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ORGANIZATIONAL CAPABILITIES, STRATEGIC MANAGEMENT ACCOUNTING AND FIRM PERFORMANCE

Tan Ah Lay

KDU University College
ahlaytan@yahoo.com

Ruzita Jusoh

University of Malaya
geee@um.edu.my

Abstract

From a resource-based view perspective, the paper provides empirical evidence on new emerging strategic management accounting (SMA), its association with organizational capabilities (market orientation, entrepreneurship, innovativeness and organizational learning) and the interlinkages among these four elements of organizational capabilities. Partial least squares (PLS) technique was used to test the contingency model. Using the mail survey data of 103 manufacturing strategic business units (SBUs) of public listed companies in Malaysia, the results found that the four organizational capabilities - market orientation, entrepreneurship, innovativeness and organizational learning - collectively give rise to positional advantage leading to enhanced firm performance. SMA techniques are found to support the internal organizational capabilities. However, SMA usage is not associated with firm performance, indicating that the mediation role of SMA usage on the relationship between organizational capabilities and firm performance is not supported. The results confirm that a firm can attain above average performance if it possesses and emphasizes the four organizational capabilities collectively and these four organizational capabilities collectively are also important to support the usage of SMA techniques which can provide useful information for improvement of internal capabilities as well as resource allocation and utilization.

Keywords: *strategic management accounting, organizational capabilities, market orientation, entrepreneurship, organizational learning*

INTRODUCTION

Traditional management accounting has failed to respond to the changing competitive and manufacturing environment resulted in a situation that management accounting systems (MAS) are considered no longer relevant to the changing environment (Bromwich and Bhimani 1989; Otley 2001; Drury 2012). Simmonds (1981) first introduced the term "strategic management accounting" (SMA) which involves numerous new techniques which are long-term, future-oriented and externally focused (Bromwich and Bhimani

1989, 1994; Wilson 1995; Roslender and Hart 2003). The strong advocates of SMA are Simmonds (1981), Shank (1989), Bromwich (1996), Roslender (1995) and Kaplan and Norton (1992). Most of their work is influenced by Porter (1980, 1985) who introduced value chain analysis and five competitive forces in formulating and implementing strategy. Since then, there were much interests expressed on the use of SMA but the empirical studies on the effectiveness in using these techniques have been scant. Even though Langfield-Smith (2008) found no compelling evidence to wide adoption of SMA,

Lord (1996) argued that the techniques and elements of SMA may in many cases already be found in the firms. More recently, based on the same instrument to measure SMA usage, studies in Italy (Cinquini and Tenucci 2010), New Zealand, the UK, the USA (Guilding et al., 2000), Australia and Slovenia (Cadez and Guilding 2007) reveal that SMA techniques with orientation towards competitor information are most widely used. Yet, there is no consensus on the meaning of the term “SMA” 30 years after it was coined by Simmonds (1981) (Roslender and Hart 2010).

It was pointed out that the SMA literature has mostly not addressed the main themes of the strategic management (SM) literature – change, organizational resources, innovation and the corporate whole (Nixon and Burns 2012). Past empirical research of SMA in the last few decades seems to focus on a narrow, first-era view of competitive advantage with Porter’s (1980, 1985) industry analysis (five competitive forces) model and generic competitive strategies (Nixon and Burns 2012). The emphasis on the strategic orientation of management accounting has overlooked the need of internal organizational capabilities to support external competitive bases (Nixon and Burns 2012). Past research suggests that each element of organizational capabilities is adequate to offer strengths, but collectively the four elements can help a firm to be uniquely competitive (Hult and Ketchen 2001; Henri 2006). Recent research found innovativeness is the determinant of firm performance and it plays the mediating role of relationship between three other elements (entrepreneurship, market orientation and organizational learning) and firm performance. But little research has explored the interaction of four elements of organizational capabilities (Hurley et al. 2003; Jimenez-Jimenez et al. 2008; Lin et al. 2008). Furthermore, there is still no research that investigates the association of SMA with the four elements of organizational capabilities in a collective manner. Besides, there is a gap in Cadez and Guilding’s (2008) study in which they only examined one element of organizational capabilities which is market orientation and

found no support for the relationship between market orientation and SMA usage.

Moreover, much of the research in SMA in the past has concentrated on which accounting techniques are used and in what circumstances the techniques are used (Tillmann and Goddard 2008). In order for a firm to realize full potential for competitive advantage, organizational capabilities have to combine with numerous components of organization such as formal reporting structure and management control systems (Barney 2001). Key SMA techniques, such as balanced scorecard, activity-based costing and target costing are found to be closely associated with internal capabilities (Davila *et al.* 2009; Goebel *et al.* 1998; Dekker and Smidt 2003).

Based on the above arguments, it is the motivation of this paper to response to the calls for bridging the gap between the concepts in management control system (in this case SMA) and strategic management (Nixon and Burns, 2005), fill the research gap of Cadez and Guilding (2008) and find more empirical support for the argument that entrepreneurship, market orientation and organizational learning are the antecedents of innovativeness which is the determinant of firm performance (Lin *et al.* 2008). The inclusion of organizational capabilities in the theoretical framework is in line with the argument that resource-based view of the firm and competitive advantage has been mostly neglected by the extant SMA literature (Nixon and Burns 2012). The aim of this paper is, therefore, to examine whether organizational capabilities (market orientation, entrepreneurship, innovativeness and organizational learning) are associated with the usage of SMA techniques. Based on the resource-based view (RBV) of the firm, the four organizational capabilities collectively may give rise to competitive advantage and lead to enhanced firm performance. There is no research thus far to examine how the four capabilities can influence the usage of SMA. Previous studies on SMA techniques (e.g. Hoque and James 2000; Kennedy and Affleck-Graves 2001; Cadez and Guilding 2008; Korravee and Phapruek 2010) normally made use of a single theory such as contingency theory. However, the current SMA study is

based on two underlying theories: contingency theory and RBV of the firm. This approach is in line with Greenwood and Miller (2010) who argued that the study of organization design can be approached by contingency theory and RBV.

The remainder of the paper is structured in six sections. Next section covers literature review and hypotheses development. Research method and results are presented in section three and section four respectively. Section five provides a review of the salient points of the study and discussion of findings and limitations. Final section presents the conclusion and recommendations for future research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Strategic Management Accounting

SMA can be defined as “the provision and analysis of financial information on the firm’s product markets and competitors’ costs and cost structures and the monitoring of the enterprise’s strategies and those of its competitors in these markets over a number of periods” (Bromwich 1996, 206). Since there is still no agreed theoretical framework for SMA, several authors have suggested several management accounting techniques, themes, or attributes that can be considered as part of SMA. These new management accounting techniques and themes emerge due to the weaknesses in the traditional management accounting systems. Bromwich and Bhimani (1989, 1994), in their CIMA Reports, stressed the importance of qualitative and non-financial measures in manufacturing activities. Management accounting needs to become more externally focused to enable the enterprise to look outward to the final goods market. Therefore, being broad scope, internal and external oriented and long term focused, SMA is considered a sub-system of management control system (MCS) (Chenhall 2003; Cadez and Guilding 2008) because MCS is a broader term that encompasses management accounting and controls (Chenhall 2003; Drury 2012).

