

Journal of Modern Management Science

Faculty of Management Science, Lampang Rajabhat University https://www.tci-thaijo.org/index.php/JMMS



Strategic Management Accounting Techniques and Organizational Sustainable Performance: Evidence from Industrial Estates in Rayong Area, Thailand Anucha Thapayom¹

Article Information
Received Jan 28, 2019
Revised Apr 2, 2019
Accepted Apr 9, 2019
Available Online June 28, 2019

Abstract

This study aims at investigating the relationships among strategic management accounting techniques, organizational competitiveness and organizational sustainable performance. Organizational competitiveness is also hypothesized to be a mediator of the research relationships. Strategic management accounting techniques comprises of strategic costing, strategic planning, control and performance measurement, strategic decision making, competitor accounting and customer accounting. In this study, 148 businesses in industrial estates in Rayong are the samples of the study. The results indicate that strategic planning, control and performance measurement, competitor accounting and customers accounting have a significant positive relationship with organizational competitiveness and organizational sustainable performance. Likewise, organizational competitiveness has an important positive association with organizational sustainable performance. For testing the mediating effects of the research relationships, organizational competitiveness is the mediator of the strategic planning, control and performance measurement-organizational sustainable performance relationships, the competitor accounting-organizational sustainable performance relationships and the customers' accounting-organizational sustainable performance relationships. Accordingly, executives of firms need to develop, implement and improve strategic planning, control and performance measurement, competitor accounting and customers accounting in order to create their organizational competitiveness and generate organizational sustainable performance by investing in appropriate valuable resources to support these techniques aspects. Theoretical and

¹ Lecturer, Ph.D., Accounting, Faculty of Business Administration, King Mongkut's University of Technology North Bangkok.

managerial contributions, conclusion and suggestions and directions for future research are highlighted.

Keywords: Strategic Management Accounting Techniques, Organizational Sustainable Performance, Organizational Competitiveness

Introduction

Over two decades ago, the environment of business has continuous changes as a result of the reliance on modern communications and information systems, in addition to the openness in the international market. These changes have caused in increasing pressures on businesses to be more competitive, and shifting their attentions to maximize efficiency in using resources in order to control markets or retain their competitive positions. Thus, traditional management practices are not enough for organizational growth and survive. Furthermore, contemporary businesses need reliable and accurate information to make appropriate decisions about the environmental factors surrounding them (Alamri, 2018).

In the present, strategic management accounting techniques (SMAT) has become one of the essential key for the decision-making process in contemporary businesses; because of its strategic role in providing useful and important information to the top management in order to handle with the dynamic environment, and to run the business in efficient and effective. Hence, SMAT is mainly an effective method for providing contemporary businesses with the information required for strategic decision making process, achievement competitive advantages, and improving performance (Ah Lay & Jusoh, 2011). However, shifting toward the strategic method in practices of management accounting is partially based on the ground that this approach can show the reflection and association between strategic management approaches and the information that the accountants seek to provide (Bromwich, 1990).

The focus of SMAT is on the market and external-oriented information rather than internal and historical information (Cadez & Guilding, 2012). Consequently, SMAT is directed toward main components of the business's external environment for example market positioning, suppliers, customers and competitors (Kırlı & Gümüş, 2011). Also, in the light of SMAT, business strategy represents a contextual factor that shapes the nature of management accounting practices, and then, increasing the business competencies in achievement competitive advantage (Roslender & Hart, 2002). Besides, SMAT can help in building strategic value through leading and controlling the

operational activities, evaluating the performance at all organizational levels, and assessing the business's competitive position (Hilton, 2008).

In the light of the association between SMAT and organizational sustainable performance, the empirical studies that support this relationship have been still scant despite the conceptualized positive association between these two constructs. Previous empirical studies has focused in examining the association between SMAT and nonfinancial performance, financial performance, business strategy and decision-making process (e.g. Ah Lay & Jusoh, 2011; Cadez & Guilding, 2012). To sum up, there is a gap of the effect of SMAT on gaining organizational sustainable performance. The lack of empirical evidence about this effect can make contemporary businesses less aware about the role of SMAT on increasing their businesses' outcomes such as gaining organizational sustainable performance. Hence, this study contributes to the research scope in the fields of SMAT and organizational sustainable performance in order to further expansion of our current understanding of the role of SMAT in gaining organizational sustainable performance in businesses.

Research Objective

The main purpose of this research is to investigate the effects of SMAT on organizational sustainable performance through organizational competitiveness as mediating of the study.

Literature review

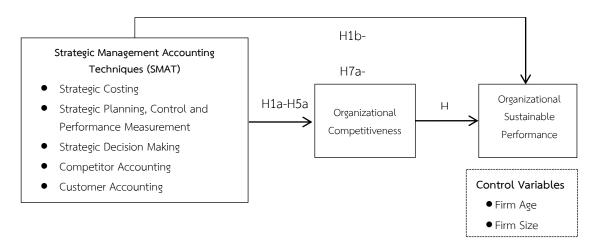
The concept of Strategic Management Accounting (SMA) was formulated in 1981 by Simmonds in a professional management accounting magazine. He conceptualized SMA as the provision and analysis of management accounting information about a business and its competitors used for monitoring and developing business strategy. When talking about techniques that are used or proposed for use under the SMA term, also due to the abovementioned lack of generally agreed conceptual framework, there is a multitude of listing and propositions of numerous accounting techniques that have strategic focus. The purpose of these techniques is to offer the strategic decision makers with information on the financial implication of alternative business strategies (Noordin, Zainuddin, & Tayles, 2009).

Strategic Management Accounting Techniques (SMAT), in general terms, are used in collecting, processing, analyzing, and providing to the decision-makers the information needed for planning, decision-making, and monitoring process (Atkinson et al., 2012). In this sense, SMAT must contribute to the collection, treatment, analysis, and provision of strategic information needed for

the strategic management, marketing, and other strategic and managerial functions. In contrast to traditional management accounting techniques which adopt a historical and internal orientation, SMAT adopt a more external and forward-looking orientation, they are multidimensional and consider both financial and non-financial typologies of measurement (Cadez & Guilding, 2008). Therefore, SMAT can provide strategic information, for example on customers, competitors, markets, and external environment in general, that allows to make and achieve organizational competitiveness and enhance firm performance.

