The Sustainability Strategy In The Company’s Life Cycle

Munawaroh, Imam Ghozali, Fuad

Abstract: This study explores the sustainability strategies of companies by examining their social environmental performance and financial performance. The data used in this study was gathered from annual reports available on the Indonesia Stock Exchange with a focus on manufacturing companies. These companies were PROPER (Corporate Performance Rating Assessment Program) participants in the implementation period of 2011 to 2015. The sampling technique chosen was by purposive sampling, and thus, 26 companies were selected. The association between PROPER performance rating and Return on Asset was explored through regression modelling and lag effects. As a result, this study found that the social environment performance did not have a significant impact on the company’s financial performance in the short term. Also, it showed that the sustainability strategy applied by the Corporate Performance Rating Assessment Program had an influence the financial performance with increasing the company’s life cycle to extend at the mature stage.


1. INTRODUCTION

THE development of industry has the possibility of highly impacting the environment which results in a decrease in quality of life and financial losses. Elkington (1998) proposed the Triple Bottom Line theory that companies must consider three dimensions: profit, people and the planet in order to achieve sustainability. Thus, maintaining economic, social and environmental balance becomes a corporate strategy in achieving its performance for value creation as a competitive advantage of the company (Porter & Kramer, 2011). Regulatively, several countries have already had provisions to become a strategic basis for companies to carry out sustainable development. In Indonesia, Law Number 32 of 2009 concerning Environmental Protection and Management states that sustainable development is an effort towards a development strategy to increase awareness with integrated planning between environmental, social and economic aspects in ensuring a better quality of life for the present and future generations. Few researches on the relationship between environmental performance and financial performance showed varying results. Levy (1995) found that by linking environmental practices with financial, regulatory and organizational performance stated that regulatory and organizational factors influence the environmental practices, but showed a weak relationship between environmental practices and financial performance. Meanwhile, Al-tuwaijri et al. (2004) stated that both have a significant positive relationship, however Wagner et al. (2002) found a negative relationship. The Government of Indonesia through the Ministry of Environment held a PROPER Rating Program. It is a coaching program for companies that aimed to encourage companies compliance with environmental regulations (http://proper.menlhk.go.id/portal). PROPER participants for the year 2012-2013 was 1,812 companies (SK Menlhk No. 349 of 2013), which has increased in the following year 2013-2014 was 1,908 companies (SK Menlhk No.180 in 2014), and the period of 2014-2015 amounting to 2,137 companies (SK.557/Menlhk-Setjen/2015). Currently, sustainability concepts involving the environmental, economic and social dimensions in the Life Cycle Sustainability Assessment (LCSA) is a corporate strategy that is widely accepted by stakeholders as a way of conducting an ethical business (Finkbeiner et al., 2010). Indonesia’s PROPER is one of the approach companies can integrate the principles of sustainable development into their business strategy. This study explores the company’s sustainability strategy by examining the relationship of social-environmental performance achieved in the PROPER valuation and financial performance of the individual company reported in the annual report on all manufacturing companies listed on the Indonesia Stock Exchange. The association between the PROPER’s index and the individual company's financial performance was explored through regression modeling and lag effects. Granger Causality is applied to examine the existence of a causal relationship between the social environmental and financial performance of the company. This was carried out, and accordingly, the study found that there is an interrelation between social environmental performance and financial performance (Tatsuo, 2009). Distributed-lag is also applied to examine the effect period of the relationship between the two variables which is reflected in the model testing with Koyek's approach for implementing a sustainability strategy. In section 2 below, the social environment, financial performance, as well as the Corporate Performance Rating Assessment Program (PROPER) is briefly introduced as the theoretical basis. In Section 3, the research methodology applied in this study. While Section 4 discusses the main analysis of results. Lastly, in Section 5 the implications based on the results and conclusions, and finally, limitations are summarized.

