

# MCS package and entrepreneurial competency influence on business performance: the moderating role of business strategy

MCS package  
and  
entrepreneurial  
competency

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## Abstract

**Purpose** – This paper draws on resource-based theory (RBV) to examine the impact of the management control system (MCS) package on business performance through the mediating role of entrepreneurial competencies and the interaction role of business strategy in small and medium-sized enterprises (SMEs).

**Design/methodology/approach** – A total of 372 questionnaires were used in this research for analysis purposes using partial least square–structural equation modelling. Cluster sampling was used and nine states out of 16 states were selected randomly, including Kelantan, Johor, Sarawak, Selangor, Kedah, Kuala Lumpur, Penang, Perak and Sabah, because the nine states cover 84.4% of the total SMEs.

**Findings** – The results revealed that only cultural and administrative control has no relationship with business performance. Moreover, in the MCS package, all elements have a significant and positive influence on entrepreneurial competencies. Furthermore, business strategy (cost leadership and differentiation strategy) significantly moderates, while entrepreneurial competencies mediate between, cultural, planning, cybernetic, rewards and compensation, administrative control and business performance.

**Originality/value** – SMEs in Malaysia are contributing 36.6% to gross domestic product. Further, as this sector is important, less attention has been paid to this area of MCS package with business strategies to determine organisational performance. This study fills these gaps, and the recommendations and findings for further research are discussed in detail accordingly. Moreover, the findings of the current research provide guidelines for the management of SMEs.

**Keywords** MCS package, Entrepreneurial competency, Cost leadership strategy, Differentiation strategy, Business performance, RBV theory

**Paper type** Research paper



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## 1. Introduction

In a turbulent business environment, which is characterised by fierce global competition and changes in supply and demand, small and medium-sized enterprises (SMEs) exert an extraordinary amount of influence on the economies of many countries through their contribution to the national income (GDP), especially in emerging economies (Bruque and Moyano, 2007; Elrehail *et al.*, 2018). To survive within the existing marketplace, organisations must endure many issues regarding management control systems (MCS), all of which have a significant influence on business performance (Rehman *et al.*, 2019a). For example, issues pertain to cultural control, planning control, rewards and compensation control, financial issues, cybernetic control, administrative control and issues regarding strategic capabilities influence on business performance. Business performance refers to the achievement of organisational objectives that are compulsory for the survival of the organisation, consisting of financial performance and non-financial performance (Rehman *et al.*, 2019a). According to Jamil and Mohamed (2011), the MCS is very important for the growth of an organisation, and it gives confidence to the top management to cut their concentration on processes that can control by exception and provide essential information. MCS is considered an essential part of top management responsibilities (Rehman *et al.*, 2019a). Nowadays, MCS is important for business environments, and it has a substantial impact on business performance (Rehman *et al.*, 2019a). Moreover, MCS is a major resource that helps top management in their decision-making and has an influence on business performance (Agbejule, 2011).

There are two different views: MC as a system and MCS as a package (Grabner and Moers, 2013). The term “package” used by Otley (1980) means separate elements of overall MCS. On the one hand, MC practices build a system; these practices are interdependent, and design choices take these interdependencies into account (Grabner and Moers, 2013). On the other hand, the MCS package signifies a complete set of control practices into one bundle, apart from if these practices are interdependent. In other words, the MCS package consists of MC systems and/or various interdependent MC practices that address isolated control problems (Grabner and Moers, 2013). Most of the prior researchers use MCS in isolation and ignore the MCS package to measure performance in developed economies and focus less on emerging economies (Rehman *et al.*, 2019a). Further, the results of the aforementioned studies are not comprehensive enough for developing countries, for system theory reveals that different countries apply different business systems, and the findings of the developed nations cannot be applied in developing countries without additional validation (Goyal *et al.*, 2013). One of the recent studies suggested that there is a need to work on MCS and the performance of an organisation in countries that are developing in nature, as the current situation ignores them (Rehman *et al.*, 2019a). An individual country is considered as a boundary condition and can play an important role in determining results (Busse *et al.*, 2017). The majority of the firms in Malaysia are micro: that is, 76.5% of overall SMEs. Most of the researchers work with MCS in large-scale organisations, and less attention has been paid towards SMEs, especially at the micro-level. The current research focusses on micro-, small- and medium-sized organisations. These organisations vary from large organisations in terms of finance, machinery and investment. Hence, this study was conducted in a developing country to see more generalised findings.

