ANALYSIS OF INTERACTIVE CONTROL SYSTEM ON CORPORATE SUSTAINABILITY PERFORMANCE: GOOD CORPORATE GOVERNANCE AS A MEDIATING VARIABLE

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ABSTRACT

The purpose of this research is to test how the measurement of interactive control system can improve corporate sustainability performance through good corporate governance. This research was employed through a survey involving the decision makers of Echelon-2 and higher levels as the research subjects in one leading cement industry in Indonesia, Semen Indonesia by distributing questionnaires. The data were analyzed through structural equation modeling. Measurement model was to test reliability and validity, while the structural measurement model was measured by the mean R^2 for the dependent variable and the path coefficient test. Of the thirty-nine questionnaires collected, thirty-three questionnaires were eligible for further processing. The results shows positive relationship between interactive control on corporate governance, negative relationship between corporate governance to corporate sustainability performance, and positive relationship between interactive control and corporate sustainability performance. The interactive control system can directly improve the corporate sustainability performance, while good corporate governance cannot mediate the relationship between interactive control system and corporate sustainability performance.

Keywords: Corporate Sustainability Performance; Good Corporate Governance; Interactive Control System; Semen Indonesia.

INTRODUCTION

Interactive control system in accounting management has close relation with management control systems that may help the companies to control the activities of the companies and individuals as it is outlined previously (Otley & Berry, 1994). Some previous researchers have investigated how the relationship between interactive performance measurement and organizational performance (Bisbe & Otley, 2004; Chenhall, Kallunki, & Silvola, 2011; Naranjo-Gil & Hartmann, 2007a, b). In contrast to previous research, this study is intended to examine how interactive performance measurement may improve the corporate sustainability performance through good corporate governance. It is assumed that with a very tight business competition, companies are expected to have intention to improve their corporate governance in order to achieve sustainability competitive advantage. Study in this issue is still considered difficult to identify.

It is assumed that interactive control systems may improve good corporate governance. Furthermore, good corporate governance may improve corporate sustainability performance. The effectiveness of the application of interactive control systems occurs when there is an intensity of

communication between superiors and sub-ordinates on issues that occur in achieving both organizational and individual goals. These issues may occur in a relatively dynamic business environment. One of the effects of communication between the superiors and subordinates is to increase information openness, which ultimately may encourage the accountability and transparency in the process of decision-making among the employees, including managers and staffs in the company. In other words, the existence of such openness is expected to improve good corporate governance in the company.

It is believed that the aspects of good corporate governance are essential elements in business continuity. One example of researches carried out by Peni & Vähämaa (2011) on banking companies in the US during the 2008 financial crisis shows that companies that implement good corporate governance are more *immune* to the monetary crisis that occurred at that time. The performance of the companies with strong corporate governance will be able to: (1) obtain higher profits, (2) have higher market valuations, and (3) receive fewer negative impacts related to the monetary crisis on stock returns. Based on these indicators, it can be concluded that good corporate governance are able to improve the corporate sustainability performance. Based on the description above, a study in the area of interactive control system analysis needs to be conducted on the corporate sustainability performance, with good corporate governance is employed as the mediating variable.

Based on the introduction, there are some issues in this study, namely:

a. Does interactive control have positive relationship with corporate governance?
b. Does corporate governance have positive relationship with corporate sustainability?
c. Does interactive control have positive relationship with corporate sustainability?

Based on the issues stated on the previous section, the objectives of this study are to test the following issues, namely:

a. Does interactive control have positive relationship with corporate governance?
b. Does corporate governance have positive relationship with corporate sustainability?
c. Does interactive control have positive relationship with corporate sustainability?

LITERATURE REVIEW

Interactive Control System

The interactive control system may give more benefits in strategic changes at high levels of environmental uncertainty. Strategic changes may occur in dynamic circumstances as the interactive control system are able to facilitate learning and innovation (Simons, 2000). The use of interactive control systems is also to accommodate the managers in stimulating learning and innovation through dialogues and communications among the organizational members, of which is expected to improve the process of developing the organizational strategy (Kaplan & Norton, 1996, 2006; Simons, 1990, 1991, 2000). Thus, this performance appraisal system will actively stimulate debate and discussion for activities that have been and will be conducted (Bisbe & Malagueño, 2009; Burchell, Clubb, Hopwood,

Hughes, & Nahapiet, 1980; Chenhall et al., 2011).

