

Sustainability Performance Measurement System Implementation: A Preliminary Finding

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ABSTRACT

Sustainability performance measurement system (SPMS) is an instrument to offer information on the firm's monetary, environmentally friendly and also societal effectiveness. It could help professionals to manage for competing edge in the end. On the other hand, to date there has been tiny facts about the scope regarding SPMS implementation within corporations. This paper explores the SPMS implementation through understanding of its characteristics. Extant literature in the area was reviewed and firms' practices were investigated. Survey questionnaire were distributed to nine companies operating in Malaysia. The findings revealed that most companies had their performance measures linked to sustainability strategies and considered various stakeholders. The result of this study should provide an avenue for future studies on SPMS in Malaysia.

Keywords: Sustainability Performance Measurement System, Corporate Sustainability, Environmental, Social, Financial, Stakeholders.

1. INTRODUCTION

Corporate sustainability continues to be widely researched in addition to business and engineering studies still now and it's got fairly small interest within the management control study (Ameer & Othman, 2011; Lozano, 2012) (Gond, Grubnic, Herzig, & Moon, 2012; Henri & Journeault, 2008). There is even lack of empirical research on performance measurement system.

Basically the corporate sustainability concept directs companies towards activities that could impact the environment and the society (Baumgartner & Ebner, 2010). Thus, companies use SPMS to measure the financial, environmental and social performance (Searcy, 2012). As such, SPMS should

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provide firms with information to adapt with the changing of environment (Milman & Short, 2008).

Although there are studies that suggest the framework of sustainability performance indicators (Delai & Takahashi, 2011; Joung, Carrell, Sarkar, & Feng, 2012), they did not systematically investigate its integrative characteristics. According to Epstein & Wisner (2001), performance measures are essential for implementing sustainability because PMS has the ability to integrate sustainability aspects in activities, decision making and strategy. Therefore, the integration aspect is important for SPMS. Thus this study will seek to understand the characteristics of comprehensive SPMS that considers the integration aspect of its measurements.

In sum, this study aims to contribute to the accounting literature first, by suggesting the characteristic of SPMS as practiced by Malaysian companies. Second, is to discuss the preliminary findings on the SPMS implementation in Malaysia. It is hoped that, this study may encourage further study on SPMS in the future. In terms of practice, this study could help managers in developing and improving their SPMS structure.

2. LITERATURE REVIEW

2.1 Sustainability Performance Measurement System Characteristics

During 1980s, financial measures would be the primary measurement for planning as well as controlling (Taticchi & Balachandran, 2008). Nevertheless, the financial measures include several constraints (Chenhall & Langfield-Smith, 2007). As a result within 1980s, firms started off integrating financial and non-financial measurements (Taticchi & Balachandran, 2008). Some great benefits with all the multidimensional measurements are that they are competent to enhance the potency of the actual PMS, support managers within managing and evaluating, as well as assist in implementing strategies (Fleming, Chow, & Chen, 2009; Hussain & Hoque, 2002; Tung, Baird, & Schoch, 2011).

Essentially Kaplan and Norton (1992) have suggested a PMS's tool generally known as Balanced Scorecard (BSC) that integrates the measurements of financial, consumer, internal processes and learning. The aim of BSC is to assist in implementing the competitive strategy. Even so sustainability aspects such as environmental and social just weren't integrated. Therefore, starting early in 21st century, there were many researches that suggested the use of Sustainability

Balanced Scorecard (SBSC) framework (Dias-Sardinha & Reijnders, 2005; Figge, Hahn, Schaltegger, & Wagner, 2002; Hsu, Hu, Chiou, & Chen, 2011). The particular SBSC had been suggested to incorporate the sustainability measures to support the implementation of the sustainability strategy. Irrespective of those endeavours, the characteristics of comprehensive SPMS have not been suggested.

Based on the prior review, the overall characteristics associated with PMS would certainly incorporate a diverse group of measures which cover organization's procedures (Hall, 2008; Ittner, Larcker, & Randall, 2003; Malina & Selto, 2001). For companies to sustain, consistent with the above discussion, Delai & Takahashi (2011) furthermore suggest that the sustainability measurements should include economic, environmental as well as social performance measures. Regarding the economic performance, basically organizations measure the profit, value, tax, capital employed, relationships with shareholders, shareholders' remuneration, company governance, risk, as well as research and development. In addition, the environmental measures cover the impact of company's activities to the biodiversity, air, water, land, consumption of energy and material, and implementation of product recyclability.