Entrepreneurial competencies consider an important resource for an organisation and play a crucial role in the enhancement of organisational performance. Literature reveals that an organisation’s performance suffers due to a lack of entrepreneurial competencies (Ahmad, 2007; Tehseen and Ramayah, 2015). As such, there is a need to focus on entrepreneurial competencies in determining business performance. This study used ethical competencies and strategic competencies to measure entrepreneurial competencies. Strategic competencies refer to an entrepreneur’s ability to set, assess and implement strategies for achieving business success, while ethical competencies indicate their ability to work with ambiguity

and sincerity and acknowledge their mistakes by speaking truly. [Barney and Arikan \(2001\)](#) conclude that the resource-based view (RBV) ignores business strategy, as it plays a crucial role in determining business performance. Firms that have a desire to compete in the existing market, then, should focus on business strategy (cost leadership and differentiation strategy), for it allows them to take advantage of their group of resources and gain a competitive advantage ([Sirmon et al., 2011](#)). The strategy has a significant influence over the control systems design in various ways, depending on which class of strategy is used ([Otley, 2016](#)). The decisions regarding strategies facilitate management to foresee the outer business environment, while valuable strategies allow management to access and utilise significant resources to achieve a competitive advantage. SMEs are considered to play an important role in the development of a country, and this sector is regarded as the backbone of Asian economies ([Yoshino et al., 2016](#)). Some significant information about SMEs in Malaysia is presented in [Table 1](#).

Malaysian SMEs face challenges regarding business strategy, entrepreneurial competencies and MCS that significantly have an influence on business performance ([Tehseen et al., 2018](#)). This is the pioneer study that determines SMEs' performance with the help of MCS as a package, entrepreneurial competencies, differentiation strategy and cost leadership strategy.

Business performance has much importance when it comes to the failure or success of any kind of enterprise ([Rehman et al., 2019a](#)). For example, organisations showing higher performance in the market become successful, while those that show less performance end up failing. Business performance is widely understood as financial, operational and organisational effectiveness ([Venkatraman and Ramanujam, 1986](#)). Literature reveals that directly relating MCS with (business) performance is a difficult task; further, the results of such research are hard to interpret ([Janka and Guenther, 2018](#)). Hence, this study measures organisational performance through the MCS package, not directly but indirectly, by using entrepreneurial competencies and business strategy. Business performance plays a vital role in the continued existence of profit, as well as non-profit businesses ([Abu-Jarad et al., 2010](#)). In the current research, we focus on the financial and non-financial performance to measure business performance. In this research, the RBV enlightens the theoretical framework, which consists of culture, planning, cybernetic and compensation, administrative control, entrepreneurial competencies, business strategies and business performance. These are the research objectives of the study:

- (1) To determine the relationship between the MCS package (cultural control, planning control, cybernetic control, rewards and compensation control and administrative control) and entrepreneurial competency.

Total number of SMEs in Malaysia	907,065
SMEs in Malaysia	97.3%
Contribution to GDP	36.6%
Micro	76.5%
Small	21.2%
Medium	2.3%
Services	89.2%
Manufacturing	5.3%
Construction	4.3%
Agriculture	1.1%
Mining and quarrying	0.1%

**Source(s):** SMEinfo (2018)

**Table 1.**  
SMEs' information  
(why SMEs matter in  
Malaysia)

- (2) To determine the relationship between entrepreneurial competency and business performance.
- (3) To determine the relationship between business strategy and business performance.
- (4) To examine whether business strategies significantly moderate between entrepreneurial competency and business performance.
- (5) To examine whether entrepreneurial competency considerably mediates between MCS package (cultural control, planning control, cybernetic control, rewards and compensation control and administrative control) and business performance.