There are several prominent management accounting techniques that can be considered as part of SMA techniques. For example, Kaplan (1990) initiated activity-based costing (ABC) which is based on the principle that it is activities and not products that give rise to costs. This approach eventually became activity-based management (ABM) which is capable of identifying and implementing opportunities for improvements in profitability, efficiency and quality within an entity (Roslender 1995). Meanwhile, Shank (1989) proposed the blending of three themes: value chain analysis, strategic positioning analysis and cost driver analysis from the strategic management literature to become a framework called ‘strategic cost management’ (SCM). Since strategy and vision are of significance to all the stakeholders in the organization, Kaplan and Norton (1992) developed a new performance measurement system called Balanced Scorecard which takes into consideration the necessity of customer, internal business process, and learning and growth perspectives alongside a financial perspective, in defining future orientation. In addition, Roslender (1995) considered SMA as a “generic approach to strategic positioning” which encompasses Porter’s competitive advantage theory and his strategic cost analysis. Further, cost management techniques such as target costing and life-cycle costing also meet the definition of SMA. Target costing is based on market-driven or price-driven costing concept (Ansari et al. 2007) where the target-selling price is set by the market through comparison of competitive products before the product is being designed (Helms, et al 2005). With regard to life-cycle costing, literature highlights that customer profiling, competitive advantage and quality of information system (IS) information have a positive impact on the extent to which life cycle cost analysis is employed by firms (Dunk, 2004). In addition, quality costing can be part of SMA as it is also known as a strategic management cost tool which considers customer orientation as the most important goal (Ito 1995). As SMA comprises of strategically oriented management accounting techniques, studies that look at the relationships between SMA

techniques and particular strategic archetypes discover that multiple designs of strategy and SMA may be equally effective in a particular context (Cadez and Guilding 2012) and the loose coupling between SMA techniques and business strategy typologies indicates that the same SMA technique can support different strategic approaches (Cinquini and Tenucci 2010).

For the purpose of this study, 16 SMA techniques which are classified into five broad categories - costing; planning, control and performance measurement; strategic decision-making; competitor accounting; and customer accounting (Cadez and Guilding 2008) – were analyzed. This study regards SMA as broad scope which has the attributes of external (e.g. customer and competitors orientation), non-financial, and future oriented information (Bromwich 1996; Wilson 1995; Roslender and Hart 2003). However, there is an oversimplification by viewing each of these 16 techniques as independent of one another (Woods et al. 2012). For example, in applying strategic cost management approach, value chain analysis, cost driver analysis or ABC, quality costing and competitive advantage analysis have to be considered (Wilson 1995; Bhimani and Langfield-Smith 2007). The valuation of customers as asset is also not possible without first applying customer profitability analysis and lifetime customer profitability analysis. As such, for the purpose of this study, SMA was viewed as comprising a coherent subset of management accounting practices which exhibit such attributes that carries a subtle, yet significant, unifying aspect (Cadez and Guilding 2008). This operationalization signifies the study to focus on an information set provided by the 16 SMA techniques.

Organizational Capabilities

Organizational capabilities are the fundamental elements of the resource-based view (RBV) of the firm. In line with RBV, innovation, organizational learning, market orientation and entrepreneurship are recognized as primary capabilities to reach competitive advantage, to match and create market change (Henri 2006, 532). These

capabilities must be combined to help a firm to be uniquely competitive (Henri 2006; Hult and Ketchen 2001; Hurley and Hult 1998) as each individual capability is not sufficient to develop sustained advantages.

The link between resources emerges when market orientation is complemented by an entrepreneurial drive that leads to the cultural foundation for organization learning which is valuable to a firm's customers. The understanding of customers' expressed and latent needs can lead to innovativeness, such as introduction of new products and services (Slater and Narver 1995). Despite that there are at least 10 alternative analytical models involving the four organizational capabilities drawn from literatures on strategic management and strategic marketing (Hult *et al.* 2003), this study adopted the model of Lin *et al.* (2008) whereby the four capabilities are predicted to be an element that collectively contributes to the development of sustainable competitive advantage resulting in better performance. The four capabilities are interlinked as follows:

1. Entrepreneurship has a positive impact on market orientation (Matsuno *et al.* 2002).
2. Market orientation requires extensive organizational learning. Both are highly correlated and mutually dependent (Day 1994; Slater and Narver 1995; Bell *et al.* 2002). Learning orientation is indispensable to market and entrepreneurial orientation (Hurley and Hult 1998).
3. Learning orientation mediates the relationship between market orientation and innovativeness, and the relationship between entrepreneurial orientation and innovativeness (Jaworski and Kohli 1993; Baker and Sinkula 2002; Slater and Narver 1995; Hurley and Hult 1998).
4. The higher the extent of learning orientation, the stronger is the influence on innovativeness (Goes and Park 1997; Hurley and Hult 1998; Baker and Sinkula 1999). Innovativeness is an important determinant of business performance (Narver and Slater 1990; Jaworski and Kohli 1993; Greenley 1995).

Organizational Capabilities and SMA Usage

Henri (2006) argued that diagnostic use of management control systems (or mechanistic controls) does not support the requirements of the four organizational capabilities. This is because the diagnostic use of management control systems emphasizes tight control of operations and strategies, and highly structured channels of communication and restricted flows of information. In contrast, the interactive use (or organic controls) of MCS (a strategic tool referred by Bhimani and Langfield-Smith (2007)) supports the development of ideas and creativity, contributes to expanding the organization's information processing capacity and fosters the deployment of the four capabilities (Simons 1995; Henri 2006). In this respect, SMA techniques seem to fall within the category of interactive or organic controls.

With regard to market orientation capability, Day (1994) argued that a market-oriented firm has processes for collecting market intelligence about customers and competitors and integrating them with strategic decision-making process. As such, Guilding and McManus (2002) contended that in an environment with a high focus on market orientation, customer accounting system (one form of SMA techniques) will be more developed. Market-oriented firms are also more likely to make use of brand valuation (a SMA technique) to encourage different departments to share information and work together (Cravens and Guilding 1999). Market orientation concept shares similar emphases as the SMA concept, including the necessity for developing a high degree of inter-functional coordination (Roslender and Hart 2003). For example, the process of brand valuation, consistent with the market orientation concept and process, encourages different departments to share information and work together (Cravens and Guilding 1999). Further, since more and more firms are relying upon market orientation to yield a competitive advantage, there must be a capability to account for the resources used in carrying out market-oriented activities (Goebel et al. 1998). Activity-based costing (considered as a SMA technique), for

example, is able to bridge the information gap between marketing and accounting (Goebel et al. 1998). Target costing, another SMA technique, also has the element of market orientation in its process. The process requires the product designers to consider explicitly the value of product characteristics in the market and the price that customers are willing to pay (Dekker and Smidt 2003). Cadez and Guilding's (2008) mail survey of 193 Slovenian companies did not produce support for the relationship between market orientation and SMA usage. They claimed that very strong direct relationship between market orientation and performance undermines the indirect effect via SMA usage. Surprisingly, their qualitative data obtained from post-survey interviews indicated that market orientation is an important factor influencing the usage of SMA techniques.