The social measures basically could be divided into five aspects; the employees, corporate citizenship, customers, suppliers and public sector. The company's performance towards its employees is actually with regard to education, training and development, diversity and opportunity, health and safety, job creation as well as human rights. The influence towards corporate citizenship could be assessed by way of social actions, communication with society, political contribution, and competitors, codes as well as data corruption. Customer relationship management could be assessed through the analysis connected to customer satisfaction, customer health and safety, product labelling, advertisement, as well as value associated with customer privacy. Business also needs to select suppliers and partners as well as review legal agreements. Furthermore, the influence by the government could be connected with income taxes as well as tax assistance.

Previous studies have highlighted the importance of PMS structure to be strategically aligned (Chenhall, 2005; Grosswiele, Röglinger, & Friedl, 2012; Hall, 2008; Ittner et al., 2003). Companies that aligned its PMS with strategy could find it helpful to obtain competitive strategy (Chenhall, 2005). This is because the strategic alignment of measures is able to support the company to adapt with the new competition as well as environment (Nanni, Dixon, & Vollmann, 1992). As a result, this study suggests that the integration of measures with sustainability strategy is one more important element regarding SPMS.

Past studies possess that PMS should integrate measures across departments and the value chain (Chenhall, 2005; Hall, 2008; Ittner et al., 2003). The measurements should cover the entire selection of activities that are required from the stages of development connected with making supplies to customers, and also discretion soon after making the use of the product (Kaplinsky & Morris, 2001; Olson, 2014).

Additionally, firms should consider a good relationship with much wider stakeholders and future stakeholders to sustain (Doyle, 1994; Dyllick & Hockerts, 2002). These stakeholders such as shareholders, customers, employees, government and suppliers have an important impact on an organization's long-term sustainability as they provide legitimacy to operate (Bansal, 2005). Thus, the performance measures developed should demonstrate a link of the stakeholders' need.

Based on the PMS characteristics and previous studies, this study argues that SPMS should; (i) consist of measures that cover the economic, environmental and social perspectives that need to be integrated in the organizations' operations, (ii) reflect the sustainability strategy, and (iii) be integrated across sustainability value chain and stakeholders. It is in conjunction that the major benefit of acquiring such structure of PMS, it might increase overall economic performance (Artz, Homburg, & Rajab, 2012), aid in receiving the competitive strategic benefits and also enhance the overall managerial performance (Artz et al., 2012; Chenhall, 2005; Hall, 2008).

3. METHODOLOGY

This research employed e-mail survey to gather information on the SPMS implementation among 9 companies operating in Malaysia. This study used purposive survey, concentrating on manufacturing, services and construction companies. Even though the results can't be generalized, it might be beneficial to obtain a common picture of the SPMS implementation. Respondents were asked to indicate to what extent PMS were practiced in their business unit. Seven (7) point Likert scales ('Not at all' to 'to a very great extent') were used to get the response.

There were also questions that captured background of the respondents, company data such as industry, number of employees, years of operation, sales turnover and the position of the respondents. Table 2 shows the characteristics of the companies selected. Data were collected from three industries which are manufacturing (44.4%), services (33.3%), and construction (22.2%).

Almost all of the respondents are from firms which have over 100 employees (55. 5%). Majority of the firms have been operating more than 9 years (77. 8%). Most of the companies' sales turnover was less than RM100 million (66. 6%). The questionnaires had been responded by middle and junior managers (88. 8%) who've expertise in the usage of PMS in the business unit procedures.

Table 2: Industry, size and turnover

	<i>n</i>	%
<i>Industry</i>		
Manufacturing	4	44.4
Services	3	33.3
Construction	2	22.2
Total	9	100
<i>Number of employees</i>		
Below 100	4	44.4
100-199	2	22.2
400 or more	3	33.3
Total	9	100
<i>Years of operation</i>		
3-5 years	1	11.1
5-9 years	1	11.1
more than 9 years	7	77.8
Total	9	100
<i>Sales turnover</i>		
less than RM50 million	2	22.2
RM50-RM70 million	3	33.3
RM71-RM100 million	1	11.1
RM101-RM150 million	1	11.1
Above RM150 million	2	22.2
Total	9	100
<i>Position</i>		
Top management	1	11.1
Middle management	4	44.4
Supervisor/junior management	4	44.4
Total	9	100

3.1 Findings

As mentioned before, this study suggested that the structure of SPMS should (i) consist of measures that cover the economic, environmental and social perspectives, (ii) reflect the sustainability strategy, and (iii) be integrated across sustainability value chain and stakeholders. Table 3 presented the data on SPMS of respondents' companies.

