Research Journal of Finance and Accounting
ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online)
Vol.14, No.10, 2023

Strategic Management Accounting and Performance Measurement Systems: A Loose Coupling?

Ahmad Mohammed Alamri
Department of Administrative Sciences, Community College, King Saud University
PO box 11437, Riyadh, Saudi Arabia
E-mail: ahamri@ksu.edu.sa

Abstract
This study aims to clarify the association between strategic management accounting (SMA) and performance measurement system (PMS) based on configurational and contingency theories assumptions. For that, data were collected from 98 higher-level accounting managers working in Saudi companies listed at the Saudi Exchange's Main Market at the end of 2022. The results show that there is a positive and significant correlation between SMA and PMS, and there is a statistically significant positive effect of the level of practicing SMA on PMS adopted by surveyed companies. This means that the company that is practicing SMA in higher level tends to adopt a non-traditional PMS. The results also show that there is a statistically significant difference between surveyed companies in the level of performance due to the linkage between their PMS and SMA practices. Appropriate linkage between SMA and PMS leads for better performance. However, the present study supports the idea that SMA can be a contextual factor affecting the type of PMS adopted by companies.
Keywords: Strategic management accounting, performance measurement systems, contextual factor, Saudi Exchange's Main Market.
DOI: 10.7176/RJFA/14-10-06
Publication date: May 31st 2023

Introduction

The contemporary business environment has witnessed many changes and developments in the field of production, communication and information technology. Open markets, freedom of trade and the emergence of blocs between countries in the form of partnership agreements enhanced the emergent of globalization concept and practices (Muzam, 2022). These changes have been accompanied by the emergence of new management ideas and practices in order for companies to face competition and survive in the markets (Al-amri, 2019). Accordingly, the goals of contemporary companies has been changed from achieving profit to satisfying consumer desires from time to time. This entails adopting new strategies that respond to these desires, and changing management accounting practices to provide effective support for the formulation, implementation and control of these strategies (Yassin and Guindy, 2017). However, new competition markets impose a new role for management accounting as an effective tool that helps companies in achieving their goals and strategies in light of the restrictions imposed by competition markets.

Nowadays, to achieve sustainable organizational success in the local and global market, the company needs to use relevant indicators to measure the performance of its business and activities. In this context, the problem of implementing company strategy represents one of the most prominent contemporary problems that companies have to face with regard to strategic management (Gimbert et al., 2010). This needs from companies to adopt and implement an appropriate performance measurement system (PMS) that is compatible with their current and future circumstances, especially in the case of economic crises (Manes-Rossi et al., 2022). In a study conducted by the Research Institute of Management Accountants in 1996, the results indicated that traditional financial measurement systems were inadequate in achieving the aspirations of companies. Only 15% of respondents believe that the current traditional measurement systems can support the goals of their companies, while 43% of the respondents considered that these systems were not suitable for achieving business goals (Burgess et al., 2007). Therefore, some recent studies have begun to develop more comprehensive and future-oriented measurement systems. One of these measurement systems is the “Strategic PMS”, which covers different perspectives to transform the company strategy into a comprehensive set of performance measures, and the “Sustainable PMS”, which measures progress towards business sustainability in parallel with identifying its environmental, social and economic impacts (Rao and Vaidya, 2016).

Within the framework of the contingency theory of management, the optimal course of action is contingent upon the internal and external situation of the company; accordingly, some contextual (situational) factors may contribute to determining the nature of PMSs adopted by companies. Some previous studies have shown that the intensity of the competitive environment, the size and age of the company, the degree of environmental instability, the level of governance, the degree of stakeholder involvement, and the information systems used (Gosselin, 2011; Pedersen and Sudzina, 2012; Hla and Teru, 2015; Kroll, 2015, Lisi, 2015; Hoang et al., 2018) consider as important contextual factors affecting the adoption of certain PMSs. In a recent review of previous studies to identify the contextual factors affecting the adoption of PMSs in companies, Hassan et al. (2020)

concluded that identifying factors affecting the nature of these systems adopted by companies is an important issue that has not received much research attention leading to a research gap in this vital issue.

As the adoption of PMSs for companies plays a strategic role in managing companies effectively and efficiently, choosing the most appropriate system fitting with the contextual factors represents a major challenge for these companies (Naslund and Norrman, 2019). Despite the great advantages that companies gain from applying and implementing an optimal PMS, many of them face obstacles in determining the nature of this system, and therefore do not achieve the full benefits of it or do not achieve anything at all due to failure of implementation. Moreover, previous studies have confirmed that a better understanding of the factors that lead to successful adoption and implementation of a PMS will increase the chances of increasing success adoption and implementation rates (Quesado et al., 2016; Abubakar et al., 2015). Accordingly, the problem of this study is addressed in the following question: "Is strategic management accounting (SMA) practices considered a contextual factor that affect the nature of PMSs adopted by companies?"

The current study considers one of the first studies dealing with the impact of the use of SMA practices - as a proposed contextual factor - on the PMSs used in companies. However, previous studies that dealt with the internal and external contextual factors that affect companies' adoption of their PMSs did not pay any significant attention to this valuable variable - SMA practices. Therefore, the importance of this study lies in enriching our knowledge with this type of modern studies that suffer from a scarcity of data, information, studies and theoretical frameworks related to its subject. From a practical point of view, the results of this study may benefit decision-makers in companies in achieving compatibility between the SMA practices and the nature of their PMSs they adopt. This may increase the chances of increasing adoption and implementation success rates for both.

Strategic management accounting (SMA)

Equally controversial is the interpretation of the word “strategy” and the problems that face the definition of the strategic management process; the accounting literature included many streams regarding the definition of SMA. Three streams can be identified in the accounting literature for this concept. Authors of the first stream use the term strategic management accounting to refer to the total developments that have occurred in the field of management accounting and as a synonym for the term “accounting for a strategic position” (Roslender, 1995, Roslender and Hart, 2010; Cravens and Guilding, 2001). According to this stream, SMA considered a continuation of a series of areas included cost accounting and then management accounting with the aim of providing accounting information that supports the organization's achievement of competitive advantage.

