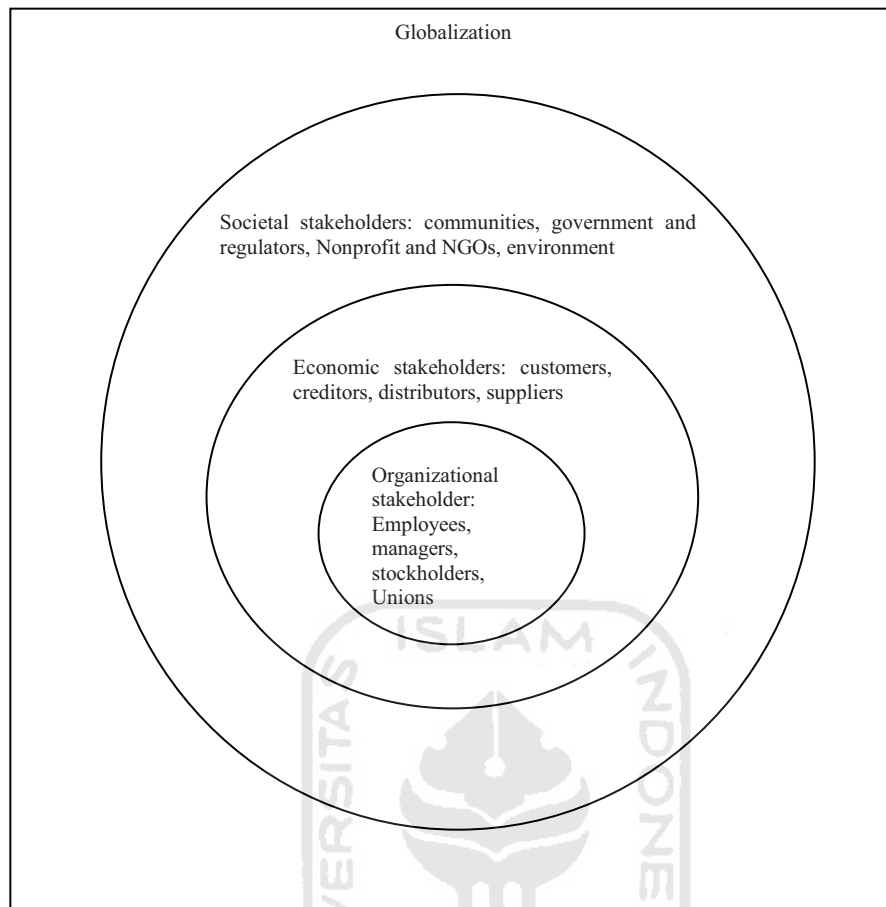
*Second*, the term environment here is defined for any kinds that around the company. It consist of all parties that the company interact to, there are: employees, suppliers, customers, and communities in which the company operate its operation.

*Third*, from the first definition, it can be implied that firm should take some of its fund for having social impact to the stakeholder. It is because company seriously gives negative impact to them.

### 2.4.1 Stakeholder Concepts

According to William B. Werther and David Chandler (2006), a firm has three kinds of stakeholders: organization stakeholder (internal to the firm), economic stakeholder, and social stakeholders. The three kinds of stakeholders are sitting together in one place that is called globalization environment of the company.

Organizational stakeholder consists of employees, managers, stockholders, and unions. While economic stakeholders are: customers, creditors, distributors, and supplier. Then, social stakeholders can be classified into communities, government and nonprofit and NGOs environment. The position of organization stakeholder is in the center of environment of the company. In this position, they also act part of social stakeholder. While economic stakeholders, represent the interface between organization and social stakeholders. They are not organizational stakeholders, but they are part of the society within which the firm operates. In addition, although society stakeholder has not economic relationship with the company, but they are part of the firm's environment.

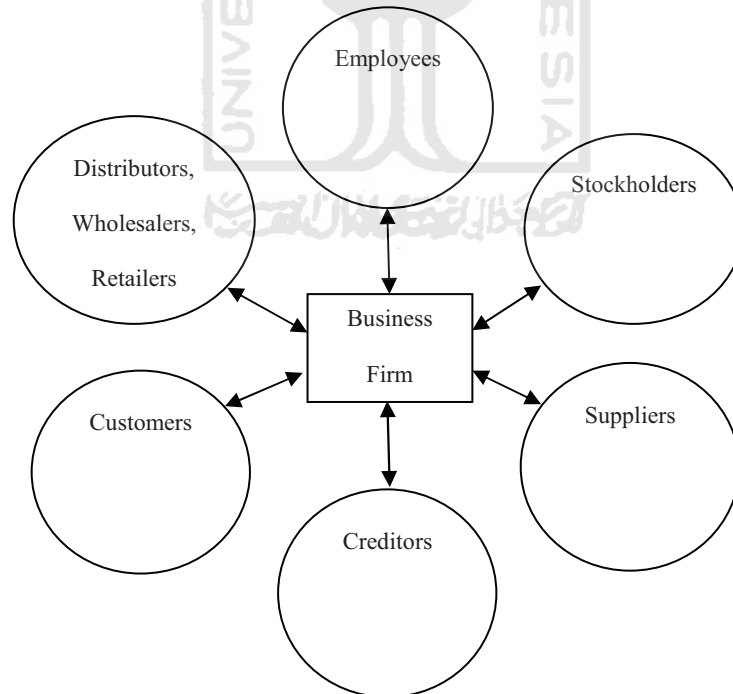


**Figure 2.4.1a**  
**Stakeholders According to William B.W. and David C**

While James Webber *et al* (2005) divide stakeholder in to two: market stakeholders and nonmarket stakeholders.

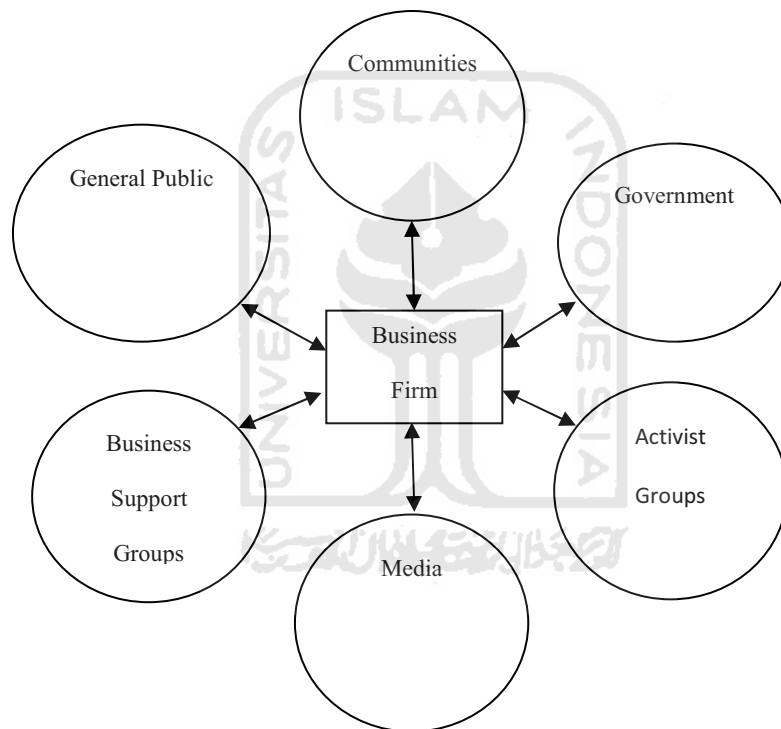
Market stakeholders are those who have relationship in economic transactions with the company as it carries out the primary purposes of providing society with goods and services. There are six kinds of market stakeholders: employees, stockholders, creditors, suppliers, customers, and distributions, wholesalers, and retailers.

The relationship between companies with market stakeholders is based on two-way exchange. Stockholders invest their money in the company, then, one day they will have some return or gain from the company for them. Creditors lend money and collect the interest from the company. Employees contribute their skill and knowledge to the company. Then, as the exchange, they will have wages, benefits, and the opportunity for personal satisfaction and professional development. Suppliers provide raw materials, energy, services, and other inputs for the company; and wholesalers, distributors, and retailers engage in market transactions with the company. Finally, all business needs customers who are willing to buy their product. Customers also have beneficial by provided their needed by the product of the company. Figure below shows those relationships.