Corporate Sustainability Performance

A company is sustainable if the company is able to create benefits for its stakeholders while protecting the environment and improving the lives of those who interact with it at the same time (Svensson, Wagner, Cambra-Fierro, & Ruiz-Benitez, 2011). There are four aspects of corporate sustainability: (1) social impact, (2) environmental impact, (3) cultural aspect, and (4) organizational funding (Crowther, 2008). Despite the fact that the developing control mechanisms to support the implementation of sustainability strategies sometimes receives skepticism and highlighted in several literatures (Mersereau & Mottis, 2011), however, some of the controls being observed are the main mechanisms, and most sample companies have not developed a complete accounting control package; these controls generally remain separate from the management control system "package" used to manage the organization (Crutzen, Swank, & Visser, 2013). The extent to which it is possible to influence sustainability at the operational level by contemporary management control systems in integrating organizational culture perspectives (Morsing, & Oswald, 2009)

Good Corporate Governance

The objectives of Law on Limited Liability Company number 40 of 2007 Articles 66 and 74 are used as the driver for the implementation of good corporate governance (GCG) in addition to encouraging the practice and disclosure of corporate social responsibility (CSR) (Djamilah & Trenggono, 2017). By applying GCG practices, it is expected that the company will be able to increase investors' confidence, thus the company will also be more stable and stronger which in turn the sustainability of the company can be relied upon. This is in accordance with the Decree of the Minister of State-Owned Enterprises number 117/M-MBU of 2002 on corporate governance which is a process and structure used by an state-owned enterprises (SOEs) organ to increase business success and corporate accountability to realize the interests of other stakeholders, based on legislation and ethical values.

According to Simons (1995) that the interactive control system is very good at helping organizations to improve the performance of a company. An interactive performance measurement system occurs when there is a flow of communication that is carried out regularly between the managers and subordinates (Abernethy & Brownell, 1999; Adler & Chen, 2011; Bisbe, Batista-Foguet, & Chenhall, 2007; Henri, 2006; Simons, 1995). The advantage of using an interactive performance measurement system is that the manager may deliver messages to all members of the organization to concentrate on various strategic issues and environmental uncertainties (Triwacananingrum & Yuliansyah, 2016).

Interactive performance evaluation can be done with some communication approaches such as discussions, meetings and even

debates, so that the process being conducted automatically will be able to stimulate information sharing among members of the organization. By sharing the information may also create accountable and transparent information, encouraging the company to create good corporate governance. Thus interactive control is believed to improve good corporate governance.

As is known that good corporate governance is an important indicator in business continuity. Companies that implement good corporate governance are likely able to maintain their business continuity. Based on this description, the conceptual framework can be described as follows:
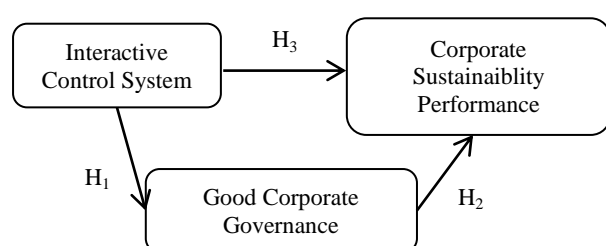

Figure 1: Conceptual Framework

Based on the above preposition, there are three hypotheses proposed in this study:

H_1 : there is positive relation between interactive control and corporate governance

H_2 : there is positive relation between corporate governance and corporate sustainability

H_3 : there is positive relation between interactive control and corporate sustainability

RESEARCH METHODS

This is a survey study involving relevant decision makers at the Echelon-2 level and above at one leading cement industry in Indonesia, Semen Indonesia Group. The survey was carried out by distributing questionnaires to the mentioned relevant decision makers. To increase the response rate, several methods were employed by the researchers, namely questionnaire design/questionnaire preparation and questionnaire delivery. In preparing the questionnaire, a booklet-shaped questionnaire with double-sided printing layouts (Dillman, 1972) was distributed. This design is believed to increase the response rate from the participants. Jobber (1989, p. 137) says that "interpretation of this result is that double-sided printing makes the questionnaire appear shorter and thus less time-consuming than single-sided printing".

In addition to the questionnaire design, just as Henri (2006) did, researchers also used four steps of survey implementation, namely initial communication, first and second follow-ups. The initial communication was taken by a researcher to confirm whether the respondents were interested in being involved in the research and asking how many questionnaires could be handled and sent. Initial communication was done via text-messaging and telephoning. As the respondents showed their interests on being involved in the study, first follow-up was carried out by posting the questionnaire as well as envelopes that had been given return-stamps to send back the questionnaires that had been filled out. In addition, second follow-up was done through telephoning which was intended to remind the respondents to fill out the questionnaires.

There are three variables in this study, namely: interactive control system, good corporate governance and corporate sustainability performance.

