Association between strategic management accounting facets and organizational performance

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Abstract

Purpose – The purpose of this paper is to develop an extensive conceptualization of strategic management accounting (SMA) facets, as well as to explore the impact of these facets on both financial and non-financial measures of organizational performance (OP).
Design/methodology/approach – Data are collected from 435 accounting managers working in Saudi companies listed in the Saudi Stock Exchange. The study applies hierarchical regression analysis to test the association between SMA facets and OP.
Findings – The results show that SMA facets significantly affect OP, assessed in the two major categories of financial and non-financial performance.
Research limitations/implications – The dominance of companies listed in the Saudi Stock Exchange in the data set limits the generalizability of the findings.
Practical implications – The present study supports the idea that companies can enhance their OP by adopting some facets of SMA such as the availability of appropriate structural arrangements, supportive resources, adequate information types and usages and good organizational climate.
Originality/value – The current study expands the conceptualization of SMA in light of organizational context as a set of facets to overcome the polarization found in the existing literature and explores their impact on OP, including non-financial performance, for which empirical evidence is still scant.

Keywords Organizational performance, Financial performance, Non-financial performance, Strategic management accounting, Saudi companies

Paper type Research paper

1. Introduction

The emphasis of strategic approach in practicing management accounting, which has been labeled strategic management accounting (SMA), is intentionally directed at shifting the focus of management accounting from an inward-oriented perspective (e.g. historical and internal information) to an outward-oriented perspective (e.g. external and market-oriented information) (Roslender, 1995; Cravens and Guilding, 2001). However, there is still no consensus on the definition or constituents of SMA since it was introduced by Simmonds (1981) see Oboh and Ajibolade (2017). However, it is well accepted that SMA lies at the crossroads of strategic management and accounting and tries to connect management accounting and strategic positioning of the organization (Juras, 2014). In an attempt to integrate management accounting with strategic management process (SMP), most literature and empirical work (e.g. Ah Lay and Jusoh, 2011; Aksoylu and Aykan, 2013; Cadez and Guilding, 2008, 2012; Oboh and Ajibolade, 2017) have conceptualized and operationalized SMA based on two main facets, namely, the adoption of strategically oriented management accounting techniques and the involvement of accountants in SMP (Cadez and Guilding, 2008; Juras, 2014).

In regard to the first facet of SMA, external and long-term orientation, multidimensionality and both financial and non-financial typologies of measurement were used as criteria to identify the SMA techniques (Cadez and Guilding, 2008). In light of these three criteria, some authors (Cadez and Guilding, 2008; Cinquini and Tenucci, 2010; Cravens and Guilding, 2001; Guilding and McManus, 2002; Guilding *et al.*, 2000) have presented lists of SMA techniques, which are classified into five broad categories: costing (e.g. attribute costing);

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planning, control and performance measurement (e.g. balance score card); strategic decision making (e.g. strategic costing and pricing); competitor accounting (e.g. competitor and competitor position); and customer accounting (e.g. customer profitability) (Cadez and Guilding, 2008). However, most of the empirical work over the past 30 years has investigated the extent to which specific strategically oriented accounting techniques were adopted (Langfield-Smith, 2008). This work was not without limitations. Nixon and Burns (2012, p. 229) found that "the links among the bundle of techniques that are usually included in SMA and between SMA and cognate literatures were not integrated into a coherent, cohesive framework to complement strategic management." Accordingly, limiting SMA conceptualization to a set of techniques may hinder our understanding of how SMA contributes to the SMP (Nixon and Burns, 2012; Otley, 2016). To overcome such limitation, Nixon and Burns (2012) suggested that more linkage between SMA, internal resources and organizational capabilities could be a good solution to making an effective alignment between management accounting and the SMP. Moreover, Otley (2016) recommended that the work in SMA conceptualization needs to be expanded to a wider range of organizational contexts (e.g. information system, climate, structure, etc.) rather than focusing on SMA techniques in order to identify the boundaries of the field.

For the second facet of SMA, most authors have claimed that management accountants' participation in the SMP is an important issue when integrating management accounting with the SMP in order to provide the necessary information for strategic purposes (e.g. Langfield-Smith, 2008; Roslender and Hart, 2010; Tillmann and Goddard, 2008). To operationalize the second facet of SMA, Cadez and Guilding (2008) and Aver *et al.* (2009) used Floyd and Wooldridge's, (1991) instrument which is designed to assess middle management involvement in the five aspects of SMP: "(1) identifying problems and proposing objectives, (2) generating options, (3) evaluating options, (4) developing details about options, and (5) taking the necessary actions to put changes into place" (Aver *et al.*, 2009, p. 315). This operationalization stems from the key role of management accounting in providing support for strategic decision making.

However, some scholars tried to expand the operationalization of the second facet of SMA by taking into account some organizational arrangements and capabilities (e.g. horizontal and team-based structures, Chenhall, 2005; new management accountant's skills, McManus and Guilding, 2008; occupational prestige, Nyamori *et al.*, 2001). According to Noordin *et al.* (2015), what facets should be included when integrating SMA within the SMP is still unclear and needs a more comprehensive review to overcome the paucity of published evidence on the impact of SMA on organizational performance (OP). Moreover, as "the strategic and organizational imperatives of a dynamic external environment mean that the context of research areas is constantly changing," re-conceptualization of SMA represents an essential issue for future researchers (Nixon and Burns, 2012, p. 240).

In his recent review of management accounting studies during the period from 1980 to 2014, Otley (2016) concluded that a major deficiency of such prior work has been the limited conceptualization of SMA in light of organizational context since the SMA does not operate in isolation. To overcome this deficiency, Otley (2016) recommended that SMA needs to be conceptualized in a broader organizational context in light of some relevant organizational resources, capabilities and subsystems (e.g. resources, climate, structure, etc.). This conceptualization may help in overcoming the "loose coupling" phenomena between SMA and SMP (Cinquini and Tenucci, 2010).

From the above discussion, conceptualizing SMA needs to be partially based on the assumption that SMA can show the reflection and correlation between SMP and the organizational context rather than limiting it to a set of techniques and management accountants' participation in the SMP. However, as the context and nature of the organizational environment has changed dramatically in the last decade, the two common

facets of SMA are not sufficient to identify what constitutes SMA and provide little knowledge about the role of SMA in enhancing OP. Additional facets for such a thriving concept are needed to overcome the loosely linked nature between SMA and the SMP (see Nixon and Burns, 2012). According to Roslender and Hart (2010), the identification of SMA as "accounting for strategic management" remains largely unspecified. Therefore, the present study contributes to the literature by developing an extensive conceptualization of SMA facets that overcomes the polarization found in the existing literature. Practically, this will be done by identifying and extending the list of facets of SMA through a survey of existing literature (see Section 2.2).