The researchers measure the organisational performance of large textile organisations in Pakistan through the MCS package (Rehman *et al.*, 2019a). Entrepreneurial competencies are used to measure SMEs' performances (Tehseen and Ramayah, 2015). Moreover, business strategies reasonably determine the performance of restaurants (Kankam-Kwarteng *et al.*, 2019). Moreover, managers/owners of SMEs can use the MCS package, entrepreneurial competency, leadership strategy and differentiation strategy to improve the business performance of Malaysian SMEs. Our study has several research contributions and implications. For instance, it is a pioneer study that builds a research model to incorporate the MCS package, entrepreneurial competency, cost leadership strategy, differentiation strategy and business performance based on RBV theory that prior researchers have ignored.

## 2. Literature review and hypotheses development

### 2.1 Resource-based view (RBV) theory

The RBV theory in the literature of strategic management has become a significant framework since 1991 (Barney *et al.*, 2001). RBV conceptualises organisations as a package of resources; after, these resources are used to put into practice, value-creating strategies (Eisenhardt and Martin, 2000) jointly with capabilities create a relationship between organisational resources and allow their strategic deployment (Day, 1994). RBV emphasises organisational resources as basic determinants of competitive advantage and business performance (Barney, 1991). The MCS package considers the most important inner resources that facilitate top management in the decision-making, in order to enhance business performance (Rehman *et al.*, 2019a). Moreover, entrepreneurial competencies are also considered to be important resources for organisations that help to enhance organisational performance (Tehseen *et al.*, 2019). Entrepreneurial competencies considered the entrepreneurial capabilities for SMEs, and they facilitate organisations in acquiring, employing and developing organisation resources successfully that, in turn, leads to improved business performance (Mitchelmore and Rowley, 2010). Therefore, our study focusses on the MCS package (internal resources) and entrepreneurial competencies (organisational capabilities) in determining business performance. Moreover, Barney and Arikan (2001) stated that the RBV theory ignores business strategy in determining business performance, as it plays a crucial role in determining business performance. This study used business strategies (cost leadership and differentiation strategy) to measure business performance and attempts to cover this gap.

### 2.2 Cultural control

Culture means a set of shared values (loyalty, honesty, a lack of discrimination and diligence), beliefs, symbols, attitudes, habits, behaviours, rituals, norms, philosophies, assumptions, practices and characteristics that a firm uses to attain a sustained competitive advantage (Rehman *et al.*, 2019b). Malmi and Brown (2008) divided cultural control into three parts: clans,

symbol-based and value-based. Sometimes, in the organisations, their employees control culture instead of management. There are sub-divided cultures within an organisation called clans. Within an organisation, there are different sub-cultures. Some prior researchers, including [Clegg et al. \(2015\)](#), give support to this argument. Likewise, in the organisation, different small cultures or sub-cultures exist called clans ([Malmi and Brown, 2008](#)). Clans have an impact on the behaviour of employees and help in the attainment of organisational objectives ([Singh, 2008](#)). Moreover, clan control plays an important role in organisations when managers confuse individual and business performance ([Singh, 2008](#)). Symbol-based control means a kind of culture that shows in visual forms, such as specific offices design and unique workers' uniforms within the organisation ([Malmi and Brown, 2008](#)). The organisations can express symbol-based culture in developing the particular design of buildings and particular workers' dress code. Value-based culture means a set of definitions that are officially shared in the organisation, from top management to their subordinates. Literature reveals that cultural controls are considered a major factor in examining organisational performance ([Maina, 2016](#)). Besides, cultural control is deemed to be a significant inside resource for an organisation that facilitates management in the decision-making that, in turn, influences business performance ([Nikpour, 2017](#)). Cultural control cannot be ignored in determining SMEs business performance, for the culture is considered a vital resource that determines entrepreneurial competencies and business performance ([Sajilan and Tehseen, 2015](#)). The following is the proposed hypothesis of the current study:

*H1. Cultural control influences entrepreneurial competency.*

### *2.3 Planning control*

According to [Rehman et al. \(2019a\)](#), planning control plays a vital role in organisations and is considered the most significant tool for top management. Furthermore, planning control includes two types of planning schemes, short-term planning and long-term planning, which are beneficial for both SMEs and large enterprises ([Rehman et al., 2019a](#)). On the one hand, short-term or action planning is a type of planning that focusses on short-term targets, and it is also called tactical focus planning ([Malmi and Brown, 2008](#)). On the other hand, long-term planning mainly focusses on strategic goals, and it is also known as strategic planning ([Malmi and Brown, 2008](#)). Literature reveals that planning controls should be a part of the organisation's internal resources in determining business performance ([Ali, 2017](#)). The entrepreneur should have a skill that is both analytical and strategic when it comes to planning ([Ahmad et al., 2018](#)). This is a pioneer study that measures the influence of planning control on entrepreneurial competencies. The proposed hypothesis of the current study is as follows:

*H2. Planning control influences entrepreneurial competency.*

### *2.4 Cybernetic control*

Cybernetic control is a system that measures standardised performance and system performance. The comparison is completed between both real performance and with standardised ones, and response provides information on differences ([Fisher, 1998](#)). Cybernetic control systems consist of four systems: budget, financial measurement systems, non-financial measurement systems and a balanced scorecard. In this research, we use these four elements to measure cybernetic control. Budget is a crucial indicator within an organisation. Indeed, top management uses it for communicating and coordinating the strategic priorities, and the organisation uses this budget for low-level management priorities. Top management uses financial measurement systems to set a target for their organisation, and financial measurement systems include return on investment and added economic value ([Malmi and Brown, 2008](#)). Non-financial measurement systems are considered to be important

for an organisation, as they overcome various ignoring elements of financial measurement systems, such as the quality of products, its relationship with suppliers and customers, market share and new product development (Malmi and Brown, 2008). Hybrid control systems or balanced scorecard is the mixture of both financial and non-financial (Rehman *et al.*, 2019a). Prior researchers paid inadequate attention to cybernetic controls and organisational performance, as few of the studies revealed any budgets (Pimpong and Laryea, 2016). Financial and non-financial measurement systems (Mutai, 2015) are significant factors in examining the business performance. Furthermore, the researchers suggest that cybernetic controls should be considered when it comes to measuring business performance (Rehman *et al.*, 2019a). Few of the studies on cybernetic controls were conducted to measure organisational capabilities in large organisations (Rehman *et al.*, 2018, 2019a); however, researchers ignored cybernetic control in determining entrepreneurial competencies in both SMEs and large organisations. This pioneer study measures cybernetic control influence on entrepreneurial competencies. This is the study's proposed hypothesis:

*H3. Cybernetic control influences entrepreneurial competency.*

#### *2.5 Rewards and compensation control*

A rewards and compensation control system (aka an incentive system) enhances the workers' performance within an organisation (Rehman *et al.*, 2019a). There are two types of rewards: tangible and intangible rewards. In the field of accounting, marketing, management, entrepreneurship and finance, researchers paid more attention to tangible rewards; however, intangible rewards cannot be ignored in order to maintain the performance and achieve a constant competitive advantage (Alatailat *et al.*, 2019; Taamneh *et al.*, 2018). Rehman *et al.* (2019) explained that rewards and compensation packages motivate organisational workers and increase their performance, enabling them to achieve organisational objectives. Moreover, individuals within an organisation work harder in case organisations pay rewards and compensation packages. Yet, they cut their efforts when they do not receive rewards and compensation packages for their hard work. This study focusses on both tangible and intangible rewards. Rewards and compensation control is considered a crucial factor that helps to enhance organisational performance (Rehman *et al.*, 2018, 2019a). Literature reveals that rewards and compensation control should be considered in measuring the performance of all types of businesses, either on a small scale or on a large scale (Rehman *et al.*, 2019a). Prior studies concluded that rewards and compensation control is a vital factor when it comes to examining firms' capabilities, but inadequate attention has been paid on rewards and compensation control in measuring entrepreneurial competencies (Rehman *et al.*, 2018, 2019a). This is a pioneer study that measures the influence of rewards and compensation control on entrepreneurial competencies. The following is the study's proposed hypothesis:

*H4. Rewards and compensation influence entrepreneurial competency.*

#### *2.6 Administrative control*

Administrative control refers to the clear management control system that is used within the organisation to direct the behaviour of managers or agents when it comes to the achievement of a firm's objectives. Further, it consists of structure and policy framework. In the current study, we focus on three parts of administrative control: enterprise design and structure, governance structure and policies and procedures (Malmi and Brown, 2008). One of the recent study's researchers measured administrative controls through organisational design and structure, policies and procedures and governance structure (Rehman *et al.*, 2019a). Organisation design is considered an essential control device, and management uses this to build a certain type of relationships and contacts. Organisational structure functions through the functional

specialisations and contributes to control by minimising the unpredictability of actions, while the outcome enhances its certainty (Flamholtz, 1983). Governance structure relates to the organisation's board structure and its composition, as well as different management and project teams (Malmi and Brown, 2008). Policies and procedures are an approach used to specify processes, as well as behaviours, within the organisation. Administrative control consists of three elements. The first element is organisational structure and design, the second is the governance structure, while the third is policies and procedures. Some prior studies demonstrated that there is a major and positive impact of organisational structure and design, governance structure and policies and procedures on business performance (Rehman *et al.*, 2019a). Administrative control is considered to be the most important resource for organisations in determining organisational capabilities and performance, but researchers have paid less attention to administrative control in measuring entrepreneurial competencies. This is the proposed hypothesis of this study:

*H5.* Administrative control influences entrepreneurial competency.

### *2.7 Entrepreneurial competency*

Entrepreneurial competency is the skills of an entrepreneur and a combination of some competencies, such as self-esteem, particular knowledge regarding jobs, traits and social, managerial and networking competencies, that help to enhance organisational performance. Mitchelmore and Rowley (2013) stated that entrepreneurial competencies include a particular group of traits that ensure successful entrepreneurship. Literature reveals that entrepreneurial competencies are associated with the growth and sustainability of organisations (Sajilan and Tehseen, 2015). This research indicates the influence of entrepreneurial competencies on SMEs' business performances. The researchers have recognised various dimensions of entrepreneurial competencies in different sectors. For instance, ethical competencies, opportunity competencies, learning competencies, strategic competencies, conceptual competencies, leadership, management, personal competencies marketing and relationship competencies (Ahmad, 2007; Tehseen *et al.*, 2019). The researchers suggested measuring particular competencies across various industries and sizes in order to improve the generalisability of the competency model (Ahmad *et al.*, 2011). Less attention has been paid to ethical competencies and strategic competencies. Therefore, this study focusses on these two dimensions of entrepreneurial competencies to determine the business performance of SMEs. Strategic competencies refer to an entrepreneur's ability to set, assess and implement strategies to achieve business success (Rahman and Ramli, 2014). Ethical competencies refer to the ability of an entrepreneur to work with ambiguity and sincerity and acknowledge their mistakes by speaking truly. Literature shows that entrepreneurial competencies are considered to be the most important resource for organisations and should therefore be included when it comes to determining business performance (Tehseen and Ramayah, 2015). In prior studies, the researchers focussed on organisational capabilities, but individual competency has not been explored in light of the MCS package to measure business performance. The current study, however, fills this gap. It uses both strategic and ethical competency to measure entrepreneurial competencies, because an entrepreneur with only a strong strategic mind cannot perform well forever, as there is also a need for strong ethical competency to enhance business performance in the long run. The following is the proposed hypothesis for the study:

*H6.* Entrepreneurial competency influences business performance.

### *2.8 Business strategies*

Business strategy is the set of decisions and actions that management uses to achieve better organisational performance compared to their market rivals (Parthasarthy, 2007, p. 7).

Organisational-level strategies play an important role in explaining the variations in organisational profitability and long-term performance. Theories regarding strategic typologies have emerged as a significant research area in the field of strategic management (Anwar and Hasnu, 2016). Business strategies have some typologies that include a set of generic strategies, such as differentiation strategy, cost leadership strategy and focus strategy (Porter, 1980); strategic types, such as prospectors' strategy, analysers' strategy, defender strategy and reactor strategy (Miles and Snow, 1978); high performance "gestalts," such as salesmen, craftsmen, pioneers and builders (Miller, 1992); and three strategic types, such as customer intimacy, product leadership and operational excellence (Treacy and Wiersema, 1995).