Authors of the second stream identify SMA as an attempt to integrate the literature of strategies and management accounting within the scope of SMA (Lord, 1996; Bhimani and Keshtvarz, 1999; and Guilding et al., 2000). The researcher of the present study believes that this stream is not much different from the first one, because the developments that occurred in the field of management accounting resulted from an attempt to innovate new accounting methods that provide information that supports the strategic management of organizations. However, the third stream of defining SMA is based on the writings that initiated by Simmonds (1981) followed by Bromwich (1990). Each of them used the term SMA as a type or method of accounting interested in providing accounting information for management in order to strengthen strategic management processes. 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. He also claimed that managerial accountants are the most capable of performing these activities because they have the skills and concepts that enable them to clarify any changes in the organization's competitive position for senior management. He also emphasized that in order for accountants to carry out these activities; they must develop what they already possess of tools and learn how to obtain information about competitors. The researcher believes that limiting these activities to the management accountant, as Simmonds called, does not agree with the concept of management accounting as an attribute rather than an activity, and contributes to the disavowal of the rest of the employees in the company from the responsibility of practicing these activities. In this context, it is preferable to use managerial accounting practitioners rather than what Simmonds advocated.

On the other hand, Bromwich (1990) emphasized that SMA represents a departure from its previous focus on historical internal information (inward-oriented perspective) and a trend towards focusing on future external and market-oriented information, especially with regard to competitors, customers and the external environment.

Despite the increasing interest in SMA, there is limited consensus in accounting studies about the components of this concept and its definition. On the other hand, many attempts have appeared to conceptualize SMA. Based on the nature of SMA, two facets have been developed; the first one focused on identifying the SMA techniques (e.g. strategic costing; competitor accounting, and customer accounting), and the second one focused on the involvement of accountants in supporting strategic decision-making process. For more integration between strategic management and SMA, Al-amri (2019) expanded the conceptualization of SMA to include five faces, which are the availability of appropriate structural arrangements, supportive resources, adequate information types and usages, and good organizational climate. This more extensive conceptualization of SMA facets significantly

affect organizational financial and non-financial performance (Al-amri, 2019).

Performance Measurement Systems (PMSs)

Companies measure the performance of their businesses and activities using a wide range of indicators that subsequently contribute to improving their performance. Based on these indicators, the company's management can take concrete and decisive decisions to move forward towards continuity, survival and development (Zhang and Yu, 2020). In literature, there are two phases regarding PMSs; the first phase extended from 1880 to 1980 and characterized by focusing on financial indicators such as profit, return on investment and productivity. As companies began to lose market share against their competitors, who were able to provide better quality products at lower costs and with more variety, the second phase since 1980 came as a result of these changes in global market (Cäker and Siverbo, 2018). To regain competitive advantage, companies not only had to shift their strategic priorities from low-cost, high-quality production, orientation towards flexibility, reliable delivery, etc., but also had to implement new technology and modern management philosophy of production (such as Just-in-time production, flexible manufacturing systems, total quality management...etc.) (Rajnoha et al., 2016). This, in turn, refers to the fact that traditional PMSs have many limitations and determinants that may lead to corporate failure, and that developing new PMS has become a very urgent necessity to achieve companies' success.

Traditionally, performance measurement is implemented by evaluating a set of indicators in five main areas: liquidity, activity, profitability, capital structure, and market value (Neely et al., 1995). It is also possible to traditionally measure performance through the use of a single aggregate indicator, for example using a forecast model (Altman Z-Score), which reveals whether the company is heading towards bankruptcy, taking into account profitability, financial leverage, liquidity, solvency, and activity ratios (Cunha et al., 2023). In the context of financial indicators, it was also important to look at the degree to which the company benefits from property rights, so the so-called Economic Value Added Index (EVA) emerged. This index aims to calculate the real economic profit of the company by measuring the value that the company generates from the funds invested in it (Okoshi et al., 2019).

The aforementioned traditional financial measures are not without shortcomings. These are: (1) reliance on traditional accounting information systems, (2) using of rigid mathematical patterns, (3) focus on results and monitoring of performance rather than its causes, (4) reinforcing of short-term decisions only, (5) hindering continuous improvement efforts, and (6) inability to keep pace with developments (Burgess et al., 2007). However, with modern production, manufacturing and management, it was necessary for companies to replace these traditional financial measures with new systems capable of keeping up with their current and future goals and the nature of the environmental factors surrounding them. This created space for creativity and interest in developing complex PMSs fitted with the new direction in global market. Therefore, many companies began to adopt measurement systems that based on non-financial indicators and their strategies in parallel with the General Accepted Accounting Principles, and processing historical data, and using internal and external indicators with a future orientation, for the purposes of monitoring performance on the one hand and continuous improvement on the other hand ((Cunha et al., 2023).

Non-traditional PMS can be defined as a set of financial and non-financial measures to support the decision-making process in the company through collecting, processing and analyzing quantitative information related to its performance and presenting it in a summary form (Rajnoha et al., 2016). One of the most prominent sub-sets of these measurement systems is the so-called "Strategic Business PMS", which is a strategic implementation tool capable of coordinating sprawling activities and compliance objectives through the communication, analysis and evaluation of a variety of Key Performance Indicators (KPIs) (Gimbert et al., 2010). Thus, this type of system contributes to achieving the strategic objectives of the company through three main mechanisms (Dossi and Pateli, 2010): (1) better understanding of the links between the priorities of different organizational policies, (2) effective communication between objectives and activities, and (3) effective allocation of resources and activities.

One of the most common example of such non-traditional PMS is the Balanced Scorecard. It is a system of balanced goals and indicators involving both tangible and intangible assets (Kaplan and Norton, 1996). On the other hand, this tool of performance is a fundamental change in the basic assumptions about measuring business performance, complementing traditional financial indicators by measuring performance from the perspective of the customer, internal operations, growth and learning, with a focus on the current and future success of the business (Kaplan and Norton, 1996). These non-financial operating indicators are drivers of the company's future financial performance (Alomiri and Alroqy, 2019). The results of the study conducted by the global consulting company Bain & Company in the year 2014, the Balanced Scorecard was one of the six most used management tools among companies and all over the world (Rigby, Bilodeau, 2015). This can confirm the assumption that companies can use this tool in implementing their strategies and measuring their business performance. The Balanced Scorecard can also be of obvious benefit in creating a new organizational culture that is consistent with the company's strategy in terms of shared assumptions about the company's mission, strategy and goals, and this contributes to understanding how to achieve these goals and measuring results and reactions (Rajnoha et al., 2016).

On the other hand, it is important not to misunderstand the balanced scorecard as a super tool that in some way improves business performance; instead, it should be seen as one tool in a company's arsenal that can help manage performance effectively. A specific version of this card should be selected and built in careful manner with appropriate adaptation to the needs of the company to achieve success, growth and continuity (Rajnoha et al., 2016).