**Figure 2.4.1b**  
**Relationship between Business Firm and Market Stakeholders**

While nonmarket stakeholders are people and groups who -without they engage in direct economic exchange with the firm- are affected or can affect its actions. It can also be called as secondary stakeholders, which include the community, various level of government, activist groups and nongovernmental organizations, the media, business support groups, and general public. In this context, the natural environment is included as activist. Figure below shows that relationship.



**Figure 2.4.1c**  
**Relationship between Business Firm and Nonmarket Stakeholder**

## 2.5 Environmental Performance

Environmental performance is an effort done by the company for realizing operational performance of the company based on environmental issues (Lindrianasari, 2007). In their operational activities company does some programs that have awareness in caring their environment for sustainable development.

According to ISO 14001, environmental performance is the result that can be measured from the environmental management system, engaging with several aspects as the measuring control.

From definition above, it can be inferred that environmental performance is the effort of company in implementing their operational system that can be measured by several aspects. In Indonesia, since 1997 the measurement system have been developed and realized by ministry of environment. It is known by PROPER (Program Peringkat Kinerja Perusahaan Dalam Pengelolaan Lingkungan Hidup). Every year many companies joined PROPER to be measured their environmental performance.

While some measuring aspects required by environmental ministry are graded with colors. Based on PROPER report year 2011-2012, colors used for grading and their measurements are divided into five grades:

1. Gold, is given to responsible person in doing business/ program that consistently disclose their environmental Excellency in production process or services, doing business ethically and responsibly toward society

2. Green, is given to responsible person in doing business / program that have been operated environment management system more than required standard (beyond compliance) through doing environmental management system, utilizing resources efficiently with 4R (Reduce, Reuse, Recycle, Recovery), and doing corporate social responsibility well
3. Blue, is given to responsible person in doing business / program have been operated environment management system in accordance with required standard
4. Red, is given to responsible person in doing business / program have been operated environment management system not accordance with required standard
5. Black, is given to responsible person in doing business / program which intentionally doing activity or dereliction affected environmental pollution or environmental damage, and break any regulations or do not realize administration sanction.

In this research, the measurement for environmental performance will be given by number from 1 to 5 based on grading PROPER colors. Golden = 5, green = 4, blue = 3, Red = 2, and black = 1.

## **2.6 Financial Performance**

Financial performance of the company is measured by the number exist in their financial statement. They will show the figure of financial performance of



the company. The measurement of financial performance will be calculated by many ratios. Here are ratios classified by Sudaryanto (2011) in his research:

1. Liquidity Ratios

Liquidity ratio is ratio used by the company to show their performance in fulfilling short-term obligation

2. Activity Ratio

Activity ratio is ratio shows how optimal natural resources used, then, by comparing activity ratio and industry standard will be known efficiency level of the company in their industry

3. Profitability Ratio

Profitability ratio can measure how far the ability of company in gaining profit, in the relationship with sales, assets, as well as profit for owners equity. Profitability ratio is divided in to six: gross profit margin, net profit margin, operating return on asset, return on assets, return on equity, and operating ratio (OR).

4. Solvability Ratio

Financial leverage shows the proportion or how much the use of obligation for financing their investment. Company that is not having leverage means using their owner equity as much as 100%.

5. Market Ratio

This ratio show important company information disclosed. The measurement of this ratio is by stock price today toward some accounting information results.

In this study, researcher will use Return on Equity as the measurement for financial performance of the company.

## **2.7 Firm Size**

Firm size used by many researchers as variable affecting many depended variables. The measurement of firm size also is differing from one researcher to another.

Blomstrom and Lipsey (2001) measured firm size by total assets; property, plan, and equipment; sales. While Hirschey and Spencer (1992) measured firm size by the level of stock return. Rahayuningsih (2009) measured firm size by total asset, total sales, and number of employees. The measurement of firm size also can be classified from total sales, total asset, and average of total sales. (Ferry and Jones, 1979) as stated in Ibrahim (2008).

In this research, researcher will use total assets as the measurement of firm size.

## **2.8 Previous Studies**

Many researchers have studied the same topic before. The result of their finding will be as theoretical bases in doing this research. Following are researches have been done by many researchers regarding environmental performance, financial performance, and firm size:

**Table 2.8**  
**Previous Studies**

<b>Researchers</b>	<b>Variables</b>	<b>Findings</b>
Lucia Spica and Dwi Wijayanto (Accounting Conference Depok, 7-9 November 2007)	Environmental performance, environmental disclosure, economic performance, Predetermined variables: unexpected earnings, pre disclosure environment, growth opportunity, profit margin, environmental concern, public visibility	<ol style="list-style-type: none"> <li>1. Environmental performance, environmental disclosure and predetermined variables are not significant variables determining economic performance</li> <li>2. Environmental disclosure is significant variables determining economic performance</li> </ol>
Lindrianasari (JAAI volume 11, No.2, December 2007)	Environmental performance, environmental disclosure, economic performance	<ol style="list-style-type: none"> <li>1. Environmental performance is positively and significantly with environmental disclosure and also economic performance</li> <li>2. Found insufficiently statistical significance to accept H<sub>2</sub> and H<sub>3</sub></li> </ol>
Ari Retno Handayani (Thesis bachelor degree, FE UNDIP, 2010)	Environmental performance, environmental disclosure, economic performance	Environmental performance is not significantly effects toward environmental disclosure and economic performance
Bala Ramasamy, Daryl Ong, and Marthew C.H. Yeung (Asian academy of management journal of accounting and finance volume 1, 2005)	ROA, Age, Capital Intensity, Growth, leverage, size, skill, ownership, price	<ol style="list-style-type: none"> <li>1. Firm size has a negative correlation with profitability</li> <li>2. Privately owned firm perform better than state owned firm</li> </ol>

(n.d.)	Corporate social performance (CSP), Corporate financial performance (CFP)	<ol style="list-style-type: none"> <li>1. When using carbon emissions as an output based measurement, CSP pays off</li> <li>2. When using carbon management as process based management, find negative correlation between CSP and CFP</li> </ol>
Eiffeliena Nuraini F (Bachelor degree thesis FE UNDIP, 2010)	Environmental performance, environmental disclosure, economic performance	<ol style="list-style-type: none"> <li>1. Environmental performance does not affect economic performance</li> <li>2. Environmental disclosure is not significantly influences economic performance</li> </ol>
Ignatius Bondan Suratno, Darsono, Siti Muthmainah (Simposium Nasional Akuntansi IX, Padang, August 23-26 2009)	Environmental performance, environmental disclosure, economic performance	<ol style="list-style-type: none"> <li>1. Environmental performance has positive and significant relationship toward environmental disclosure</li> <li>2. Environmental performance has positive and significant relationship toward economic performance</li> </ol>
Susi Sarumpeat (n.d.)	Environmental performance, financial performance Control variables: total sales, industry sector, stock exchange listing, ISO 14001	<ol style="list-style-type: none"> <li>1. There is not significant relationship between financial performance and firm performance</li> <li>2. Firm size, exchange listing, and ISO 14001 have significantly relationship toward environmental performance</li> <li>3. PROPER grading is valid measurement for measuring environmental performance. It is caused its relevancy with international environment certification, ISO 14001</li> </ol>
Herman darwis (Journal Keuangan dan Perbankan volume 13, No. 1, January 2009)	Firm size, profitability, financial leverage, CSR disclosure	<ol style="list-style-type: none"> <li>1. Company size significantly and positively influenced CSR disclosure</li> <li>2. Company's profitability has negatively and significant association</li> <li>3. Financial leverage has no influence toward CSR disclosure</li> </ol>