In addition, Otley (2016) found that the majority of reviewed contingency studies in SMA examined only one contingent independent variable (e.g. strategy, information systems, structure, etc.) or multiple contingent variables in correlation with one dependent variable (e.g. financial performance). He also found that there are little to no studies that examine the effect of the fit of multiple independent variables on several dependent variables. Moreover, these contingency-based studies in SMA were heavily employed financial performance measures as independent variables (Otley, 2016). Despite their importance, non-financial performance measures have rarely been used in the studies reviewed by Otley (2016). To overcome the limitations founded in contingency-based SMA studies, the current study deploys the assumption identified in configurational theories that considers OP as an outcome of the internal consistency or fit between an organization's parts and practices (Doty *et al.*, 1993). Consistent with this assumption, the current study attempts to conceptualize SMA in the context of relevant organizational resources, capabilities and subsystems as a set of facets (e.g. SMA – structure facet, SMA – information facet, etc.), then explore the impact of these facets on both financial and non-financial performance measures of OP. In particular, this study addresses the following two questions:

RQ1. What are the main facets of SMA in light of organizational context that overcome the polarization found in the existing literature?

RQ2. Do these facets have a significant impact on OP?

This study applies a factor analysis to uncover the underlying dimensions of the main SMA facets identified in the existing literature. In addition, it applies hierarchical regression analyses to show if these SMA facets explain a statistically significant amount of variance in both financial and non-financial performance measures of OP after accounting for all other variables.

The remainder of the paper is organized into five sections. Section 2 presents the theoretical background of the study, discussing the concept of SMA and developing its new facets. Section 3 covers the development of study hypotheses. Sections 4 and 5 present the method used in conducting the current study and the results. Finally, the discussion, main conclusions and some limitations of this study are presented in the last section.

2. Theoretical background

2.1 Strategic management accounting (SMA)

The interpretation of the word "strategy" is controversial, and when used within the definition of SMA, it is fraught with problems; no consensus about the definition of SMA has been found in accounting literature. In defining SMA, three common threads have been identified in the accounting literature. The first thread uses the term SMA as a synonym of "accounting for strategic positioning" (Cravens and Guilding, 2001; Roslender, 1995). The second thread treats SMA as an approach to bridging the strategy literature and management accounting into a unified strategic perspective (Guilding *et al.*, 2000). The third stream comes to define SMA based on the literature developed by Simmonds (1981),

as well as Bromwich (1990) and Oboh and Ajibolade (2017). According to Simmonds (1981), SMA is a range of activities that provide and analyze management accounting data on the organization and its competitors in order to formulate and monitor the organization's strategy. In the same vein, Bromwich (1990) stressed the importance of SMA in providing financial information about external areas of organizations such as markets, products, suppliers, competitors and customers. Similarly, Langfield-Smith (2008, p. 206) stated that "SMA entails taking a strategic orientation to generation, interpretation and analysis of management accounting information, and competitors' activities provides the key dimension for comparison."

However, the researcher believes that these three threads of SMA do not significantly differ from each other, since developments in the field of SMA resulted from attempts to cultivate new management accounting practices that could provide information to support the SMP.

In order to identify the contributions of activities, processes or products to the achievement of an organization's strategy, management accounting–strategic management integration goes through three phases of development. The first phase is characterized by the emergence of new techniques in the field of management accounting (e.g. activity-based costing and strategic cost analysis) as a source of measuring the internal performance (Kaplan and Norton, 1996). In the second phase, the focus is on developing generic approaches to strengthen strategic position of an organization. These approaches focus heavily on activity or operational excellence and try to achieve an appropriate linkage between different organizational functions (e.g. management accounting and marketing management) and the external aspects of OP (Roslender, 1995). The final phase leads to the emergence of three overlapping managerial philosophies (e.g. activity-based management, strategic cost management and target cost management) that aim to achieve a competitive advantage and improve performance (Roslender and Hart, 2010). Besides, these three philosophies, the involvement of accountants in SMP has been added to enhance the integration between management accounting and SMP (Cadez and Guilding, 2008).

However, management accounting–strategic management integration still needs more identification and clarification. This is due to the lack of an integrative view of SMA within the organizational context (Otley, 2016). Langfield-Smith (2008) suggested that understanding how SMA is conceptualized within the organizational context will continue to be a source of interesting research and bridge the gap between strategy literature and management accounting into a unified strategic perspective. As previous conceptualizations of SMA did not express a better fit between SMA and its complementary organizational and strategic contexts within the SMP, it does not bridge this gap and therefore cannot identify the nature of SMA as a dynamic, integrated and multifaceted concept (Jacobides, 2010). In the current study, the researcher will try to bridge this gap by refining the previous conceptualizations of SMA and therefore develop new facets of SMA.

2.2 Developing new facets for SMA

As stated by Davila and Oyon (2008, p. 887), "leveraging diversity can only bring richer knowledge," and as mentioned earlier in the introduction that the two facets of SMA are not sufficient to identify of what constitutes SMA, the current study attempts to expand these facets by exploring some related work in the field of SMA. After intensive review of existing literature on the field of SMA (see Table I), five SMA facets have been identified as a good solution to enhance the integration between management accounting and SMP. These facets are:

(1) The existence of formal and informal advisory channels in organizations that use management accounting information as a fundamental input in SMP.

Table I. Factor structure of SMA facets

Some related sources	Questionnaire item	1	2	3	4	AVE	α
SMA – organizational structure facet						0.66	0.83
Cadez and Guilding (2008), Fauré and Rouleau (2011), Hiller *et al.* (2014)	The company provides formal and/or informal advisory channels for management accounting managers to participate in the strategic decision-making process	0.54					
Nyamori *et al.* (2001)	Management accounting managers have senior management positions in the company	0.57					
Ahid and Augustine (2012), Oboh and Ajibolade (2017)	Management accounting managers are considered strategic partners in the company management team	0.67					
Cadez and Guilding (2012), Hammad *et al.* (2010), Trkman *et al.* (2010)	There is a specialized management accounting unit in the company structure for managing management accounting activities and processes	0.55					
Cadez and Guilding (2012), Gong and Ferreira (2014)	The management accounting unit in the company works in an integrated manner with other functional units to achieve a high degree of synergy	0.59					
Aver *et al.* (2009), Chenhall (2005), Cadez and Guilding (2012), Seal (2010)	The company formulates a cross-functional team composed of different functional areas in the company for strategic purposes	0.51					
SMA – resource facet						0.76	0.89
McManus and Guilding (2008), Mishra and Mishra (2010)	The company has the appropriate abilities, expertise and experiences needed for implementing SMA		0.55				
Mishra and Mishra (2010)	Members of cross-functional teams in the company have adequate skills to identify, utilize, evaluate and interpret information effectively and efficiently		0.56				
Wang and Huynh (2014)	The company provides an effective management accounting information system		0.54				
Charles *et al.* (2016)	The management accounting information system in the company is based on modern technology applications		0.64				
SMA – information facet						0.79	0.78
Juras (2014), Nixon and Burns (2012), Wang and Huynh (2014)	Management accounting information is used as a fundamental input in formulating, implementing and evaluating the strategies of the company			0.56			
Ah Lay and Jusoh (2011), Cadez and Guilding (2008), Langfield-Smith (2008), Oboh and Ajibolade (2017)	The company adopts and uses external and market-oriented management accounting techniques with a strategic focus			0.58			

(*continued*)

Table I.

