Strategic Performance Measurement System and Organisation Capabilities: Using Levers of Control Framework

Rapiah Mohamed, Wee Shu Hui, Ibrahim Kamal Abdul Rahman and Rozainun Abdul Aziz

The purpose of this paper is to use the levers of control to examine the relationship between strategic performance measurement system and organisational capabilities. The main objective is to examine how strategic performance measurement system influences organisational capabilities. This study proposes that strategic performance measurement system is positively related to organisational capabilities. This paper reports the results of a pilot study of a mail survey. The response came from the top management of 80 Malaysian manufacturing and service firms. The results indicate that beliefs, boundary, diagnostic and interactive control system is positively and significantly correlated with overall organisational capabilities. As for the relationship of levers of control dimension and individual organisational capabilities, the result indicates an overall positive and significant relationship. However, the relationship between diagnostic use and entrepreneurship is not significant.

Field of Research: Management Accounting, Performance Measurement System, Strategic Management, Levers of Control Framework

1. Introduction

Strategic performance measurement system (SPMS) has been in vogue for over a decade. SPMS is designed based on the strategic options adopted by the organisations. Among the prominent examples of strategic performance measurement system are the Balanced scorecard (BSC) concept (Kaplan and Norton, 1992), the results and determinant framework (Fitzgerald et al., 1991) and the performance pyramid system (Lynch and Cross, 1991). The main purpose of SPMS is to help organisations to build organisational capabilities to sustain their competitiveness within an ever increasing competitive

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*Rapiah Mohamed, Faculty of Accountancy, Universiti Utara Malaysia, 06010 Sintok, Kedah Darul Aman, Malaysia E-mail: rapiah@uum.edu.my
**Wee Shu Hui, Ph.D., Associate Professor, Faculty of Accountacy, Universiti Teknologi MARA, Selangor Darul Ehsan, Malaysia E-Mail: weesh411@salam.uitm.edu.my

environment. The rapid growth in ICT provides an avenue for knowledge to spawn and learning and growth to take place. Organisational capabilities must be able to accommodate such growth in order to keep pace with the changing environment. The emphasis of learning and growth perspective in BSC indicates the importance of organisational internal capabilities in sustaining organisational competitiveness. In short, it is necessary for organisations to understand the need for adopting SPMS that provides the necessary information, thereby, allowing organisations to identify the strategies offering the highest potential for achievement of the organisation's objectives and align management processes such as target setting, decision-making and performance evaluation with the achievement of the chosen strategic objectives (Ittner et al., 2003).

Many authors cited capabilities as an important source of competitive advantage (for example Grant (1991); Day (1994); Barney (2001); Hult & Ketchen (2001). The capabilities are a complex bundle of skills and accumulated knowledge, exercised through organisational processes, which enable firms to coordinate activities and make use of their assets (Day, 1994). Innovation, organisational learning, market orientation and entrepreneurship are recognised as primary capabilities to achieve competitive advantage, to match and create market change (Henri, 2005, Hult and Ketchen, 2001). However, there is a lack of evidence in how the design and use of SPMS can support business strategy efficiently and improve organisational competitiveness through facilitating organisational capabilities. The current study, therefore, represents an effort to examine the relationship between strategic performance measurement system use and organisational capabilities by adopting the levers of control framework.

The main objective of this study is to examine the role of strategic performance measurement system as a strategic control tool in assisting managers to enhance organisational competitive advantage. Specifically, the objective of this paper is to examine the relationship between strategic performance measurement system and organisational capabilities using the four levers control framework. This paper reports a preliminary result based on a pilot study. The main research question in this study is: does the strategic performance measurement system influence organisational capabilities?