In general, the findings show that the respondents' PMS structure covers the economic, environmental and social measurements. However, the financial indicators appear to be highly implemented by firms, with a mean score of 6, while social responsibility measures come second (mean = 5.67) followed by the supplier performance measures (mean = 5.44), employees performance measures (mean = 5.33), customer satisfaction measures (mean = 5.11), new product development measurements (mean = 4.67), the information capital effectiveness (mean = 4.67) and finally the environmental measures (mean = 3.89).

The findings also prove that respondents' PMS reflects the sustainability strategy. The findings show the measurements linked with the financial goals (mean = 5.56) as well as sustainability goals (mean = 5.67). Besides that the measurements are linked with the financial strategies (mean = 5.11) and also with sustainability strategies (mean = 5.00).

With regards to the integration of the measurements of activities, the findings show that the measurements have been documented (mean = 5.22) and linked to activities (mean = 5.11). Additionally, most measurements are linked to stakeholders such as, employees, government (mean = 5.56), shareholders, society (mean = 5.22), customer (mean = 5.11) and supplier (mean = 5.00).

Table 3: SPMS of respondents' business unit (n = 9)

SPMS	M	SD
<i>Perspectives:</i>		
Environment	3.89	2.32
New Product Development	4.67	2.12
Employee	5.33	1.22
Financial	6.00	1.12
Information Capital Effectiveness	4.67	1.73
Social Responsibility	5.67	1.00
Customer	5.11	1.17

Supplier	5.44	0.88
<i>Measures link to:</i>		
Customer	5.11	1.05
Supplier	5.00	1.12
Employees	5.56	0.73
Shareholders	5.22	1.30
Society	5.22	1.20
Government	5.56	1.01
<i>Generics:</i>		
Documented	5.22	1.20
Link to financial strategies	5.11	1.36
Link to sustainability strategy	5.00	1.32
Link to financial goals	5.56	1.01
Link to sustainability goal	5.67	1.00
Link to activities	5.11	1.17

Notes: Scale values range from 1 (“Not at all”) to 7 (“To a very great extent”); the higher a mean score is the higher is the level of SPMS provided by the business unit.

M = mean, SD = standard deviation

As stated in Table 3, the environmental measurements were the lowest indicators used by the respondents’ companies. Further analysis on the data reveals that environmental measures were more emphasized by firms in the manufacturing sector compared to other industry (Figure 1). Figure 2 shows that the new product development measurements were also being used by companies in manufacturing sector compared to other industry. However the information effectiveness measurements had been highly implemented in services companies. In terms of social responsibility measurements, the measurements had been greatly implemented in the manufacturing and construction companies (Figure 4).