Some related sources	Questionnaire item	1	2	3	4	AVE	α
Bromwich (1990), Noordin *et al.* (2015), Roslender (1995), Simmonds (1981)	In the company, competitors, customers and product-related information are used in the strategic decision-making process			0.61			
SMA – organizational climate facet						0.65	0.81
CIMA Executive Summary Report (2015), Seal (2010)	Senior management in the company provides an adequate support and encouragement for practicing management accounting from a strategic perspective				0.58		
	Senior management in the company has positive attitudes toward the strategic role of management accountants				0.67		
	The company has a supportive organizational culture for practicing management accounting based on a strategic approach				0.52		
	Management accounting managers are in a position of credibility for senior management in the company				0.55		
	Eigenvalue	2.67	3.09	1.98	2.07		
	Proportion of variance explained	25.3	21.86	28.8	19.5		
	KMO = 0.938						

Assigning management accounting managers in senior management positions and considering them strategic partners in an organization's management team are the main indicators for such a facet (Ahid and Augustine, 2012). Some recent studies showed that management accountants' role has changed from an information provider to a strategic advisor (Fauré and Rouleau, 2011; Hiller *et al.*, 2014).

(2) The availability of a specialized management accounting unit in an organization's structure equipped with necessary abilities, expertise and experiences. However, SMA requires that management accountants need to exhibit a broad vision of the organization (Fauré and Rouleau, 2011), embrace new skills extending beyond their usual areas in a context of uncertainty and intense competition, and be "capable of interdisciplinary thinking and communication and able to understand the complex linkages and interrelationships inside the company" (Tillmann and Goddard, 2008, p. 96). Furthermore, the management accounting unit should also work in an integrated manner with other organizational units to achieve a high degree of synergy (Otley, 2016). This can be accomplished by formulating of a cross-functional management team from various functional departments of the organization (Aver *et al.*, 2009). Furthermore, the members of this team should have adequate information literacy skills that enable them to identify, utilize, evaluate and interpret information effectively and efficiently (Mishra and Mishra, 2010).

(3) The adoption and use of external and market-oriented management accounting techniques with a strategic focus to make better strategic decisions (see Cadez and Guilding, 2008).

(4) The availability of effective management accounting information systems based on modern technological applications, with the ability to provide inputs for strategic decision making and strategic control. However, this information should have both internal and external orientations with reliable projections for the future, which are usually non-financial ones (Cinquini and Tenucci, 2010).

(5) Adequate support and encouragement from the top management for practicing SMA. Positive attitudes of senior management, open relationships with senior management, a supportive organizational culture and credibility are some of the main factors for effective linkage between SMA and SMP in an organization. According to the Chartered Institute of Management Accountants' (CIMA) project in CIMA Executive Summary Report (2015), the accountants' involvement in the SMP depends on their organizational position, the culture of the organization, their relationships with CEO and credibility (p. 1).

From of the above-mentioned facets, four organizational context variables, namely, structure, resources, information system and climate can be identified. In other words, each SMA facet seems to have a fit with one or two of these variables. As these organizational context variables play an essential role in enhancing SMP (Charles *et al.*, 2016), achieving a better fit between these variables and management accounting may provide an alternative way to conceptualize and operationalize SMA in a broad context for a holistic view. In sum, synergizing SMA with some relevant organizational context variables as a set of facets, and then deploying them in a causal model as antecedents of both financial and non-financial performance measures of OP were theoretically conceptualized but not empirically supported.

3. Hypothesis development

Despite the conceptualized relationship between SMA and OP, any empirical studies supporting this relationship have been few and far between. Past findings on the

relationship between SMA and OP are not conclusive and lack of empirically based research (Nixon and Burns, 2012). Some studies (e.g. Ah Lay and Jusoh, 2011; Dheseviano and Patrick, 2018) have found a positive relationship between the usage of SMA techniques and OP. However, other empirical studies have found no significant or weak associations between the two variables (e.g. Aksoylu and Aykan, 2013; Cadez and Guilding, 2008). Some research pointed out that the relationship between these two variables is rather ambiguous and needs more contextual factors to make it clearer (Chenhall, 2005; Cadez and Guilding, 2012; Nixon and Burns, 2012; Otley, 2016). These contradictory results have been mainly attributed to the limited conceptualization of SMA (Nixon and Burns, 2012; Otley, 2016).

Some authors have argued that fitting SMA within the context of an organization in a harmonic and synergetic way could enhance the integration between SMA and SMP and therefore improve OP (Cadez and Guilding, 2012; Trkman *et al.*, 2010). According to Morton and Hu (2008), expanding the way we conceptualize SMA can help in integrating SMA into well-designed processes that may improve organizational effectiveness and performance. Berliantiningrum *et al.* (2017) found that institutionalizing or integrating SMA into SMP positively affects company performance. This integration or institutionalization helps organizations achieve vertical and horizontal fits for SMA and in turn improve their performance (Cadez and Guilding, 2012; Hammad *et al.*, 2010; Trkman *et al.*, 2010). In a vertical fit, organizations need to design their functions and activities in a systematic way by tailoring the inputs, processes and outputs of management accounting in a harmonic way within the corporate, business and functional strategies (Cadez and Guilding, 2012; Hammad *et al.*, 2010; Trkman *et al.*, 2010). In a horizontal fit, organizations need to achieve internal consistency between SMA practices and procedures (Cadez and Guilding, 2012). These two types of fit are consistent with the assumption of configurational theories that views the fit between different practices or approaches or subsystems as a cluster as a relatively important and more effective way of meeting strategic demands (Marlin *et al.*, 2007), as well as improving OP (Cadez and Guilding, 2012; Trkman *et al.*, 2010). According to Otley (2016), coordinated combinations of elements into an overall system labeled as "closely-coupled" (i.e. greater fit between management accounting and organizational context) may enhance the role of SMA and may have a significant impact on company performance. Furthermore, the contingency theory implies that the successful implementation of SMA depends upon particular contingent factors (e.g. structure, information system, size, climate, etc.), while OP is dependent on a fit between SMA and these factors (Otley, 2016). According to Oboh and Ajibolade (2017), this assumption, however, needs more empirical investigation within SMA research. Moreover, Wang and Huynh (2014) found that a higher use of integrated SMA information helps managers enhance their OP. According to Jacobides (2010), as SMA is considered a foundation for strategic decision-making process in an organization, it is supposed to play a significant role in improving OP. Based upon these arguments and findings, the following study hypothesis will be tested:

H1. A higher fit between SMA and organizational context as a set of facets is associated with higher OP.