Accordingly, when evaluating the success of the company's strategy, it is necessary to measure the company's performance in appropriate and effective methods. In the past two decades, there has been a significant movement in ways of measuring business performance in the right way by shifting from shareholder value-creation theory to the stakeholder theory, and this means reconsidering the company from the interests of business owners only to the interests of the main stakeholders (Tapaninaho and Kujala, 2019). As csharompanies gradually implemented the Balanced Scorecard system, the public as well as the entire society began to care about the outcome of activities on the environment and society, which increasingly reinforced the idea that companies have a number of obligations to their stakeholders to act responsibly (Rajnoha et al., 2016). This notion is also close to the fact that companies cannot be successful in the long term if they constantly ignore the interests of their primary stakeholders. This means that the company is responsible not only for creating economic value, but also for broader social relations. For these reasons, a new tool for measuring business performance has been developed under the name of the "Triple Bottom Line" (TBL). TBL is an accounting framework based on the principle that the responsibility of a company is not only related to making an economic profit, but also has a responsibility to take care of society as a whole (people) and environment (planet) (Fauzi et al., 2010). These three elements form the basis of this new framework for measuring and evaluating company performance prepared by John J. Elkington in the year 1994. This framework has gone beyond the traditional measure of profit and return on owner value to environmental and social dimensions, and with its application, this framework can be an important tool to enhance achieving the goal of sustainability in companies (Elkington, 1994).

TBL framework is based on the global concept of sustainable development, which can be defined according to the report of the United Nations World Commission on Environment and Development in 1987 as development that meets the needs of current generations without compromising the ability to meet the needs of future generations (Our Common Future, 1987). This valuable report led to the crystallization of concepts and interpretations concerning sustainable development and the emergence of a group of environmentally responsible behaviors such as saving resources and energy, using renewable energy sources instead of fossil fuels, recycling waste, proper management of waste water and its disposal, and others (Barkemeyer et al., 2014). In this context, a corporate sustainability strategy is essential for the sustainable development and successful management of the company by meeting the relevant social, legal, political and economic requirements in terms of market competition. On the other hand, this concept can be crystallized as the basic philosophy that passes through all levels, strategies and activities of the company gradually, so that the concept of corporate sustainability is better integrated into business activities and organizational culture in order to achieve a deeper integration between operations, strategy, organizational systems…, as well as stakeholders (Searcy, 2012).

In the case of sustainability, companies can use KPIs to measure progress towards sustainability, and identify the environmental, social and economic impacts of the company's business and activities. However, before the company decides its KPIs, it is necessary to understand the correct way to use and integrate them into the management system of the company. In addition, developing a company sustainability measure is important to identify the appropriate set of KPIs, which should be a well-balanced set that reflects the interests of the various stakeholders (Rajnoha et al., 2016). On the other hand, the identification of these indicators can vary based on the nature of the company's interests and expectations, and the nature of the social and environmental impacts of the business through operational changes, new products, new markets or lines of business. Accordingly, the sustainable PMS is a system of KPIs that provide companies with the information necessary for the short and long-term management, control, planning and performance of the economic, environmental and social activities carried out by the company. It is assumed that the positive perception of companies through their environment can stimulate their financial performance and accelerate the positive effects of these companies overall society. Therefore, managing the performance of corporate sustainability in all its perspectives and aspects requires a management framework that links environmental and social management of business strategies and competitive management and integrates environmental and social information with economic information for companies.

Strategic management accounting and Performance Measurement Systems

The failure of PMS that were born in an environment characterized by stability and slow-paced growth in adapting to an environment characterized by rapid growth, intense competition and sudden change, imposed the need to search for new PMS tools commensurate with these conditions (Zhang and Yu, 2020). This transition does not mean that the latter tools eliminates the former one, but on the contrary complements the characteristics of one of the other. Table (1) presents a comparison between traditional and non-traditional PMS.

Table 1. Comparison between types of PMS in terms of organization goals and techniques

Traditional PMS	Non-traditional PMS
Verifying the suitability of the strategy with operations and objectives in a traditional way.	Advance control of strategy and qualitative objectives with translating the most complex realities.
Implementing and following-up of plans.	Executing and simulating of plans.
Slow and delayed reaction.	Fast and predictable reaction.
Interpretation of results based on internal data.	The interpretation of results based on external data.
Reliance on quantitative data.	Reliance on quantitative and qualitative data.
Reliance on penalty and punishment systems.	Reliance on the training and development system.
Traditional PMS	**Non-traditional PMS**
The contribution of employees is few and concentrated.	An interactive and unfocused contribution of employees.
Focus on partial goals	Focus on comprehensive goals
Reliance on the accounting information system.	Reliance on a system that treats information as a raw material that company provides.
Solid processing of information.	Flexible multidimensional processing based on data.
Sequential and upward quantitative information intended for everyone interested.	Search for transparent, up-and-down information.
The information system is a pillar of the job.	The information system is a pillar of inter-functional communication.
Financial analytical indicators.	Comprehensive monetary and quality indicators.
Match control using deviation indicators.	Strategic direction using progress indicators.
Vertical analysis based on responsibility centers.	Horizontal analysis based on activities and processes.
Standard concept of tools, rational and sequential logic of recording tools.	The concept of interaction: a mutual effect between the tools and the factors.
Monthly monitoring and evaluation cycle.	The course is adapted and linked to the capabilities of the managers' work.
Lack of interest in sustainability measurement.	Using KPIs to measure progress towards sustainability.
Lack of interest in identifying the environmental, social and economic impacts of the company's business and activities.	Identifying the environmental, social and economic impacts of the company's business and activities.

Source: (Ghalayin and Noble, 1996; Gimbert, et al., 2010; Rajnoha et al., 2016; Cäker and Siverbo, 2018; Cunha et al., 2023)

As noted from Table 1, the reliance of traditional PMS on quantitative information that identify where to reach facilitated the task of penalty and punishment systems, but on the other hand, it covered the way in which success is achieved. Non-traditional PMS is based on qualitative information that is more accurate than traditional PMS and facilitates the search for solutions based on training and development systems. The traditional PMS includes a huge number of financial and analytical indicators that do not allow a clear interpretation of the observed deviations, while non-traditional PMS search for comprehensive indicators that give broad interpretations about the observed deviations. Non-traditional PMS uses positive indicators that lead to permanent progress (such as overall quality, deadlines…etc.) over indicators that measure deviations in relation to standards.

Furthermore, the indicators of non-traditional PMS are more comprehensive and allow a better interpretation of the complexities in the new environment including the internal and external elements, financial and qualitative with facilitating the process of economic communication in the organization. The main question in this context is "to what extent can organization integrate traditional and non-traditional PMSs?" The basic rule that guarantees integration between these two systems is to reduce duplication of information to the lowest possible level in order to ensure the maximum possible interdependence between systems and thus the credibility of information.