There are two motivations for this study. First, the need to better understand the role of SPMS in assisting organisation to achieve competitive advantage. Simons (1999) has developed four levers of control framework for controlling business strategy. Since then, some researchers have adopted this framework in the context of performance measurement system (see for example Henri (2005); Tuomela (2005); Widener (2005). Overall, the results from these studies support the assertion that performance measurement system can be used both diagnostic and interactive, and also is connected to the beliefs and boundary system. However, according to Henri (2004), an open debate remains concerning the relationship between performance measurement system and organisational capabilities such as innovation and

organisation learning. Some authors suggest that performance measurement system acts as a trigger for these relationship while other consider it an obstacle. It remains unclear how and why performance measurement system could positively or negatively affect organisational capabilities (Henri, 2004).

Second, many strategy researchers have turned to the resource-based view (RBV) of the organisation as a means of explaining differences in organisation performance (Fahy, 2000, Finney et al., 2005). Under the RBV, resources are the foundation of organisation success. RBV refers to the use of assets, skills, abilities and knowledge within the organisation (Coates and McDermott, 2002); and comprise of three sub-groups, namely tangible assets, intangible assets and capabilities (Fahy, 2000). Competitive advantage from the RBV perspective is achieved by focusing on and exploiting the firm's internal characteristics (Coates and McDermott, 2002). The literature of RBV has tended to favour capabilities as the most likely source of sustainable competitive advantage (Fahy, 2000). Despite considerable interest in the relationship between performance measurement system and strategy, the performance measurement system literature has devoted scant attention to the RBV (Henri, 2005). According to Henri (2005), performance measurement system must be aligned with capabilities to be effective and consistent with strategic choices. This is because the notion of strategic choice itself may not be directly traceable to performance measurement system, but, the relationship should be examined between capabilities and performance measurement system, rather than between strategic choice and performance measurement system. This study used market orientation, entrepreneurship, innovation and organisation learning because past studies found that they are the primary capabilities to achieve competitive advantage (Henri, 2005). The rest of this paper is divided into five sections. Section two is the literature review, section three details the methodology, followed by the results and discussion in section four, and finally the last section provides a conclusion.

2. Literature Review

Simons' (1999) framework suggests four basic levers to control business strategy which are beliefs systems, boundary systems, diagnostic control systems and interactive control systems. Beliefs systems are used to inspire and direct the search for new opportunities, and are related to the core values. Boundary systems are related to the risks to be avoided, and are used to set limits on opportunity-seeking behaviour. Diagnostic control systems are concerned on critical performance variables, and organisation can use them to motivate, monitor and reward achievement of specified goals. Interactive control systems focus more on strategic uncertainties, and organisation can use them to stimulate organisational learning and the emergence of new ideas and strategies.

The levers of control framework contain four types of control systems: a beliefs system, a boundary system, a diagnostic control system, and an interactive control system. Simons (1999) claimed that there is a link between the way that organisations achieve competitive advantage and the design and use of their management control systems including performance

measurement system. The performance measurement system is designed to be used by managers, where the managers can use the system to maintain or alter the pattern in organisational activities (Simons, 2000). Effective control of strategy requires both the freedom to innovate and the assurance that individuals are working productively toward predefined goals. Beliefs system, boundary system, diagnostic control system and interactive control system are believed to be able to manage this tension (Simons, 1999). Control of business strategy is achieved by integrating these four levers of control - beliefs systems, boundary systems, diagnostic control systems and interactive control systems (Simons, 2000 p301). Meaning that organisation needs to use these four levers of control together to get a maximum benefit because the power of these levers in implementing strategy does not lie in how each is used alone. Simons (2000 p303-304) explained how these four levels of control can be used to guide business strategy.