Guilding et al, (2000) provided an original set of SMA techniques. They gathered 12 SMAT from the literature, and then Cravens & Guilding (2001) added alternative three techniques. The more recent study done by Cadez & Guilding (2008) drew 16 SMAT from prior works, and they classified these techniques into five broad categories: strategic costing, strategic planning, control and performance measurement, strategic decision making, competitor accounting and customer accounting. Numerous studies have been conducted about the essence of SMA techniques and to what extent these techniques have been used. Chai-Amonphaisal & Ussahawanitchakit (2010) also found that SMA implementation is positively associated with corporate performance. In addition, Santini (2013) indicate that the SMEs which operate in high-complexity environment use SMAT more extensively to achieve higher financial performance. The conceptual model presents the relations between strategic management accounting techniques and organizational sustainable performance as shown in Figure 1.

Figure 1: Conceptual Model of Strategic Management Accounting Techniques and Organizational Sustainable Performance



Strategic Costing

The first dimension of SMAT is strategic costing. This dimension comprises five techniques that aim to determine, analyze, and manage strategically costs. These techniques include attribute costing, life-cycle costing, quality costing, target costing and value chain costing. In this research, strategic costing is defined as the use of cost data based on strategic and marketing information to develop and identify superior strategies that will create an organizational competitiveness (Cadez & Guilding, 2008). Strategic costing is viewed as part of a larger business procedure to effect decisions on pricing and profitability across numerous dimensions: customer, product, region, and distribution channel (Griff, 2014). Strategic costing is essential in improving firm performance, efficiency and effectiveness in the operation and increasing profitability of the organization. Strategic costing techniques are imperative in ensuring the organization achieves a competitive advantage over its competitors. These strategic costing systems ensure that an organization gets a competitive advantage in the global market (Blocher, Stout, & Cokins, 2010). The increasing global competition has led to firms, developing costing and strategic management that facilitate achievement of a competitive advantage.

The prior research of Alsoboa, Al-Ghazzawi, & Joudeh (2015) found that strategic costing have a statistically significant positive effect on Jordanian Listed Manufacturing Companies overall performance, financial performance, and market performance. Consistent with Abdelraheem, Serajeldin, & Jedo (2017), it was found that the used of strategic costing help firm to decrease costs and to support the competitive advantage. Also, strategic costing is a modern accounting method that helps firms provides cost information that helps management make decisions in addition to contribute to the development of strategies to complete the competitive advantages of the organization in the short and long term (Sayed, 2010). Therefore, the associations are hypothesized as follows:

Hypothesis 1: Strategic costing will positively relate to a) organizational competitiveness and b) organizational sustainable performance.

Strategic Planning, Control and Performance Measurement

Strategic planning, control and performance measurement is the second dimension of SMAT. This dimension includes two techniques related to the performance management. Integrated performance measurements and benchmarking are the main techniques that correlated to this dimension. The integrated performance measurement considers both non-financial and financial performance measures associated with external and internal views that allows a comprehensive and integrated performance management. For instance, balanced scorecard assumes an external and

internal orientation paralleled with forward-looking orientation (Kaplan & Norton, 2001). The benchmarking emphases on the identification of the best practices used namely by competitors in order to increase firm performance, which confers an external and forward-looking orientation (Cadez & Guilding, 2008).

In this research, strategic planning, control and performance measurement refers to an organization's process of defining its strategy and management system that is used extensively to align business activities to firms' vision and strategy, improve internal and external communications and monitor organizational performance against strategic goals (Cadez & Guilding, 2007). Strategic planning, control and performance measurement is critical for improving corporate sustainability. Prior research found that in applying benchmarking with its external and forward-looking orientation, firm is searching for best practices of competitors as a means for improving its performance and strategic positioning (Cinquini & Tenucci, 2010). Also, Planning, control, and performance measurement techniques can provide a helping hand for managers in implementing, developing, and controlling of strategies and identifying and managing of the intellectual capital (Tayles et al., 2007). Respectively, the related hypotheses are postulated as the following:

Hypothesis 2: Strategic planning, control and performance measurement will positively relate to a) organizational competitiveness and b) organizational sustainable performance.

Strategic Decision Making

Strategic decision making involves three effective techniques about the strategic orientation of the firm. These techniques are strategic pricing, strategic costing and brand valuation. Strategic decision making is a main choice of actions about resource allocation and involvement to the achievement of firm objectives (Raju & Parthasarathy, 2009). One of the important parts of building and running a corporate is forming a vision or mission for the corporate and a set of goals the firm aims to achieve. Strategic decision making explains the process of generating a business's objectives and mission and deciding upon the ways of action a firm should follow to achieve those goals (Hamel & Media, 2014).

In this research, strategic decision making is defined as a process structured from the activities of information collecting, processing and assessment; as a process of knowledge and information transformation in managerial activities such as strategic pricing, strategic costing and brand valuation (March, 1991). The study of Alsoboa, Al-Ghazzawi & Joudeh (2015) found that strategic decision making techniques have a positive influence on Jordanian hotels' performance. Furthermore, strategic decision making is an important organizational practice, and strategic decisions

are the most significant decisions made in a business because of its importance for organizational achievement (Matić & Bulog, 2012). In addition, Elbanna & Child (2007) indicated that strategic decision making is the most important and plays vital roles in any business. It is significant managerial activity in all types of business organizations; for profit and not - profit, large and small, private and public. Moreover, successful strategic decision making enables an organization to maintain competitive position, align internal operations with external environment and improve organizational performance (Mueller et al., 2007). Consistent with Oboh & Ajibolade (2017), it was found that the adoption of SMAT contributes significantly to strategic decision making in the area of competitive advantage and increased market share. Therefore, the associations are hypothesized as follows:

Hypothesis 3: Strategic decision making will positively relate to a) organizational competitiveness and b) organizational sustainable performance.