On the other hand, SMA does not work in isolation from the rest of the systems in organizations (Charles et al., 2016). However, "loose coupling" phenomena between SMA and strategic management process was identified in literature (Cinquini and Tenucci, 2010). In their recent review of SMA literature, Otley (2016) and Abdullah et al. (2022) concluded that the reason for this phenomenon may due to the lack of operationalizing SMA in appropriate organizational contexts such as organization strategy, structure, culture and information systems…etc.

The relationship between organization strategy and management accounting systems has received great attention from researchers during the last two decades (Al-amri, 2019). Studies in this topic indicated that the performance of companies may be positively affected by the design of management accounting systems in line with the company's strategy (Abdullah et al., 2022). Most of these studies followed the contingency Approach, where the variables are treated as competing in explaining the difference in results rather than explaining how those variables are integrated to find the results (Al-amri, 2019). In contrast, configurational theories suggest that organizations can be better understood by looking at them as interrelated groups of structures and practices and

that the degree of efficiency can be related to the degree of internal consistency or the degree of consistency between structural and strategic factors (Duci, 2021).

Based on the aforementioned theories, it is possible that SMA is one of the important configuration in the context of selecting and using PMSs in companies, as choosing the appropriate system is considered one of the strategic decisions that need appropriate management accounting practices. From another point of view, SMA looks ahead toward desired goals; PMS looks back at achievements (Hassan et al., 2020), therefore SMA and PMS can form a circle (figure 1). As the whole is greater than the sum of its parts, achieving synergy between SMA and PMS reinforces and strengthens each other. The connection between SMA and PMS may improve the understanding and use of both systems. In addition, the current study proposed that viewing SMA and PMS in integrated manner might enhance organizational performance.

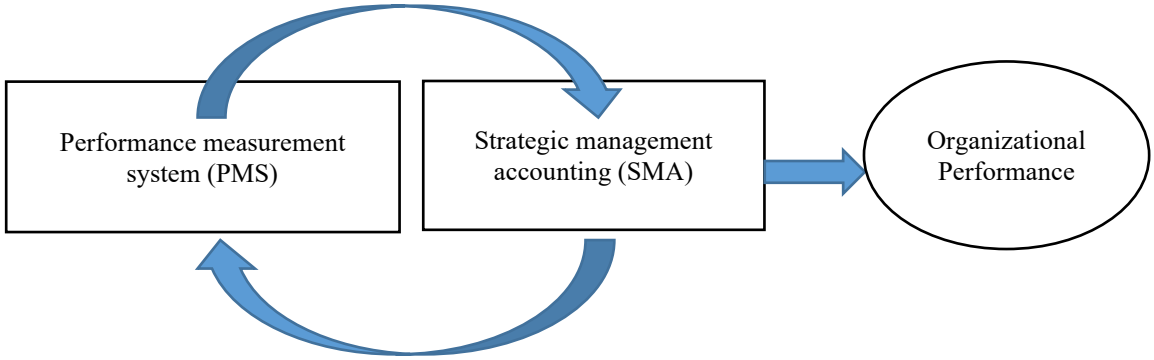

Figure 1. The circle of SMA and PMS

For nearly twenty years, many companies have witnessed dramatic changes due to the intensity of competition, the development of manufacturing technology and the consequent of technical innovations, in addition to the short life cycle of products, which resulted in the need to search for customers' desires and then satisfy them. In order for companies to operate in this changing environment and work to satisfy their customers, they must be able to compete, and these companies will not be able to compete unless they adopt modern management methods aimed at managing costs and creating value for customers.

Based on the foregoing, researchers began in the early eighties to draw attention to the problems facing the organizational environment, such as the increase in inventory and the consequent costs of retention, insurance, opportunity costs, and other costs, the low quality of products and the consequent inability to compete. This formed a challenge to traditional managerial accounting (Nguyen and Nguyen, 2021). The challenge of improving organizational performance is considered an appropriate variable for management accounting (Rashid et al., 2020). The models and methods of traditional management accounting were designed on the assumptions of the stability of the organizational environment, and that the two elements of uncertainty and fixed costs are considered external factors for those models (Visedsun and Terdpaopong, 2021). It has been proven that these hypotheses are unrealistic, as managers find themselves responsible for significantly interfering in production processes to improve quality, reduce delivery and preparation time, and increase the flexibility of industrial operations (Nguyen and Nguyen, 2021). Therefore, the role of management accounting is no longer limited to providing information for decision-making and carrying out administrative functions, but rather goes beyond that to facilitate, develop and implement management strategies (Dahal, 2019).

Dahal (2019) indicated that the change in the business environment was the main reason for applying SMA methods aiming to reducing conflict and providing oversight, linking strategy to resource allocation, and facilitating the internal harmony of the organization's operations. In addition, since the goal of SMA is to achieve a competitive advantage, maximize profits, add value to stakeholders and reduce costs while preserving customer requirements, it is necessary to apply modern management methods to achieve these strategic goals (e.g. value chain analysis, just-in time production, activity-based costing system, activity management system, target costing program, SWOT, kaizen, and theory of constraints) (Shaqqour, 2020). As there are radical changes and transformations in the modern business environment that have resulted in many challenges for management, traditional PMSs will be not able to meet what is required of them. Developing PMSs commensurate with the internal and external environmental variables of the organization and with modern strategic management methods including SMA represents as a critical success factor. For management, the lack of connectivity and integration of the strategic plan consider as challenge. This may due to the weak alignment between proper PMS and business processes and activities that drive financial and non-financial outcomes. However, this misalignment can be resolved by linking PMS with SMA practices. As SMA looks ahead toward desired goals (real drivers of business performance) and PMS looks back at achievements (outcomes of business processes and activities) (Hassan et al., 2020), successful linkage between them is an urgent necessity to improve performance. However, SMA may represent as a prerequisite to effective PMS. In this context, adopting a traditional PMS with strategic accounting

practices represents a gap between reality and practice, and the matter is no different in the case of adopting non-traditional PMS with traditional accounting practices. Achieving compatibility between the two sides of the equation (PMS and SMA) may enhance the areas of organizational performance and create a competitive difference for organizations. This is what the current study seeks to shed light on, examine and investigate its validity.

Method

Study population and sample

This study's population consists of 211 Saudi companies listed at the Saudi Exchange's Main Market at the end of 2022. For the purposes of this study, large companies (employ more than 1,000 employees) with at least five years in business operation were targeted. The total number of companies included was 154 out of 211. For those who agreed to participate, electronic questionnaire were sent to their working higher-level accounting managers. Overall, 98 managers participated, providing a response rate of 63.6%. The average age of respondents is 42 years, and the majority of respondents with a percent of 68% are male. Most respondents (82%) hold a bachelor's degree or above, and (62%) of them have an average total experience of about 12 years. All sectors of the Saudi Stock Exchange were represented in the sample, with the average age of participated companies about 23 years.