Market orientation firms seek to understand the need for an organisation's culture to be oriented around customers and competitors. Market orientation is important since it can contribute to organisational continuous learning and knowledge accumulation through continuously collecting information about customers and competitors and using the information to create superior customer value and competitive advantage (Hult and Ketchen, 2001, Sin et al., 2005). Entrepreneurship is defined as the identification and exploitation of previously unexploited opportunities (Ireland et al., 2003). Entrepreneurship involves bundling resources and deploying them to create new organisational and industry configurations. According to Ireland et al., (2003) by exploiting entrepreneurship opportunities it can contribute to the organisation's effort to build sustainable competitive advantage. Innovation can be defined as the generation, acceptance and implementation of new ideas, processes, products and services (Calantone et al., 2002). Prior empirical studies had found that innovation capability is the most determinant organisation performance (Calantone et al., 2002). Organisation learning refers to the generation of new insights that have potential to reshape behavior (Hult and Ketchen, 2001). According to Hult and Ketchen (2001) market orientation, entrepreneurship, innovation and organisation learning are each necessary but are not individually sufficient for creating positional advantage. The past research suggests that each element is adequate to offer strengths, but together they can help a firm be uniquely competitive (Hult and Ketchen, 2001).

Tuomela (2005) conducted a case study about implementation of strategic performance measurement system and found that in addition to diagnostic and interactive control, the strategic performance measurement system also supported through beliefs and boundary systems. He explained that a core competencies and customer relationships are visible in strategic performance measurement system, and, hence, respect for individuals and customers had been given a top priority by organisation. While boundary systems are touched upon via strategic constrains that get reflected in selected measures. The study done by Marginson (2002) found that the beliefs system opened the door for new ideas, actions and initiatives. Henri (2005) investigated the influence of performance measurement system use i.e. diagnostic and

interactive on organisational capabilities. The results suggest that an interactive use of performance measurement system fosters organisational capabilities by focusing organisational attention on strategic priorities and stimulating dialogue. Also, by creating constraints to ensure compliance with orders, the diagnostic use of performance measurement system exerts negative pressure on organisational capabilities. However, Henri's study ignored the beliefs systems and boundary systems. Widener (2005) also used levers of control framework in terms of performance measurement system. The study found that both diagnostic and interactive uses of performance measurement system along with the beliefs system and boundary system facilitate the efficient use of management attention. Organisational learning is enhanced reliance on the beliefs system as well as use of the diagnostic system. However, in contrast with Simon's assertion that interactive use will stimulate organisational learning, Widener's study found that the interactive use of the performance measurement system is not associated with organisational learning. Based on the past literature, this study proposes that strategic performance measurement system i.e. diagnostic use, interactive use, beliefs control system and boundary control system is positively related to organisational capabilities i.e. market orientation, entrepreneurship, innovation and organisation learning.

3. Research Method

3.1   The Sample

Questionnaires were sent to top management of 80 organisations covering a listed firms and non-listed companies. Top management refers to either chief executive officer, managing director, chief financial officer, chief operating officer, general manager, vice president or other related executives as normally mentioned as management team in company's annual report. The study used top management team as respondents because according to Simons (1999) top management are the persons who are knowledgeable about the business strategy and the one who will use strategic performance measurement system either diagnostically or interactively. Of the 80 organisations, 30 had returned the questionnaire yielding a 37.5% response rate. Table 1 presents the details of respondent profile.

3.2   Data Collection

Data were collected through a structured questionnaire sent to one member of top management teams. A mail-out package including a cover letter, the questionnaire and a business reply envelope was sent to every contact name. The contact names were obtained from company's annual report 2005 and Federation of Malaysian Manufacturers (FMM) directory (2006). The questionnaire has six sections covering strategic performance measurement