Competitor Accounting

The fourth dimension of SMAT is competitor accounting. This dimension emphasis on competitors and assume an external orientation. The use of competitor accounting is supposed to, provide detailed insight into a present cost and financial situation of competitor; determine one's own competitive position and forecast future competitive strategic behaviors (Heinen & Hoffjan, 2005). This dimension comprises three techniques include competitor position monitoring, competitor cost assessment and competitor financial statement performance appraisal. The objective of a business's competitive advantage is to increase superior performance over the competitors. Information and knowledge are crucial matters to sustain this advantage. As a potential part of the internal capabilities of the firm, the competitor accounting, which is one of the major themes in SMA, could provide such an opportunity (Alsoboa & Alalaya, 2015). In this research, competitor accounting refers to the provision and analysis of management accounting information about each of a firm's competitor relating to the competitor's resources, objectives and competitive stance, for use in monitoring and developing business strategy (Fong & Wong, 2012).

Knowledge about competitors and understanding their competitive position may ensure that an organization's existence and profitability are maintained in order to build a sustainable competitive advantage (BPP, 2005). The study of Chiekezie et al. (2014) found that the mean financial performance of full adopters of competitor accounting was greater than that of partial adopters and non-adopters. Also, Chiekezie et al. (2014) suggested that Manufacturing firms should give priority to SMA and it sub-divisions especially competitor accounting to enhance its competitive edge over competitors. Moreover, Heinen & Hoffjan (2005) demonstrate that competitor cost assessment is a

powerful instrument for maintaining or achievement competitive advantage. According to them, information of the cost advantage and disadvantage of competitors allows anticipate of their future behavior. Also, Phornlaphatrachakorn (2017) reveled that both competitor performance appraisal and competitor cost assessment have significant effects on competitive advantage and marketing capability. Respectively, the related hypotheses are postulated as the following:

Hypothesis 4: Competitor accounting will positively relate to a) organizational competitiveness and b) organizational sustainable performance.

Customer Accounting

Customer accounting comprises three practices that focus on customers. Those practices provide strong external orientation and the relevance of the customers within the context of the organizations. This dimension comprises three sub-dimension include customer profitability analysis, lifetime customer profitability analysis and valuation of customers as assets. Customer accounting practices assume a strategic orientation and allow to evaluate the associations with customers and develop strategies, decision-making correlated with product development and pricing, marketing, and management of resources correlated with the customers (Guilding & McManus, 2002). Customer accounting has the potential to support the understanding of customers and how they are interconnected but can also help the prioritization among them (Håkansson & Lind, 2007). Customer accounting can also prove useful for managing and exploiting a dyadic relationship (Cäker & Strömsten, 2010), for example, through information sharing that results in a more effective value chain.

In this research, customer accounting is defined as the process of identifying, measuring, communicating, and reporting economic information as profit, sales, and present value of earnings relating to a customer or customer group (Guilding & McManus, 2002). Customer accounting has become a valuable method of strategic performance measurement that improves companies to complete sustained competitive advantage and increase superior organizational performance (Ussahawanitchakit, 2017). Customer accounting provides significant information related to customers, plays a critical role in strategic decision making and leads to better firm performance (Guilding et al., 2000). Likewise, Al-Mawali & Lam (2016) found that customer accounting information usage significantly affects firm performance. Also, Aykan & Aksoylu (2013) revealed the relationships between customer-oriented techniques and qualitative performance of the businesses. Respectively, the related hypotheses are postulated as the following:

Hypothesis 5: Customer accounting will positively relate to a) organizational competitiveness and b) organizational sustainable performance.

Organizational Competitiveness

The significant outcome of SMAT is organizational competitiveness. The concept of organizational competitiveness is based on how the organization can distinguish itself from its competitors and achieve its own superiority and excellence. Competitiveness is the result of many interrelated and varied factors in its patterns and effects. Competitiveness is defined as the continued win-win of a business with a higher return rate than its competitors (Reginald, 2001). Also, Richard (2003) indicated that competitiveness is the capability to achieve superior returns compared to competitors by optimizing the existing resources. In the past decades, Porter (1985) identified two dimensions of competitive advantage. These are differentiation advantages and cost advantages. Later, this framework has extended to include other dimensions to conceptualize competitive advantage. These dimensions are cost reduction, quality and innovation (Tuan & Mai, 2012). In this research, organizational competitiveness refers to business assets, attributes, or capabilities that are hard to duplicate or exceed; and offer a superior or favorable long term position over competitors (Faulkenberry, 2015).

A firm achieves organizational competitiveness when an attractive number of buyers prefer its products or services over the offerings of competitors and when the foundation of this preference is durable. Moreover, organizational competitiveness leads to improving customer satisfaction, encouraging repeat purchase of product, and attracting new buyers in markets. Organizational competitiveness enhances their business performance and achievement in violent markets and environments (Phornlaphatrachakorn, 2017). Similarly, Tuan and Mai (2012) indicated that organizational competitiveness has a direct link with firm performance. Besides, Guimarães, Severo, & Vasconcelos (2017) found that organizational competitiveness is a significant antecedent of firm performance because it highlights important attributes for organizations to complete positive economic consequences. Furthermore, organizational competitiveness leads to superior market performance (e.g., customer satisfaction, perceived quality) and in turn, greater financial performance (e.g., market share, profit) (Zhou, Brown, & Dev, 2009). Organizational competitiveness is a significant consequence of SMAT while it is also an important determinant of organizational sustainable performance. Hence, organizational competitiveness is hypothesized to mediate the relationships between SMAT and organizational sustainable performance. The hypotheses are proposed as follows:

Hypothesis 6: Organizational competitiveness will positively relate to organizational sustainable performance.

Hypothesis 7: Organizational competitiveness is a mediator of (a) the strategic costing-organizational sustainable performance relationships, (b) the strategic planning, control and performance measurement-organizational sustainable performance relationships, (c) the strategic decision making-organizational sustainable performance relationships, (d) the competitor accounting-organizational sustainable performance relationships, and (e) the customer accounting-organizational sustainable performance relationships.

Organizational Sustainable Performance

Organizational sustainable performance is the last consequence of SMAT in this study. In the world of business, the competition is getting stiffer and stiffer daily. Sustainability has become an issue. In this view, organization has to be efficient in managing time, money and energy. Firm performance comprises the actual output or results of a business as measured against its intended outputs (or goals and objectives). The concept of performance is different from the broader construct of organizational effectiveness. According to Santos & Brito (2012), performance can be also measured by two dimensions of financial performance (profitability, growth, market value), and strategic performance (consumer satisfaction, employee satisfaction, environmental performance, social performance). Moreover, firm performance can be viewed as two different viewpoints comprise financial performance and non-financial performance. Financial performance includes profitability, productivity, and market share; whereas non-financial performance includes customer satisfaction, workflow improvement, innovation and skills development (Marimuthu, Arokiasamy, & Ismail, 2009). In this research, organizational sustainable performance refers to the actual goal achieved through proper strategies by organization. Organizational performance covers elements such as increased profit, market share, product quality and innovation, employee satisfaction and outstanding position over competitors (Selvarajan et al., 2007).