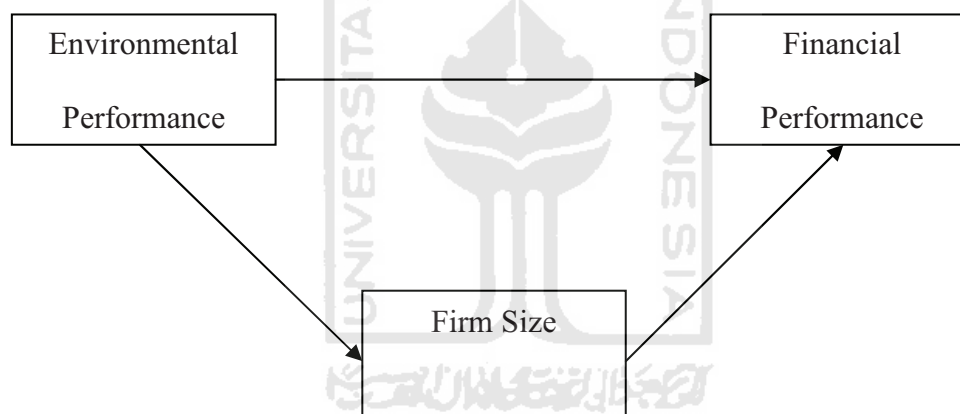
Despina Galani, Efthymios Graves, Antonios stavropoulos (International Conference on applied economics, 2011)	Firm size, profitability, quotation on the stock market, environmental disclosure	Firm size is significantly determined the level of environmental disclosure
Erol Munir (Journal of Management research volume 11, No. 2, August 2011, pp. 87-98)	Firm size, capital structure choice, and financial performance	<ol style="list-style-type: none"> <li>1. Present some robust evidence suggesting that the effect of firm size on financial performance and sustainability may differ according to the way how size expansion is financed</li> <li>2. Any asset expansion financed with debt has proven to increase risk exposure especially during economic down-turns, which favors the static trade of theory offer others</li> </ol>
Thorsten Beck, Ash Demirgüç, and Vojislav Maksimovic (n.d.,2004)	Financial, legal institution, firm size	<ol style="list-style-type: none"> <li>1. There is positive relation between the level of development of country's firm system and firm size</li> <li>2. Significant relation between the characteristic of a country's legal system and firm size</li> <li>3. Indicate that firms in industries with a higher need for external financing are larger in countries with none develop firm institutions</li> </ol>
Kashif Hamid, Rana shahid imdad Al Kash, Muhammad Asghar, and Sajjad ahmad (African journal of business management volume 5 (15) pp. 6342-6349, august	Corporate social performance, financial performance, and market value behavior	Corporate social performance has no effect on financial performance (CFP) under slack resources theory and good management theory

4, 2011)		
Benny dwi saputra (Bachelor degree thesis FE Uiversitas Sumatera Utara, 2007)	Environmental performance, environmental disclosure, and economic performance	<ol style="list-style-type: none"> <li>1. The impact of environmental performance to economic performance was insignificantly</li> <li>2. The impact of environmental disclosure to economic performance was positively significant</li> </ol>
Feb tri Wijayanti, Sutaryo, Muhammad Agung Prabowo (SNA XIV Aceh, July 21-22, 2011)	Corporate social responsibility, financial performance	Corporate social responsibility has no effect on financial performance for all ratios
Sulaiman A, Al Tuwaiji, Theodore C. cristenan, K.E. Huges (American Accounting Association, 2000)	Environmental disclosure, environmental performance, economic performance	Good environmental performance is significantly associated with good economic performance
Ram Kumar kakani & Mayank kaul (XLRI jampshedpur, 2002)	Value creation, profitability, profitability components, growth, risk, firm size, marketing expenditure, solvency position, age, net exports, leverage, international diversification, business group affiliate, minority stake, domestic institutions stake	Firm size was the most important factor influencing its financial performance
Sudaryanto (bachelor degree thesis FE UNDIP, 2011)	Environmental performance, financial performance, corporate social responsibility disclosure as an intervening variable	<ol style="list-style-type: none"> <li>1. Environmental performance significantly affect corporate social responsibility disclosure</li> <li>2. Environmental performance does not significantly affect the company financial performance</li> <li>3. Corporate social responsibility</li> </ol>

		<p>disclosure significant impact on the company's financial performance</p> <p>4. Statistically the environment performance of an indirect affect on the financial performance of companies through the corporate social responsibility</p>
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## 2.9 Theoretical Framework

To show the theoretical framework of this research, figure bellow will be as the model.



**Figure 2.9**  
**Theoretical Framework**

## 2.10 Relationship between Environmental Performance and Financial Performance

In previous researches linked to the relationship between environmental performance and financial performance, found a wide range of differences. Some found that their relationship has a positive and significant relationship; however, some others found that there is no relationship. As the consequences, there are

many researchers concern to this topic in their researches, to study the ambiguities results.

Bondan *et al* (2006) found environmental performance has positive and significant relationship toward economic performance. From his research, he found F result as 3,593 with  $p = 0.007$ . Because the result of p value is  $< 0.05$ , therefore it can be concluded that all independent variables used in his research (environmental performance, unexpected earning, growth, opportunities, and profit margin) have significant affect toward environmental performance. The result of this research is not supported the theory stated that insignificant relationship between environmental performance and economic performance consistent with traditional economic thought which figure out this relationship as tradeoff between company's profitability and its act toward environment. Lindrianasari (2007) also found that positive and significant relationship between environmental performance and financial performance. She found the positive relation for 27,9%. From five variables used to measure financial performance which consist of Debt to Equity Ratio, Export, Ownership, Margin, and Age of the company, she found positive relation for all of them. Her research also stated that firms that have excellent environmental performance will have excellent financial performance too.

Almilia and Wijayanto (2007) found different result with Bondan *et al* (2006) and Lindrianasari (2007). On their research, they found insignificant relationship between environmental performance and economic performance. For example, in 2004 and 2005 companies with green point in PROPER have negative



in economic performance. However, companies with black point in PROPER have positive in economic performance. With this result the researchers presume that the condition between Indonesia and other countries is different. Until 1992 the form of efficiency in Indonesian Stock Exchange had not been strength. This is still happen until the research taken. Therefore, although Environmental Ministries (Kementerian Lingkungan Hidup) announce the information about grading the company based on their awareness to the environment, the stakeholder still not shows their responds. It is consistent with the results found by Saputra (2007), Handayani (2010), Eiffeliena (2010) Sarumpeat (n.d.), Wijayanti (2011), and Sudaryanto (2011).

Although the research had been done by those researchers, it still has many limitations. Amilia and Wijayanto (2007) suggest many other variables used by the researchers to test the economic performance, such as financial ratio, company size, and the investment category which the company apply PMDN (Penanaman Modal Dalam Negeri) or PMA (Penanaman Modal Asing)

Actually, both Lindrianasari (2007) and Bondan *et al* (2006) are consistent with the result found by Al Tuwajjri (2000). He studied 198 firms listed in *Wall Street Journal* Index, and found significantly positive relationship. His finding result suggested that environmental pollution will force the firm to be incompletely, inefficiently, or ineffectively.

Al-Tuwajjri *et al* (2004) found significantly positive relationship between environmental performance and economic performance. By implementing good

environmental performance, like implementing green company concept which consists of green strategy, green process, green product, and green employees, company will have competitive advantage in compete the competitors. Moreover, green process will reduce cost because it will manage the process effectively and efficiently. Green product will also create new differentiation market for their product (Salim, 2002)

In other words, it can be stated that company with good environmental performance will attract their stakeholder, especially economic stakeholder like employees, stockholders, creditors, suppliers, customers, wholesalers and retailers. It is because they will have differentiation for their business and they can reduce much cost in their production. The impact is the goods and services price produced will be lower than the others. Therefore, stockholder will be sympathy to invest their money in the company because of their prospective business. Customer also will order the goods or services from the company because of lower price and their good interaction with them. Customers will think that the company aware of them and part of their life. As the consequence, it will affect the financial performance of the company.

Therefore, from those explanation it can be inferred this hypothesis:

*H<sub>1</sub> : There is positive relationship between environmental performance and financial performance*

## 2.11 Relationship between Environmental Performance and Firm Size

On the previous research, Darwis (2009) found that firm size significantly and positively influenced environmental disclosure. It shows that the bigger a firm, the higher their disclosure level. His finding is supported by Galani (2011). He studies about some variables: firm size, profitability, quotation on the stock market, and environmental disclosure, only firm size that has significantly positive relationship with environmental performance.

On the other side, Ardiami (2011) found that there is positive relationship between environmental disclosure and environmental performance. Her research result is in line with the result found by Spica and Wijayanto (2007), Bondan *et al* (2006), and Sudaryanto (2011). However, the lack of the study done by Ardiami (2011) is not shown all manufacturing companies in Indonesia. It is because the sample of the research is only seven manufacturing companies listed in Indonesia Stock Exchange. Besides that, the data used in the research has not completed yet.