Despite the importance of non-financial measures, they have been relatively neglected in the contingency-based SMA studies reviewed by Otley (2016). Several authors argued that using non-financial measures in tandem with financial ones would allow some limitations of financial performance measures as a single indicator to be overcome (O'Connell and O'Sullivan, 2014).

While multivariate approaches covering major dimensions of financial performance (e.g. return on assets and return on equity) have been used to capture OP in SMA research (Otley, 2016), other studies in strategic initiatives, including SMA, have used non-financial

performance measures (e.g. Afonina, 2015; Indiatsu *et al.*, 2014). As SMA represents a critical source of strategically oriented information for planning, decision making and control purposes, these studies have supported the positive impact of SMA on these two measures. Accordingly, the following hypotheses will be tested in the current study:

H2. A higher fit between SMA and organizational context as a set of facets is associated with higher organizational financial performance.

H3. A higher fit between SMA and organizational context as a set of facets is associated with higher organizational non-financial performance.

4. Method

4.1 Sampling and data collection

This study's population consists of 178 Saudi public companies from 20 sectors which were listed at the Saudi Stock Exchange (Tadawul) at the end of 2016. As this study's topic is strategic in nature, the criteria for inclusion in the study sample were that the company had to have a well-established accounting department, use financial and non-financial measures, and have conducted its business operation for at least five years. The researcher, with the help of three academic staff members, contacted all of these listed companies by telephone to identify those companies that met the criteria set out in the study and asked for their participation. The total number of companies included was 154 out of 178. For those who agreed to participate, an appointment was made to meet at the company's premises. Overall, 124 companies participated, providing a response rate of 80.5 percent.

With regard to the sample unit of analysis, higher-level accounting managers were selected as key information providers. Those managers were more likely to have the most suitable information for the current study, since they were more likely to have a comprehensive overview of the strategic issues across the whole company. Data on SMA facets and OP were collected by a structured questionnaire. The drafted questionnaire was reviewed by five professors specialized in the field of management accounting for clarity and face validity. In addition, a pilot sample of 35 higher-level accounting managers, from outside the original study sample, was used to examine the temporal stability of the study questionnaire. The pilot sample managers answered the questionnaire in two time frames, separated by three weeks. Then, the Pearson correlation coefficient between the two time frames was calculated. The value of this coefficient was ($rtt = 0.82$; $p < 0.001$) for the full items, and ($rtt = 0.78$; $p < 0.001$) and ($rtt = 0.83$; $p < 0.001$) for the facets of SMA and OP, respectively. Moreover, non-response bias was assessed by comparing the responses in the questionnaires between the early and late respondents using a *t*-test. There was no significant difference found in the results.

The survey questionnaire was personally handed to 510 respondents with the help of three academic staff members. This was followed by a period of one month to follow up with the respondents and to collect all the responses. Within this period of time, 76.9 percent of responses were collected, followed by a call reminder from the researcher for those companies that had not completed the survey. One week later, an additional 43 responses were collected, and the total number of participated managers was 435 with a response rate of 85.3 percent.

The study sample consists of 75 percent male and 25 percent female respondents, with an average age of about 38 years. In total, 93 percent hold a bachelor's degree or above and have an average total experience in the accounting position of about nine years. Managers from all different sectors listed in the Saudi Stock Exchange are represented in the sample. Most respondents (93 percent) work for large companies that employ more than 1,000 employees, while only 7 percent come from medium-sized companies with less than 1,000 employees. The average age of all companies who participated in survey is about 19 years.

4.2 Measures

To investigate the impact of the developed SMA facets on OP, the present study uses the following variables.

Independent variables. In order to operationalize SMA in this study, the five facets of SMA identified in existing literature are used as independent variables to measure the extent to which companies practice management accounting from a strategic approach in light of achieving a fit between SMA and organizational context. These facets are (see Table I for the wording of the items):

(1) The active participation of management accountants in the strategic decision-making process. This facet is operationalized as the extent to which a company provides effective channels, senior positions and a view of strategic partnering for management accounting managers in the company (three items).

(2) The availability of a specialized management accounting unit in the organization structure equipped with necessary abilities, expertise and experiences. This facet is operationalized as the extent to which a company has a specialized management accounting unit with competent employees and effective cross-functional teams, as well as to what extent this unit works in a synergetic manner with other functional units (five items).

(3) The adoption and use of SMA techniques and tools. As indicated previously, past studies have both identified a set of SMA techniques and investigated their impact on OP. The findings regarding such techniques were mixed and contradictory. So, the present study operationalizes this facet of SMA in a general view as the extent to which a company adopts and uses external and market-oriented management accounting techniques to provide essential information about competitors, customers and product for strategic purposes (two items).

(4) The availability of effective management accounting information systems based on modern technology applications. This facet is operationalized as the extent to which a company provides such systems for better linkage with the SMP (three items).

(5) Adequate support and encouragement from the top management for practicing SMA. In order to operationalize this facet, four items were developed to measure the extent to which a company participates in such support and encouragement. Top management's support, attitudes and credibility, in addition to supportive organizational culture for practicing SMA, portray this facet.

In the present study, participants were asked to indicate the extent to which their companies having these five SMA facets. Each of these facets is based on questionnaire items answered on Likert scales ranging from 1, "strongly disagree" to 5, "strongly agree." Prior to doing further analysis on this study's hypotheses, several procedures were conducted to test the internal consistency and discriminant validity of data. The results of such tests are provided in Table I.

To uncover the underlying dimensions of the 17-item study questionnaire, the principal component analysis and varimax rotation method were performed. Four factors emerged from this analysis after constructing each scale with a cutoff point of 0.40 or greater with an eigenvalue greater than 1, and no item was removed (Gorsuch, 1974). In addition, the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was above 0.90, the superb value proposed by Hutcheson and Sofroniou (1999). All 17 items loaded significantly on the constructs, satisfying the convergent validity. Together, all four factors explain 95.46 percent of the variation in the data.