Measures

The present study uses the following measurement variables:

Independent variables. In order to measure SMA in this study, the four facets of SMA developed by Al-amri (2019) are used. These facets (as independent variables) are:

1-"SMA-organizational structure facet" (6 items) (e.g. the company provides formal and/or informal advisory channels for management accounting managers to participate in the strategic decision-making process) (α =0.87);

2- "SMA-resource facet" (4 items) (e.g. the company provides an effective management accounting information system) (α =0.88);

3- "SMA-information facet" (3 items) (e.g. the company adopts and uses external and market- oriented management accounting techniques with a strategic focus) (α =0.92); and

4- "SMA-organizational climate facet" (4 items) (e.g. the company has a supportive organizational culture for practicing management accounting based on a strategic approach) (α =0.87).

Al-amri (2019) instrument of measuring SMA items answered on Likert scales ranging from 1, "strongly disagree" to 5, "strongly agree." This instrument showed good reliable and valid indicators in Saudi Stock Exchange context (Al-amri, 2019). In the current study, this instrument showed an acceptable reliability with Alpha Cronbach of (0.93). For the purpose of this study, SMA facets was combined into one construct (SMA) by averaging the four facets into one variable. Since the five-point Likert scale was used to measure the SMA facets, the result is interpreted as follows: the average mean ranges from 1 to 2.33 indicating low SMA practices; the average mean ranges from 2.34 to 3.67 indicating moderate SMA practices; the average mean ranges from 3.68 to 5 indicating high SMA practices.

Dependent variables. To measure a PMS adopted by surveyed companies, the present study identify two types of these systems as follows:

(a) Traditional PMS: 19 items have been developed to determine whether the company adopts traditional PMS as listed in Table (1).
(b) Non-traditional PMS: 19 items have been also developed to determine whether the company adopts non-traditional PMS as listed in Table (1).

In the current study's survey questionnaire, the participants were asked to identify their company's PMS attributes using a five-point scale, one side represents one of the attributes of traditional PMS and the other side represents the corresponding attribute of non-traditional PMS. For example:

- Your company's PMS focus on: (a) partial goals ……(b) comprehensive goals
  1 2 3 4 5
- Your company's PMS has:

(a) a solid processing of information …….. (b) a flexible multidimensional processing based on data.
1 2 3 4 5

The drafted scale for identifying company's PMS was reviewed by (6) facilities working on the Accounting Department at King Saud University for clarity and face validity. In addition, this scale showed an acceptable reliability with Alpha Cronbach of (0.89) in this study. For the purpose of this study, PMS was combined into one construct by averaging the 19 items into one variable. Since the five-point Likert scale was used to measure the PMS attributes, the result is interpreted as follows: the average mean $\leq$ 2.5 indicating traditional PMS adopted by the surveyed company; the average mean > 2.5 indicating non-traditional PMS.

Control variables. To capture those organizational factors related to the adoption of SMA and PMS, the present study selected Company age, size (total employment), the intensity of competition, and sector type as control

variables based on prior empirical work (Ah Lay and Jusoh, 2011; Cadez and Guilding, 2012; Hammad et al., 2010). Company age and size were logged and included as control variables, and the intensity of competition is controlled by applying Guilding and McManus's (2002) scale (7-point Likert scale) for measuring competition (α = 0.86). To control the impact of sector type, 20 dummy variables were added.

In the light of these variables, the following regression model was developed:

$$\mathbf{PMS}=\beta_0+\beta_1\mathbf{SMA}+\beta_2\mathbf{Log_{age}}+\beta_3\mathbf{Log_{size}}+\beta_4\mathbf{CI}+\beta_5\mathbf{ST}+\varepsilon$$

Where: PMS: Performance measurement system; SMA: Strategic management accounting; Log_{age}: The natural logarithm of the company's age; $Log_{size:}$ The natural logarithm of the company's size; CI: The level of competition intensity; ST: Sector type; ε: error term.

To analyze the effect of achieving a linkage between PMS and SMA on company's performance, cluster analysis method was used. This method classify cases (companies) with similar characteristics determined in the light of linkage between PMS and SMA. Six configurations can be identified using this method as depicted in Figure 2.

High practices of SMA	Group 1	Group 2
Moderate practices of SMA	Group 3	Group 4
Low practices of SMA	Group 5	Group 6
	Traditional PMS	**Non-Traditional PMS**

Figure 2. The six configurations for linkage between PMS and SMA

The company's performance is measured by asking the participants about the performance of their companies compared to competitors over the past 3 years using Likert scales ranging from 1, "below competitors" to 5, "above competitors." in relation to three dimensions of performance: return on investment, customer satisfaction and development of new products. To consolidate company's performance into one construct, a new composite variable (Company Performance) was created by averaging the three dimensions of performance into one variable. Since the five-point Likert scale was used to measure the company's performance, the result is interpreted as follows: the average mean ranges from 1 to 2.33 indicating low company performance; the average mean ranges from 2.34 to 3.67 indicating moderate company performance; the average mean ranges from 3.68 to 5 indicating high company performance.

After clustering surveyed companies into six group, One-way ANOVA test was used to identify any significant differences between them in the three dimensions of performance under investigation.

Results

Descriptive statistics and correlations

As shown from Table 2, the surveyed companies practice SMA at moderate level with a mean average of (3.64). The value of the standard deviation indicates that there is a dispersion in the level of this practice among these companies. As for the PMS adopted by survey companies, the results indicate that the mean average is above 2.5 (M=3.11) indicating that these companies adopted non-traditional PMSs. However, the value of the standard deviation of (1.43) indicating that there is a variation in the level of this adoption among the surveyed companies.The mean average (=2.98) and standard deviation (=1.25) of company performance indicating that survey companies achieved moderate performance with a variation in the level of this performance. In addition, the results in Table 2 indicate that high level of competition intensity faces surveyed companies with minor variations between them (M=5.44; S.D=0.64). Moreover, variations between surveyed companies in age and size were obvious (S.D= 2.09 and 2.21 respectively).

Table 2. Means, standard deviations, and correlations

Variables	M	S.D	1	2	3	4	5
1. SMA	3.64	1.23					
2. PMS	3.11	1.43	0.42**				
3. CP	2.98	1.25	0.39**	0.48**			
4. Log_{age}	4.66	2.09	0.33**	0.22*	0.14		
5. Log_{size}	6.42	2.21	0.31**	0.31**	0.11	0.26**	
6. CI	5.44	0.64	0.51**	0.44**	-0.23*	0.09	0.83**

**p≤0.01; *p≤0.05; M= mean; S.D= standard deviation; SMA=strategic management accounting; PMS=performance management system; CP=company's performance; Log_{age}= the natural logarithm of the company's age; Log_{size}= the natural logarithm of the company's size; CI= competition intensity.