Actually, the relationship between environmental performance and firm size is consistent with the concept of stakeholder. James Webber *et al* (2005) stated that the relationship between company and the stakeholder is two-way exchange relationship, where both of them have beneficial. Stockholder, for instance, invest their money in the company, then one day they will have some return or gain from the company for them. Creditors also do the same thing. They lend money and collect the interest from the company. Furthermore, William B. Werther and David Chandler (2006), divide stakeholder into three groups,

organization stakeholder (employees, managers, stockholders, unions), economic stakeholder (customers, creditors, distributors, suppliers), and social stakeholder (communities, government and regulators, nonprofit and NGOs, environment).

From the theory of stakeholder, it can be inferred that company has close relationship with the stakeholder. In other words, the operational activity of the company is really depending on how the stakeholder interacts with them. If the stakeholder get much benefit from the company, they will give more to them. However, if they think that the company has poor in act, they tend to be not loyal. On the other side, Darwis (2009) has proven that firm size is really influenced by the environmental disclosure. It is happen because stakeholder will get more sympathy from what have the company done. It also can effect to develop good relationship between stakeholder and company. Company that has good relationship with their stakeholder and with their environment will also have good performance in their financial (Al Tuwaijri *et al*, 2004). As the consequence, they will expand their business to be more professional and more beneficial both for organizational stakeholder, economic stakeholder, and social stakeholder, which affect the size of the company. Therefore, there is relationship between environmental performance and the size of the company.

*H<sub>2</sub> : There is positive relationship between environmental performance and firm size*

## 2.12 Relationship between Firm Size and Financial performance

Erol Muzir (2011) when testing 114 firms in Istanbul, Turkey, found some evidences that the effect of firm size on financial performance may differ according to the way how size expansion is financed. It means there is relative result about the relationship between firm size and financial performance. Any asset expansion financed with debt has proven to increase risk exposure especially during economic downturns, which favor over Tradeoff theory.

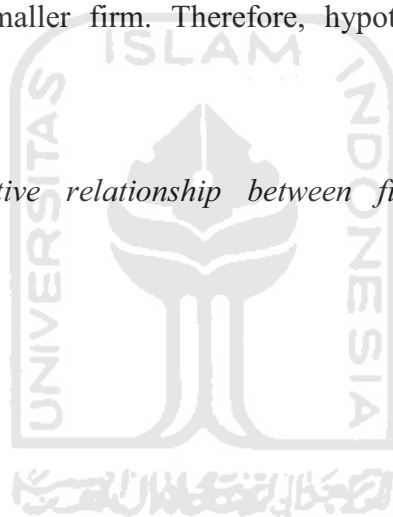
The different result about the relationship between firm size and financial performance was found by Kakani and Kaul (2002). On their research, they found significant relationship between firm size and financial performance. It is because the large companies will be as the opportunity to venture cheaper sources of capital rather than other smaller companies on the same sectors. Firm with large size also will have the opportunity to do cooperative with other foreign businesspersons or investors. They can attract many foreign investors to invest their money in the company. As the consequence, the company with larger size will have positive financial performance than the smaller one. It is in line with the result found by Beck *et al* (2004).

Although Erol Muzir (2011) found that there is relative relationship between firm size and financial performance, the research is conducted in Turkey. It is the lack of this research. According to Spica and Wijayanto (2007) the market in Indonesia is different with other countries. In consequence, it has not been

proven that the relationship between firm size and financial performance in Indonesia is as same as what have been found by previous researchers.

Inferred from Emil Salim (2002), firm size will be a competitive advantage for the firm. Larger firm size will have more benefit for a company than smaller one. It is because larger firm size will be more efficient in their operation than smaller firm. They can manipulate raw material, as well as direct labor cost. In purchasing supply for instance, larger firm with larger indicate to have lower cost than smaller firm. Therefore, hypothesis proposed for this relationship is:

*H<sub>3</sub> : There is positive relationship between firm size and financial performance*



## **CHAPTER III**

### **RESEARCH METHOD**

#### **3.1 Research Variables**

In this research, there are two variables. They are, independent variable and dependent variable.

1. Independent variable : Environmental performance
2. Dependent variable : Financial Performance and Firm size

#### **3.2 Research Subject**

##### **3.2.1 Environmental Performance**

In Indonesia, environmental performance is measured by program established by Environmental Ministry which is called by PROPER. It will grade firms from the best to the worst rating signed by colors: gold, green, blue, red, and black.

The measurement for those grading will classify as:

1. Score 5 for gold,

Score 5 is given to responsible person in doing business/ program that consistently disclose their environmental Excellency in production process or services, doing business ethically and responsibly toward society

2. Score 4 for green,

Score 4 is given to responsible person in doing business / program that have been operated environment management system more than required standard (beyond compliance) through doing environmental management system, utilizing resources efficiently with 4R (Reduce, Reuse, Recycle, Recovery), and doing corporate social responsibility well

3. Score 3 for blue,

Score 3 is given to responsible person in doing business / program that have been operated environment management system in accordance with required standard

4. Score 2 for red,

Score 2 is given to responsible person in doing business / program that have been operated environment management system not accordance with required standard

5. Score 1 for black,

Score 1 is given to responsible person in doing business / program which intentionally doing activity or dereliction affected environmental pollution or environmental damage, and break any regulations or do not realize administration sanction.

### 3.2.2 Firm Size

There are many researchers doing some researches about firm size by using many variables. Such as total assets, total sales, total employees, and many others.



In this research, researcher will measure company size by total assets, which formulized as:

SIZE = Log of total Assets

### 3.2.3 Financial Performance

Financial performance of the company can be seen from its financial statement. Specifically, it can be measured by several ratios. In this research, financial performance will be measured by ROE (Return on Equity Ratio), which formulized as:

$$\begin{aligned} \text{Return on Equity} &= \frac{\text{Net Income}}{\text{Shareholder's equity}} \\ &= \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} = \frac{\text{Assets}}{\text{Shareholder's Equity}} \end{aligned}$$

### 3.3 Research Setting

The population of this research is companies that are listed in Indonesia Stock Exchange (IDX). While the sample is chosen by purposive sampling technique, from companies disclose their financial statement in IDX joining PROPER from 2006 to 2010. Companies chosen to be the research object are those which have criteria:

1. Companies joining PROPER since 2006 until 2010
2. Companies disclose their financial statement for five years, from 2006 until 2010
3. Companies data needed are available

### 3.4 Type and Data Source

The type of data used in this research is secondary data, gain by third parties and published by this party. Data for Environmental Performance is gain from PROPER report, year 2006-2010 that is published by environmental ministry. The data for financial performance and firm size is gain from financial statement of manufacturing companies published in Indonesia Stock Exchange.

Therefore, data used in this research are gained from:

1. Data related to the environmental performance is gained from PROPER published by environmental ministry in the website:  
[www.menlh.go.id](http://www.menlh.go.id).
2. Other data are taken from Indonesia Stock Exchange

### 3.5 Operational Hypotheses

Based on the problem statement and the review of the related literature, the hypotheses that are proposed in this research are:

$H_{01}: \alpha_1 \leq 0$  : *There is no positive relationship between environmental performance and financial performance*

$H_1: \alpha_1 > 0$  : *There is positive relationship between environmental performance and financial performance*

$H_{02}: \beta_1 \leq 0$  : *There is no positive relationship between environmental performance and firm size*

$H_2 : \beta_1 > 0$  : There is positive relationship between environmental performance and firm size

$H_{03} : \alpha_2 \leq 0$  : There is no positive relationship between firm size and financial performance

$H_3 : \alpha_2 > 0$  : There is positive relationship between firm size and financial performance

### 3.6 Technique of Data Analysis

In this research, researcher test the normality of the data to know whether it is normal distributed or not. If the data is normal distributed, the tool of analysis will use parametric statistic. However, non-parametric statistic will be applied if data is not normal distributed.

This research uses linear regression to test independent variable and dependent variable. While formula used for those three hypotheses are:

$$FiP = \alpha_0 + \alpha_1 EnP_i + \alpha_2 FiS_i + \varepsilon_i \dots\dots\dots 3.1$$

$$FiS = \beta_0 + \beta_1 EnP_i + \varepsilon_i \dots\dots\dots 3.2$$

Where,

FiP : Financial Performance

EnP : Environmental Performance

FiS : Firm Size

i : The amount of sample company

$\alpha_0, \beta_0$  : Intercept

$\alpha_1, \beta_1 \dots$  : Regression Coefficient

### **3.6.1 Descriptive Statistic**

According to Ghazali (2009), descriptive statistic will describe the data by some approaches, such as mean, standard deviation, maximum variant, minimum variant, sum, range, kurtosis, and skewness.