TABLE 1 Respondents Profile

Item	Frequency	Percentage
Position		
Associate Director/Director	4	13.3
CFO/VP Finance	5	16.7
COO/General Manager	10	33.4
Head of Department	4	13.3
Manager/Executive	6	20.0
Group Company Secretary	1	3.3
Total	30	100.0
Working year		
1 yr to 5yr	11	36.7
6 yr to 15 yr	13	43.3
Above 15 yr	5	16.7
Total	29	96.7
Missing	1	3.3
Number of employees		
100 to 300	6	20.0
400 to 800	6	20.0
900 to 2000	8	26.6
2500 to 5000	5	16.7
6000 to 8000	2	6.7
15000 above	2	6.7
Total	29	96.7
Missing	1	3.3
Annual profits		
Less than RM 5million	2	6.7
Between RM 5million to RM 25million	5	16.7
Between RM 26million to RM45million	4	13.3
Between RM 46million to RM 65million	1	3.3
Between RM 66million to RM 85million	1	3.3
Between RM 86million to RM105million	4	13.3
Between RM146million to RM165million	1	3.3
Above RM165million	11	36.7
Total	29	96.7
missing	1	3.3
Major activity		
Manufacturing	9	30
Services	21	70
Total	30	100
Type of Industry		
Consumer products	4	13.3
Industrial products	3	10.0
Construction	1	3.3
Trading/services	7	23.3
Infrastructure	1	3.3
Finance	5	16.7
Technology	2	6.7
Properties	4	13.3
Funds	1	3.3
Others	2	6.7
Total	30	100

design, communication and control, strategic performance measurement use, organisational capabilities, competitive advantage and general information. However, this paper will only focus on the findings of strategic performance measurement use, communication and control, and organisational capabilities. The dependent variable is organisational capabilities that were captured via a five-point Likert scale. The organisational capabilities cover the areas such as market orientation, entrepreneurship, innovation and organisation learning. The independent variables are the four levers of control framework – diagnostic use, interactive use, beliefs system and boundary system where the respondents need to evaluate these items based on a five-point Likert scale.

3.3 Measures

The diagnostic use, interactive use, belief control system and boundary control system was operationalised using the instrument developed by Henri (2005) and Widener (2005). However the wording of the original instrument is slightly modified. This instrument is originally developed based on levers of control framework (Simons, 1999). For market orientation, the instrument developed by Narver & Slater (1990) was adopted. The instrument consisted of three subscales used to measure customer orientation, competitor orientation and interfunctional coordination. Altogether, there are 14 items used to measure market orientation. For entrepreneurship, the study used the instrument suggested by Hult & Ketchen (2001) and Henri (2003). This instrument is originally developed by Naman & Slevin (1993). Entrepreneurship covers three dimensions, which are the willingness to take business related risks, the willingness to be proactive when competing with other organisations, and the willingness to innovate, i.e., to favour change and innovation in order to gain competitive advantage (Naman & Slevin, 1993). Altogether, there are 9 items to measure entrepreneurship. For innovation and organisation learning, the instrument adopted by Hult & Ketchen (2001) and Henri (2005) was used for this study.

4. Results and Discussion

Table 2 reports the reliability of the beliefs, boundary, diagnostic, interactive and organisational capabilities scale using Cronbach's coefficient alpha. Ideally, Cronbach alpha coefficient of a scale should be above 0.70 (Pallant, 2001). All the constructs have Cronbach alpha of above 0.90, indicating that all the constructs have good internal consistency. Table 2 shows a descriptive statistics of minimum value, maximum value, mean and standard deviation of all variables involved in the study. Table 3 displays the Pearson correlation matrix for all variables. The correlation results indicate that beliefs, boundary, diagnostic and interactive are positively and significantly correlated with organisational capabilities as proposed by this study. The presence of multicollinearity is assessed by performing tolerance and variance inflation factor (VIF). As shown in Table 4, the highest VIFs were for interactive ($VIF = 3.043$), diagnostic ($VIF = 2.613$), boundary ($VIF = 2.162$), and beliefs ($VIF = 1.786$). As a VIF of greater than 10 is a litmus test for severe multicollinearity

(Studenmund, 1992), there does not appear to be a major multicollinearity problem.