Table 2 also showed that there are positive and significant correlations between SMA and all other study variables. PMS also have positive and significant correlations with all other study variables. The positive correlation between SMA and PMS (r= 0.42) indicates that the more the company is directed towards a higher practice of SMA, the more it is directed towards non-traditional PMS, and vice versa.

Testing the study regression model

To test the study regression model in order to reveal the impact of SMA on PMS adopted by surveyed companies, the multiple regression analysis test was used. The results of the Kolmogorov-Smirnov and Shapiro-Wilk tests showed normal distributions of the variables included in the study model, as the values of these two tests were not statistically significant (α≥0.05). There was also a statistically significant correlation between the independent and control variables in the model, but it was a relatively weak correlation (less than 30%). The results of the multicollinearity analysis showed that all the variables entered into the regression models had values for the Variance Inflation Factor (VIF) less than (2.5). This, in turns, indicates the absence of multicollinearity of the study data (the variables included in the regression model are highly correlated with each other). In order to identify outliers in the study data, the Mahalanobis test was used, which indicated that there were no outliers in the data that could affect the regression model.With regard to the regression standardized residual distributions of the study data, the regression model showed normal distributions for these residuals. In addition, the results of the scatterplot of the residuals showed that the bulk of the data points are between (-1) and (1). In addition, no outliers were observed in the scatterplot as all data points were less than (3) and higher than (-3). Accordingly, all the assumptions of applying the regression test in this study were met. Table 3 shows the most important results of this test.

Table 3. Regression model for company PMS

Variables	Standardized regression coefficients ß	Standard error	t-value	p-value
1. SMA	0.58**	0.001	6.304	<0.001
2. Log_{age}	0.15	0.342	0.198	0.566
3. Log_{size}	0.11	0.357	0.115	0.602
4. CI	0.36**	0.004	4.888	0.006
5. ST	0.07	0.441	0.098	0.635
R^2		0.442**		
Adjusted R^2		0.408**		
F		10.785**		

**p≤0.01; *p≤0.05; M= mean; S.D= standard deviation; SMA=strategic management accounting; Log_{age}= the natural logarithm of the company's age; Log_{size}= the natural logarithm of the company's size; CI= competition intensity; ST= Sector type dummies.

It is clear from the results presented in Table 3 that the regression model between SMA and PMS with the presence of the controlling variables was statistically significant; the value of the F statistic was (10.785), with a significance level of less than 1%. The value of the adjusted R^2 of (0.408) also indicates that 40.8% of the variation in the PMS of the surveyed companies can be explained by the level of their adoption of the SMA. The positive ß coefficient (0.58; p<0.001) indicates that there is a statistically significant positive effect of the level of practicing SMA on PMS adopted by surveyed companies. This means that the company that is practicing SMA in higher level tends to adopt a non-traditional PMS. Moreover, only competition intensity had a significant positive effect on company PMS (ß=0.36; p=006). This means that companies with high level of competition intensity tends to adopt non-traditional PMSs. The results of Table 3 also indicate that there is no effect of company size, age, and its belonging sector on the adopted PMS of the surveyed companies.

Testing the impact of linkage between PMS and SMA on performance

Within the framework of the six configurations (see figure 2), the surveyed companies were classified based on two variables; SMA practice and PMS. Table 4 shows the number and percentage of this classification. As shown from Table 4, (21.4%) of surveyed companies practice SMA at a low level while adopting non-Traditional PMS and (20.4%) of them practice SMA at a low level while adopting traditional PMS. In addition, (18.4%) of surveyed companies practice SMA at a high level while adopting non-traditional PMS and (17.4%) of them practice SMA at a moderate level while adopting non-traditional PMS. Moreover, (12.2%) of surveyed companies practice SMA at a moderate level while adopting traditional PMS and (10.2%) of them practice SMA at a high level while adopting traditional PMS.

Table 4. Classification of surveyed companies according to study's configurations framework

Group	Classification	Frequency	Percent %
1	High practices of SMA…..Traditional PMS	10	10.2
2	High practices of SMA…..Non-traditional PMS	18	18.4
3	Moderate practices of SMA…..Traditional PMS	12	12.2
4	Moderate practices of SMA…..Non-traditional PMS	17	17.4
5	Low practices of SMA…..Traditional PMS	20	20.4
6	Low practices of SMA…..Non-traditional PMS	21	21.4
	Total	**98**	**100**

To uncover significant differences between the above-mentioned six groups in the level of performance, Table 5 shows the results of One-Way ANOVA analysis.

Table 5. The results of One-way ANOVA results (Six configurations-Company performance)

Source	Sum of Squares (SS)	df	Mean Squares (MS)	F	p
Between groups	90.94	5	18.19	22.167	<0.001
Within groups	75.49	92	0.82		
Total	166.43	97			

As shown from Table 5, there is a statistically significant difference between surveyed companies in the level of performance due to the linkage between their PMS and SMA. The value of (F) was (22.167) and the level of significance was (<0.001), which means that there is a statistically significant effect of the type of linkage between PMS and SMA on companies' performance.

In order to find out the sources of differences between the surveyed companies -as classified in six groups- on performance, the Scheffe test was used, and Table 6 shows the results of this test.

Table 6. The results of Scheffe test for multiple comparisons of the study six groups

Group	Mean	1	2	3	4	5	6
1	2.44	-	2.34*	-	1*	-	-
2	4.78	-2.34*	-	-2.85*	-1.34*	-2.16**	-2.5**
3	1.93	-	2.85*	-	1.51*	-	-
4	3.44	-1*	1.34*	-1.51*	-	-0.82*	-1.16*
5	2.62	-	2.16*	-	0.82*	-	-
6	2.28	-	2.5*	-	1.16*	-	-

Results of a Scheffe test (Table 6) revealed that the sources of significant differences in performance levels were between the group 2 (High practices of SMA…..Non-traditional PMS) and the rest of the groups under classification, in favor of the group 2. This result indicates that the companies of the group 2 have the highest performance compared to other groups. Furthermore, significant differences in performance levels were between the group 4 (Moderate practices of SMA…..Non-traditional PMS) and the rest of the groups under classification. This result also indicates that the companies of the group 4 have better performance compared to other groups except group 2. Accordingly, companies that have a good linkage between PMS and SMA were in good positions to improve their performance levels.