### **3.6.2 Validity Test**

#### **3.6.2.1 Determinant Coefficient ( $R^2$ )**

The coefficient of determination ( $R^2$ ) aims to measure how far the ability of models to explain variation in the dependent variable. The value of determination coefficient is zero and one. Small value of  $R^2$  means the ability of independent variables in explaining variations in the dependent variable is very limited. Value near one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable. If the adjusted  $R^2$  value is negative, then the adjusted  $R^2$  value is considered equal to zero.

### **3.6.3 Testing The Hypotheses**

#### **3.6.3.1 T - Test**

Hypothesis testing performed using regression analysis is to determine the effect of independent variables on an individual basis. By using regression analysis, it can measure the strength of the relationship between two variables or more. Besides that, it also shows the direction of the relationship between the dependent variable with independent variables.

With t test it can determine the existence of significant relationship between the X (Independent variable) and Y (dependent variable) by testing whether the populations slope is equal to 0. If this hypothesis is not rejected, it would conclude that there is evidence of linear relationship. The null and alternative hypotheses are stated as follows:

The test statistic to test formula 3.1 and 3.2 is:

$$t = \frac{b_1 - \beta_1}{S_{b_1}}$$

Where,

$b_1$  : Regression slope coefficient

$\beta_1$  : Hypothesized slope

$S_{b_1}$  : Standard error of slope

Test conducted by comparing calculated t value of each coefficient with a t table, with a significance level of 5%. If t is calculated  $< t$  table, so  $H_0$  is received. This means that independent variables had no effect on the dependent variable. Whereas if t count is  $> t$  table, so  $H_0$  is rejected and  $H_a$  is accepted. This means that the independent variable affects the dependent variable.

The significance level used in this study is 5%. If the significance level is  $> 0.05$  then the hypothesis is rejected. If the level of significance is  $< 0.05$  then the hypothesis is accepted.

## **CHAPTER IV**

### **RESEARCH FINDINGS AND DISCUSSION**

#### **4.1 Research Description**

In this research, there are two variables. They are, independent variable and dependent variable. The Independent variable is environmental performance, while the dependent variables are firm size and financial performance. For the sample of the data, environmental performance data are taken from the report of PROPER (Program Penilaian Kinerja Perusahaan Dalam Pengelolaan Lingkungan Hidup) established by Environmental Ministry from year 2006 until year 2010. Meanwhile, firm size and financial performance data are taken from Indonesian Stock Exchange (IDX).

Sample of the data for this research are taken by using purposive sampling technique, from manufacturing companies listed in Indonesian Stock Exchange (IDX) which joined PROPER (Program Penilaian kinerja Perusahaan Dalam Pengelolaan Lingkungan Hidup) consistently from year 2006 until the year 2010. The summary of the process for taking the sample is as follows:

**Table 4.1**  
**Sampling Technique**

	<b>Amount</b>
Manufacturing companies listed in IDX	145
Manufacturing companies listed in IDX do not joined PROPER	(125)
Manufacturing companies listed in IDX and Joined PROPER	20
Sample	20

Source: Secondary Data

From the table above, it can be seen that there are 20 manufacturing companies taken as the sample of this research, which means that there will be 100 samples of data. The data is categorized as normal data, because the amount of data sample is  $> 35$ . This amount is obtained after selecting manufacturing companies that match with the criteria. Previously, there were 21 manufacturing companies taken. However, PT Pabrik Kertas Tjiwi Kimia Tbk did not join PROPER consistently every year. Consequently, 20 manufacturing companies with 100 samples of data are taken. The 20 manufacturing companies taken as sample for this research are presented in Appendix 1.

## 4.2 Validity Test

Validity test is done to see the determination coefficient in the research model. It will test the ability of independent variable in explaining the variance of the dependent variable. Here is determination coefficient ( $R^2$ ) in the research model.

### 4.2.1 Determinant Coefficient ( $R^2$ )

The coefficient of determination ( $R^2$ ) aims to measure the ability of models to explain variation in the dependent variable. The value of determination coefficient is zero and one. Small value of  $R^2$  means the ability of independent variables in explaining variations in the dependent variable is very limited. The value that almost reaches the score of one indicates that the independent variables provide almost all the information needed to predict the variation of the dependent variable. According to Gujarati (2003) in Handayani (2010), if the adjusted  $R^2$  value is negative, then the adjusted  $R^2$  value is considered equal to zero. The result of  $R^2$  can be seen on the table below:

**Table 4.2.1**  
**Determinant Coefficient**

	Estimate
FIS	.102
FIP	.146

From the table above it can be seen that the result of R square for equation 3.1 is 0.146. It means 14.6% financial performance variable can be explained by environmental performance and firm size. Whereas the remaining 85.4% can explain financial performance excluded from the model.



The table also shows that the result of R square for equation 3.2 is 0.102. It means 10.2% firm size can be explained by environmental performance. There are still 89.8% other factors that can explain firm size excluded of the model.

### 4.3 Hypothesis Testing and Discussion

The hypotheses are tested by using linear regression analysis, to examine the relationship between environmental performance, firm size, and financial performance.

The summary of regression test using software Amos 16.0 is:

**Table 4.3a**  
**Standardized Regression Weight**

	Estimate
FIS <--- ENP	.320
FIP <--- ENP	.304
FIP <--- FIS	-.348

**Table 4.3b**  
**Intercepts**

	Estimate	S.E.	C.R.	P	Label
FIS	11.464	.262	43.705	***	par_5
FIP	3.030	.736	4.117	***	par_4

The tests in the two tables above can be formulated as follows:

$$FiP = 3.030 + 0.304EnP - 0.348FiS \dots\dots\dots 4.1$$

$$FiS = 11.464 + 0.320EnP \dots\dots\dots 4.2$$

#### 4.4 Testing Hypotheses

**Table 4.4a**  
**Regression Weight**

	Estimate	S.E.	C.R.	P	Label
FIS <--- ENP	.291	.087	3.360	***	par_3
FIP <--- ENP	.177	.057	3.098	.002	par_1
FIP <--- FIS	-.222	.063	-3.554	***	par_2

**Table 4.4b**  
**Standardized Total Effect**

	ENP	FIS
FIS	.320	.000
FIP	.192	-.348

**Table 4.4c**  
**Standardized Direct Effect**

	ENP	FIS
FIS	.320	.000
FIP	.304	-.348

**Table 4.4d**  
**Standardized Indirect Effect**

	ENP	FIS
FIS	.000	.000
FIP	-.111	.000

The output of the analysis software Amos 16.0 shows that there is direct effect from environmental performance toward financial performance, environmental performance toward firm size, and firm size toward financial performance. Besides, it also shows the indirect effect from environmental performance toward firm size, then toward financial performance.

In the table 4.4c, standardized direct effect, it can be seen that the direct effect of environmental performance toward financial performance is 0.304, the

direct effect of environmental performance toward firm size is 0.320, and the direct effect of firm size toward financial performance is -0.348. While the indirect effect of environmental performance toward financial performance is -0.111.

In conclusion, the total effect of environmental performance toward financial performance is 0.192, environmental performance toward firm size is 0.320, and firm size toward financial performance is -0.348.

#### 4.4.1 Testing $H_1$

$H_{01}: \alpha_1 \leq 0$  : There is no positive relationship between environmental performance and financial performance

$H_1: \alpha_1 > 0$  : There is positive relationship between environmental performance and financial performance

According to the data shown in the table 4.4a, the significance of the relationship between environmental performance and financial performance is 0.002 with the coefficient of environmental performance 0.304. It is lower than level of significance which is determined by 0.05. It means that  $H_1$  is stated as “There is positive relationship between environmental performance and financial performance” is accepted with significance at the level of 0.002. However,  $H_{01}$  that stated as “There is no positive relationship between environmental performance and financial performance” is rejected. From the finding, it can be explained that the better the awareness of companies to their environment, the better their financial performance.

This finding happen because companies with good environmental performance, like by implementing green company concept with consist of green strategies, green process, green product, and green employees, will have competitive advantages to compete their competitors. More specifically, by implementing green process, companies may reduce their cost. By implementing green process, companies can increase the efficiency.