Figure 1: Environment perspectives & Industry classificatic

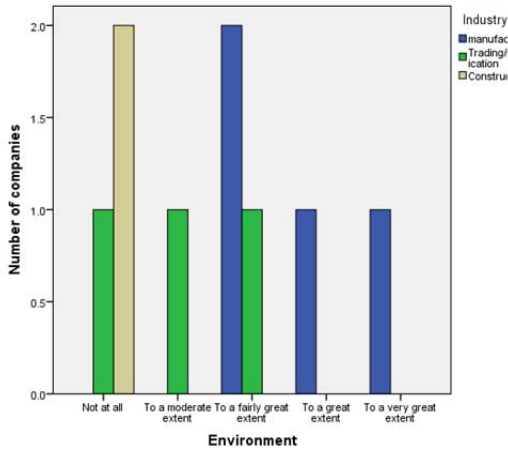


Figure 2: New Product Development and Industries

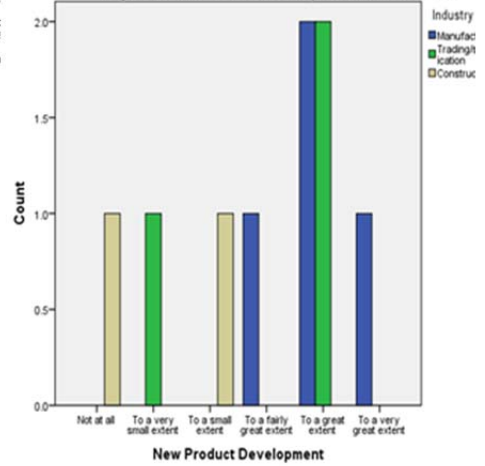


Figure 3: Information effectiveness and Industries

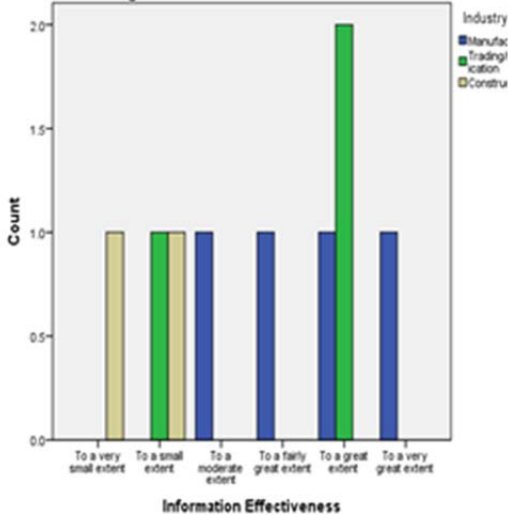
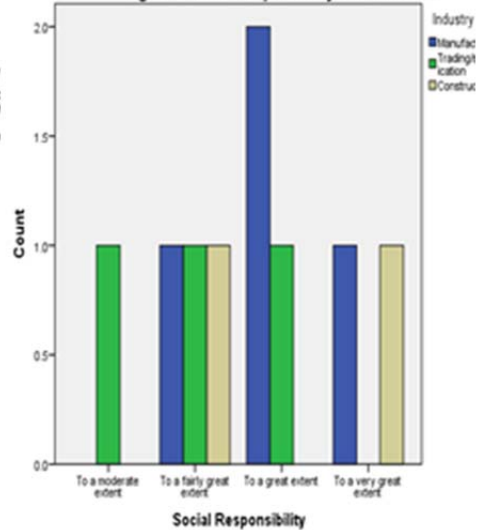


Figure 4: Social Responsibility and Industries



4. DISCUSSION

This study originally examines the execution of SPMS among 9 Malaysian firms within 3 groups of industries, namely the manufacturing, services and construction. To our understanding, it's the first research that examined the characteristics of SPMS implementation. This research shows simply how much firms focus on the way procedures are usually integrated with finance,

sustainability, goals and strategies as well as activities. While, the outcome is less accurate for generalization due to few respondents, nonetheless it is believed to be able to guide future empirical study. As a whole, the study findings provide support that the suggested underlying characteristics for SPMS are in practice.

In particular, this study identifies that most firms carefully assess the performances of economy, social responsibility, supplier, employees, customers and environment. This study identifies that firm from manufacturing industry gives more emphasis on environmental performance. This finding is actually in line with the discussion of Henri and Journeault (2010), where many factories sensitive to environment, would use more environmental performance measures. Whereas, the services firms were identified to give less importance on environmental measurements (Ittner et al., 2003).

This study extends the knowledge of the significant links between both strategic and operational measures (Chenhall, 2005; Ittner et al., 2003). This is due to the findings that most of the respondents not only integrate the financial goals and strategy but also integrate their PMS with sustainability strategy and goals. In fact, by integrating the sustainability aspects in their PMS, firms are able to implement their sustainability strategy.

This study also found that most SPMS are linked with broader stakeholders. These findings are congruent with (N. A. Torugsa, O'Donohue, &Hecker, 2013) argument, where sound relationship with stakeholders is important for corporate sustainability.

Pertaining to managers, our results point out the requirement for them to focus on the improvement of the structure of SPMS. This kind of measurements could underpin the effectiveness of decision making to pursuit the competitive advantage. Foreseeable future works will be able to use that SPMS feature for further understanding on the role of SPMS in obtaining sustainability performances.

5. CONCLUSION

The main objectives of this paper are to suggest the underlying characteristics for SPMS, and to get an idea of the SPMS implementation in Malaysia. The conclusions of this study are;

- There are three comprehensive characteristics of SPMS; (1) measurements cover the economic, environmental and social perspectives (2) measurements reflect the sustainability strategy, and (3) measurements are across sustainability activities and stakeholders.
- Based on a preliminary study on the implementation of SPMS among 9 Malaysian companies, it shows that, SPMS is being used by the respondents' companies.

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