Discussion and Conclusion

The present study's findings consistent with the idea stated that SMA should operate in conjunction with other organizational subsystems such as PMS, which in turns lead to superior performance (Al-amri, 2019). The linkage and integration between SMA and company's PMS for strategic purposes can enhance the strategic management process (Otley, 2016), overcome the 'loose coupling' phenomena (Cinquini and Tenucci, 2010), and therefore, improve company's performance. This linkage between SMA and PMS and its impact on company's performance, as indicated by the current study, may also allow SMA to operate effectively through most relevant company's subsystems, namely PMS, and therefore "overcoming academics' and practitioners' doubts on the practicality of SMA adoption and implementation as part of management accounting practices" (Oboh and Aljibolade, 2017, p. 120, cited in Al amri, 2019).

The present study's findings also indicate that the more a company links its management accounting from a strategic perspective into its PMS, the higher its financial and non-financial performance. As SMA and PMS play an important role in enhancing the strategic management process especially the implementation part (Charles et al., 2016), linking these two subsystems in a synergetic manner leads to improve company's performance. Furthermore, as a configurational theory proposed that enhancing organizational performance required an internal consistency (linkage and integration) between organizations' practices (Doty et al., 1993), the finding of the current study support this theory proposition. This is also consistent with some authors and researchers' claim that practicing SMA with fitted PMS is a determinant of company performance (Cadez and Guilding, 2012; Otley, 2016; Al-amri, 2019).

From another point of view, the present study's findings also consistent with the main assumption of contingency theory stated that "an appropriate match between organizational elements and contingencies will improve organizational effectiveness and performance" (Morton and Hu, 2008, p. 396). This appropriate match can be represented by achieving high linkage and integration between SMA and PMS. Accordingly, fitting SMA with PMS in a company in a synergetic way is associated with higher performance. To yield higher performance, companies that practice SMA should adopted non-traditional PMS to enhance their performance; otherwise, no effect on performance may occur. For example, a company practicing SMA with traditional PMS, the possibility of achieving high performance can be limited as indicated by current study's findings.

Additionally, in the current study, the regression model revealed that the variations in the PMS of the surveyed

companies can be explained by the level of their adoption of SMA. That is to say, SMA represents a good contextual factor that determines the PMS adopted by companies. As indicated by current study's findings, companies focus on adopting SMA practices in a high or moderate level, this may encourage them to adopt non-traditional PMS and vise versus. Previous studies indicated that the intensity of the competitive environment, the size and age of the company, the degree of environmental instability, the level of governance, the degree of stakeholder involvement, and the information systems used consider as important contextual factors affecting the adoption of certain PMS in companies, however neglecting SMA as another contextual factor affecting this adoption.

The present study's findings also indicate that the level of competition intensity has a negative impact on company's performance and a positive impact on PMS adopted by companies. This leads us to conclude that there has been a major and radical change in the factors for the success of organizations in which create an urgent need for organizations to adopt a new management philosophy such as SMA and adopted non-traditional PMS. This may help contemporary organizations to face intense global competition and achieve success and survival in the world of business.

The present study provides a clear and integrated view of the relationship between SMA practices and PMS through a comprehensive approach. It also provides, for the first time in SMA studies, an analysis of the PMS associated with each of the strategic choices of practicing SMA in the Saudi business environment. In addition, it provides information that may be useful at an operational level to company managers when dealing with choices relating to PMS and SMA in integrated manner. However, there is no study without limitations. The present study limits itself to Saudi Stock Exchange companies; therefore, generalization of its results should be taken in cautious manner. This because there are contextual and environmental differences between companies inside or outside Saudi Arabia. In addition, findings of this current study are needed to be supported, confirmed, or compared in further research.

As the present study depends on a self-reported questionnaire; future research need to apply measurements that are more credible (e.g. case studies, interviews…etc.) for overcoming this limitation. In addition, measuring companies' performance as perceived by respondents may be also a limitation for this current study. Future research may overcome this limitation by addressing real progression of actual performance of companies. Other configurational variables such as corporate and business strategies for example can be investigated in the light of the association between SMA and PMS.

References

Abdullah, N., Shamala, K., Azliza, A., & Grace, M. (2022). Strategic management accounting practices in business: A systematic review of the literature and future research directions. *Cogent Business & Management*, 9(1), 2093488, DOI: 10.1080/23311975.2022.2093488

Abubakar, A., Saidin, S., & Ahmi, A. (2015). Adoption of the performance measurement system in the Nigerian public sector: Challenges and prospects. *International Journal of Management Research and Reviews*, 6(10), 1424-1436.

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 MARA1-27.

Alomiri, D.M., & Alroqy, F.A. (2019). Factors influencing the adoption of balanced scorecard in the Saudi Arabia services sector. *Alexandria Journal of Accounting Research*, 3(1), 1-46.

Barkemeyer, R., Holt, D., Preuss, L. & Tsang, S. (2014). What happened to the "Development" in sustainable development? Business guidelines two decades after Brundtland. *Sustainable Development*, 22 (1), 15-32.

Bhimani, A., & Keshtvarz, M. H. (1999). British management accountants: Strategically oriented. *Journal of Cost Management*, 13(2), 25-31.

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.

Burgess, T. F., Ong, T. S., & Shaw, N. E. (2007). Traditional or contemporary? The prevalence of performance measurement system types. *International Journal of Productivity and Performance Management*, 56 (7), pp. 583-602.

Cadez S., & Guilding C. (2012). Strategy, strategic management accounting and performance: a configurational analysis. *Industrial Management Data System*, 112(3), 484-501.

Cäker, M., & Siverbo, S. (2018). Effects of performance measurement system inconsistency on managers' role clarity and well-being. *Scandinavian Journal* of *Management*, 34, 256–266.

Charles W. L., Gareth R., & Melissa A. (2016). *Strategic management: theory: an integrated approach*. South-Western College Pub; 12 edition, USA.

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.

Cunha, F., Dinis-Carvalho, J., & Sousa, R. M. (2023). Performance Measurement systems in continuous improvement environments: Obstacles to their effectiveness. *Sustainability*, 15(1), 867-879.

Dahal, R. K. (2019). Changing role of management accounting in 21st century. Review of Public Administration and Management journal, 7(3), 264-272.

Dossi, A., & Pateli, L. (2010), You learn from what you measure: Financial and non-financial performance measures. *Long Range Planning*, 43(4), 498-526.

Duci, E. (2021). The relationship between management accounting, strategic management accounting and strategic cost management. *Academic Journal of Interdisciplinary Studies*, 10(5), 376.

Elkington, J. (1994). Towards the sustainable corporation: Win-Win-Win business strategies for sustainable development. *California Management Review*, 36(2), 90–100.