In order to test for discriminant validity, average variance extracted (AVE) was computed for each construct and compared to squared intercorrelations with other constructs. The test

showed that all AVEs values were adequate; therefore, discriminant validity was achieved. In addition, the Cronbach's αs for the facets of SMA were all larger than 0.7, the lowest limit suggested by Nunnally (1978). In sum, the above findings suggest that the study instrument used to operationalize SMA facets is reliable and valid.

The naming of each factor in the present study depends on the practices listed under it. The researcher named the first factor "SMA – organizational structure facet." This factor includes elements that link SMA with organizational structure such as supportive communication channels, accountant positions and synergetic issues. In the same vein, the second factor, named "SMA – resource facet," is composed of the most important resources needed for effective SMA such as information systems and qualified SMA personnel and teams. "SMA – information facet," as the third factor, includes the adoption of SMA techniques, as well as the nature of information they provide. The practices of the last factor, named "SMA – organizational climate facet," are related to the prevailing organizational climate such as senior management support, positive attitudes and credibility and a supportive organizational culture.

To assess the risk of common method variance, which may have biased the findings and yielded misleading conclusions, the researcher used the Harman's single-factor test as suggested by Podsakoff *et al.* (2003). The findings of the Harman's single-factor test indicated that the present study's measurement model with one method factor has low and insignificant loadings. Taken with the findings of principal component analysis (see Table I), these tests suggest that common method bias was not a concern.

Dependent variables. To conceptualize company performance, the present study used the subjective approach (managerial perception) by selecting the 12 most crucial measures of OP founded on related strategic-based studies and SMA contingency-based studies. These measures (used as dependent variables) are divided into two categories:

(1) Financial measures include market share, sales growth, profit growth, return on equity, cash-flow and return on assets ($\alpha = 0.86$).

(2) Non-financial measures include customer satisfaction, the organization's adaptive ability to a changing environment, the organization's innovative performance, employee satisfaction, product quality and new product/service offers ($\alpha = 0.76$).

Despite the limitations of perceptual performance data, managers' perceptions of OP have been used extensively by research works as a reliable measurement than secondary data (Afonina, 2015), and have no validity problem on strategic orientation studies (Kantur, 2016). In the current study's survey questionnaire, the participants were asked to compare their company's performance over the past three years to other companies in the same sector using Likert scales ranging from 1, "below competitors" to 5, "above competitors."

Control variables. To capture those organizational factors related to the OP in the regression analysis, the present study selected several control variables based on prior empirical work (Ah Lay and Jusoh, 2011; Cadez and Guilding, 2012; Hammad *et al.*, 2010). Company age was logged and included as a control variable to capture any founding values and maturation effect. However, having more years of experience increased the opportunities for the company to operate effectively and efficiently and may therefore be associated with its performance. Company size (log of total employment) was also controlled in light of its potential impact on resource devotion to the operations in the company.

The intensity of competition is another variable that may influence company performance. The present study controlled this variable by applying Guilding and McManus's (2002) scale. In this scale, participants were asked to identify the intensity of competition on a seven-point scale ranging from "1" (negligible intensity) to "7" (extremely intense) on five indicators: market share, selling and distribution, price, quality and variety

of products and customer service (Ah Lay and Jusoh, 2011, p. 12) ($\alpha = 0.83$). Finally, the sector type was controlled by adding 20 dummy variables into the regression analysis to capture the impact of sector characteristics on the dependent variables of the current study.

5. Results

Before performing any analyses, the researcher developed new composite variables for each factor by averaging items within factors. The seven new variables created were organizational structure facet (SMA–OSF), SMA – resource facet (SMA–RF), SMA – information facet (SMA–INFF), SMA – organizational climate facet (SMA–OCF), competition intensity (CI), organizational financial performance (OFP) and organizational non-financial performance (ONFP). In addition, the last two variables were composited into a new variable, "OP", by being averaged. To consolidate SMA facets into one construct, a new composite variable (combined SMA–facets) was created by averaging the four facets into one variable.

Table II provides descriptive statistics and correlations for all independent and dependent variables. Results indicate that all four correlations between SMA facets and OP are positive and statistically significant. In particular, all these facets of SMA have consistently high correlations with a company's financial performance, as well as moderate correlations with a company's non-financial performance. These correlations also reflect the criterion or concrete validity of the SMA facets measurement scale used in the current study. In addition, the correlation between the two dependent variables (financial performance and non-financial performance) is positive and significant ($r = 0.43$). Correlations among all SMA facets also tend to be positive and significant and may indicate that the companies under consideration have, to some extent, an integrative view toward SMA facets. CI has positive correlations with all SMA facets; therefore, more CI encourages the adoption of SMA facets. This can be explained by an awareness of the competitive environment, which is the main driver for the adoption of SMA rather than traditional management accounting. On the other hand, CI has a negative correlation with company performance both financially and non-financially. In other words, more CI may harm company performance.

To examine the problem of multicollinearity, the researcher used the variance inflation factor (VIF). Typically, VIF value greater than 10 or even 5 suggests severe multicollinearity (Rogerson, 2001). The observed VIF values for the variables in the current study model ranged from 1.01 to 1.51, suggesting that no multicollinearity problem exists. To test the current study hypotheses, the researcher chose to utilize hierarchical regression analyses, which allowed him to control for potential variables that may influence results. The hierarchical regression results for the company performance are shown in Table III, while Table IV presents the regression results for company financial performance, and Table V presents the results of non-financial performance. Two regression models with six equations were employed for OP, financial performance and non-financial performance, one equation for Model 1, and five equations for Model 2. In Model 1, the control variables were deployed as independent variables against the company performance. In Model 2, the four facets of SMA identified in the present study were added to the model, one facet at a time. All the control variables deployed in Model 1 were also included in Model 2. In Equation (6), the significant SMA facets were combined together as one construct (combined SMA–facets) and tested in the same manner.