Table 2 Descriptive Statistics

Variable	No. of items	Min	Max	Mean	Std. Deviation	Cronbach Alpha
Capabilities	32	2.23	4.73	3.6973	.5883	.942
Beliefs	4	2.00	5.00	4.0173	.5587	.913
Boundary	4	2.75	5.00	4.0948	.6698	.842
Diagnostic	4	2.00	5.00	4.2931	.6933	.918
Interactive	8	1.88	5.00	3.8965	.5883	.938

Table 3 Correlation matrix

	Belief	Boundary	Diagnostic	Interactive	Capabilities
Capabilities	0.700**	0.597**	0.657**	0.733**	1.000
Belief	1.000	0.520**	0.360	0.612**	0.700**
Boundary	0.520**	1.000	0.663**	0.643**	0.597**
Diagnostic	0.360	0.663**	1.000	0.724**	0.657**
Interactive	0.612**	0.643**	0.724**	1.000	0.733**

** Correlation is significant at the 0.01 level (2-tailed).

In order to test the relationship between beliefs control system, boundary control system, diagnostic use and interactive use with organisational capabilities, a multiple linear regression was conducted. Two analysis were done; (1) regression of independent variables and overall (total) capabilities (Table 4); and (2) regression of independent variables and individual capabilities (Table 5-8).

Table 4 Results of regression

Variable	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
Constant	.336	.513		.654	.519		
Belief	.339	.113	.446	3.013	.006	.560	1.786
Boundary	.005	.172	.005	.028	.978	.463	2.162
Diagnostic	.299	.157	.340	1.899	.069	.383	2.613
Interactive	.178	.164	.210	1.088	.287	.329	3.043

Adjusted R^2 = .644; R^2 = .693 F=14.094; p= 0.000

a Dependent Variable: Capabilities

According to Pallant (2001), when a small sample involved, it is better to report adjusted R square rather than R square. It is because the adjusted R square statistic provides a better estimate of the true population value. Since the sample size of this study is only 30, so the study will report adjusted R square. The results show that the independent variable i.e. beliefs control

system, boundary control system, diagnostic use and interactive use, explains 64.4 percent of the variance in organisational capabilities. The independent variables made a unique and statistically significant contribution to the prediction of organisational capabilities as indicated by the F-value (*F = 14.094; p = 0.000*, see Table 4).

Table 4 shows that beliefs control system (*b = .446; p = .006),* diagnostic use (*b = .340; p = .069)* and interactive use *(b = .210; p = .287)* has a positive impact on organisational capabilities. However, only beliefs control system has a significant association with organisational capabilities. While boundary control system has the weakest impact on organisational capabilities and does not has a significant relationship with organisational capabilities (*b = .005; p = .978).* The results suggest that beliefs control system makes a strongest unique contribution to explaining organisational capabilities for the Malaysian companies in the sample. It suggests that organisations have strongly enhanced their internal capabilities through the belief systems by ensuring that employees are clearly aware of the mission and vision of the organisation and communicating its set of beliefs to the employees. A beliefs system is the explicit set of organisational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organisation (Simons, 2000). The definitions espouse the values and direction that senior managers want subordinate to adopt and can be used to motivate them to search for and create opportunities to achieve the overall mission of the firm. Core values provide guidance about responsibilities to customers, employees, local communities, and shareholders. They explicitly define top management's views on trade-offs such as short-term performance versus long-term responsibilities.

The strong dominance of the beliefs system as an explanatory lever of control dilutes the significance of the other three levers, boundary, diagnostic and interactive. Therefore, it would be necessary to drill down further the significance of the individual lever of control. Table 5 to Table 8 present the results of regression for relationship of each dimensions in the strategic performance measurement system i.e. beliefs, boundary, diagnostic use and interactive use with individual capabilities i.e. market orientation, entrepreneurship, innovation and organisation learning. The results show that for beliefs, it has a positive and significant relationship with market orientation, entrepreneurship, innovation and organisation learning (see Table 5). This confirms the results as shown in Table 4. However, the beliefs system has made the strongest unique contribution to explaining market orientation (*b=.752; p = .000),* followed by entrepreneurship (*b = .658; p = .000),* organisation learning (*b= .578; p= .001)* and innovation (*b= .377; p= .040).* More than 50% of the respondents are from the service sectors and would therefore tend to be customers oriented. The beliefs system of such organisations, in focusing on customers would have an organisation culture oriented around customers and competitors. Market orientation is therefore important and strongly related to the beliefs system. Information on customers and competitors through its beliefs system would be continuously communicated. The importance of using and understanding such information

ultimately leads to the creation of superior customer value and competitive advantage.