Furthermore, entrepreneurship capability is concerned with the pursuit of significant new value creating opportunities; taking advantage of experimenting and succeeding; uncertainty and volatility; and foremost creativity (Davila et al. 2009). A new paradigm has emerged in highlighting the relevance of accounting and control to innovation and entrepreneurship by looking at the competitors and other actors in the environment. Control systems such as objective setting processes, performance measurement, and compensation schemes are important in creating a creativity environment (Davila et al. 2009). Kaplan and Norton (2001) suggested that balanced scorecard (a SMA technique) also has some elements of entrepreneurship whereby it should describe how intangible assets are combined with tangible assets to create differentiating customer value propositions. SMA techniques, being more forward-looking and proactive as compared to traditional management accounting (Lord, 2007), will be more suitable for entrepreneurial organizations operating in a risk-taking environment.

Innovativeness capability deals with the degree in which the organizational culture promotes and supports innovation (Jimenez-Jimenez et al. 2008). Bisbe and Otley (2004) argued that the most innovative firms are

intensive users of formal MCS which may lead to increased innovativeness. For example, Simons' (1995) framework of interactive control system stimulates the discussion and exchange of knowledge in the organization and is associated with enhanced innovativeness. Also, balanced scorecard, a performance measurement system that is intimately associated with the strategic process, has been argued to work as an interactive system (Davila et al. 2009), thus should be able to stimulate innovativeness.

With respect to organizational learning, organizations that have the capability to learn and transfer knowledge quickly by effectively using their human capital can gain a source of competitive advantage (Ireland et al. 2001). It is organizational learning that makes the company act proactively and facilitates radical innovation (Jimenez-Jimenez et al. 2008). SMA requires a learning orientation which motivates hard work and smart work (Coad 1996). In fact, organizational learning orientation has been embedded in several management accounting and performance measurement systems. For example, a customer orientation dimension of strategic performance measurement system is found to be associated with organizational learning (Chenhall 2005). Also, knowledge acquisition, a major construct of organizational learning, requires non-financial performance measurement such as the balanced scorecard in the processes of environmental scanning (Kloot 1997).

Since organizations require various SMA techniques to attain competitive advantage, a positive relationship between organizational capabilities and SMA usage is anticipated as follows:

H₁: Organizational capabilities (market orientation, entrepreneurship, innovativeness and organizational learning) are positively associated with SMA usage.

Organizational Capabilities and Performance

Past research suggests only the combination of four organizational capabilities can help a firm become uniquely competitive

and enhance superior performance (Hurley and Hult 1998; Hult and Ketchen 2001; Henri 2006; Lin et al. 2008). Following the framework of Lin et al. (2008), four constructs of organizational capabilities are linked to each other and this combination gives rise to competitive advantage and better firm performance. While several past studies found market orientation has a positive direct impact on firm performance (e.g. Narver and Slater 1990; Jaworski and Kohli 1993; Slater and Narver 2000; Farrell and Oczkowski 2002; Ramayah et al. 2011), there are also studies that did not find market orientation significantly and directly related to firm performance but rather it indirectly related to firm performance through innovativeness or organizational learning (e.g. Greenley 1995; Baker and Sinkula, 1999; Jimenez-Jimenez et al., 2008). A few studies also discovered that innovativeness is an important determinant of firm performance (Narver and Slater 1990; Jaworski and Kohli 1993; Greenley 1995; Jimenez-Jimenez et al. 2008). In line with the framework of Lin et al. (2008), it is conjectured that organizational capabilities collectively help to generate competitive advantage leading to enhanced performance.

H₂: Organizational capabilities (market orientation, entrepreneurship, innovativeness and organizational learning) are positively associated with firm performance.

SMA Usage and Performance

The relationship between management accounting usage and performance has been extensively investigated (Cadez and Guilding 2008). However, Cadez and Guilding (2008) pointed out that the exact nature of its relationship is rather ambiguous (Baines and Langfield-Smith 2003) and the relationship is rather dependent on organizational contextual factors (Chenhall 2003). With regard to SMA, despite its overwhelming increase in literature, it suffers from a lack of empirically based research (Cadez and Guilding 2008; Nixon and Burns 2012). Therefore, for the purpose of this study, prior studies relating to budgets and the use of management accounting system (MAS), non-financial information, benchmarking, and

balanced scorecard will be used to lend some support for the SMA and performance relationship.

SMA is expected to provide many benefits similar to budget setting process if used interactively or as a planning mechanism. According to Dunk (2011), budgets that are used predominantly as a planning mechanism and consistently with Simons' (1990) interactive MCS approach, then such planning would facilitate product innovation resulting in enhanced performance. This argument is consistent with Abernethy and Brownell (1999) who found interactive use of budgets (i.e. using the budget to stimulate dialogue and continuous learning) is matched with higher levels of strategic change and performance. Generally, academics regard SMA as forward-looking, outward-looking, and broad scope which includes financial and non-financial measures (Wilson 1995; Lord 2007). Empirical investigation supports that firms employing a combination of financial and non-financial measures achieve higher returns on assets (Said et al. 2003). SMA, which has the characteristics of broad scope MAS information, may be used interactively to encourage dialogues among managers and to enhance performance. This is in line with the argument that interactive use of MAS focuses on the use of information for dialogue and communication (Simons 1995; Abernethy and Brownell 1999). Abernethy and Bouwens (2005) argued that if sub-managers are involved in the system design, there will be a greater level of managerial acceptance of accounting innovation, greater level of system satisfaction, and which in turn leads to the performance improvement. In the context of SMA, sub-managers' acceptance of SMA practices and satisfaction can lead to higher performance if sub-managers are involved in the SMA system design. Interestingly, Ittner and Larcker (1997) found that the association between benchmarking (a form of SMA techniques) and firm performance depends on the industry types. They revealed that benchmarking has little association with the performance of firms in computer industry but has a positive effect on the performance in the automotive industry. In the case of activity-

based costing (ABC), Kennedy and Affleck-Graves (2001) discovered firms adopting ABC techniques outperformed or matched non-ABC firms.

Furthermore, Malina and Selto (2001) found balanced scorecard (BSC), another form of SMA technique, creates strategic alignment, effective motivation, and positive organizational outcomes. Likewise, Hoque and James (2000) found that greater use of BSC is associated with improved performance. Chenhall (2005) also found integrative strategic performance measurement systems, such as balanced scorecard, enhance the strategic competitiveness of organizations through the support of alignment of manufacturing with strategy and organizational learning. Overall, the above evidence motivates the following hypothesis:

H3: SMA usage is positively associated with firm performance.

Organizational Capabilities, SMA Usage and Performance

H1 envisages that organizational capabilities influence SMA usage while H3 proposes that SMA usage leads to higher firm performance. If these two hypotheses are statistically supported, then it can be deduced that SMA usage plays a mediation role on the relationship between organizational capabilities and firm performance. Based on the contingency approach (Baron and Kenny 1986; Gerdin and Greve 2004) and the assumptions that H1 and H3 are supported, it is anticipated that there is an indirect effect exists between organizational capabilities and performance via SMA usage. Thus, the following hypothesis is formulated:

H4: SMA usage mediates the relationship between organizational capabilities (market orientation, entrepreneurship, innovativeness and organizational learning) and firm performance.