This study used Porter's model of business strategies due to its recognition, well-defined structure, simplicity, clarity, generality and the way it set off two other approaches for the analysis purpose at the aggregative level (Ormanidhi and Stringa, 2008). In this study, we use two major typologies of business strategies: cost leadership strategy and differentiation strategy. This study ignored focussed strategy, as it is most appropriate for those organisations that aim to cover niche markets. Cost leadership strategy consists of a group of activities that management performs, especially producing goods or services at a lower cost than their rivals, specifically to attain a sustainable competitive advantage and superior performance (Adaileh *et al.*, 2020; Harazneh *et al.*, 2020). Moreover, literature concludes that cost leadership strategy is considered an important resource in determining an organisation's performance (Kankam-Kwarteng *et al.*, 2019). Differentiation strategy refers to a group of activities that management performs, such as producing goods or services, in order to differentiate from a competitor, but at the same cost, therefore enabling them to achieve a long-term competitive advantage and higher performance. The literature demonstrates that the differentiation strategy can significantly and positively influence a firm's performance (Teeratsirikool *et al.*, 2013). Also, earlier studies conclude that business strategy plays a crucial role in examining the business performance (Parnell, 2010). Sirmon *et al.* (2011) suggested that business strategy can enhance the relationship between capabilities and business performance. These are the proposed hypotheses of this study:

*H7.* Cost leadership significantly influences business performance.

*H8.* Differentiation strategy significantly influences business performance.

*H9.* Differentiation strategy significantly moderates between entrepreneurial competency and business performance.

*H10.* Cost leadership strategy significantly moderates between entrepreneurial competency and business performance.

In prior studies, MCS significantly and positively enhanced business performance (Uyar and Kuzey, 2016). Despite this, the literature reveals that MCS has mixed results with a firm's performance (Rehman *et al.*, 2019a). As the above study mentioned, there are inconclusive results between MCS and performance, so there is a need to study this relationship further, with the addition of another variable. According to Barney (1991), organisational resources play an important role in enhancing business performance. Entrepreneurial competency considers a significant resource for an organisation, and it can enhance business performance (Tehseen *et al.*, 2019). Entrepreneurial competency (strategic competency, ethical competency) is used as a mediating variable, as it has a significant influence on business performance and can enlighten the association between MCS and business performance. The following are the proposed hypotheses of the current study:

*H11–15.* Entrepreneurial competencies mediate between (1) cultural control, planning control, cybernetic control, rewards and compensation control and administrative control and (2) business performance.



### 3. Methodology

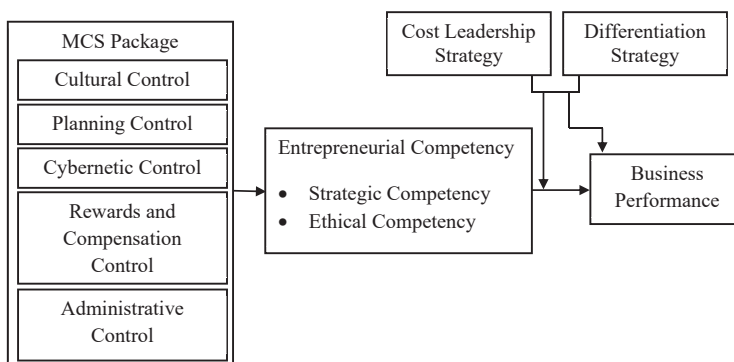
In order to see the nature, research problem and research objective in this study, we used a cross-sectional design and correlational design to fulfil the research objectives. Our study used a survey technique and questionnaires distributed among managers/owners of SMEs in Malaysia to collect data. This study measured constructs reflectively. Prior researchers also used a survey technique to collect data. For instance, the MCS package and organisational performance (Rehman *et al.*, 2019a), entrepreneurial competency, business performance (Tehseen and Ramayah, 2015) and business strategy and business performance (Kankam-Kwarteng *et al.*, 2019) (see Figure 1).