Table 5 Results of Regression: IV - Beliefs

Models	Regression Coefficients			Statistical Significance	
	B	Std error	Beta	t	Sig.
1 (constant)	1.732	.367		4.717	.000
Beliefs	.542	.090	.752	6.035	.000
2 (constant)	.880	.513		1.714	.098
Beliefs	.580	.126	.658	4.622	.000
3 (constant)	2.538	.573		4.430	.000
Beliefs	.302	.140	.377	2.156	.040
4 (constant)	1.087	.768		1.415	.168
Beliefs	.704	.188	.578	3.747	.001

1- DV: Market orientation ($Adj.\ R^2 = .550;\ F = 36.422$)
2- DV: Entrepreneurship ($Adj.\ R^2 = .413;\ F = 21.367$)
3- DV: Innovation ($Adj.\ R^2 = .112;\ F = 4.650$)
4- DV: Organisation learning ($Adj.\ R^2 = .310;\ F = 14.040$)

Similarly, boundary has a positive and significant relationship with market orientation, entrepreneurship, innovation and organisation learning (see Table 6). The largest beta coefficient is *.555* which is for relationship between boundary and organisation learning, while the smallest beta is *.372*, indicating that boundary has made less contribution in explaining innovation.

Table 6 Results of Regression: IV - Boundary

Models	Regression Coefficients			Statistical Significance	
	B	Std error	Beta	t	Sig.
1 (constant)	1.726	.659		2.618	.014
Boundary	.533	.160	.534	3.344	.002
2 (constant)	.620	.816		.760	.453
Boundary	.633	.198	.518	3.203	.003
3 (constant)	2.063	.804		2.567	.016
Boundary	.412	.195	.372	2.119	.043
4 (constant)	.077	1.096		.071	.944
Boundary	.938	.265	.555	3.535	.001

1 DV: Market orientation ($Adj.\ R^2 = .260;\ F = 11.180$)
2 DV: Entrepreneurship ($Adj.\ R^2 = .242;\ F = 10.257$)
3 DV: Innovation ($Adj.\ R^2 = .107;\ F = 4.492$)
4 DV: Organisation learning ($Adj.\ R^2 = .284;\ F = 12.493$)

The boundary systems are formally stated rules, limits, and proscriptions tied to defined sanctions and credible threat of punishment (Simons, 2000). These systems are important to allow individual creativity within defined limits of freedom. Boundaries such as business conduct and strategic are established by senior managers who are in a unique position to appreciate the risks that derive from innovation and high-performance strategies. One of the benefits of having such boundaries is organisation learning as indicated in the strong, significant and positive relationship between boundary and organisation learning. Although boundaries may have its restrictions and also be misconstrued as stifling learning, proper communication on the limits of freedom to organisational participants is essential to reduce chaos. Examples of strategic boundaries that are often communicated are minimum levels of financial performance, minimum sustainable competitive position, products and services that do not draw on core competencies, and market positions and competitors to be avoided. Without boundary systems, creative opportunity-seeking behavior and experimentation can waste the resources of the organisation. The results from Table 7 indicate that diagnostic use has a unique and statistically significant relationship with market orientation ($b = .668; p = .000$), innovation ($b = .425; p = .019$) and organisation learning ($b = .709; p = .000$). Diagnostic use shows a weakest contribution to explaining entrepreneurship ($b = .352; p = .056$) and the association is not significant. The strongest relationship is between diagnostic use and organisational learning.