From the above arguments, a theoretical framework drawn from contingency theory and resource-based view (RBV) was developed as shown in Figure 1. Contingency theory assumes that the design and use of control systems is contingent upon the context

of the organizational settings (Fisher 1998). Past studies on MCS are carried out to a large extent on contingency theory. Their purpose is mainly to explain the effectiveness of MCS designs best suit the contextual variables such as strategy, external environment, technology, organizational structure, size and culture (Kald et al. 2000; Chenhall 2003). Contingency theory became a feature of management accounting research when researchers started to explore budgeting, and management control in its organizational context (Ryan et al. 2002).

The principal contribution of RBV is its theory of sustainable competitive advantage which can be expected to lead to sustained performance (Newbert 2007). In order to achieve sustainable competitive advantage, a firm must possess certain key firm-specific resources and capabilities that have special characteristics, such as value, rare, inimitability and non-substitutable, or VRIN (Barney 1991). Firm's resources such as organizational capabilities are tied semi-permanently to the firm. The allocation and utilization of firms' resources are determined by administrative decisions which provide opportunities for management accounting to supply decision-useful information (Collier and Knight 2009).

The combination of both contingency and RBV theories can lead to better understanding and addressing the design challenges of complex organizations (Greenwood and Miller 2010). In this study, the purpose of using contingency theory on management control systems (MCS) research (refers to SMA) is to explain the effectiveness of MCS designs that best suit the contextual

variables (refers to organizational capabilities). Therefore, it is essential that companies are able to identify the critical mechanisms, such as SMA techniques, most responsible for creating, sustaining, or exploiting the resources that results in competitive advantage. Recent research of RBV of the firm stressed that collectively the four organizational capabilities (market orientation, entrepreneurship, innovativeness and organizational learning) contribute to competitive advantage (Hult et al. 2003; Henri 2006; Lin et al. 2008). The contingency model in Figure 1 demonstrates how firm performance is enhanced by organizational capabilities (market orientation, entrepreneurship, innovativeness and organizational learning) and the usage of SMA techniques. SMA usage is assumed to function as a mediator to the extent it accounts for the relation between the predictor (organizational capabilities) and the criterion (performance) (Baron and Kenny 1986). The inclusion of four organizational capabilities in the SMA framework is influenced by the principal characteristics of SMA which emphasize external and outward-looking information as well as broad scope information dealing with both financial and non-financial information. In other words, SMA practices are assumed to be more effective in companies employing a strategy of market orientation, entrepreneurship, and innovation, as well as in companies promoting organizational learning. Although SMA is considered a formal control, it is more flexible than the traditional management accounting, and suitable for interactive use which encourages ideas and creativity (Wilson 1995; Simons 1995).

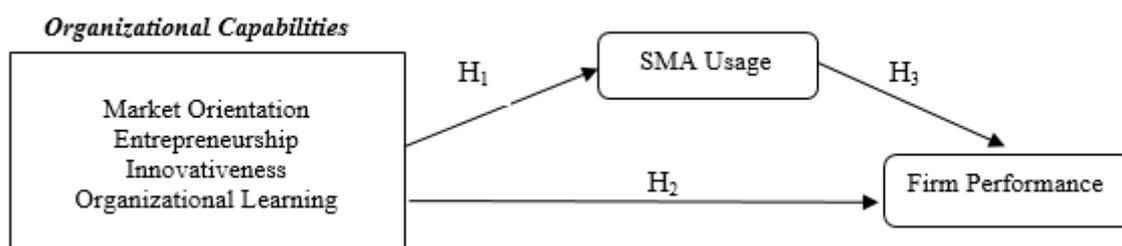


Figure 1
Contingency Model on Relationship Between Organizational Capabilities, SMA Usage and Firm Performance

RESEARCH METHOD

Sample and Data Collection

The unit of analysis for the study is the strategic business units (SBUs) of Malaysian public listed companies which have core business in manufacturing. The selection of listed companies in Malaysia is based on the ground that these companies have to comply with stringent Listing Requirements and the Malaysian Code on Corporate Governance. As such, the directors of listed companies are expected to review quality information, financial and non-financial information of their operations prepared by the management. In this regard, these companies should have more established management accounting departments compared to unlisted companies (Maelah and Ibrahim 2007). This is because companies having a more established management accounting department might facilitate the adoption of more sophisticated (strategic) management accounting techniques. The choice of public listed companies is also based on size as company size is also an important factor influencing the adoption of complex administration system (Chen and Langfield-Smith 1998; Hoque and James 2000). The use of companies in manufacturing segment is specific because this sector represents the most commonly employed management accounting systems (Smith et al.

2008). From the websites of companies listed in Bursa Malaysia, a total of 430 companies engaging in manufacturing were selected from around 1,000 listed companies throughout Malaysia.

Mail survey was used for this study as it enables gathering of information from a broad cross-section of companies at relatively low cost (Hoque 2004). The survey instrument was first reviewed by three accounting academicians and pre-tested on 30 accountants for clarity and face validity. Upon revision, the survey instruments were sent with a personalized cover letter and a stamped return envelope to the management accountants/heads of accounts in these 430 selected companies. After five weeks, a reminder was sent to those companies which had not completed the survey. A total of 103 completed questionnaires were received, representing a response rate of 24%. The response rate is within the range of recent mail surveys in similar academic research (Chenhall et al. 2011; Parnell 2011; Amir et al. 2010). The possible response bias from early and late responses was tested using t-test. There is no significant difference found in the results. The statistics of respondents in terms of size in employees and annual sales, proportion of export sales, history of responding firms and industry are presented in Table 1.

Table 1
Profiles of the Responding Companies

<i>Size</i>		<i>Size</i>	
<i>By Employees</i>		<i>By Annual sales (Ringgit Malaysia) in million</i>	
Below 150	25	Below 25	20
150-500	35	25 to 100	36
501-1000	25	101 to 500	33
Above 1,000	<u>18</u>	Above 500	<u>14</u>
Total	103	Total	103
<i>Export sales (%)</i>			
Below 20%	37		
20% to 50%	28		
More than 50%	<u>38</u>		
Total	103		
<i>Years of establishment</i>			
Less than 5 years	3		
5 to 10 years	15		
More than 10 years	<u>85</u>		
Total	103		

Industry	
Textiles & apparel	4
Food & beverages	14
Furniture, wood-based products	15
Electrical & electronics	13
Transport & automotive	6
Rubber-based products	4
Plastic products	7
Pharmaceutical, cosmetics	4
Chemicals	2
Iron, steel & other metal products	21
Other industry	13
Total	103

Variables Measurement

Strategic Management Accounting (SMA)

Instrument from Cadez and Guilding (2008) was adopted to measure the degree of SMA techniques usage. 16 SMA techniques were listed together with a Likert-type scale ranging from “1” (not at all) to “7” (to a great extent). The respondents were asked to indicate the extent their organizations make use each of these techniques. A glossary was provided to aid interpretation of these 16 SMA techniques which may be grouped into five categories: *costing* (attribute costing, life-cycle costing, quality costing, target costing, value-chain/activity costing); *planning, control and performance measurement* (benchmarking, integrated performance measurement); *strategic decision-making* (strategic costing, strategic pricing, brand valuation); *competitor accounting* (competitor cost assessment, competitive position monitoring, competitor performance appraisal); and *customer accounting* (customer profitability analysis, lifetime customer profitability analysis and valuation of customers as assets). Because the primary goal was to estimate relationships between constructs while increasing the estimation model parsimony, each dimension of SMA usage construct was represented in the model with one composite item which was calculated as the aggregate mean of five original dimensions (Cadez and Guilding, 2008).