Fauzi, H., Svensson, G., & Rahman, A. A. (2010). Triple bottom line as sustainable corporate performance: A proposition for the future. *Journal of Sustainability*, 2(5), 1345-1360.

Ghalayini, A. M., & Noble, J. S. (1996). The changing basis of performance measurement. *International Journal of Operations & Production Management,* 16(8), 63-80.

Gimbert, X., Bisbe, J., & Mendoza, X. (2010). Measurement systems in strategy formulation processes. *Long Range Planning*, 43(4), 477-497.

Gosselin, M. (2011). Contextual factors affecting the deployment of innovative performance measurement systems. *Journal of Applied Accounting Research*, 12(3), 260–277.

Guilding, C., & McManus, L. (2002). The incidence, perceived merit and antecedents of customer accounting: an exploratory note. *Accounting, Organizations and Society,* 27(1-2), 45-59.

Guilding, C., Cravens, K.S., & Tayles, M. (2000). An international comparison of strategic management accounting practices. *Management Accounting Research*, 11, 113-135.

Hammad, S. A., Jusoh, R., & Yeen Nee Oon, E. (2010). Management accounting system for hospitals: a research framework. *Industrial Management Data System*, 10, 762-84.

Hoang, V. T., Dinh, H. N., Tran, M. D., & Nguy, T. H. (2018). Determinants influencing the usage of balanced scorecard for performance measurement: the case of Vietnam. *Academy of Accounting and Financial Studies Journal*, 22(6), 1–15.

Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system. *Harvard Business Review*, 74, 75-85.

Kroll, A. (2015). Drivers of performance information use: Systematic literature review and directions for future research. *Public performance & management review*, 38(3), 459-486.

Lisi, I. E. (2015). Translating environmental motivations into performance: The role of environmental performance measurement systems. *Management Accounting Research*, 29, 27–44.

Lord, B. R. (1996). Strategic management accounting: The emperor's new clothes? *Management Accounting Research,* 7, 347-366.

Manes-Rossi, F., Mussari, R., & Cepiku, D. (2022). Introduction to the special issue: "Performance measurement systems in universities: Threats or opportunities for governance?" Journal of ***Management*** and Governance, 26, 327–335.

Morton, N. A., & Hu, Q. (2008). Implications of the fit between organizational structure and ERP: a structural contingency theory perspective. *International Journal of Information Management*, 28(5), 391-402.

Muzam, J. (2022). The Challenges of modern economy on the competencies of knowledge workers. *Journal of the Knowledge Economy*. https://doi.org/10.1007/s13132-022-00979-y

Naslund, D., & Norrman, A. (2019). A performance measurement system for change initiatives: An action research study from design to evaluation. *Business Process Management Journal*, 25(7), 1647-1672.

Neely, A., Gregory, M., & Platts, K. (1995). Performance measurement system design: A literature review and research agenda. *International Journal of Operations & Production Management*, 15, 80–116.

Nguyen, T. M., & Nguyen, T. T. (2021). The application of strategic management accounting: Evidence from the consumer goods industry in Vietnam. *The Journal of Asian Finance, Economics and Business*, 8(10), 139–146.

Okoshi, C. Y., Pinheiro de Lima, E., & Gouvea da Costa, S. E. (2019). Performance cause and effect studies: analyzing high performance manufacturing companies. *International Journal of Production Economics*, 210, 27-41.

Otley, D. (2016).The contingency theory of management accounting and control: 1980-2014. *Management Accounting Research*, 31(4), 45-62.

Our Common Future. (1987). *Chapter 2: Towards Sustainable Development* Retrieved from: http://www.un-documents.net/ocf-02.htm.

Pedersen, E. R. G., & Sudzina, F. (2012). Which firms use measures?: Internal and external factors shaping the

adoption of performance measurement systems in Danish firms. *International Journal of Operations and Production Management*, 32(1), 4–27.

Quesado, P. R., Aibar-Guzmán, B., & Rodrigues, L. L. (2016). Extrinsic and intrinsic factors in the Balanced Scorecard adoption: An empirical study in Portuguese organizations. *European Journal of Management and Business Economics*, 25(2), 47–55.

Rajnoha, R., Lesníková, P., & Korauš, A. (2016). From financial measures to strategic performance measurement system and corporate sustainability: Empirical evidence from Slovakia. *Economics and Sociology*, 9(4), 134-152.

Rao, M., Vaidya, R. W., & K.D.V., P. (2016). Factors influencing the scope, significance and objectives of performance management systems: A study with reference e-commerce and m-commerce companies in hyderabad. *International Journal of Current Research*, 8(9), 38301-38307.

Rashid, M. M., Ali, M. M., & Hossain, D. M. (2020). Strategic management accounting practices: A literature review and opportunity for future research. *Asian Journal of Accounting Research*, 6(1), 109–132.

Rigby, D., & Bilodeau, B. (2015). Management tools and trends 2015, Boston: Bain & Company, retrieved from: http://www.bain.com/publications/articles/management-tools-and-trends-2015.aspx.

Roslender, R. (1995). Accounting for strategic positioning: responding to the crisis in management accounting. *British Journal of Management,* 6(1), 45-57.

Roslender, R., & Hart, S. J. (2010). Taking the customer into account: transcending the construction of the customer through the promotion of self-accounting. *Critical Perspectives on Accounting*, 21, 739-753.

Searcy, C. (2012). Corporate sustainability performance measurement systems: A review and research agenda. *Journal of Business Ethics*, 107(3), 239-253.

Shaqqour, O. F. (2020). Impact of vertical and horizontal integration between strategic management accounting and decision-making on reducing financial failures case of Jordan. *Academy of Accounting and Financial Studies Journal*, 24(5), 1–9.

Simmonds, K. (1981). Strategic management accounting. *Management Accounting*, 59(4), 20-29.

Tapaninaho, R., & Kujala, J. (2019). Reviewing the stakeholder value creation literature: towards a sustainability approach. In: Leal Filho, W. (eds) Social responsibility and sustainability. World Sustainability Series. Springer, Cham.

Visedsun, N., & Terdpaopong, K. (2021). The effects of the strategy and goal on business performance as mediated by management accounting systems. *Economies*, 9(4), 149.

Yassin, M., & Guindy, M.N. (2017). Management accounting change and the contemporary business environment: An article review. *Journal of Empirical Research in Accounting & Auditing*, 4(1), 7-22.

Zhang, L., & Yu, W. (2020). Effects of the interactive use of performance measurement systems on job performance: Mediation effect of organizational learning. *Frontiers in Psychology*. 10, 3059. doi: 10.3389/fpsyg.2019.03059