Table 7 Results of Regression: IV – Diagnostic use

Models	Regression Coefficients			Statistical Significance	
	B	Std error	Beta	t	Sig.
1 (constant)	1.521	.509		2.990	.006
Diagnostic	.556	.117	.668	4.750	.000
2 (constant)	1.671	.783		2.134	.042
Diagnostic	.359	.180	.352	1.990	.056
3 (constant)	2.063	.687		3.001	.006
Diagnostic	.393	.158	.425	2.486	.019
4 (constant)	-.368	.815		-.451	.655
Diagnostic	.998	.188	.709	5.317	.000

1   DV: Market orientation (*Adj. $R^2 = .426; F = 22.565$*)
2   DV: Entrepreneurship (*Adj. $R^2 = .093; F = 3.959$*)
3   DV: Innovation (*Adj. $R^2 = .152; F = 6.181$*)
4   DV: Organisation learning (*Adj. $R^2 = .485; F = 28.266$*)

Diagnostic control systems are the essential management tools to transform intended strategies into realized strategies. These control systems are focus attention on goal achievement for each individual within the business and allows managers to measure outcomes and compare results with preset profit plans and performance goals (Simons, 2000). Information used in the process of diagnosing provides key knowledge to organisation learning. The lack of significant relationship between diagnostic use and entrepreneurship could be due to the lack of entrepreneurship characteristics such as in risk taking. This is an area for future study. The findings show that interactive use is

significantly correlated with market orientation, entrepreneurship, innovation and organisation learning (see Table 8). Interactive use has the largest contribution in explaining market orientation ($b = .772; p = .000$), followed by organisation learning ($b = .743; p = .000$), innovative ($b = .463; p = .010$) and entrepreneurship ($b = .449; p = .013$).

Table 8 Results of Regression: IV – Interactive Use

Models	Regression Coefficients			Statistical Significance	
	B	Std error	Beta	t	Sig.
1 (constant)	1.490	.382		3.895	.001
Interactive	.621	.097	.772	6.425	.000
2 (constant)	1.489	.658		2.264	.032
Interactive	.442	.166	.449	2.658	.013
3 (constant)	2.139	.592		3.612	.001
Interactive	.414	.150	.463	2.765	.010
4 (constant)	-.021	.681		-.030	.976
Interactive	1.010	.172	.743	5.871	.000

1   DV: Market orientation (*Adj. R^2 = .581; F = 41.285*)
2   DV: Entrepreneurship (*Adj. R^2 = .173; F = 7.066*)
3   DV: Innovation (*Adj. R^2 = .186; F = 7.646*)
4   DV: Organisation learning (*Adj. R^2 = .536; F = 34.473*)

Interactive control systems are the control system that managers can use as a tool to influence the experimentation and opportunity-seeking that may result in emergent strategies. Interactive control systems are formal information systems managers use to involve themselves regularly and personally in the decision activities of subordinates (Simons, 2000). Interactive control systems focus attention and force dialogue throughout the organisation. The strong positive relationship between interactive control system and market orientation suggests that as market conditions change, control systems need to be interactive to respond swiftly to new market conditions. Customers tastes change as new products enter the market or as the environment changes and these changes need to captured and translated into revised strategies which can be facilitated through an interactive control system.

From the results of the multiple regression analysis, it is clear that all the four levers of control framework play an important role in enhancing organisational capabilities such as market orientation, entrepreneurship, innovativeness and organisation learning. Overall, beliefs control system makes a largest unique contribution and significant relationship with the total capabilities. The results also indicate that boundary control system has a smallest contribution on a total capabilities and the relationship is not significant. For the relationship with each individual variable of organisation capabilities, it is found that beliefs and interactive use has a strongest unique contribution in explaining market orientation. While boundary and diagnostic use has a strongest unique contribution in explaining organisation learning. Diagnostic use and interactive use show a weak contribution in explaining entrepreneurship. Beliefs and boundary has made less contribution in explaining innovation.