2 LITERATUR REVIEW

2.1 Theory

According to Freeman et al. (2010), Stakeholder theory has been developed to solve specific problems in modern business and concentrated in creating value, where corporate managers increase the company's value from activities and relationships that are carried out with stakeholders. Bennett & James (1999) define environmental performance as one of the

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company achievements in managing various interactions between company activities, products and services, as well as the environment. Supporting this, according to Callens & Tyteca (1999) environmental performance at the company level in the short term is determined by indicators of natural resources, waste, pollution, modes of transportation and distance, while in the long run determined by the global impact, consisting of biodiversity, global warming, acid deposition, landscape, main waste disposal, product recycling capability. Meanwhile, economic performance in the short term with indicators of turnover, value-added, production output, resources are used as inputs (including recycled products and energy), while in the long term includes profitability, competitiveness, market share, product durability, research and development. Therefore, economic performance including financial performance such as profitability (Return on Asset, Return on Equity) is a measure of the company’s quantitative success. As in the balanced scorecard, this quantitative measure balanced with qualitative performance (Kaplan & Norton, 1996). These company’s performance is presented in an annual report as stipulated in Law Number 40 of 2007 concerning Incorporated Companies. According to the theory of the company’s life cycle, Black (1998) and Gup & Agrawal (1996) stated that the development of a company, like product development in the product life cycles, will go through four major stages, which consists of start-up, growth, maturity, and decline. While Miller & Friesen (1984) stated that there are five general stages of company development, comprised of birth, growth, maturity, revival, and decline, then predicting the differences between stages in terms of strategy, structure, method of decision making, and environment (situation), the result is organizational growth and environmental improvement (situation) will cause each stage to show significant differences from all other stages in the four variables; and organizations tend to move linearly through the five stages that take place sequentially from the birth stage to the decline stage.

2.2 The Sustainability Strategy

The term of sustainability is derived from the word ‘sustainable development’, introduced by Brundtland (1987), the chairman of World Commission on Environmental Development in the Commission Report entitled ‘Our Common Future’. The Sustainable Development Goals (SDGs) is the global goals for sustainable development. There are 17 SDGs which describes the challenges of finding sustainable development paths for a multilateral solution (www.sustainabledevelopment.un.org). Based on the SDGs related to a business, the business company ought to provide the impetus through the sustainability strategy by responsible business practices, license to operate as well as a resilient business model for the emerging context (National Center for Sustainability Reporting (NCSR), 2016). The business development is expected to achieve environmental excellence through the integration on the principles of sustainable development in the process of production and services, resource conservation, and ethical business implementation and responsibility to society through community development programs. Participation of the companies in Indonesia to the Performance Assessment Program in Environmental Management (PROPER) is an approach towards sustainability strategy. PROPER is based on the regulation from the Minister of Environment of the Republic of Indonesia’s Number 3 of 2014 which is an evaluation of compliance and performance assessments exceeding the compliance of those responsible for controlling pollution, environmental damage, and the management of hazardous waste and toxic materials. PROPER is the flagship program by the Ministry of Environment for monitoring activities and providing incentives and reprimands those responsible for businesses activities. PROPER provides awards and grants to those companies that comply with environmental regulations and standards, which in turn encourages companies to be able to apply the principles of green economy with environmental management system assessment criteria, energy efficiency, water conservation, emission reduction, biodiversity protection, 3R (Reduce, Reuse, Recycle) practices, B3 waste (Hazardous and Toxic Material) and non-B3 solid waste, as well as reducing economic disparities by implementing community empowerment programs (http://proper.menlhk.go.id/portal). PROPER performance rating indicators are divided into 5 (five) colours of Gold, Green, Blue, Red and Black to show compliance of these businesses to the standards. Each of the colours represent a rating for those companies earning those awards. The company that receives Black shows that these businesses do not comply to the standards. While, those companies that have achieved the basic level of compliance are awarded the colours of blue, and red, while to show that these companies have gone beyond what is the standards, they are awarded the colours of green and gold. To achieve the gold standard, these companies emphasise the application of community empowerment criteria. The compliance aspects are assessed from the analysis of environmental documents (AMDAL/ UKL-UPL), efforts to control water and air pollution, management of Hazardous and Toxic Materials (B3) and the prevention of environmental damage specifically for mining activities.