Research Methodology

Sample Selection and Data Collection Procedure

The population is the firms in industrial estates in Rayong Area, Thailand. This population from the online data base of the Industrial Estate Authority of Thailand (IEAT) (www.ieat.go.th). In this study, the firms in an Industrial Parks in Rayong Area, Thailand were selected as samples of the study because they are main parts of Thailand's economy and they have invested their high amount of

money in the businesses. These firms are under the Eastern Economic Corridor (EEC) Development Plan under scheme of Thailand 4.0. Under this initiative, EEC has been assigned to drive the country's investment in up-lifting innovation and advanced technology for the future generation. The EEC Development Plan will lead an important development and transformation of Thailand's investment in social infrastructure and physical in the area. The EEC project focused in 3 eastern provinces namely Rayong, Chonburi and Chachoengsao (EECO, 2018). Rayong remains the province with the highest Gross Provincial Product (GPP) per capita, with income at almost one million baht per person (Office of the National Economics and Social Development Board, 2016). Also, Rayong has nine industrial estates, representing 19.15 percent of the country (IEAT, 2018). Likewise, a structure of accounting information in the industrial estates is complicate. Thus, they tend to apply SMAT as a strategic tool in order to achievement organizational competitiveness and succeed organizational sustainable performance.

This study, all 623 firms in industrial estates in Rayong was selected as the samples. A mail survey procedure via questionnaire was implemented by using accounting executives as the key informants. With regard to the questionnaire mailing, 13 surveys were undeliverable because some firms had moved to unknown locations. Deducting the undeliverable from the original 623 mailed, the valid mailing was 610 surveys, from which 152 responses were received. Due to four found incomplete and with response errors, they were deducted from further analysis. As a result, completed questionnaires are 148. The effective response rate was approximately 24.26% which is considered acceptable for the response rate for a mail survey because it is greater than 20% (Aaker, Kumar, & Day, 2001). To test non-response bias and to detect and consider possible problems with non-response errors was investigated by t-test that followed to Armstrong & Overton (1977). The researcher was compared early and late responses about firm age and firm capital. The results were not significant between early and late responses. Therefore, it was implied that these received questionnaires show insignificant non-response bias for the analysis in this research.

Variable Measurement

To measure each construct in the conceptual model, all variables are anchored by five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), except firm age and firm size. In addition, all constructs are developed for measuring from definition of each constructs and examine the relationship from theoretical framework and prior literature reviews. Therefore, the variable measurements of this study are described as follows:

Organizational sustainable performance is the ending dependent variable in this research. Five-item scale was issued to assess organizational sustainable performance. This construct is measured via the actual goal achieved through proper strategies by organization such as increased profit, market share, product quality and innovation, employee satisfaction and outstanding position over competitors.

Strategic costing is measured via the use of cost data based on strategic and marketing information to develop and identify superior strategies that will create an organizational competitiveness. This construct is measured using a five-item scale.

Strategic planning, control and performance measurement is measured via an organization's process of defining its strategy and management system that is used extensively to align business activities to firms' vision and strategy, improve internal and external communications and monitor organizational performance against strategic goals. This construct is measured using a four-item scale.

Strategic decision making is measured via a process structured from the activities of information collecting, processing and assessment; as a process of knowledge and information transformation in managerial activities such as strategic pricing, strategic costing and brand valuation. This construct is measured using a four-item scale.

Competitor accounting is measured via the provision and analysis of management accounting information about each of a firm's competitor relating to the competitor's resources, objectives and competitive stance, for use in monitoring and developing business strategy. This construct is measured using a five-item scale.

Customer accounting is measured via the process of identifying, measuring, communicating, and reporting economic information as profit, sales, and present value of earnings relating to a customer or customer group. This construct is measured using a five-item scale.

Organizational competitiveness is measured via business assets, attributes, or capabilities that are hard to duplicate or exceed; and offer a superior or favorable long term position over competitors. This construct is measured using a five-item scale.

Control variables in this study comprise firm age and firm size. Based on the sample data, firm age was measured by the number of years a firm has been in existence by using a dummy variable as less than 15 years = 0 and equal to or greater than 15 years = 1. Next, firm size was measured by the number of employees in a firm by using a dummy variable as less than 300 employees = 0 and equal to or greater than 300 employees = 1.

Reliability and Validity

To verify a quality of the research tool in this study, factor analysis, item-total correlation and cronbach alpha are applied. Firstly, factor analysis was utilized to measure the underlying associations of a large number of items and to determine whether they can be reduced to a smaller set of factors. A higher rule-of-thumb, a cut-off value of 0.40, was adopted (Nunnally & Bernstein, 1994). All factor loadings are greater than the 0.40 cut-off and are statistically significant. Secondly, discriminant power was used to evaluate the validity of the measurements by item-total correlation. In the scale validity, item-total correlation is greater than 0.30 (Churchill, 1979). Lastly, the reliability of the measurements was assessed by Cronbach alpha coefficients. In the scale reliability, Cronbach alpha coefficients are greater than 0.70 (Nunnally & Bernstein, 1994). Therefore, the scales of all measures appear to produce internally consistent results and these measures are deemed appropriate for further analysis as shown in Table 1.