Organizational Capabilities

Four primary organizational capabilities, namely, market orientation, entrepreneurship, innovativeness, and organizational learning

were used (Henri 2006). Each organizational capability was measured using a seven-point likert scale ranging from “1” (not at all) to “7” (to a large extent) where respondents were asked to indicate the extent to which each statement describes their companies.

- i) **Market orientation** was measured using the instrument developed by Narver and Slater (1990). The instrument has three components (customer orientation, competitor orientation, and inter-functional coordination) consisting of 13 statements.
- ii) **Entrepreneurship** was measured using the instrument taken from Naman and Slevin (1993) which was previously developed by Khandwalla (1977). The instrument covers three dimensions with nine items. The dimensions are:
 - i) willingness to take business related risks,
 - ii) willingness to be proactive when competing with other firms, and
 - iii) willingness to innovate.
- iii) **Innovativeness** was measured by five items adopted from Hurley and Hult (1998).
- iv) **Organizational learning** was measured based on four items used by Hult (1998).

Firm Performance

Since combining non-financial measures with financial measures can be better indicators to judge the organizational processes and outcomes (Jusoh and Parnell 2008), the study used seven dimensions adapted from Gupta and Govindarajan (1984) and Chenhall and Langfield-Smith (1998) to measure firm performance. The respondents were asked to assess their organization’s

performance over the past three years, across seven dimensions on a seven-point likert scale ranging from 1(well below average) to 7 (well above average), in comparison with the industry average. The seven dimensions are: ROI, sales growth, new product development, research and development, customer satisfaction, cost reduction programs and human resource development.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 shows the descriptive statistics for all main variables. Among the organizational capabilities dimensions, organizational learning indicates the highest mean score (5.362), followed by market

orientation (4.991), innovativeness (4.932) and entrepreneurship (4.375). The extent of overall SMA usage is moderately high (4.240). As shown in Table 3, the extent of usage for certain SMA techniques such as attribute costing, life-cycle costing, quality costing and activity-based costing, is rather low. The results seem consistent with those found by Rahman et al. (2005). Practicing accountants may have difficulties applying these SMA techniques as some of the techniques are in the stages of conceptual developments, such as attribute costing and strategic cost analysis (Roslender and Hart 2003). It was also pointed out that with the exception of activity-based costing and the balanced scorecard, there is scant interest shown in research on practice of contemporary management accounting (Baldvinsdottir et al. 2010).

Table 2
Descriptive Statistics: All Variables

<i>Latent Variables</i>	<i>N</i>	<i>Theo. Range</i>	<i>Actual Minimum</i>	<i>Actual Maximum</i>	<i>Mean</i>	<i>Std. Dev.</i>
SMA usage	103	1.00-7.00	1.00	6.65	4.240	1.114
Market orientation	103	1.00-7.00	2.08	7.00	4.991	0.996
Entrepreneurship	103	1.00-7.00	1.22	6.11	4.375	0.981
Innovativeness	103	1.00-7.00	1.40	7.00	4.932	1.126
Organizational learning	103	1.00-7.00	1.00	7.00	5.362	1.177
Firm performance	103	1.00-7.00	1.57	6.86	4.718	1.062

Table 3
Descriptive Statistics: SMA Usage

<i>Item</i>	<i>SMA techniques</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Median</i>
	<i>SMAG1 Costing</i>	3.66	1.438	
SMA1	Attribute costing	3.59	1.978	4.00
SMA2	Life-cycle costing	2.94	1.781	3.00
SMA3	Quality costing	3.43	1.993	3.00
SMA4	Target costing	4.29	1.918	5.00
SMA 5	Value-chain/Activity costing	4.03	1.927	4.00
	<i>SMAG2 Planning, control and perform</i>	4.69	1.409	
SMA6	Benchmarking	4.82	1.583	5.00
SMA7	Integrated performance measurement	4.57	1.525	5.00
	<i>SMAG3 Strategic decision-making</i>	4.59	1.286	
SMA8	Strategic costing	4.74	1.521	5.00
SMA9	Strategic pricing	5.03	1.410	5.00
SMA10	Brand valuation	4.01	1.834	4.00
	<i>SMAG4 Competitor accounting</i>	4.26	1.517	
SMA11	Competitor cost assessment	4.12	1.756	4.00
SMA12	Competitor position monitoring	4.46	1.620	5.00

SMA13	Competitor performance appraisal	4.19	1.591	4.00
SMAG5 Customer accounting		4.00	1.476	
SMA14	Customer profitability	4.35	1.684	5.00
SMA15	Lifetime customer profit analysis	3.74	1.668	4.00
SMA 16	Valuation of customers as assets	3.92	1.802	4.00

Cronbach alpha 0.894

average mean 4.24 SD 1.114

PLS Results

The hypotheses were tested using Partial Least Squares (SmartPLS 2.0, Ringle et al. 2005), a second-generation statistical technique that allows testing models with multiple independent, mediating and dependent variables. PLS is a powerful method of analysis, useful for theory confirmation and suggesting where relationships might or might not exist (Chin et al., 1996). PLS path modeling can estimate very complex model with many latent and manifest variables (Henseler et al. 2009).

The application of PLS in a management research involves: (1) assessing the measurement model, and (2) assessing the structural model. The measurement model is assessed by examining reliability, convergent validity and discriminant validity. The first

criterion is to check for individual item reliability by examining the loadings (or simple correlations) of the measures with their respective construct. A value above 0.70 is regarded as satisfactory. In general, items with loadings of less than 0.40 (a threshold commonly used for factor analysis results) or 0.50 should be dropped (Hulland, 1999). For this study, all indicators have loadings above 0.60 as shown in the measurement model in Figure 2. Cronbach’s alpha and composite reliability are used to measure the reliability where a benchmark of 0.70 is usually used for these two measures and value below 0.60 indicates a lack of reliability (Hulland 1999; Henseler et al. 2009). Table 4 presents the results of composite reliability and Cronbach’s alpha, showing all values exceeding 0.80.