From the stakeholder point of view, companies with good environmental performance may attract the stakeholder, especially economic stakeholder that consist of employees, stockholders, creditors, suppliers, customers, wholesalers, and retailers. Efficient companies will attract stockholder to invest their money because of their prospective business. Customer will also order the goods or services from the company. It happens because they will get lower price than any other companies. Besides, companies with good environmental performance have good interaction with the costumer, then, the costumer will be loyal to the company.

The finding is consistent with the finding of the research done by Al Tuwajiri *et al* (2004) and Bondan *et al* (2006). They found that environmental performance have positive and significant relationship with financial performance. Lindrianasari (2007) also found that companies with excellent environmental performance will have excellent in financial performance too.

#### 4.4.2 Testing H<sub>2</sub>

H<sub>02</sub>:  $\beta_1 \leq 0$  : There is no positive relationship between environmental performance and firm size

H<sub>2</sub>:  $\beta_1 > 0$  : There is positive relationship between environmental performance and firm size

According to the data shown in the table 4.4a, the result for significance is 0.001 with the coefficient of environment performance 0.320. It is lower than level of significance which is determined by 0.05. It means H<sub>2</sub> which stated as “There is positive relationship between environmental performance and firm size” is accepted with significance at the level of 0.001. However, H<sub>02</sub> which stated as “There is no positive relationship between environmental performance and firm size” is rejected. In other words, it can explain how companies with excellent environmental performance affect the size of the company.

The finding is in line with the theory of stakeholder. This theory stated that companies have close relationship with the stakeholder. Meanwhile, the operational activity of the company is depending on how the stakeholder interacts with them. If the stakeholders get much benefit from the companies, they will give more feedback for the companies. However, if they think that the companies are poor in the performance, the stakeholders will tend to be not loyal. On the other side, the firm size is really influenced by the environmental disclosure. It happens because stakeholder will get more sympathy from what the company has done. It

can also affect to develop good relationship between stakeholders and companies. Companies that have good relationship with stakeholder and environmental performance will also have performance in their financial.

As the consequence, they will expand their business to be more professional and more beneficial not only for organizational and, economic stakeholder, but also for social stakeholder. The expansion of the companies will also affect the size of the companies.

Actually, not many researchers studied about the relationship between environmental performance and firm size. However, Darwis (2009) found that there is relationship between firm size and environmental disclosure. He found that there is significant and positively relationship between companies size and environmental disclosure.

#### 4.4.3 Testing H<sub>3</sub>

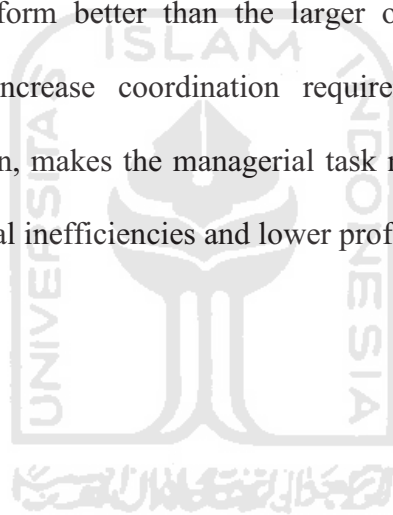
H<sub>03</sub> :  $\alpha_2 \leq 0$  : There is no positive relationship between firm size and financial performance

H<sub>3</sub> :  $\alpha_2 > 0$  : There is positive relationship between firm size and financial performance

According to the data shown in the table 4.4a, the result for significance is 0.001 with the coefficient of firm size -0.348. It is lower than level of significance which is determined by 0.05. It means H<sub>3</sub> which stated as “There is positive relationship between firm size and financial performance” is rejected with significance at 0.001 and firm size coefficient at -0.348. However, H<sub>03</sub> which

stated as “There is no positive relationship between firm size and financial performance” is accepted.

This finding is not consistent with the research done by Kakani and Kaul (2002), which found significant positive relationship between firm size and financial performance. However, the result is consistent with the finding of Ramasamy *et al* (2005) which stated that there is negative relationship between firm size and financial performance. In other words, the company with relatively lower asset tends to perform better than the larger one. It is because larger company can lead to increase coordination requirements like complicated bureaucratic, which in turn, makes the managerial task more difficult. Therefore, it can lead to organizational inefficiencies and lower profit rates.



## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Conclusion

This research aims to test the effect of environmental performance toward financial performance, environmental performance toward firm size and firm size toward financial performance. According to the finding and discussion, the results of the study can be concluded as follows:

1. Environmental performance has positive effect toward financial performance. It is proven by the significance level which  $0.002 < 0.05$  with the environmental performance coefficient is 0.304. As the consequence, the alternative hypothesis is accepted.
2. Environmental performance has positive effect toward firm size. It is proven by the significant level which  $0.001 < 0.05$  with the environmental performance coefficient is 0.320. As the consequence, the alternative hypothesis is accepted.
3. Firm size has negative effect toward financial performance. It is proven by the significant level which  $0.001 < 0.05$  with the firm size coefficient is -0.348. As the consequence, the alternative hypothesis is rejected.

#### 5.2 Recommendation

Although the researcher has tried his best efforts, this research still has limitation that can be developed by the next researchers. The recommendations for further research are:



1. In this research, the data are taken from the companies listed in IDX which are almost companies with large size. The consequence is, the findings have not represented all companies. It is recommended to take the sample not only from companies listed in IDX.
2. Researcher uses ROE (Return on Equity) as the measurement of financial performance. It is recommended that the next researchers to use other ratio rather than ROE. Researcher also uses total asset as the measurement of firm size. Therefore, it is recommended for the next researcher to use total sales as the measurement. As the measurement of environmental performance, the next researcher can try to use ISO 14001.
3. The implication of this research finding is, company with excellence in their environmental performance like implementing green program, will have excellence in their financial performance. Furthermore, from the result, it can be seen that the better environmental performance, the larger company size will be. Therefore, it is recommended for the company to increase the environmental performance like implementing green program to broaden the firm size.

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## Appendix 1

### List of Companies Sample

No	Company Name	Share Index
1	PT Tunas Baru Lampung Tbk	TBLA
2	PT Argo Pantes	ARGO
3	PT Century Tekstil Industri	CNTX
4	PT Teijin Indonesia Fiber Corporation Tbk	TFCO
5	PT Indo Acidatama Tbk	SRSN
6	PT Indorama Synthetics	INDR
7	PT Sumalindo Lestari Jaya Tbk	SULI
8	PT Fajar Surya Wisesa Tbk	FASW
9	PT Indah Kiat Pulp & Paper Perawang	INKP
10	PT Suparma	SPMA
11	PT Surabaya Agung Industri Pulp & Kertas Tbk	SAIP
12	PT Budi Acid Jaya Divisi Tapioka Labuhan Ratu	BUDI
13	PT Unggul Indah Cahaya	UNIC
14	PT Asahimas Flat Glass Tbk	AMFG
15	PT Lapindo Brantas	LAPD
16	PT Holcim Indonesia Tbk	SMCB
17	PT Indocement Tunggul Prakarsa Tbk	INTP

18	PT Semen Gresik (Persero) Tbk	SMGR
19	PT Citra Tubindo	CTBN
20	PT Surya Toto Indonesia	TOTO





## Appendix 2

### Report of PROPER year 2006-2010

No	Company Name	Year	Grade	Score
1	PT Tunas Baru Lampung Tbk	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
2	PT Argo Pantes	2006	Blue	3
		2007	Blue	3
		2008	Red	2
		2009	Red	2
		2010	Blue	3
3	PT Century Industri Tekstil	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Red	2
4	PT Teijin Indonesia Fiber Corporation Tbk	2006	Green	4
		2007	Green	4
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
5	PT Indo Acidatama Tbk	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
6	PT Indorama Synthetics	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
7	PT Sumalindo Lestari Jaya Tbk	2006	Red	2
		2007	Red	2
		2008	Red	2
		2009	Red	2
		2010	Red	2
8	PT Fajar Surya Wisesa Tbk	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3

9	PT Indah Kiat Pulp & Paper Perawang	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
10	PT Suparma	2006	Blue	3
		2007	Blue	3
		2008	Black	1
		2009	Black	1
		2010	Red	2
11	PT Surabaya Agung Industri Pulp & Kertas Tbk	2006	Red	2
		2007	Red	2
		2008	Red	2
		2009	Red	2
		2010	Red	2
12	PT Budi Acid Jaya Divisi Tapioka Labuhan Ratu	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
13	PT Unggul Indah Cahaya	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
14	PT Asahimas Flat Glass Tbk	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
15	PT Lapindo Brantas	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
16	PT Holcim Indonesia Tbk	2006	Green	4
		2007	Green	4
		2008	Green	4
		2009	Green	4
		2010	Blue	3
17	PT Indocement Tungal Prakarsa Tbk	2006	Green	4
		2007	Green	4
		2008	Green	4
		2009	Green	4