Table 1: Result of Measure Validation

Variables	Factor	Item-total	l Cronbach's	
variables	Loadings	correlation	Alpha	
Strategic Costing (SCO)	.720859	.575762	.855	
Strategic Planning, Control and Performance	.750907	.592811	.863	
Measurement (SPC)				
Strategic Decision Making (SDM)	.736852	.530689	.773	
Competitor Accounting (COA)	.851889	.764816	.916	
Customer Accounting (CUA)	.740822	.595682	.829	
Organizational Competitiveness (OCO)	.721876	.583788	.872	
Organizational Sustainable Performance (OSP)	.743885	.613803	.881	

Statistical Techniques

To empirically investigate the research relationships, hierarchical linear regression analysis is conducted because all variables in this research were neither nominal data nor categorical data (Chan & Mak, 2012). From the conceptual model and hypotheses, the following five equation models are formulated:

Equation 1: $OCO = \alpha_1 + \beta_1 AGE + \beta_2 SIZ + \epsilon_1$

Equation 2: OCO = $\alpha_2 + \beta_3$ SCO + β_4 SPC + β_5 SDM + β_6 COA + β_7 CUA + β_8 AGE + β_9 SIZ + ϵ_2

Equation 3: OSP = $\alpha_3 + \beta_{10}SCO + \beta_{11}SPC + \beta_{12}SDM + \beta_{13}COA + \beta_{14}CUA + \beta_{15}AGE + \beta_{16}SIZ + \epsilon_3$

Equation 4: OSP = $\alpha_4 + \beta_{17}$ OCO + β_{18} AGE + β_{19} SIZ + ϵ_4

Equation 5: OSP = $\alpha_5 + \beta_{20}$ SCO + β_{21} SPC + β_{22} SDM + β_{23} COA + β_{24} CUA + β_{25} OCO + β_{26} AGE + β_{27} SIZ + ϵ_5

Results and Discussion

Table 2 shows descriptive statistics and correlation matrix for all variables. Correlation coefficients are ranging from 0.464 - 0.684. With respect to potential problems relating to multicollinearity, variance inflation factors (VIF) were used to test the intercorrelations among independent variable. In this study, the VIFs range from 1.125 to 2.443, well below the cut-off value of 10 (Hair et al., 2010), meaning that the independent variables are not correlated with each other. So, there are no substantial multicollinearity problems encountered in this study.

Table 2: Descriptive Statistics and Correlation Matrix

Variables	SCO	SPC	SDM	COA	CUA	осо	OSP
Mean	4.039	3.924	4.061	3.974	3.988	4.080	3.996
S.D	.669	.637	.543	.585	.557	.598	.588
SCO	1						_
SPC	.575***	1					
SDM	.573***	.624***	1				
COA	.624***	.645***	.550***	1			
CUA	.464***	.598***	.563***	.539***	1		
OCO	.474***	.615***	.493***	.632***	.596***	1	
OSP	.525***	.615***	.527***	.615***	.532***	.684***	1

^{***} p<0.01, ** p<0.05

Table 3 shows the results of hierarchical linear regression analysis of the relationships among SMAT, organizational competitiveness and organizational sustainable performance.

Firstly, strategic planning, control and performance measurement has a significant positive effect on organizational competitiveness (β_4 = 0.229, p < 0.05) and organizational sustainable performance (β_{11} = 0.230, p < 0.05). In existing literature, it help firm to determine strategy and management system that is used extensively to align business activities to firms' vision and strategy, improve internal and external communications and monitor organizational performance against strategic goals (Cadez & Guilding, 2007). Also, it is critical for improving corporate sustainability.

Likewise, it can provide a helping hand for managers in implementing, developing, and controlling of strategies and identifying and managing of the intellectual capital (Tayles et al., 2007). *Therefore, Hypotheses 2a and 2b are supported.*

Table 3: Results of Hierarchical Regression Analysis^a

	Dependent Variables				
Independent Variables	осо	осо	OSP	OSP	OSP
	Model 1	Model 2	Model 3	Model 4	Model 5
Strategic Costing (SCO)		002	.068		.069
		(.082)	(.083)		(.077)
Strategic Planning, Control and		.229**	.230**		.142
Performance Measurement (SPC)		(.089)	(.090)		(.086)
Strategic Decision Making (SDM)		.017	.105		.099
		(.083)	(.084)		(.078)
Competitor Accounting (COA)		.321***	.247**		.124
		(.087)	(.087)		(.085)
Customer Accounting (CUA)		.272***	.138*		.034
		(.078)	(.079)		(.077)
Organizational Competitiveness				.635***	.382***
(OCO)				(.060)	(.079)
Firm Age (AGE)	340**	031	242*	304**	230*
	(.170)	(.128)	(.129)	(.126)	(.120)
Firm Size (SIZ)	.442***	.055	.254*	.344***	.233*
	(.168)	(.129)	(.130)	(.125)	(.121)
Adjusted R ²	.046	.496	.487	.494	.557

^{**} p<0.01, ** p<0.05, * p<0.10, a Beta coefficients with standard errors in parenthesis

Secondly, competitor accounting has a significant positive effect on organizational competitiveness (β_6 = 0.321, p < 0.01) and organizational sustainable performance (β_{13} = 0.247, p < 0.05). In existing literature, it provides detailed insight into a present cost and financial situation of competitor; determine one's own competitive position and forecast future competitive strategic behaviors (Heinen & Hoffjan, 2005). Furthermore, Knowledge about competitors and understanding their competitive position may ensure that an organization's existence and profitability are maintained in order to build a sustainable competitive advantage (BPP, 2005). Moreover, Heinen &

Hoffjan (2005) demonstrate that competitor cost assessment is a powerful instrument for maintaining or achievement competitive advantage. According to them, information of the cost advantage and disadvantage of competitors allows anticipate of their future behavior. *Thus, Hypotheses 4a and 4b are supported.*

Thirdly, customers accounting has a significant positive effect on organizational competitiveness (β_7 = 0.272, p < 0.01) and organizational sustainable performance (β_{14} = 0.138, p < 0.10). In existing literature, it provides strong external orientation and the relevance of the customers within the context of the organizations. Customer accounting has the potential to support the understanding of customers and how they are interconnected but can also help the prioritization among them (Hakansson & Lind, 2007). Also, it can also prove useful for managing and exploiting a dyadic relationship (Caker & Stromsten, 2010). Besides, it has become a valuable method of strategic performance measurement that improves companies to complete sustained competitive advantage and increase superior organizational performance (Ussahawanitchakit, 2017). *Thus, Hypotheses 5a* and 5b are supported.