#### 3.1 Questionnaire development

The theoretical model of this research has nine variables and measures these constructs with the help of various items adapted from prior researches, as their validity and reliability have been established, for example, demonstrating a full questionnaire adapted from prior studies. As most of the studies regarding MCS focus on large-scale organisations, this study is on SMEs. Consequently, the questionnaire is adapted in terms of SMEs. Each item is measured by using a five-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Cultural control has 16 items adapted from Sampe (2012), planning control has 13 items, cybernetic control has 8 items and rewards and compensation control has 6 items adapted from Hanzlick and Brühl (2013); administrative control has 9 items adapted from Ramamurthy (1990); differentiation strategy has 4 items, cost leadership has 6 items adapted from Narver and Slater (1990); strategic competency consists of 4 items adapted from Ahmad (2007) and Man and Lau (2000); ethical competency consists of 6 items adapted from Ahmad (2007); financial performance has 3 items adapted from Henri (2006); and non-financial performance has 8 items adapted from Teeratansirikool *et al.* (2013). This study does not have a control variable, only an independent, mediator, moderator and dependent variable.

#### 3.2 Population and sampling

Currently, the research on SMEs has been conducted in Malaysia, and managers or owners are selected for the collection of data. The total number of SMEs in Malaysia is 907,065, which is mentioned on the public website of Malaysia (SMEinfo, 2018). SMEs are divided into five main heads: agriculture, services, mining and quarrying, manufacturing and construction. A total of 950 questionnaires were distributed among owners/managers. The reason behind distributing more than double the questionnaires to respondents is to enhance the response



**Figure 1.**  
Theoretical framework

rate, as the population of the current study is nearer to 1m SMEs. This study used a five-point Likert scale that ranged from 1 “strongly disagree” to 5 “strongly agree”. Only the established variables from prior research were used, which measure the constructs in five-point Likert scales (Khan *et al.*, 2019; Rehman *et al.*, 2019a). Area cluster sampling is more appropriate for those studies where the population is spread out across a wide area (Sekaran and Bougie, 2016). For this study, area cluster sampling was used, as the population was spread across a wider geographical area. Clusters were developed based on states in Malaysia. There are 16 states in Malaysia, as mentioned in Table 2. Each state deemed one cluster and, from the total 16 states, only nine were selected randomly, Kelantan, Johor, Sarawak, Selangor, Kedah, Kuala Lumpur, Penang, Perak and Sabah, because they cover 84.4% of the total SMEs. While using area cluster sampling, there is a need to follow some steps, such as to firstly define the total number of clusters, then select clusters randomly, as suggested by Sekaran and Bougie (2016). Area cluster sampling has a few advantages. For example, it reduces data collection costs, for this method covers the majority portion and leaves a smaller portion. Secondly, this technique is more suitable in a situation where the population is spread over a wider area (Sekaran and Bougie, 2016). Thirdly, this sampling technique covers the advantages of both stratified and simple random sampling.

### 3.3 Sample size

Comrey and Lee (1992) state that a sample size below 50 is considered weak, between 51 and 100 is supposedly weak, within 101–200 is adequate, within 201–300 is good, 301–500 is very good, while a sample size of more than 500 is excellent. This study used a sample size of over 1,000, which is considered as an exceptionally good sample size. A total of 950 questionnaires were distributed among managers/owners; out of 950 questionnaires, only 389 questionnaires were returned. Further, 17 questionnaires were excluded due to some missing values. Consequently, only 372 questionnaires were used in the final analysis. The sample size is appropriate, as the unit of analysis is an organisation, and data from 372 organisations has been used for the final analysis. Among the 372 respondents, 218 (58.60%) were male, while the remainder (154/42.20%) were female. The majority of the respondents have professional degrees (204/54.84%), diplomas (101/27.15%) and postgraduate degrees (67/18.01%). Most of the respondents are senior managers 249 (66.93%), while the remaining respondents are business owners.

### 3.4 Common bias method (CBM)

The current research collected data regarding independent, dependent, mediator and moderating variables at one point in time through a questionnaire. Therefore, there is a chance that a common bias method (CBM) error occurred and affected the data. Generally, common bias is a major issue that is related to a self-survey report (Spector, 2006), as it can inflate the value of the relationship that exists within measured constructs (Conway and Lance, 2010). This study used Harman’s single factor; the total variance should not be more than 50%. In this case, Table 3 shows that total variance is 47.35% and there is no common bias issue with data.