2.3 Hypotheses

The existence of the concept for sustainable development is expected to give an effect towards sustainability strategy in the relationship between the social-environmental and financial performance of a company. However, its relationship can occur in the period after one year, as Hart & Ahuja (1996) research using a sample of companies incorporated in the S&P 500 found a positive influence after two years between environmental performance (emission reduction) and the company’s financial performance. Consequently, the research results of Munawaroh et al. (2018) also shows that there is a lag of two effects in the relationship for some industrial sectors recorded at Nikkei225 and has a high impact on the environment, even the relationship shows as a trade-off strategy in the company’s sustainability strategy for the creation of environmental and social values along with economic value. The relationship between the company’s life cycle with sustainability strategy can be shown from the results of the analysis of several researchers, including Ariffin (2009), Anthony & Ramesh (1992). Their research examined the relationship between the company’s life cycle and the financial dimension as one of the dimensions of sustainability. The results in this study are expected to support the results of the previous research and the proposed hypothesis is as follows:

Hypotheses 1. The social-environmental performance as a sustainability strategy has an impact on financial performance in the future.

Hypotheses 2. There is an influence on the maturity stage of the company’s life cycle on sustainability strategies.
3 RESEARCH DESIGN

3.1 Samples and Data
The data that was analysed in this study used secondary data. Data were collected from annual reports of manufacturing companies listed on the Indonesia Stock Exchange and also from PROPER's report for companies that obtained PROPER's ratings in the period of 2011-2015. It was used to examine the company's performance after the enactment of Law Number 32 of 2009 concerning Environmental Protection and Management. Financial performance variables were measured using the ROA (Return on Asset) ratio, as a measure of profitability that considers assets. This is in the opinion of McGuire et al. (1988), that to measure the success of managing environmental and social responsibility by using accounting-based financial performance measures is considered as a better predictor. Social-environmental performance variable is measured based on the results of the company's performance rating in environmental management (PROPER Performance Rating) in the period of 2011 to 2015 obtained by the company from the State Ministry of Environment. There are 5 (five) ratings with the colour indicators and order of the assessment index (Ministry of Environment, 2015) as in Table 1. According to B. E. Gup & Agrrawal (1996) the company's life cycle at the maturity stage is determined based on the formula of: \[ \text{Sales growth} = \frac{\text{Net sales} - \text{Net sales} - 1}{\text{Net sales} - 1} \times 100\% \] (1) For this study, the sample is grouped into each life cycle stages by following criteria such as according to Black (1998). The company's life cycle in the maturity stage is determined by measuring the average sales growth for 5 (five) years, and generating a score of 1% to 10%, but if the average yields a score of <1%, it means that the company's life cycle is experiencing a decline. The target population includes all manufacturing companies on the Indonesia Stock Exchange who belong to PROPER participants (Corporate Performance Rating Assessment Program) in the implementation period of 2011 to 2015. By using purposive sampling technique, these selected companies were PROPER participants in the implementation period of the year 2011 to 2015. After 26 companies were selected and classified into the respective stages of a company's life cycle, it was found that 21 companies are currently in the maturity stage while 5 companies are in the declining stage. The following is presented in Table 2 containing descriptive data collected in this study.