Interestingly, organizational competitiveness is a key determinant of organizational sustainable performance and a mediator of the strategic planning, control and performance measurement-organizational sustainable performance relationships, the competitor accounting-organizational sustainable performance relationships and the customers' accounting- organizational sustainable performance relationships. In existing literature, organizational competitiveness refers to business assets, attributes, or capabilities that are hard to duplicate or exceed; and offer a superior or favorable long term position over competitors (Faulkenberry, 2015). Organizational competitiveness leads to improving customer satisfaction, encouraging repeat purchase of product, and attracting new buyers in markets. It enhances their business performance and achievement in violent markets and environments (Phornlaphatrachakorn, 2017). Besides, it is a significant antecedent of firm performance because it highlights important attributes for organizations to complete positive economic consequences (Guimarães, Severo & Vasconcelos, 2017). Thus, organizational competitiveness has a positive relationship with organizational sustainable performance ($\beta_{17} = 0.635$, p < 0.01). *Therefore, Hypothesis 6 is supported.*

Likewise, organizational competitiveness has a mediating effect on the strategic planning, control and performance measurement-organizational sustainable performance relationships, the competitor accounting-organizational sustainable performance relationships and the customers' accounting- organizational sustainable performance relationships. In Hypotheses 2a, 4a and 5a,

strategic planning, control and performance measurement, competitor accounting and customers accounting are confirmed to have positive relationships with organizational competitiveness. Congruence with the study of Baron & Kenny (1986) for testing the mediating effects, strategic planning, control and performance measurement, competitor accounting, customers accounting and organizational competitiveness are considered as the independent variables of the study. The results shows that only organizational competitiveness has a significant association with organizational sustainable performance ($\beta_{25} = 0.382$, p < 0.01). Hence, organizational competitiveness is a mediator of the research relationships between strategic planning, control and performance measurement and organizational sustainable performance, competitor accounting and organizational sustainable performance and customers accounting and organizational sustainable performance. *Therefore, Hypotheses 7b, 7d and 7e are supported, but Hypotheses 7a and 7c are not.*

Surprisingly, strategic costing has no relationship with organizational competitiveness (β_3 = -0.002, p > 0.10) and organizational sustainable performance (β_{10} = 0.068, p > 0.10). While strategic costing is considered as an important strategic competence and a key competitive weapon of firms in turbulent business environments, firms have implemented strategic costing as a strategic tool in selecting, collecting, measuring, classifying, analyzing, reporting, and using quality cost data (Luther & Sartawi, 2011). Strategic costing is a critical step for effective planning and implementation of quality improvement programs by focusing on reducing the costs associated with attaining high quality. Firms have attempted to utilize the benefits of strategic costing to gain competitive advantage. However, strategic costing does not have an effect on organizational competitiveness and organizational sustainable performance in this study. To reasonably explain the research result, sources of competitive advantage may include numerous factors, such as quality, price, and marketing mechanisms. *Therefore, Hypotheses 1a and 1b are not supported.*

Moreover, the results of this study found that strategic decision making has no relationship with organizational competitiveness ($\beta_5 = 0.017$, p > 0.10) and organizational sustainable performance ($\beta_{12} = 0.105$, p > 0.10). Strategic decision making is a main choice of actions about resource allocation and involvement to the achievement of firm objectives (Raju & Parthasarathy, 2009). One of the important parts of building and running a corporate is forming a vision or mission for the corporate and a set of goals the firm aims to achieve. Strategic decision making explains the process of generating a business's objectives and mission and deciding upon the ways of action a firm should follow to achieve those goals (Hamel & Media, 2014). However, the natures of strategic decisions have high complexity and pressure making can often produce conflicts such as affective conflict. The

effect this conflict has on the decision making process and it has an effect to reduce the quality of the decision (Amason & Mooney, 1999). As a result, strategic decision making is not related to organizational competitiveness and organizational sustainable performance in this study. *Therefore, Hypotheses 3a and 3b are not supported.*

Contributions and Directions for Future Research

Theoretical Contribution and Directions for Future Research

This study attempts to integrate five components of SMAT, namely, strategic costing, strategic planning, control and performance measurement, strategic decision making, competitor accounting and customer accounting in the same model. In congruence with the existing literature, those components play important roles in determining, driving, and explaining organizational outcome (organizational competitiveness and organizational sustainable performance). However, each dimension of SMAT has some effect on organizational competitiveness and organizational sustainable performance. Therefore, future research should cover a reconceptualized literature review linking to SMAT and its consequences in order to verify and confirm the results of current study and upgrade usable results of the study. Also, future research may need to collect more data and/or larger sample group for potentially increasing and encouraging the research results and collect data from different samples in order to build the generalizability of this study. Likewise, future research may apply either structural equation model (SEM) or partial least squared (PLS) to test the research relationships in order to verify the research results and add the contributions of the study.

Managerial Contribution

According to the results of current study, SMAT can help firms increase organizational competitiveness and obtain superior performance and success. Hence, executives of firms need to invest and use their resources and assets of an organization effectively and efficiently for developing, implementing and maintaining SMAT well. Likewise, they should consider SMAT as a strategic tool in doing business by understanding and utilizing its characteristics and use them as key factors of competitive advantage and performance. Successfully linking SMAT to competitive advantage and performance can be required for operating under the rigorous markets and environments. To achieve effective SMAT implementation, firms need to define their visions, objectives and policies in order to support a success of its implementation. SMAT can present the attention and awareness of their executives for wanting growth, stability, and sustainability in highly competitive markets and

environments. Therefore, SMAT becomes a valuable strategic tool for doing and operating business excellently.

Conclusion

Strategic management accounting techniques has become a value tool in helping firms achieve sustainable competitive advantage and achieve superior performance. Accordingly, the objective of this study is to examine the relationships between SMAT and organizational sustainable performance with organizational competitiveness as a mediator of the research relationships. SMAT includes strategic costing, strategic planning, control and performance measurement, strategic decision making, competitor accounting and customer accounting. In this study, 148 firms in industrial estates in Rayong are the samples of the study. In the research results, strategic planning, control and performance measurement, competitor accounting and customers accounting have a significant positive relationship with organizational competitiveness and organizational sustainable performance. Also, organizational competitiveness has a critical positive interaction with organizational sustainable performance. To investigate the mediating effects of the research relationships, organizational competitiveness is the mediator of the strategic planning, control and performance measurementorganizational sustainable performance relationships, the competitor accounting-organizational sustainable performance relationships and the customers' accounting-organizational sustainable performance relationships. The executives of firms need to develop, implement and improve strategic planning, control and performance measurement, competitor accounting and customers accounting in order to create their organizational competitiveness and generate organizational sustainable performance by investing appropriate valuable resources to support these techniques aspects. However, strategic costing and strategic decision making not effects on organizational competitiveness and organizational sustainable performance. Future research may need to review more literature relating to these strategic management accounting issues and their characteristics, relationships and effects in order to verify the current study. To expand the research results and prove the generalizability of the study, future study may need to collect data from larger samples and from different businesses and industries.