Interactive Control System

The interactive performance measurement system in this study employed a questionnaire which has previously been developed by Abernethy & Brownell (1999). The questionnaire has been widely used by previous researchers in the related contexts (see Bisbe & Otley, (2004); Bisbe & Malagueño, (2009) and Naranjo-Gil & Hartmann, (2007b). The questionnaire consisted of five questions asking the respondents about how important the respondents are to the performance evaluation. The questions were distributed into 6-point Likert scale that starts from 1 (corresponds very low) to 6 (corresponds very high).

Good Corporate Governance

Good corporate governance in this study used a questionnaire which was developed by the Indonesian Center for Social and Environmental Accounting Research and Development. The questionnaire consisted of four questions asking the respondents about how important the respondents are to performance evaluation. The questions were distributed into 6-point Likert scale that starts from 1 (corresponds very low) to 6 (corresponds very high).

Corporate Sustainability Performance

Corporate sustainability performance in this study used a questionnaire which was previously developed by the Indonesian Center for Social and Environmental Accounting. The questionnaire consisted of eight questions asking the respondents about how important the respondents are to performance evaluation. The questions were distributed into 6-point Likert scale that starts from 1 (corresponds very low) to 6 (corresponds very high).

ANALYSIS AND DISCUSSION

Data were analyzed by using structural equation model (SEM) with the rationale that "the ability to model multiple relationships is an advantage of latent variable SEM over multiple regression and path analysis" (Baines & Langfield-Smith, 2003, p. 686). Likewise, SEM can examine simultaneously the measurement model and the structural model in the one model (Burton-Jones & Hubona, 2006). In addition, partial least square (PLS) has an obvious advantage over regression for two reasons:

1. It considers all path coefficients simultaneously to allow the analysis of direct, indirect, and spurious relationships;

2. It estimates the individual item weightings in the context of the theoretical model rather than in isolation' (Birkinshaw, Morrison, & Hulland, 1995, p.647).

Smith & Langfield-Smith (2004) state that in analysis, SEM uses two steps, namely measurement model and measurement structural model. The measurement model is to test reliability and validity (Camisón & López, 2010; Hulland, 1999). Reliability testing is done by analyzing Cronbach's alpha and

composite reliability. In accordance with the rules used that as Cronbach's alpha is more than 0.7, it shows a good level of reliability (Hulland, 1999).

Testing the validity by using PLS can be done by convergent validity testing and discriminant validity. Convergent validity can be calculated by looking at the Average Variance Extracted (AVE) score. Henseler et al. (2009) said that the value of convergent validity is very good if the score of AVE is above 0.5. The purpose of discriminant validity is to see whether the item is unique and not the same as other constructs in the model (Hulland, 1999). To test discriminant validity can be done by two methods, namely the Fornell-Larcker and the Cross-loading methods.

Fornell-Larcker method is done by comparing the square roots of AVE with vertical latent correlation, and the next method is the Cross-loading method which states that all items must be larger than other constructs (Al-Gahtani, Hubona, & Wang, 2007).

Table 1. Quality Criteria

	AVE	Composite reliability	R square	Cronbach's alpha
Interactive control sysem	0.543	0.892		0.858
Good corporate governance	0.566	0.791	0.261	0.648
Corporate sustainability performance	0.539	0.968	0.711	0.965

Source: Data process

As shown in Table 2 in which the value of the construct correlation of GCG is higher than the valueof other constructs. As with other indicators that are higher correlated with

their respective constructs compared to others, this means that the construct has a good discriminant validity value. In addition, it is also to see the square value of the correlation between constructs with AVE values or correlation between constructs and AVE roots.

Table 3 shows the maximum correlation of GCG constructs with other constructs of 0.752 while the minimum correlation is 0.511. This shows that if each construct has a higher value than the other construct, this construct has a good discriminant validity value.

Structural measurement model is measured by the average R^2 for the dependent variable and path coefficient testing. According to Camisón & López (2010) that if the value of R^2 is greater than 0.1, it can be accepted. This test is carried out using a bootstrap procedure with 500 replacements (e.g. Hartmann & Slapnicar, 2009).