3.2 Analysis Models
The differences in the results of previous research that examined the relationship between environmental performance and financial performance, interest to be explored the relation of the company's sustainability performance by examining the causality relationship of social-environmental performance and financial performance, as well as examining the period of effect of social-environmental performance, as sustainability strategy and indicated by the PROPER Performance Rating (PPR), on ROA as financial performance. Thus, the relationship between social-environmental performance and the company's financial performance is explored through a model of causality, regression and lag effects. To examine the relationship between social-environmental performance and financial performance, it can be examined from the direction of the relationship, whether the social-environmental performance as a cause of financial performance or vice versa, using the Granger Causality Test. Regression analysis with time series data includes the current and past independent variables, so this regression model is called distributed lag (Ghozali & Ratmono, 2013). The distributed lag model is a simple model by entering one or more lags from explanatory variables (Gujarati & Porter, 2008), this study uses a model as follows:

\[
\text{ROA}_t = \alpha + \beta_1 \text{PPR} + \beta_2 \text{PPR} + \ldots + \beta_n \text{PPR} + \mu,
\] (2)

### TABLE 1

<table>
<thead>
<tr>
<th>Rating</th>
<th>Colour</th>
<th>Value</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gold</td>
<td>5</td>
<td>Awarded to business practices and/or activities that have consistently demonstrated environmental excellence in production processes or services, as well as carrying out ethical and socially responsible business.</td>
</tr>
<tr>
<td>2</td>
<td>Green</td>
<td>4</td>
<td>For business practices and/or activities that have made an effort environmental management, which is required in accordance with applicable regulations or laws.</td>
</tr>
<tr>
<td>3</td>
<td>Blue</td>
<td>3</td>
<td>For business practices and/or activities that have made efforts to manage the environment but not in accordance with the requirements as stipulated in the legislation.</td>
</tr>
<tr>
<td>4</td>
<td>Red</td>
<td>2</td>
<td>For those who have made efforts to manage the environment but not in accordance with the requirements as stipulated in the legislation.</td>
</tr>
<tr>
<td>5</td>
<td>Black</td>
<td>1</td>
<td>Granted to those who, in carrying out their business practices and/or activities, have intentionally committed acts or committed negligence resulting in pollution or damage to the environment, as well as violating applicable laws and/or not implementing administrative sanctions.</td>
</tr>
</tbody>
</table>

### TABLE 2

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Social-Environmental Performance (PPR)</th>
<th>Financial Performance (ROA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.476190</td>
<td>11.45430</td>
</tr>
<tr>
<td>Median</td>
<td>3.000000</td>
<td>9.700000</td>
</tr>
<tr>
<td>Maximum</td>
<td>5.000000</td>
<td>42.700000</td>
</tr>
<tr>
<td>Minimum</td>
<td>2.000000</td>
<td>-4.660000</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.735046</td>
<td>11.18224</td>
</tr>
</tbody>
</table>

PPR = PROPER Performance Rating, ROA = Return on Asset.
study can be generalized for various periods of observation. Stationary (or non-stationary) tests used the unit root test or also called the Dickey-Fuller (DF) test. The data stationarity test results used are presented in Table 3 below:

The results of Augmented Dickey-Fuller test (ADF) in Table 3 above shows that the null hypothesis of social-environmental performance variable (PPR) and financial performance variable (ROA) have a unit root or the non-stationary data is rejected. Thus, the results of the Root Test Unit (ADF) of the two variables are declared stationary. This is indicated by the t-statistic of both variables is still greater than the critical value at alpha 5%, and the probability value is smaller than alpha 5%. Furthermore, a causality test was conducted using the Granger Causality Test with lag = 1 at a significant level of * 5%, ** 10%. The test results are presented in Table 4 below:

The output in Table 4 above shows the null hypothesis that social-environmental performance (PPR) is not Granger Cause (have no effect on) ROA rejected with a p-value of 0.0933, as well as the null hypothesis that financial performance (ROA) to social environmental performance with a p-value of 0.0900. These results indicate that there is a bilateral or causal relationship between PPR and ROA on companies in the maturity stage. However, the reciprocal relationship does not occur in companies that experiencing a decline in their life cycles. Therefore, further testing is carried out on companies in the maturity stage. This testing to estimate $\alpha$ and $\beta$ of the model equation in the test of distributed lag above using the Koyek’s approach. The independent variable X is assumed to be non-stochastic (does not correlate with the error term $(\mu_t)$), then $X_t$-1 and Xtk are also non-stochastic. Therefore, Ordinary Least Square (OLS) is used.