The results of the study support the assertion by Fitzgerald et al., (1991), Kaplan and Norton (1992) and Simons (1999) who claimed that organisations can use SPMS to help them to build their internal capabilities of market orientation, entrepreneurship, innovation and organisation learning. SPMS contains of financial and non-financial information and by using the information either diagnostic or interactive can motivate and stimulate organisation learning and the emergence of new ideas. Beliefs system provides the basic values, purpose and direction for the organisation. This can help the top management to cultivate the values to be adopted by the employees and can be used to motivate them to search for and create opportunities to achieve the overall mission of the organisation. Boundary system is important to inform the employees the rules and limits. Without boundary system, creative opportunity-seeking behaviour can waste the resources of the organisations. The findings also consistent with the suggestion by Henri (2005) who said that diagnostic use and interactive uses of SPMS contribute both specifically and collectively to organisation capabilities.

The results provide evidence that beliefs control system makes a strongest unique contribution to explaining organisational capabilities. This is in line with the suggestion made by Marginson (2002) who found that the beliefs system opened the door for new ideas, actions and initiatives. It is found that beliefs and interactive use has a strongest unique contribution in explaining market orientation. The results suggest that the greater the beliefs control system is communicated and understood by employees and the greater the SPMS use to enable discussion in meetings with subordinates, to provide common view, to tie organisation together and etc will help organisation to enhance its internal capabilities of market orientation. The results are not surprising as majority of the companies in the study mentioned the importance of to be customer oriented and it is reflected in their mission statement.

The results are not similar with Henri (2005) who reported that diagnostic use of performance measurement system is significantly and negatively related to capabilities of market orientation, entrepreneurship, innovation and organisation learning. Besides that Henri's (2005) study found the significant positive relationship between interactive use of performance measurement system and capabilities. The results from analysis of interactive use and individual capabilities provide the similar of those of Henri (2005). The positive and significant relationship between beliefs system, diagnostic use and organisation learning reported in this study is consistent with the findings from prior study by Widener (2005) where she found that organisation learning is enhanced by reliance on the beliefs system and diagnostic use. However, in contrast with Widener (2005), this study found that interactive use is significantly correlated with organization learning, which is in line with Simons (1999) argument that interactive use can help organisation to stimulate organisation learning. The insignificant relationship of diagnostic use, boundary system and overall capabilities of market orientation, entrepreneurship, innovation and organisation learning is may be due to the function of diagnostic use and boundary system that create constraints, rules

and limits to ensure compliance with order and this will exert negative pressure on capabilities as suggested by Henri (2005).

5. Conclusion

This study, in examining the relationship between SPMS and organisational capabilities, provides empirical evidence on the use of the four levers of control framework as a SPMS tool and the four dimensions of organisational capabilities, market orientation, entrepreneurship, innovation and organisation learning. This study provides support for levers of control framework. The results of the study showed that there is a positive relationship between beliefs control system, boundary control system, diagnostic use and interactive use with overall organisational capabilities. Beliefs control system is found as a strongest predictor for organisational capabilities and the only one that had a significant impact on the organisational capabilities. Diagnostic use and interactive use have a positive association with organisational capabilities, but the association is not significant. Boundary control system has a weakest impact on organisational capabilities, and it is also not significant. For the relationship of levers of control dimension and individual organisational capabilities, it is found that the relationship is positive and significant except for diagnostic use and entrepreneurship.

The results provide evidence that SPMS can help organisations to build organisational capabilities to sustain competitiveness against their competitors. However, the use of strategic performance measurement system alone is not enough to enhance organisational capabilities. In order to ensure the effectiveness of SPMS it must also be supported by beliefs control system and boundary control system. The results have implications to the management practice. As mentioned by prior researchers such as Day (1994); Barney (2001); Hult and Ketchen (2001), capabilities are an important source of competitive advantage. This study sheds light on the importance of internal capabilities and also the potential of SPMS as a major contributor to enhance the capabilities. Due to the small sample size, the results of the study cannot be generalised, however it provide empirical evidences and can be used as a basis to understand the role of strategic performance measurement system in enhancing organisation capabilities.

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