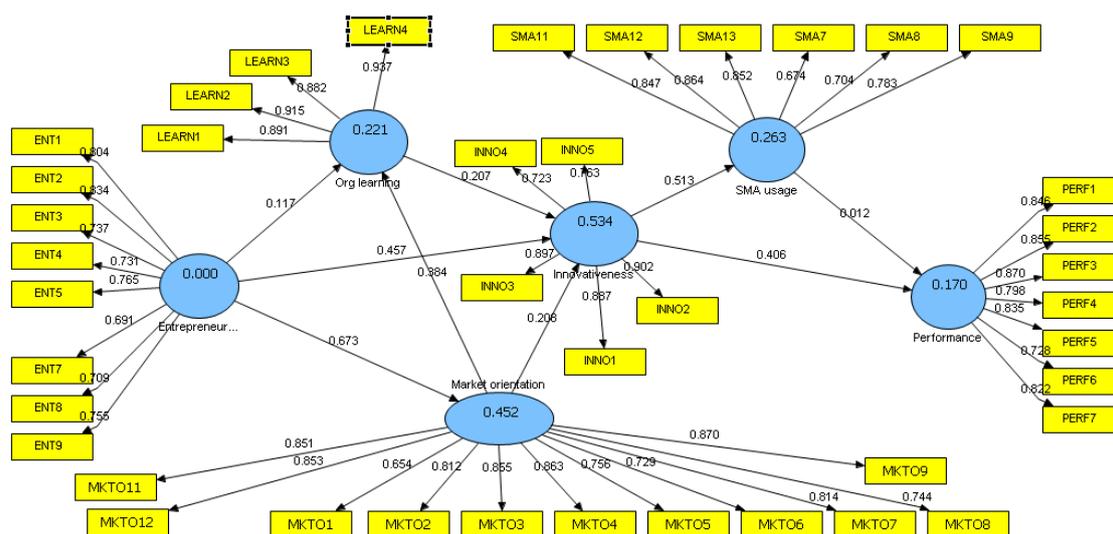


Figure 2
PLS Measurement Model (n=103)

To satisfy convergent validity, a set of indicators must represent one and the same underlying construct. An AVE (average variance extracted) value of at least 0.50 indicates sufficient convergent validity. As

shown in Table 4, the AVEs of all latent variables are above 0.50. To satisfy discriminant validity, cross loadings of indicators for a respective latent variable should be higher than the cross loadings of

their correlations with other latent variables. The PLS results confirm that cross loadings of indicators for each respective variable are higher than their correlations with other latent variables. The discriminant validity can also be assessed by comparing the square roots of AVE calculated for each of the constructs and the correlations between different constructs in the model. The square roots of AVE are all higher than the latent variable correlations indicating the presence of discriminant validity (see Table 5).

The structural model can be assessed by examining the R² values for the dependent (endogenous) constructs and the path coefficients for the model. As cited in Camison

and Lopez (2010), Falk and Miller (1992) recommended a minimal R² value of 0.1 so as to ensure that at least 10 percent of the construct validity is due to the model. A bootstrap procedure can be used to provide confidence intervals for all parameter estimates. R² value of PLS model is presented in Table 4. The indicators are significantly associated with the relevant variables as indicated by their outer loadings which have *t* values far above 1.96 (see appendix). Table 6 shows the path coefficients among latent variables and their *t* values, while Figure 3 illustrates the structural model showing the significant path coefficients among the latent variables.

Table 4
Internal Consistency and Validity of Measurement Model

	<i>AVE</i>	<i>Composite Reliability</i>	<i>R Square</i>	<i>Cronbach alpha</i>
Entrepreneurship	0.569	0.913		0.893
Innovativeness	0.702	0.921	0.534	0.895
Market orientation	0.645	0.952	0.452	0.944
Organizational learning	0.822	0.948	0.221	0.927
Firm performance	0.678	0.936	0.170	0.921
SMA usage	0.626	0.909	0.263	0.880

Table 5
Latent Variable Correlations

	<i>ENT</i>	<i>INNO</i>	<i>MKTO</i>	<i>ORG L</i>	<i>PERF</i>	<i>SMA usage</i>
Entrepreneurship	0.755					
Innovativeness	0.674	0.838				
Market orientation	0.673	0.611	0.803			
Org learning	0.375	0.475	0.462	0.906		
Performance	0.435	0.412	0.451	0.615	0.823	
SMA usage	0.526	0.513	0.548	0.394	0.220	0.791

Square roots of AVE are shown diagonally.

Table 6
Path Coefficients (Mean, STDEV, T-Values)

	<i>Original Sample (O)</i>	<i>Sample Mean (M)</i>	<i>Standard Deviation (STDEV)</i>	<i>Standard Error (STERR)</i>	<i>T Statistics</i>
Entrepreneurship -> Innovativeness	0.457	0.454	0.096	0.096	4.771
Entrepreneurship -> Market orientation	0.673	0.679	0.063	0.063	10.710
Entrepreneurship -> Org learning	0.117	0.128	0.153	0.153	0.762
Innovativeness -> Performance	0.406	0.415	0.107	0.107	3.801
Innovativeness -> SMA usage	0.513	0.530	0.085	0.085	6.004
Market orientation -> Innovativeness	0.208	0.196	0.104	0.104	1.993
Market orientation -> Org learning	0.384	0.385	0.129	0.129	2.973
Org learning -> Innovativeness	0.207	0.221	0.100	0.100	2.068
SMA usage -> Performance	0.012	0.023	0.110	0.110	0.107

Hypotheses Testing

As shown in Figure 1, organizational capabilities were hypothesized to have a positive association with SMA usage (H1) and firm performance (H2). It is also anticipated that SMA usage is positively associated with firm performance (H3). By combining H1 and H3, hypothesis 4 was developed to show that SMA usage mediates the relationship between organizational capabilities and firm performance based on the propositions of Baron and Kenny (1986).

Figure 3 illustrates that organizational capabilities are positively and significantly associated with SMA usage (0.513, $p < 0.01$). Thus, H1 is supported. Organizational capabilities, spearheaded by innovativeness, appear to have a strong impact on firm performance (0.406, $p < 0.01$). Hence, H2 is supported. However, SMA usage is positively but not significantly associated with firm performance (0.012, ns). Thus, H3 is not supported. Since H3 is not supported, the mediation role of SMA usage on the relationship between organizational capabilities and firm performance (H4) is therefore not supported.

RESULTS AND DISCUSSION

This study aims to provide additional empirical evidence on new emerging strategic management accounting, its association with organizational capabilities (market orientation, entrepreneurship, innovativeness and organizational learning) and the interlinkages among these four elements of organizational capabilities.

In the context of SBUs of Malaysian public listed companies, the results reveal that the four organizational capabilities collectively are significantly associated with the usage of SMA techniques. This finding is consistent with the past studies on SMA techniques such as balanced scorecard (Kaplan and Norton, 2001; Davila et al., 2009; Chenhall, 2005; Kloot, 1997), customer accounting (Guilding and McManus, 2002), brand valuation (Cravens and Guilding, 1999), activity-based costing (Goebal et al., 1998) and target costing (Dekker and Smidt, 2003). Goebal et al. (1998) found activity-based costing is capable to account for the resources used in carrying out market-oriented activities. The benefit derived from target costing is the combination of knowledge and capabilities from different functions (Dekker and Smidt, 2003). Balanced

scorecard works as an interactive system which is associated with enhanced

innovativeness and entrepreneurial capabilities (Davila et al., 2009).