For Model 1, the results presented in Table III indicated that only CI had significant effect on company performance. The four control variables together explained about 5.2 percent of the total variation in company performance (adjusted $R^2 = 0.052$, $F = 8.445$, $p < 0.005$). For Model 2 (Equations (2)–(5)), each SMA facet was entered in the regression model after controlling for the effects of control variables. The results indicated that the addition of SMA facets, one at a time (i.e. SMA–OSF, SMA–RF, SMA–INFF, SMA–OCF), explained an additional variance in company performance ranging from 12.5 to 26.1 percent. This means that Model 2 explains the

Table II.
Means, standard deviations and correlations

Variables	*M*	SD	1	2	3	4	5	6	7	8	9
1. SMA–OSF	3.46	0.89									
2. SMA–RF	3.05	0.78	0.15*								
3. SMA–INFF	2.98	0.73	0.28**	0.58**							
4. SMA–OCF	3.17	0.91	0.53**	0.19*	0.11*						
5. OP	2.99	0.79	0.47**	0.51**	0.74**	0.36**					
6. OFP	3.31	0.69	0.63**	0.64**	0.67**	0.56**	0.83**				
7. ONFP	2.66	0.77	0.35**	0.38**	0.48**	0.34*	0.52**	0.43*			
8. Log of company age	3.67	1.08	0.04	0.07*	0.06*	0.11	0.17	−0.08*	−0.09		
9. Log of total employment	4.22	2.11	0.18	0.11	0.01	0.18*	−0.07	−0.14	−0.15	0.25*	
10. CI	5.88	1.65	0.24*	0.21**	0.44**	0.21*	−0.23*	−0.19*	−0.21*	0.11	0.04

Notes: SMA–OSF, organizational structure facet; SMA–RF, SMA–resource facet; SMA–INFF, SMA – information facet; SMA–OCF, SMA – organizational climate facet; CI, competition intensity; OFP, organizational financial performance; ONFP, organizational non-financial performance; OP, organizational performance. *$p < 0.05$; **$p < 0.01$

Table III.
Regression models for company performance

Variables	Model 1 Equation (1)	Equation (2)[a]	Equation (3)[a]	Model 2 Equation (4)[a]	Equation (5)[a]	Equation (6)[a]
Constant	3.331** (0.617)	3.678*** (0.885)	4.668** (0.539)	3.996*** (0.882)	4.324** (0.444)	5.334** (0.609)
Log of company age	−0.143 (0.019)	−0.311 (0.288)	−0.359 (0.442)	−0.358 (0.228)	−0.412 (0.395)	−0.084 (0.111)
Log of total employment	−0.117 (0.205)	−0.077 (0.052)	−0.218 (0.224)	−0.241 (0.312)	−0.261 (0.279)	−0.318 (0.388)
CI	−0.423* (0.025)	−0.481** (0.007)	−0.441** (0.009)	−0.408** (0.039)	−0.376* (0.024)	−0.335* (0.037)
Sector type dummies	0.333 (0.359)	0.361 (0.409)	0.335 (0.442)	0.362 (0.421)	0.388 (0.432)	0.321 (0.308)
SMA–OSF	–	0.335*** (0.018)	–	–	–	–
SMA–RF	–	–	0.453*** (0.009)	–	–	–
SMA–INFF	–	–	–	0.485*** (0.003)	–	–
SMA–OCF	–	–	–	–	0.406*** (0.021)	–
Combined SMA–facets						0.521*** (0.001)
R^2	0.077*	0.227**	0.209***	0.348***	0.224***	0.436***
Adjusted R^2	0.052*	0.208**	0.178***	0.313***	0.177***	0.408***
F	8.445***	8.764***	8.562***	9.272***	8.342***	10.009***
Δ Adjusted R^2		0.156	0.126	0.261	0.125	0.356
ΔF		7.277**	9.144***	9.644***	8.077***	11.779***

Notes: $n = 435$. Standardized regression coefficients are reported, with standard errors in parentheses. [a]Statistics are reported in comparison with Equation (1). *$p < 0.05$; **$p < 0.01$; ***$p < 0.005$ (one-tailed test)

Table IV.
Regression models for company financial performance

Variables	Model 1 Equation (1)	Equation (2)[a]	Equation (3)[a]	Model 2 Equation (4)[a]	Equation (5)[a]	Equation (6)[a]
Constant	2.145** (0.445)	3.063*** (0.745)	3.111** (0.882)	2.895*** (0.668)	2.132** (0.216)	3.432** (0.892)
Log of company age	−0.245 (0.288)	−0.266 (0.268)	−0.245 (0.271)	−0.226 (0.274)	−0.304 (0.322)	−0.188 (0.209)
Log of total employment	−0.226 (0.201)	−0.198 (0.254)	−0.207 (0.233)	−0.201 (0.221)	−0.221 (0.232)	−0.266 (0.251)
CI	−0.343* (0.118)	−0.335** (0.007)	−0.321** (0.004)	−0.319** (0.015)	−0.308** (0.012)	−0.242** (0.005)
Sector type dummies	0.201 (0.234)	0.244 (0.222)	0.221 (0.303)	0.225 (0.241)	0.243 (0.252)	0.222 (0.205)
SMA–OSF	–	0.278*** (0.013)	–	–	–	–
SMA–RF	–	–	0.312*** (0.011)	–	–	–
SMA–INFF	–	–	–	0.357*** (0.009)	–	–
SMA–OCF	–	–	–	–	0.263*** (0.021)	–
Combined SMA–facets						0.403*** (0.004)
R^2	0.065*	0.119**	0.189***	0.222***	0.147***	0.375***
Adjusted R^2	0.007*	0.106**	0.125***	0.188***	0.116***	0.344***
F	4.223**	4.567***	4.509***	5.227***	4.751***	6.751***
Δ Adjusted R^2		0.099	0.118	0.181	0.109	0.337
ΔF		3.209**	5.171***	6.253***	5.133***	8.804***

Notes: $n = 435$. Standardized regression coefficients are reported, with standard errors in parentheses. [a]Statistics are reported in comparison with Equation (1). *$p < 0.05$; **$p < 0.01$; ***$p < 0.005$ (one-tailed test)

Table V.
Regression models for company non-financial performance

Variables	Model 1 Equation (1)	Equation (2)[a]	Equation (3)[a]	Model 2 Equation (4)[a]	Equation (5)[a]	Equation (6)[a]
Constant	3.662** (0.593)	3.113*** (0.226)	4.009** (0.584)	3.777*** (0.482)	3.118** (0.109)	3.501** (0.441)
Log of company age	−0.156 (0.174)	−0.221 (0.188)	−0.183 (0.111)	−0.208 (0.164)	−0.224 (0.246)	−0.251 (0.281)
Log of total employment	−0.301 (0.278)	−0.262 (0.258)	−0.323 (0.302)	−0.277 (0.281)	−0.312 (0.332)	−0.278 (0.234)
CI	−0.455* (0.012)	−0.367** (0.027)	−0.337** (0.011)	−0.286** (0.045)	−0.311** (0.012)	−0.206** (0.002)
Sector type dummies	0.328 (0.322)	0.266 (0.271)	0.242 (0.226)	0.247 (0.238)	0.252 (0.233)	0.209 (0.187)
SMA–OSF	–	0.189*** (0.067)	–	–	–	–
SMA–RF	–	–	0.301*** (0.011)	–	–	–
SMA–INFF	–	–	–	0.316*** (0.007)	–	–
SMA–OCF	–	–	–	–	0.263*** (0.032)	–
Combined SMA–facets	–	–	–	–	–	0.352*** (0.003)
R^2	0.089**	0.111**	0.241***	0.282***	0.159***	0.335***
Adjusted R^2	0.067**	0.084**	0.219***	0.261***	0.147***	0.312***
F	5.876**	5.333***	7.589***	8.227***	6.051***	9.633***
Δ Adjusted R^2		0.017	0.152	0.194	0.08	0.245
ΔF		4.111***	6.215***	7.203***	5.456***	8.804***