		2010	Green	4
18	PT Semen Gresik (Persero) Tbk	2006	Green	4
		2007	Green	4
		2008	Green	4
		2009	Green	4
		2010	Green	4
		2010	Green	4
19	PT Citra Tubindo	2006	Red	2
		2007	Red	2
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3
20	PT Surya Toto Indonesia	2006	Blue	3
		2007	Blue	3
		2008	Blue	3
		2009	Blue	3
		2010	Blue	3



### Appendix 3

#### Total Asset Data

		TOTAL ASSET				
	Year	2006	2007	2008	2009	2010
1	PT Tunas Baru Lampung Tbk	2,049,163,000,000	2,457,120,000,000	2,802,497,000,000	2,786,340,000,000	3,651,105,169,000
2	PT Argo Pantes	1,960,252,000,000	1,866,001,000,000	1,724,241,000,000	1,461,056,000,000	1,428,233,566,000
3	PT Century Tekstil Industri	390,777,000,000	424,739,000,000	518,831,000,000	358,537,000,000	314,859,196,196
4	PT Teijin Indonesia Fiber Corporation Tbk	2,523,042,000,000	2,507,594,000,000	2,180,988,000,000	1,745,620,000,000	1,784,739,000,000
5	PT Indo Acidatama Tbk	269,380,000,000	334,128,000,000	392,937,000,000	413,777,000,000	364,004,769,000
6	PT Indorama Synthetics	5,352,243,000,000	5,874,702,000,000	6,675,957,000,000	5,123,263,000,000	507,856,123,487
7	PT Sumalindo Lestari Jaya Tbk	1,520,602,000,000	1,895,845,000,000	2,169,945,000,000	2,009,536,000,000	1,955,535,689,750
8	PT Fajar Surya Wisesa Tbk	3,421,892,000,000	3,769,588,000,000	3,718,548,000,000	3,671,235,000,000	4,495,022,404,702
9	PT Indah Kiat Pulp & Paper Perawang	47,646,020,000,000	51,689,503,000,000	65,349,184,000,000	54,646,899,000,000	53,195,655,536

10	PT Suparma	1,381,434,000,000	1,501,892,000,000	1,564,902,000,000	1,432,637,000,000	1,490,033,771,432
11	PT Surabaya Agung Industri Pulp & Kertas Tbk	2,202,306,000,000	2,661,804,000,000	2,523,434,000,000	2,413,703,000,000	2,211,701,000,000
12	PT Budi Acid Jaya Divisi Tapioka Labuhan Ratu	931,614,000,000	1,485,651,000,000	1,698,750,000,000	1,598,824,000,000	1,967,633,000,000
13	PT Unggul Indah Cahaya	2,747,039,000,000	2,623,497,000,000	3,107,278,000,000	2,243,478,000,000	227,692,961,336
14	PT Asahimas Flat Glass Tbk	1,629,669,000,000	1,801,015,000,000	1,998,986,000,000	1,972,397,000,000	2,372,657,000,000
15	PT Lapindo Brantas	49,198,000,000	56,521,000,000	1,331,617,000,000	1,325,782,000,000	1,258,506,325,113
16	PT Holcim Indonesia Tbk	7,065,846,000,000	7,208,250,000,000	8,208,985,000,000	7,265,366,000,000	10,437,249,000,000
17	PT Indocement Tungal Prakarsa Tbk	9,598,280,000,000	10,037,927,000,000	11,286,707,000,000	13,276,270,000,000	15,345,145,677,737
18	PT Semen Gresik (Persero) Tbk	7,496,419,000,000	8,515,227,000,000	10,602,964,000,000	12,951,308,000,000	15,562,998,946,000
19	PT Citra Tubindo	1,580,619,000,000	1,601,065,000,000	2,088,892,000,000	1,863,990,000,000	245,705,782,200
20	PT Surya Toto Indonesia	908,168,000,000	913,995,000,000	1,031,131,000,000	1,010,892,000,000	1,091,583,115,098

## Appendix 4

### Total Sales Data

		TOTAL ASSET				
	Year	2006	2007	2008	2009	2010
1	PT Tunas Baru Lampung Tbk	1,193,999,000,000	1,844,207,000,000	3,955,846,000,000	2,783,573,000,000	2,951,113,862,000
2	PT Argo Pantes	928,350,000,000	1,045,370,000,000	1,091,776,000,000	754,957,000,000	664,257,009,000
3	PT Century Tekstil Industri	323,625,000,000	268,182,000,000	423,948,000,000	256,818,000,000	249,048,822,200
4	PT Teijin Indonesia Fiber Corporation Tbk	2,575,743,000,000	2,878,583,000,000	3,294,804,000,000	2,314,656,000,000	2,686,061,000,000
5	PT Indo Acidatama Tbk	269,380,000,000	268,079,000,000	313,919,000,000	352,543,000,000	342,870,221,000
6	PT Indorama Synthetics	4,254,481,000,000	4,762,933,000,000	6,064,262,000,000	4,605,512,000,000	553,886,667,957
7	PT Sumalindo Lestari Jaya Tbk	703,992,000,000	1,073,890,000,000	1,097,078,000,000	667,300,000,000	592,237,585,904
8	PT Fajar Surya Wisesa Tbk	1,693,081,000,000	2,655,795,000,000	3,027,012,000,000	2,733,300,000,000	3,385,973,456,418
9	PT Indah Kiat Pulp & Paper Perawang	14,298,094,000,000	17,701,849,000,000	24,933,168,000,000	16,669,960,000,000	22,531,467,118

10	PT Suparma	688,434,000,000	815,410,000,000	1,037,542,000,000	1,019,726,000,000	1,162,609,336,847
11	PT Surabaya Agung Industri Pulp & Kertas Tbk	438,659,000,000	673,176,000,000	653,101,000,000	452,652,000,000	365,502,000,000
12	PT Budi Acid Jaya Divisi Tapioka Labuhan Ratu	1,072,908,000,000	1,350,298,000,000	1,551,987,000,000	1,782,132,000,000	2,124,381,000,000
13	PT Unggul Indah Cahaya	2,917,451,000,000	3,001,992,000,000	3,761,796,000,000	2,648,519,000,000	322,625,636,643
14	PT Asahimas Flat Glass Tbk	1,541,551,000,000	1,909,805,000,000	2,235,021,000,000	1,912,966,000,000	2,426,138,000,000
15	PT Lapindo Brantas	84,303,000,000	61,809,000,000	183,454,000,000	271,578,000,000	307,577,110,661
16	PT Holcim Indonesia Tbk	2,993,197,000,000	3,754,906,000,000	5,341,054,000,000	5,943,881,000,000	5,960,589,000,000
17	PT Indocement Tunggul Prakarsa Tbk	6,325,329,000,000	7,323,644,000,000	9,780,498,000,000	10,576,456,000,000	111,378,052,655
18	PT Semen Gresik (Persero) Tbk	8,727,858,000,000	9,600,801,000,000	12,209,846,000,000	14,387,850,000,000	14,344,188,706,000
19	PT Citra Tubindo	2,465,461,000,000	2,629,710,000,000	3,321,493,000,000	2,229,170,000,000	192,217,061,401
20	PT Surya Toto Indonesia	828,164,000,000	885,829,000,000	1,124,347,000,000	980,327,000,000	1,121,498,803,637

## Appendix 5

### Financial Performance Data

		FINANCIAL PERFORMANCE (ROE, SALES/ASSET)				
	Year	2006	2007	2008	2009	2010
1	PT Tunas Baru Lampung Tbk	0.582676	0.750556	1.411543	0.999007	0.80828
2	PT Argo Pantes	0.473587	0.560219	0.633192	0.51672	0.46509
3	PT Century Tekstil Industri	0.828158	0.631404	0.817122	0.716294	0.790985
4	PT Teijin Indonesia Fiber Corporation Tbk	1.020888	1.147946	1.510693	1.325979	1.505016
5	PT Indo Acidatama Tbk	0.802324	0.798904	0.852012	0.941939	
6	PT Indorama Synthetics	0.794897	0.810753	0.908373	0.898941	1.090637
7	PT Sumalindo Lestari Jaya Tbk	0.462969	0.566444	0.505579	0.332067	0.302852
8	PT Fajar Surya Wisesa Tbk	0.494779	0.704532	0.814031	0.744518	0.753272
9	PT Indah Kiat Pulp & Paper Perawang	0.30009	0.342465	0.381538	0.305049	0.423558