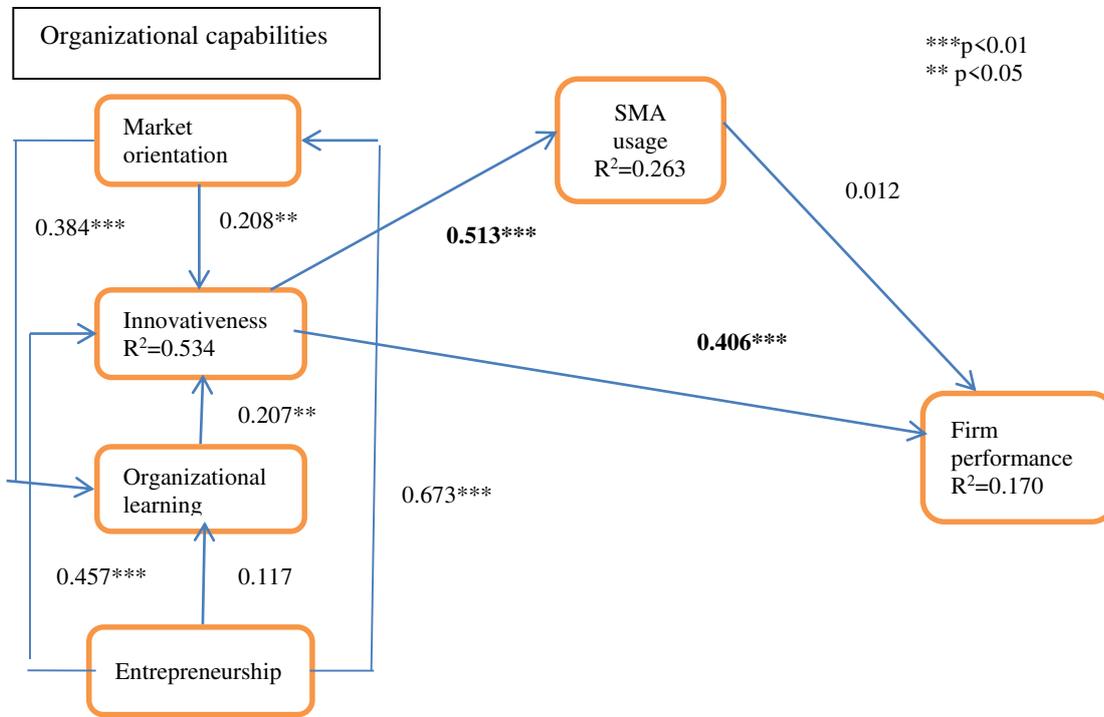


Figure 3
Structural model on the relationship between organizational capabilities, SMA usage and firm performance (n=103)

It can be reasonably concluded that the usage of SMA techniques are found to support the internal organizational capabilities. This is because to achieve a breakthrough performance, companies have to apply strategic management control system to unleash the organizational capabilities hidden within the companies. For example, organizational capabilities through market orientation supporting customer linkages may be captured through value chain analysis. Besides, exploiting customer linkage as part of market orientation is the key idea behind the concept of life-cycle costing (Shank 1989). Through market orientation also, the generation of market intelligence pertaining to current and future customers may complement with the customer accounting which anticipates the future stream of revenue from customers. With regard to innovativeness capability, the use of broad scope management accounting systems which considers both

financial and non-financial performance indicators in performance evaluation would allow companies to motivate and facilitate employees to be more innovative and creative. Overall, the findings seem to support the argument that the adoption of management accounting techniques in particular organizational settings can provide decision useful information for improvement of internal capabilities and support of resource allocation and utilization (Collier and Knight 2009).

Moreover, as shown in Figure 3, the results appear to support the research model of Lin et al. (2008) whereby the four organizational capabilities collectively give rise to positional advantage leading to enhanced firm performance. The significant positive relationships between the four organizational capabilities and firm performance can be explained from the fact that key-specific resources and capabilities which are of value, rare, inimitability and non-

substitutable (VRIN) may lead to sustained performance (Barney 1991). Based on past research, Lin et al. (2008) claimed that the confluence of the four organizational capabilities which have a rather complex web of relationships have an impact on firm performance. Consistent with Matsuno et al. (2002), entrepreneurship has a significant direct impact on market orientation. In line with Hult et al. (2003) who suggested that entrepreneurship is one of the critical drivers of innovativeness, this study found entrepreneurship is also positively and significantly associated with innovativeness. Consistent with Lin et al. (2008), Day (1994), Slater and Narver (1995) and Bell et al. (2002), the finding reveals that market orientation and organizational learning are highly correlated and mutually dependent. This is because the process of market sensing follows the usual sequence of information processing activities that organizations use to learn (Day 1994). Market orientation is also positively associated with innovativeness. Similar to past studies (e.g. Goes and Park, 1997; Hurley and Hult 1998; Baker and Sinkula 1999), organizational learning has a direct impact on innovativeness. Hence, it can be reasonably concluded that organizational learning mediates the relationship between market orientation and innovativeness. When organizations continuously learn and adapt, they become more sensitive to market changes and are able to identify market opportunities (Fang et al. 2014).

However, entrepreneurship does not have any positive association with organizational learning, instead it has a direct impact on innovativeness, suggesting that organizational learning does not act as a mediating role in the relationship between entrepreneurship and innovativeness. A very strong direct relationship between entrepreneurship and innovativeness seems to undermine the mediating role of organizational learning. Surprisingly, the finding suggesting that the ability of an organization to discover, evaluate and exploit new business opportunities (e.g. Shane and Venkataraman 2000) does not seem to depend on the

capability of the organization to learn and adapt.

The study does closely support Lin et al.'s (2008) propositions on the interlinking of four capabilities and is also consistent with Jimenez-Jimenez et al. (2008) who found the impact of market orientation and organizational learning on performance is completely mediated by innovation. Though empirical research on the complex relationship among these four concepts is still scarce, the findings of this study support the collective use of all four organizational capabilities which lead to higher firm performance as well as having direct impact on SMA usage.

Further, in contrast to past research relating to management accounting and control systems, the results show that SMA usage is not associated with firm performance. These findings are not consistent with past empirical studies (Govindarajan and Gupta 1985; Chenhall and Langfield-Smith 1998; Malina and Selto 2001; Jermias and Gani 2004) that examined some of the SMA techniques individually. For example, past research supports significant correlations between performance measurement systems and performance (Hoque and James 2000; Ittner et al. 2003). Kallunki et al. (2011) also found formal MCS significantly associated with non-financial performance which in turn improves financial performance. However, the non-significant association between SMA usage and firm performance is consistent with the finding of Hyvonen (2007). She found contemporary performance measures (i.e. non-finance measures, qualitative measures, balanced scorecard and customer satisfaction measures) do not help to enhance performance of those firms pursuing customer-based (differentiation) strategy.

The non-significant result for SMA usage and firm performance relationship could be due to the costly implementation of SMA as the firms might start using the SMA techniques only recently. As shown by the mean values, the extent of SMA usage is still low and some even in the stage of conceptual development. As such, the benefit of using the SMA techniques may not be able to cover the cost of deploying them resulting in the insignificant

improvement in firm's overall performance. This is because the introduction of new management accounting techniques requires managers and employees to be familiar with the techniques and this process will take some time. Hence, the improvement in firm performance may not be immediate. Another reason for the insignificant association between SMA usage and firm performance could be due to the small size of the companies in the sample as small companies constitute more than half of the sample. Based on US definition of small companies in manufacturing industry, companies are considered small if they engaged less than 500 employees

(<http://www.bizjournals.com/bizjournals/on-numbers/scott-thomas/2012/07/16055>).

Compared to large companies, small companies usually have lesser resources and fewer expertise which may hinder them to adopt and implement more advanced accounting techniques at a larger scale. As a result, the companies are not able to obtain the full benefits of implementing SMA techniques, thereby bring less impact to the business performance.