Notes: $n = 435$. Standardized regression coefficients are reported, with standard errors in parentheses. [a]Statistics are reported in comparison with Equation (1). *$p < 0.05$; **$p < 0.01$; ***$p < 0.005$ (one-tailed test)

dependent variable better than Model 1. So, it can be said that the added SMA facets in Model 2 explain the variance in company performance above and beyond the control variables in Model 1. Finally, in Equation (6), the addition of SMA facets as combined construct to the Model 1 explained an additional 35.6 percent of the variation in company performance. As the change in F ratio assesses any statistical difference between the equation of Model 1 and the equations of Model 2, the combined construct of SMA facets has the highest change in F ratio ($\Delta F = 11.779$, $p < 0.005$) when it is added into the Model 1. This means that the integrative view of SMA facets as one construct has an effect above and beyond the effect of control variables as well as individual SMA facets on company performance. In sum, all individual or combined SMA facets enhanced the predictive power of Model 1.

An inspection of significant β coefficients in Table III revealed that all individual SMA facets had a significant, positive impact on company performance. Moreover, only CI had a significant negative effect on company performance. No other study control variables were significant predictors of company performance. In addition, the combined SMA facets were positively related to company performance. Among the individual SMA facets, "SMA–INFF" had the highest change in F-value ($\Delta F = 9.644$) with a positive effect on company performance ($\beta = 0.485$, $p < 0.005$). "SMA–RF" came next ($\Delta F = 9.144$, $\beta = 0.453$, $p < 0.005$), followed by "SMA–OCF" ($\Delta F = 8.077$, $\beta = 0.406$, $p < 0.005$) and "SMA–OSF" ($\Delta F = 7.277$, $\beta = 0.335$, $p < 0.005$). These findings may indicate the basic nature of SMA as a source of information for strategic purposes in the first place. Moreover, the coefficient of the facets of SMA as one construct was larger than the coefficients of the facets when they are entered individually. Combining SMA facets into one construct showed a positive impact on company performance ($\beta = 0.521$, $p < 0.005$), indicating that the combined SMA facets positively predicted company performance, therefore supporting *H1*. These findings may be due to the nature of SMA as a main source of outward- and future-oriented information, as well as an inward-oriented one. This information represents a cornerstone for enhancing a company's ability to make appropriate strategic decisions that in turn improve its performance. In addition, as the current study conceptualizes and operationalizes SMA into relevant organizational context variables, this is supposed to enhance a high level of fit and synergy between SMA and these variables, which in turn has a positive reflection on performance.

Tables IV and V present regression results for the financial performance and non-financial performance, respectively, and in a similar format used in Table III. All results shown in Tables IV and V are similar to those presented in Table III in which all β coefficients of SMA facets were positive and significant when these facets entered individually or together into the regression equations. In addition, the value of the β coefficients became larger when these facets were entered together as one construct, and the order of the impact of the facets according to the change of F ratio did not change. For example, "SMA–INFF" still has the highest change value ($\Delta F_{\text{financial performance}} = 6.253$; $\Delta F_{\text{non-financial performance}} = 7.203$).

In general, the findings in Tables IV and V generally indicate that a higher fit between SMA and organizational context as a set of facets is associated with higher financial performance ($\beta = 0.403$, $p < 0.005$) and non-financial performance ($\beta = 0.352$, $P < 0.005$), and explains 37.5 and 33.5 percent of the variation in financial and non-financial performances, respectively, and therefore supports *H2* and *H3*. In sum, the overall findings of hierarchical regression analyses between SMA facets and company performance indicate that SMA facets are significant and good predictors of this performance.

6. Discussion and conclusion

The present study's factor analysis findings confirm that SMA can be integrated into four organizational context variables: structure, resources, information and climate, forming four new facets for SMA conceptualization and operationalization. These findings are consistent

with the argument that SMA cannot operate in isolation from organizational context. This new SMA conceptualization and operationalization may also allow SMA to operate across relevant organizational context and therefore "overcoming academics' and practitioners' doubts on the practicality of SMA adoption and implementation as part of management accounting practices" (Oboh and Ajibolade, 2017, p. 120).

The present study's findings also indicate that the more a company focuses on fitting SMA into relevant organizational contexts variables (i.e. structure, resources, information and climate) for strategic purposes, the higher its performance is both financially and non-financially. As these four organizational context variables play a crucial role in enhancing the SMP (Charles *et al.*, 2016), fitting them with management accounting strategically leads to enhanced OP. This integration between management accounting and organizational context for strategic purposes is found to support the SMP (Otley, 2016; Seal, 2010), overcome the "loose coupling" phenomena (Cinquini and Tenucci, 2010) and improve organizational effectiveness and performance (Morton and Hu, 2008).

However, in the current study, the four developed facets of SMA may support the external competitive base of organization, as they take into consideration some relevant contextual issues that play a significant role in enhancing an organization's competitive advantages (Nixon and Burns, 2012). Accordingly, it is not surprising to see such positive impacts from these four SMA facets on OP. The findings also indicate that combining the four facets of SMA together has a higher impact on performance than individually. Therefore, these results provide support for the configurational proposition in which OP is an outcome of the internal consistency between an organization's parts and practices (Doty *et al.*, 1993), and the contribution of each SMA facet to OP has no practical sense unless each facet can combined with other facets (Cadez and Guilding, 2012). This findings is also consistent with some claims that an appropriate SMA fit within an organizational context is a determinant of company performance (Cadez and Guilding, 2012; Otley, 2016; Wang and Huynh, 2014) and is also consistent with contingency theory's assumption that an appropriate match between organizational elements will improve organizational effectiveness and performance (Morton and Hu, 2008). In sum, all SMA facets identified in this study should be presented, internally consistent and combined so that effective financial performance and non-financial performance can be achieved.

Furthermore, the results reveal that the impact of SMA facets on financial performance is higher than non-financial performance. However, SMA facets should be oriented toward improving both financial and non-financial performance at the same level of interest to formulate a big picture of the company as expected.