\[ Y_t = -2.816913 + 1.274323 \cdot PPR_t + 2.757871 \cdot PPR_{t-1} \]

The above test produces a regression model for PROPER Index. This reflects the performance of the social-environmental, that is related to financial performance occurring in the period after 1 year. This is indicated by a probability of 0.0900, but at period t shows a probability of 0.4310, which means that the social-environmental performance has no effect on the financial performance achieved in the same year. As for the results of data processing, Adjusted $R^2$ only shows 3.77% which means that the low social-environmental performance in influencing financial performance. This is shown in the Table 2 descriptive data, that the average of companies listed in Indonesia Stock Exchange has a social-environmental performance of 3.476190 or with a value of 3. The value of 3 means achieving limited performance to meet what is required by applicable law or regulation. This reflects the need for efforts to spur public companies in Indonesia to prepare

TABLE 3

<table>
<thead>
<tr>
<th>Variabes</th>
<th>Max Lags</th>
<th>t-statistic</th>
<th>Test Critical Value (5%)</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social-Environmental Finance (PPR)</td>
<td>12</td>
<td>-5.864439</td>
<td>-2.889753</td>
<td>0.0000</td>
</tr>
<tr>
<td>Financial Performance (ROA)</td>
<td>11</td>
<td>-3.079203</td>
<td>-2.8894274</td>
<td>0.0312</td>
</tr>
</tbody>
</table>

PPR = PROPER Performance Rating, ROA = Return on Asset.

1. The application of pollution prevention strategies, which is focused on developing the businesses ability to minimize the level of waste and pollution, even to the extent of eliminating waste or pollution. Efforts made by the company are continuous improvement by involving all workers by creating production procedures that are more environmentally friendly.

2. Product monitoring strategies (product stewardship) which are more focused on minimizing waste and pollution, by starting to use less raw materials, energy and by packaging products that are more environmentally friendly.

3. Environmental Protection and Management Act mandated to implement a sustainable development strategy, as the most advanced environmental-oriented strategy, which is focused on the businesses operational activities that are adapted to the ability and carrying capacity of the natural environment to neutralize waste and pollution that could affect the environment. The development of this strategy requires companies to be able to innovate and to create new technologies that are environmentally friendly. Consequently, multinational companies in western countries have been able to use this as an advantage as their business approach to create a more competitive advantage against competitors. The use of these environmental strategies is considered to be able to save the company's operating costs, in the form of reducing costs for waste management, and the decrease in demands or claims of third parties (companies) for the effects of pollution and waste disposal.

5 CONCLUSIONS AND RECOMMENDATION

As the concept of sustainable development, the application for long-term goals (Krechovská & Prochazkova, 2014) found that the conclusion of this study is stated as the social-environmental performance does not have a significant impact on the company’s financial performance in a short-term period. However, an impact occurs once the company reaches maturity stage. Or in other words, social-environmental performance has an influence on financial performance to increase a company’s life cycle. The practical implication of this research is in the implementation of sustainability strategy decisions. Even though not all companies is public in Indonesia and listed in Indonesia Stock Exchange, they are welcomed to take part in PROPER as a choice of sustainability strategy. Managers that are facing the decline stage in the life cycle could use this strategy to create economic value through environmental management as a green businesses approach as a value-added which is an alternative and considered to be a trade-off strategy (Mciwilliams et al., 2014). This strategy is
creating environmental values to develop economic value with a sustainable value approach in order to re-create the economy as companies do need economic and environmental resources (Figge & Hahn, 2012). This study does not classify the sub-sector of the manufacturing industry sector, so in addition it can be developed with other sample sizes, and in the same time by classifying the sub-sector of the manufacturing industry sector in order to obtain optimum results because there are differences in the use of natural resources for each industry (Figge & Hahn, 2013). Trade-off strategies can also be considered in exploring the relationship between the company's performance in future research.

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