Regarding the mediation role of SMA usage, the findings reveal that there is no mediating role of SMA usage as SMA usage is not significantly associated with firm performance and organizational capabilities collectively already have a significant direct relationship with firm performance. A very strong direct relationship between organizational capabilities and firm performance could undermine the role of SMA usage as a mediator.

CONCLUSIONS

As far as the theoretical implication is concerned, this study contributes to the development and implementation of SMA techniques as empirical studies on SMA or advanced management accounting practices are still limited, particularly in the Malaysian context. This study is part of the effort to bridge the gap between the concepts in management control and strategic

management (Nixon and Burns, 2005) by incorporating the resource-based view of the firm through the presence of organizational capabilities. The findings also bring some practical implications. Manufacturing companies must realize that besides the strategic tools, organizational capabilities (market orientation, entrepreneurship, innovativeness and organizational learning) collectively play an important role in sustaining competitive advantage. The four primary capabilities which have the characteristics of value, rare, inimitability and non-substitutable (VRIN) are imperative for companies operating in uncertain market environment, especially when the product life cycle is becoming shorter. For the designers of management accounting control systems, particularly, for the development of SMA techniques, and for those responsible for managing organizational capabilities, the findings provide a useful insight into the relationship between organizational capabilities and the usage of SMA techniques. For entrepreneurial organizations operating in a risk-taking environment, they may employ suitable SMA techniques to complement market orientation so that better decisions can be made to prevent unprofitable products from being introduced.

The study should be evaluated in the light of several limitations before drawing any conclusion from its findings. Firstly, in view of the small sample size drawn from the manufacturing SBUs of public listed companies, it is unlikely to have satisfactory attestation of the association of the latent variables. Therefore, future research should consider using a larger sample size and extending the study to other types of industry such as service industry involving banking and healthcare organizations. Secondly, quite a number of the 16 SMA techniques identified in Cadez and Guilding (2008) are overlapping and difficult to differentiate. In order to manage a set of SMA techniques effectively, it is necessary to understand how they relate to each other. Hence, future SMA studies focusing on the development and validation of the measurement instrument are warranted. Thirdly, the study has not considered other

contextual variables such as size, industry, strategy, organizational structure, external environment and technology. For example, as SMA practices tend to develop in line with their strategy formulation and organizational processes (Nixon and Burns 2012), subsequent SMA studies incorporating sustainable business strategy together with the four organizational capabilities and other disciplines of strategic management would provide additional evidence to the development in the SMA literature. Fourthly, this study relies on cross-sectional research design which cannot examine claims regarding the causal possibility due to a relatively short time frame. Therefore, the complex relationships among organizational capabilities, SMA usage and performance as well as the issue of short time frame can be addressed using a longitudinal data or case studies. In fact, using case studies would be able to provide in-depth evidence on how SMA techniques and processes are implemented and used in practice within organizations (Langfield-Smith 2008; Tillman and Goddard 2008).

In summary, the research findings support the general contention that the four primary organizational capabilities must be collectively utilized to enhance organizational performance and influence the usage of SMA techniques. As pointed out by Nixon and Burns (2012), SMA in last few decades seemed to focus on a narrow view of competitive advantage and overlooked the need of internal organizational capabilities to support external competitive bases. Hence, the findings should be able to provide more evidence of the relation between strategic management concepts and SMA. From strategic management perspective, organizational capabilities and resources are important factors that influence how an organization can achieve its stated goals and objectives. In this respect, organizations must utilize SMA techniques to support strategy implementation, strategic decision making as well as the strategic management process within organizations. SMA techniques are useful for organizations operating within business environments that demand more broad scope information which

has the attributes of external, non-financial, and future oriented information.

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APPENDIX

Table 7:
Outer Loadings (Mean, STDEV, T-Values) n=103, Bootstrapping 500 samples

	<i>Original Sample (O)</i>	<i>Sample Mean (M)</i>	<i>Standard Deviation (STDEV)</i>	<i>Standard Error (STERR)</i>	<i>T Statistics</i>
ENT1 <- Entrepreneurship	0.804	0.805	0.052	0.052	15.374
ENT2 <- Entrepreneurship	0.834	0.833	0.050	0.050	16.754
ENT3 <- Entrepreneurship	0.737	0.733	0.066	0.066	11.097
ENT4 <- Entrepreneurship	0.731	0.728	0.058	0.058	12.624
ENT5 <- Entrepreneurship	0.765	0.767	0.048	0.048	15.882
ENT7 <- Entrepreneurship	0.691	0.692	0.079	0.079	8.744
ENT8 <- Entrepreneurship	0.709	0.713	0.063	0.063	11.247
ENT9 <- Entrepreneurship	0.755	0.754	0.063	0.063	11.952
INNO1 <- Innovativeness	0.887	0.889	0.021	0.021	42.730
INNO2 <- Innovativeness	0.902	0.905	0.016	0.016	54.962
INNO3 <- Innovativeness	0.897	0.899	0.018	0.018	49.077
INNO4 <- Innovativeness	0.723	0.717	0.086	0.086	8.358
INNO5 <- Innovativeness	0.763	0.758	0.079	0.079	9.604
LEARN1 <- Org learning	0.891	0.891	0.032	0.032	27.458
LEARN2 <- Org learning	0.915	0.915	0.023	0.023	40.188
LEARN3 <- Org learning	0.882	0.877	0.042	0.042	21.037
LEARN4 <- Org learning	0.937	0.934	0.018	0.018	52.800
MKTO1 <- Market orientation	0.654	0.652	0.060	0.060	10.860
MKTO11 <- Market orientation	0.851	0.848	0.038	0.038	22.212
MKTO12 <- Market orientation	0.853	0.855	0.031	0.031	27.419
MKTO2 <- Market orientation	0.812	0.812	0.047	0.047	17.163
MKTO3 <- Market orientation	0.855	0.852	0.030	0.030	28.936
MKTO4 <- Market orientation	0.863	0.864	0.028	0.028	30.443
MKTO5 <- Market orientation	0.756	0.757	0.049	0.049	15.300
MKTO6 <- Market orientation	0.729	0.727	0.058	0.058	12.602
MKTO7 <- Market orientation	0.814	0.817	0.037	0.037	21.860
MKTO8 <- Market orientation	0.744	0.744	0.046	0.046	15.996
MKTO9 <- Market orientation	0.870	0.871	0.025	0.025	35.336
PERF1 <- Performance	0.846	0.835	0.066	0.066	12.800
PERF2 <- Performance	0.855	0.844	0.064	0.064	13.458
PERF3 <- Performance	0.870	0.858	0.071	0.071	12.321

PERF4 <- Performance	0.798	0.796	0.079	0.079	10.094
PERF5 <- Performance	0.835	0.822	0.066	0.066	12.695
PERF6 <- Performance	0.728	0.721	0.074	0.074	9.815
PERF7 <- Performance	0.822	0.819	0.063	0.063	13.069
SMA11 <- SMA usage	0.847	0.845	0.040	0.040	21.259
SMA12 <- SMA usage	0.864	0.870	0.030	0.030	28.869
SMA13 <- SMA usage	0.852	0.851	0.032	0.032	26.559
SMA7 <- SMA usage	0.674	0.665	0.089	0.089	7.535
SMA8 <- SMA usage	0.704	0.692	0.086	0.086	8.194
SMA9 <- SMA usage	0.783	0.779	0.056	0.056	13.889