10	PT Suparma	0.498347	0.542922	0.663008	0.711783	0.780257
11	PT Surabaya Agung Industri Pulp & Kertas Tbk	0.199182	0.252902	0.258814	0.187534	0.165258
12	PT Budi Acid Jaya Divisi Tapioka Labuhan Ratu	1.151666	0.908893	0.913605	1.114652	1.079663
13	PT Unggul Indah Cahaya	1.062035	1.144271	1.21064	1.180542	1.416933
14	PT Asahimas Flat Glass Tbk	0.945929	1.060405	1.118077	0.969869	1.022541
15	PT Lapindo Brantas	1.713545	1.093558	0.137768	0.204844	0.244399
16	PT Holcim Indonesia Tbk	0.423615	0.520918	0.650635	0.818112	0.571088
17	PT Indocement Tungal Prakarsa Tbk	0.659007	0.729597	0.86655	0.796644	0.007258
18	PT Semen Gresik (Persero) Tbk	1.16427	1.127486	1.15155	1.110919	0.921685
19	PT Citra Tubindo	1.559807	1.642475	1.590074	1.195913	0.782306
20	PT Surya Toto Indonesia	0.911906	0.969184	1.090402	0.969764	1.027406

## Appendix 6

### Firm Size Data

		FIRM SIZE (LOG ASSET)				
	Year	2006	2007	2008	2009	2010
1	PT Tunas Baru Lampung Tbk	12.31158	12.39043	12.44755	12.44503	12.56242
2	PT Argo Pantes	12.29231	12.27091	12.2366	12.16467	12.1548
3	PT Century Tekstil Industri	11.59193	11.62812	11.71503	11.55453	11.49812
4	PT Teijin Indonesia Fiber Corporation Tbk	12.40192	12.39926	12.33865	12.24195	12.25157
5	PT Indo Acidatama Tbk	11.43037	11.52391	11.59432	11.61677	11.56111
6	PT Indorama Synthetics	12.72854	12.76899	12.82451	12.70955	11.70574
7	PT Sumalindo Lestari Jaya Tbk	12.18202	12.2778	12.33645	12.3031	12.29127
8	PT Fajar Surya Wisesa Tbk	12.53427	12.57629	12.57037	12.56481	12.65273
9	PT Indah Kiat Pulp & Paper Perawang	13.67803	13.7134	13.81524	13.73757	10.72588

<b>10</b>	PT Suparma	12.14033	12.17664	12.19449	12.15614	12.1732
<b>11</b>	PT Surabaya Agung Industri Pulp & Kertas Tbk	12.34288	12.42518	12.40199	12.38268	12.34473
<b>12</b>	PT Budi Acid Jaya Divisi Tapioka Labuhan Ratu	11.96924	12.17192	12.23013	12.2038	12.29394
<b>13</b>	PT Unggul Indah Cahaya	12.43886	12.41888	12.49238	12.35092	11.35735
<b>14</b>	PT Asahimas Flat Glass Tbk	12.2121	12.25552	12.30081	12.29499	12.37523
<b>15</b>	PT Lapindo Brantas	10.69195	10.75221	12.12438	12.12247	12.09986
<b>16</b>	PT Holcim Indonesia Tbk	12.84916	12.85783	12.91429	12.86126	13.01859
<b>17</b>	PT Indocement Tunggal Prakarsa Tbk	12.98219	13.00164	13.05257	13.12308	13.18597
<b>18</b>	PT Semen Gresik (Persero) Tbk	12.87485	12.9302	13.02543	13.11231	13.19209
<b>19</b>	PT Citra Tubindo	12.19883	12.20441	12.31992	12.27044	11.39042
<b>20</b>	PT Surya Toto Indonesia	11.95817	11.96094	12.01331	12.0047	12.03806

## Appendix 7

### AMOS 16.0 Outputs

#### Estimates (Group number 1 - Default model)

#### Scalar Estimates (Group number 1 - Default model)

#### Maximum Likelihood Estimates

#### Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
FIS <--- ENP	.291	.087	3.360	***	par_3
FIP <--- ENP	.177	.057	3.098	.002	par_1
FIP <--- FIS	-.222	.063	-3.554	***	par_2

#### Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
FIS <--- ENP	.320
FIP <--- ENP	.304
FIP <--- FIS	-.348

#### Means: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
ENP	2.960	.063	46.661	***	par_6

#### Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
FIS	11.464	.262	43.705	***	par_5
FIP	3.030	.736	4.117	***	par_4

#### Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
ENP	.398	.057	7.036	***	par_7
e2	.296	.042	7.036	***	par_8
e1	.115	.016	7.036	***	par_9

#### Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
FIS	.102
FIP	.146

**Matrices (Group number 1 - Default model)**

**Factor Score Weights (Group number 1 - Default model)**

▪

**Total Effects (Group number 1 - Default model)**

	ENP	FIS
FIS	.291	.000
FIP	.112	-.222

**Standardized Total Effects (Group number 1 - Default model)**

	ENP	FIS
FIS	.320	.000
FIP	.192	-.348

**Direct Effects (Group number 1 - Default model)**

	ENP	FIS
FIS	.291	.000
FIP	.177	-.222

**Standardized Direct Effects (Group number 1 - Default model)**

	ENP	FIS
FIS	.320	.000
FIP	.304	-.348

**Indirect Effects (Group number 1 - Default model)**

	ENP	FIS
FIS	.000	.000
FIP	-.065	.000

**Standardized Indirect Effects (Group number 1 - Default model)**

	ENP	FIS
FIS	.000	.000

	ENP	FIS
FIP	-.111	.000

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTrises	Ratio
0	e 0	59080.975		9999.000	723.232	0	9999.000
1	e 0	48764.626		2.035	246.398	5	.000
2	e 0	48016.614		1.056	82.124	1	.795
3	e 0	47787.738		.199	28.933	1	1.269
4	e 0	48211.395		.179	8.092	1	1.258
5	e 0	48586.017		.145	1.375	1	1.219
6	e 0	48598.365		.095	.079	1	1.142
7	e 0	48598.521		.031	.000	1	1.047
8	e 0	48598.521		.002	.000	1	1.004
9	e 0	48598.521		.000	.000	1	1.001

	par_1	par_2	par_3	par_4	par_5	par_6	par_7	par_8	par_9
par_1	1.000								
par_2	-.320	1.000							
par_3	.000	.000	1.000						
par_4	.106	-.975	.000	1.000					
par_5	.000	.000	-.978	.000	1.000				
par_6	.000	.000	.000	.000	.000	1.000			
par_7	.000	.000	.000	.000	.000	.000	1.000		

	par_1	par_2	par_3	par_4	par_5	par_6	par_7	par_8	par_9
7									
par_8	.000	.000	.000	.000	.000	.000	.000	1.000	
par_9	.000	.000	.000	.000	.000	.000	.000	.000	1.000

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	9	.000	0		
Saturated model	9	.000	0		
Independence model	6	26.307	3	.000	8.769

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	1.000		1.000		1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Model	PRATIO	PNFI	PCFI
Default model	.000	.000	.000
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Model	NCP	LO 90	HI 90
Default model	.000	.000	.000
Saturated model	.000	.000	.000
Independence model	23.307	10.490	43.581

Model	FMIN	F0	LO 90	HI 90
Default model	.000	.000	.000	.000
Saturated model	.000	.000	.000	.000
Independence model	.266	.235	.106	.440

Model	RMSEA	LO 90	HI 90	PCLOSE
Independence model	.280	.188	.383	.000

Model	AIC	BCC	BIC	CAIC
Default model	18.000	18.758		
Saturated model	18.000	18.758		
Independence model	38.307	38.812		

Model	ECVI	LO 90	HI 90	MECVI
Default model	.182	.182	.182	.189
Saturated model	.182	.182	.182	.189
Independence model	.387	.257	.592	.392

Model	HOELTER .05	HOELTER .01
Default model		
Independence model	30	43

Minimization: .015  
 Miscellaneous: 1.297  
 Bootstrap: .000  
 Total: 1.312