References

- Aaker, D. A., Kumar, V. & Day, G. S. (2001). Marketing Research. New York: John Wiley and Sons.
- Abdelraheem, A. A. E., Serajeldin, B. E. A., & Jedo, A. A. A. (2017). Strategic Cost and Activating Competitive Advantage. *International Journal of Trend in Scientific Research and Development*, 1(4), 337-342.
- Ah Lay, T. & Jusoh, R. (2011). Business Strategy, Strategic Role of Accountant, Strategic Management Accounting and Their Links to Firm Performance: An Exploratory Study of Manufacturing Companies in Malaysia. *Proceeding in Accounting Research and Education Conference, University Teknologi MARA*1-27.
- Alamri, A. M. (2018). Strategic Management Accounting and the Dimensions of Competitive

 Advantage: Testing the Associations in Saudi Industrial Sector. *International Journal of*Academic Research in Accounting, Finance and Management Sciences, 8(2), 48-64.
- Al-Mawali, H. & Lam, T. (2016). Customer Accounting and Environmental Uncertainty: Sequential Explanatory Study. *International Review of Management and Marketing, 6(3),* 532-543.
- Alsoboa, S. S. & Alalaya, M. M. (2015). Practices of Competitor Accounting and its Influence on the Competitive Advantages: An Empirical Study in Jordanian Manufacturing Companies. *Global Journal of Management and Business Research*, *15(3)*, 12-23.
- Alsoboa, S., Al-Ghazzawi, A., & Joudeh, A., (2015). The Impact of Strategic Costing Techniques on the Performance of Jordanian Listed Manufacturing Companies. *Research Journal of Finance and Accounting*, *6*(10), 116-127.
- Amason, A. C. & Mooney, A. C. (1999). The Effects of Past Performance on Top Management Team Conflict in Strategic Decision Making. *International Journal of Conflict Management, 10(4),* 340-359.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating Non-Response Bias in Mail Surveys. *Journal of Marketing Research*, 14(3), 396-402.
- Atkinson, A.A., Kaplan, R.S., Matsumura, E.M., & Young, S.M. (2012). *Management Accounting Information for Decision-Making and Strategy Execution (6th ed.).* New Jersey: Pearson Prentice Hall.
- Aykan, E. & Aksoylu, S. (2013). Effects of Competitive Strategies and Strategic Management Accounting Techniques on Perceived Performance of Businesses. *Australian Journal of Business and Management Research*, *3*(7), 30-39.

- Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic and Statistical Considerations. *Journal of Personality and Social Psychology, 51,* 1173–1182.
- Blocher, E, J., Stout, D, E., & Cokins, G. (2010). *Cost Management: A Strategic Emphasis (5th ed.).*McGraw Hill, New York, NY.
- BPP Professional Education, (2005). *CIMA Management Accounting: Business Strategy.* London: BPP Publishers.
- Bromwich, M. (1990). The Case for Strategic Management Accounting: The Role of Accounting Information for Strategy in Competitive Markets. *Accounting, Organization and Society, 15(1),* 27-46.
- Cadez, S., & Guilding, C. (2012). Strategy, Strategic Management Accounting and Performance: A Configurationally Analysis. *Industrial Management & Data Systems, 112(3),* 484-501.
- Cadez, S., & Guilding, C. (2008). An Exploratory Investigation of an Integrated Contingency Model of Strategic Management Accounting. *Accounting, Organizations and Society, 33,* 836–863.
- Cadez, S., & Guilding, C. (2007). Benchmarking the Incidence of Strategic Management Accounting in Slovenia. *Journal of Accounting and Organizational Change, 3(2),* 126-146.
- Cäker, M. & Strömsten, T. (2010). Customer Accounting when Relationships and Networks Matter, in Accounting in Networks, ed. Håkansson H., Kraus K. & Lind J. New York: Routledge.
- Chai-Amonphaisal, K. & Ussahawanitchakit, P. (2010). Strategic Management Accounting and Corporate Performance of Thai-Listed Companies: A Mediating Effect of Management Process.

 International Journal of Strategic Management, 10(1), 1-23.
- Chan, S. C. H., & Mak, W. (2012). Benevolent Leadership and Follower Performance: The Mediating Role of Leader-Member Exchange (LMX). *Asia-Pacific Journal of Management, 29,* 285-301.
- Chiekezie, N. R., Egbunike, P. A. & Odum, A. N. (2014). Adoption of Competitor Focused Accounting Methods in Selected Manufacturing Companies in Nigeria. *Asian Journal of Economic Modeling*, *2*(3), 128-140.
- Churchill, G. A., Jr. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research, 16,* 64–73.
- Cinquini, L. & Tenucci, A. (2010). Strategic Management Accounting and Business Strategy: A Loose Coupling? *Journal of Accounting & Organizational Change, 6(2),* 228-259.
- Cravens, K.S., & Guilding, C. (2001). An Empirical Study of the Application of Strategic Management Accounting Techniques. *Advances in Management Accounting*, *10*, 95-124.