The results also indicate that "SMA – information facet" has a larger positive impact on financial performance and non-financial performance. This positive impact on financial performance is in line with prior research (e.g. Ah Lay and Jusoh, 2011; Aksoylu and Aykan, 2013), but the present study provides the first empirical evidence for the positive association between SMA facets and non-financial performance. This finding may be explicable by the scope of SMA in providing predictive and future-oriented information for meaningful, strategic decision making (Roslender and Hart, 2010); consequently, managers will be able to make decisions that are more anticipative when facing rapid changes and uncertainties in a business environment, and in turn OP will be improved since achieving and sustaining higher performance requires external, non-financial and future-oriented information (McManus, 2013). In sum, practicing management accounting from a strategic perspective requires focusing on its impact on non-financial performance rather than on just financial performance. The results also indicate that CI has a positive correlation with all SMA facets, and a negative impact on OP. This leads us to conclude that the rapid and progressive changes in the competitive business environment create an urgent need for organizations to adopt integrative ways

of practicing SMA as a set of interrelated facets to cope with these changes and improve their performance.

To date, our knowledge on SMA has been conceptually limited while only a paucity of empirical work is available. The current study has enriched our knowledge on the current state of SMA conceptualization by moving it beyond a focus on the antecedents of the SMA to the consequences of fitting this concept into a broader organizational context. Over the last three decades, this concept has not broadened enough in its scope, so it therefore seems sensible to include two common facets (i.e. the adoption of strategically oriented management accounting techniques and the involvement of accountants in SMP), which are used to conceptualize this notion, rather than focusing on how to operate across organizational resources, capabilities, subsystems and boundaries. The current study has refined the two common facets of SMA by expanding the concept into a wider range of facets (i.e. four facets) rather than viewing it only within the boundaries of its techniques and management accountants' participation in SMP, as it is by the majority of prior research in the field of SMA. This limited view of SMA makes some authors "believe that the practice of SMA is mere academic figments yet to gain a convincing practicality across the globe" (cited in Oboh and Ajibolade, 2017, p. 120), and yield contradictory results regarding the relationship between SMA and OP. In addition, the current findings reveal that this expanded conceptualization of SMA does have great value to organizations in terms of its association with performance. Accordingly, it can be said that conceptualizing SMA within some relevant organizational context as integrated facets is an effective way to enhance the strategic role of SMA as a means to improve OP.

To sum up, the current study has some contributions that are worth highlighting. The current study has developed a 17-item scale for measuring SMA facets. This scale showed valid and reliable properties and therefore can be used safely to assess the level of organizational engagement in SMA. The development of this scale is consistent with the new way of conceptualizing SMA as multidimensional facets within organizational context (Nixon and Burns, 2012; Otley, 2016). Moreover, it is consistent with viewing organizations as multiple and interconnected parts and practices in order to achieve effective integration between management accounting and SMP (Cadez and Guilding, 2012; Nixon and Burns, 2012; Otley, 2016; Seal, 2010). In addition, it overcomes the fragmentary nature of contingency-based research, in which variables are "competing in explaining variation in outcomes rather than showing how variables combine to create outcomes" (Cadez and Guilding, 2012, p. 485). Thus, having this measurement scale may open the door for further investigations by future researchers and liberates SMA from a collection of academic texts that miss its significant impact on strategic management theory and practice (Seal, 2010). This study may also provide accountant managers in contemporary organizations an insight into how to fit SMA within organizational context variables, which is found to yield greater OP both financially and non-financially. Moreover, under the uncertain conditions and interlocking factors of their surrounding environment, managers need high quality, reliable information for strategic purposes; therefore, integrating management accounting within the company's SMP is considered as precondition for success and survival (Cadez and Guilding, 2012). Hopefully, the current study can contribute to drawing managers' attention to the essential role of SMA, and to the importance of considering it as an integrative issue that needs to be fitted within organizational context, and therefore integrated with the SMP in order to improve company performance.

Since the present study draws its conclusions from different companies in terms of age, size, sector and CI, it might be very likely that the impact of SMA facets on OP is applicable to other companies or industries. The present study provides new evidence for understanding the effect of SMA facets on OP, drawing on data from Saudi companies, and emphasizes the importance for organizations of adopting the strategic approach to

management accounting in order to improve their performance both financially and non-financially. Practically, to adopt this approach, organizations need to build appropriate integration between SMA and SMP through fitting SMA into organizational context.

At the structural level, management accounting managers should be viewed as strategic partners who participate in the strategic decision-making process at the senior management level. With regard to the management accounting unit, the main concern should be a high degree of integration and synergy with other units in the company. This can be achieved by forming cross-functional teams with adequate plans and policies. In addition to providing an adequate structure, organizational resources should be made available. Qualified management accounting personnel having relevant knowledge, abilities, expertise and experiences are needed. Moreover, the members of the cross-functional teams in the company should have adequate skills to identify, utilize, evaluate and interpret information effectively and efficiently. To enhance their work, the company should provide management accounting personnel and cross-functional teams with an effective management accounting information system based on modern technological applications. SMA techniques and tools with external and market orientation should also be adopted and utilized. Financial and non-financial information about competitors, customers and product-related information should be used as fundamental inputs in formulating, implementing and evaluating company's strategies.

At the organizational climate level, top management should support and encourage SMA adoption with positive attitudes at all organizational levels. An organizational culture that embeds practicing management accounting based on a strategic approach is also an essential requirement of the effective adoption of SMA. Last but not least, building the credibility of management accounting managers for senior management is also a critical element for such adoption.

The findings of the present study should be considered in light of some limitations that present opportunities for future research. First, the present study limits itself to companies listed in the Saudi Stock Exchange. This necessitates a cautious generalization of the findings when applying them to other companies inside or outside Saudi Arabia due to differences in business contexts and environments. Further studies are needed to support, confirm or contradict the present study's findings and enable local, regional and international comparisons. Second, the findings of the present study depend on data collected by a self-reported questionnaire; therefore, the credibility of the results relies on the credibility of the respondents in accurately conveying the actual practices and performance of their companies. For future research, case study methods with adequate documentation analysis may be beneficial to overcoming this limitation. Third, the performance data of the present study were collected at one point of time as perceived by respondents which, in turn, may not reflect the real progression of actual performance. A long-time series study would greatly benefit the field of SMA since it could address causality in a proper manner. In addition, the present study has not investigated how organizational corporate strategies or business strategies affect SMA practices and OP. Future research may be carried out by developing the present study model while adding organizational corporate and business strategies as controlling or moderating variables. Future research is also needed to investigate the moderating role of CI in the association between SMA facets and company performance.

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Conflict of interest: there is no conflict of interest. Ethical approval: all procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent: informed

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