Table 2. Cross Loading

	GCG	Interactive	Sustainability
CG 2	**0.919**	0.532	0.600
CG 3	**0.623**	0.076	0.201
CG 4	**0.681**	0.345	0.283
IC 2	0.283	**0.604**	0.585
IC 7	0.347	**0.808**	0.590
IC 8	0.290	**0.766**	0.645
IC 9	0.552	**0.767**	0.556
IC 11	0.314	**0.730**	0.645
IC 12	0.257	**0.694**	0.662
IC 13	0.546	**0.769**	0.595
SP 1	0.324	0.584	**0.697**
SP 2	0.431	0.513	**0.690**
SP 3	0.353	0.521	**0.673**
SP 4	0.487	0.681	**0.738**
SP 5	0.432	0.686	**0.839**
SP 6	0.302	0.619	**0.660**
SP 7	0.395	0.729	**0.828**
SP 8	0.208	0.429	**0.497**
SP 9	0.372	0.739	**0.778**
SP 10	0.473	0.790	**0.829**
SP 11	0.571	0.753	**0.812**
SP 12	0.353	0.602	**0.773**
SP 13	0.341	0.547	**0.679**
SP 14	0.500	0.670	**0.713**
SP 16	0.321	0.539	**0.647**
SP 17	0.268	0.575	**0.648**
SP 18	0.283	0.449	**0.707**
SP 19	0.341	0.492	**0.674**
SP 20	0.430	0.636	**0.819**
SP 22	0.443	0.658	**0.775**
SP 25	0.447	0.562	**0.701**
SP 26	0.402	0.343	**0.663**
SP 27	0.470	0.560	**0.745**
SP 28	0.559	0.642	**0.832**
SP 29	0.463	0.667	**0.843**
SP 30	0.448	0.507	**0.711**

Source: Data process

Table 3. Fornell-Larcker

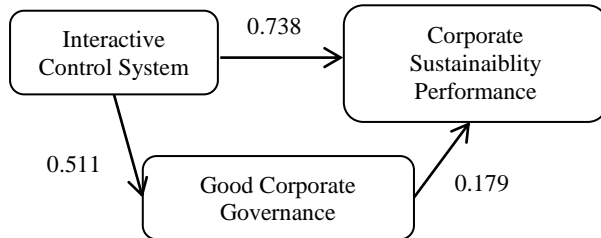|	GCG	Interactive	Sustainability
GCG	**0,752**		
Interactive	0,511	**0,737**	
Sustainability	0,556	0,829	0,734

Source: Data process

Figure 2. Structural Equation Model (SEM)

Table 4. Structural Measurement Model

Dependent variables	Independent variables		R^2
	Interactive control system	Good corporate governance	
Good corporate governance	(4.545***)		0.261
Corporate sustainability	(6.924***)	(-1.325)	0.711

Source: Data process

H₁: There is positive relation between interactive control and corporate governance.

In Table 4 shows the positive relation of interactive control to the corporate governance with the significant score of (β = 0.511, t = 4.545, p < 0.01). As the t-statistic is on the critical score of 2.303, thus H_1 is supported.

H₂: There is positive relation between corporate governance and corporate sustainability performance.

In Table 4 shows the negative relation of corporate governance to corporate sustainability performance with the score of (β= 0.179, t= -1.325, p < 0.1). As the t-statistic is under the critical score of 1.600, thus H_2 is not supported.

H₃: There is positive relation between interactive control and corporate sustainability performance.

In Table 4 shows the positive relation of interactive control to corporate sustainability performance with the score of (β= 0.738, t= 6.924, p< 0.01). As the t-statistic is above the critical score of 2.303, thus H_3 is supported.

CONCLUSION

The involvement of managers and subordinates/staffs in the process of achieving organizational goals may lead into information openness that may encourage better accountability and transparency in the process of decision-making between the managers and employees in a company. This involvement may also provide more benefits in terms of strategic changes at a high level of environmental uncertainty. Strategic changes may take place dynamically as the interactive control system facilitates learning and innovation through two-way communications among the members of an organization (a company) that may improve the development process of each organization which can ultimately improve good corporate governance.

In order to answer the research objectives, a survey was carried out involving Echelon-2 level and above in one leading cement industry in Indonesia, Semen Indonesia Group. Based on 39 questionnaires collected, 33 questionnaires were analyzed (85%) and considered valid that had been tested using SmartPLS 3.0. Based on the results of calculations, the interactive control system may directly improve corporate sustainability performance, while good corporate governance may not mediate the

relationship of interactive control systems and corporate sustainability performance.

This research is limited to sampling, which was only at one cement industry, Semen Indonesia Group that have not been able to describe the actual state of the entire companies thoroughly. In addition, the mediation variable used in this study is only good corporate governance so that it cannot fully describe the factors that can mediate interactive control systems and the sustainability of corporate performance.

The implication of this research is that the interactive control system is a very necessary aspect in a company because it is believed to improve good corporate governance and corporate sustainability performance. For companies in industrial sector, sharing information in an interactive performance evaluation may create more accountable and transparent information. Accountable and transparent information encourages companies to create good corporate governance as well as corporate sustainability governance.

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