- Elbanna, S. & Child, J. (2007). Influences on Strategic Decision Effectiveness: Development and Test of an Integrative Model. *Strategic Management Journal*, *28*, 431-453.
- Faulkenberry, K. (2015). Sustainable Competitive Advantages: Definition, Types, & Examples. http://www.arborinvestmentplanner.com/sustainable-competitive-advantages-definition-types-examples/
- Fong, C. C. F., & Wong, J. (2012). Competitor Analysis and Accounting of Social Networking Site Service Companies in China. *Journal of Technology Management in China*, 7(3), 243-254.
- Griff, M. (2014). Professional Accounting Essays and Assignments. Lulu Press, Inc.
- Guilding, C., & McManus, L. (2002). The Incidence, Perceived Merit and Antecedents of Customer Accounting: An Exploratory Note. *Accounting, Organizations and Society, 27,* 45-59.
- Guilding, C., Cravens, K. S., & Tayles, M. (2000). An International Comparison of Strategic Management Accounting Practices. *Management Accounting Research*, 11, 113-135.
- Guimarães, J. C., Severo, E., & Vasconcelos, C. R. (2017). Sustainable Competitive Advantage: A Survey of Companies in Southern Brazil. *Brazilian Business Review, 14(3), 352-367*.
- Hair, J. F. Jr., Black W. C., Babin B. J., Anderson R. E. & Tatham R. L. (2010). *Multivariate Data Analysis* (6th ed.). New Jersey: Pearson Education International.
- Håkansson, H. & Lind, J. (2007). Accounting in an Interorganizational Setting, in Chapman, C. S., Hopwood, A. G. & Shields, M. D. (eds), Handbook of Management Accounting Research Volume 2. Oxford: Elsevier, 885-902.
- Hamel, G. & Media, D. (2014). What is strategic decision making? http://smallbusiness.chron.com/strategic-decision-making-23782.html.
- Heinen, C. & Hoffjan, A. (2005). The Strategic Relevance of Competitor Cost Assessment: An Empirical Study of Competitor Accounting. *Journal of Management Accounting Research, 3(1),* 17-21.
- Hilton, R. W. (2008). Managerial Accounting. (7th edition), New York: McGraw-Hill.
- Kaplan, R. S., & Norton, D. P. (2001). *The Strategy-focused Organization*. Harvard Business School Process, Boston.
- Kırlı, M. & Gümüş, H. (2011). The Implementation of Strategic Management Accounting Based on Value Chain Analysis: Value Chain Accounting. *International Journal of Social Sciences and Humanity Studies, 3(1),* 307-321.
- Krejcie, R. V. & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Psycholological Measurement*, *30(3)*, 607-610.

- Luther, R., & Sartawi, I. I. (2011). Managerial Practices of Quality Costing: An Evidence-based Framework. *International Journal of Quality and Reliability Management*, 28(7), 758–772.
- March, J. G. (1991). How Decisions Happen in Organizations. *Human-Computer Interaction, 6(2),* 95-117.
- Marimuthu, M., Arokiasamy, L., & Ismail, M. (2009). Human Capital Development and Its Impact on Firm Performance: Evidence from Developmental Economics. *The Journal of International Social Research*, 2(8), 265-272.
- Matić, I., & Bulog, I. (2012). The Nature of Strategic Decision Making-exploiting the Role of Managers' Incremental and Radical Learning. *The Journal of International Management Studies, 7(2),* 7-19.
- Mueller, C. G., Mone, M. A., & Barker, V. L. (2007). Formal Strategic Analyses and Organizational Performance: Decomposing the Rational Model. *Organization Studies*, *28*, 853-883.
- Noordin, R., Zainuddin, Y., & Tayles, M. (2009). Strategic Management Accounting Information Elements: Malaysian Evidence. *Asia-Pacific Management Accounting Journal*, 4(1), 17-34.
- Nunnally, J. C., & Bernstein, I. H. (1994). Psychometric Theory. New York, NY: McGraw-Hill.
- Oboh, C., & Ajibolade, S. (2017). Strategic Management Accounting and Decision Making: A Survey of the Nigerian Banks. *Future Business Journal*, *3*(2), 119-137.
- Phornlaphatrachakorn, K. (2017). Competitor Accounting and Marketing Performance: An Empirical Investigation of Electronics and Electrical Appliance Businesses in Thailand. *University of the Thai Chamber of Commerce Journal Humanities and Social Sciences*, *37*(4), 35-55.
- Porter, M. E. (1985). *Competitive Advantage. Creating and Sustaining Superior Performance.* Free Press, New York.
- Raju, R. S. & Parthasarathy, A. (2009). *Management: Text and Cases, (2nd ed.),* PHI Learning Private Limited, New Delhi.
- Reginald, M. B. (2001), Competitive Advantage: Sustainable or Temporary in Today's Dynamic Environment? www.sba.muohio.edu/abas//brussels/reginaldbeal.pdf.
- Richard, P. R. (2003). What in the World is Competitive Advantage, Policy Working Paper 105. www.anderson.ucla.edu/faculty/dick.rumel Docs/.../WhatisCA_03.pdf.
- Roslender, R. & Hart, S. (2002). Integrating Management Accounting and Marketing in the Pursuit of Competitive Advantage: The Case for Strategic Management Accounting. *Critical Perspectives on Accounting*, 13(2), 255-277.

- Santini, F. (2013). Strategic Management Accounting and Financial Performance in the Small and Medium Sized Italian Manufacturing Enterprises. *Management Control*, 1(1), 77-107.
- Santos, J. B. & Brito, L. A. (2012). Toward a Subjective Measurement Model for Firm Performance. Brazilian Administration Review, 9(SI), 95-117.
- Sayed, S, A, F. (2010). A Proposed Model for the Integration of Management Accounting Innovations to Support Enterprises on Global Excellence. Dissertation of Unpublished Accounting, Faculty of Commerce and Business Administration, Helwan University, p.66
- Selvarajan, T. T., Ramamoorthy, N., Flood, P. C., Guthrie, J. P., MacCurtain, S. & Liu, W. (2007). The Role of Human Capital Philosophy in Promoting Firm Innovativeness and Performance: Test of a Causal Model. *International Journal of Human Resource Management*, 18(8), 1456-1470.
- Tayles, M., Pike, R.H., & Sofian, S. (2007). Intellectual Capital, Management Accounting Practices and Corporate Performance: Perceptions of Managers. *Accounting, Auditing & Accountability Journal*, 20, 522-548.
- Tuan, N. P. & Mai, N. T. (2012). A Firm Analysis Level of Supporting Industries in Hanoi City- Vietnam:

 Application of Resource-based View and Industrial Organization. *International Journal of Business Management*, 7(5), 53-72.
- Ussahawanitchakit, P. (2017). Customer Accounting as a Valuable Approach of Strategic Management Accounting: Evidence from Hotel Businesses in Thailand. *Journal of Business Administration*, 40(154), 37-57.
- Zhou, K. Z., Brown, J. R., & Dev, C. S. (2009). Market Orientation, Competitive Advantage, and Performance: A Demand-Based Perspective. *Journal of Business Research*, *62(11)*, 1063–1070.