**Table 2.**  
SMEs in Malaysian  
States

States	%Age	States	%Age	States	%Age	States	%Age
Selangor	19.8	Penang	7.4	Kelantan	5.1	Terengganu	3.2
Kuala Lumpur	14.7	Sarawak	6.7	Pahang	4.1	Perlis	0.8
Johor	10.8	Sabah	6.2	Negeri Sembilan	3.6	Labuan	0.3
Perak	8.3	Kedah	5.4	Malacca	3.5	Putrajaya	0.1

**Table 3.**  
Common bias method  
variance test

Components	Total	Initial eigen values		Extraction sum of squared loadings		
		% Of variance	Cumulative %	Total	% Of variance	Cumulative %
1	47.356	47.356	47.356	47.356	47.356	47.356
2	15.016	15.016	62.372	15.016	15.016	62.372
3	11.188	11.188	73.560	11.188	11.188	73.560
4	8.743	8.743	82.303	8.743	8.743	82.303
5	6.824	6.824	89.127	6.824	6.824	89.127
6	4.040	4.040	93.167	4.040	4.040	93.167
7	3.267	3.267	96.434	3.267	3.267	96.434
8	2.639	2.639	99.073	2.639	2.639	99.073
9	0.927	0.927	100.000	0.927	0.927	100.000

### 3.5 Statistical analysis results

We used partial least square–structural equation modelling (PLS-SEM) to determine the model of the current research, as the PLS-SEM technique has proven to be capable of handling both simple and complex models. It also works on data that does not fulfil the criteria of normality with subtleness (Hair *et al.*, 2014). Furthermore, PLS-SEM is strong in the estimation, as well as when it comes to establishing variable validities compared to the covariance-based approach CBS-SEM (Hair *et al.*, 2014). To use PLS-SEM, we estimated the measurement model, as well as a structural model for the current study.

**3.5.1 Measurement model.** To estimate the measurement model, the researcher found three validity techniques: content, convergent and discriminant (Hair *et al.*, 2013). For the current research, all these factors meet the standardised criteria, as established by different researchers and as shown in Tables 2–4.

**3.5.1.1 Content validity.** According to Rehman *et al.* (2019a), content validity refers to a concept: that instruments of questionnaire convey the same meanings as embedded in specific concepts. To measure the content validity of the instruments, the researcher is required to take the opinion of professionals and experts of this area. Indeed, they give an opinion regarding instrument wording and phrases that are then used in the questionnaire (Sekaran and Bougie, 2016). Content validity is assessed through cross-loading, and it means that the value of a measured construct must be greater than other constructs in the same rows and columns (Chin, 1998b; Hair, 2010), as shown in Table 4.

Hence, Table 4 demonstrates the values of all measured constructs greater than other constructs in the same rows and columns. They are shown in italic.

**3.5.1.1.1 Cross-loadings.** Therefore, Table 4 demonstrates the values of all measured constructs greater than other constructs in the same rows and columns. They are shown in italic.

**3.5.1.2 Convergent validity.** Convergent validity refers to the level to see that items of variable measure the same variable (Rehman *et al.*, 2019b). According to Zhou (2013), convergent validity performs to see if the items of all constructs reflect effectively their related predictor. Convergent validity was calculated to find three techniques: average variance extracted (AVE), factor loadings and composite reliability (CR). Loadings of all items should be higher than 0.50 and those with a value of less than 0.50 should be deleted (Bhatti and Rehman, 2019). Moreover, values of factor loadings, AVE and CR should be more than 0.50, 0.50 and 0.60, respectively (Hair *et al.*, 2013). According to Nunnally (1978), Cronbach's alpha value should be higher than 0.60.

Table 5 demonstrates that factor loading and AVE have values higher than 0.50, and the CR value is more than 0.60, as recommended by Hair *et al.* (2013). Further, Cronbach's alpha value is greater than 0.60, as recommended by Nunnally (1978).

Variable	Items	CC	PLC	CBC	RWC	ADC	EC	DF	CL	BP
Cultural control	CC1	<i>0.646</i>	0.028	0.039	0.093	0.017	0.167	0.102	0.095	0.225
	CC10	<i>0.836</i>	0.228	0.105	0.242	0.087	0.348	0.267	0.180	0.302
	CC13	<i>0.789</i>	0.235	0.081	0.206	0.052	0.316	0.188	0.174	0.236
	CC14	<i>0.755</i>	0.193	0.170	0.263	0.035	0.220	0.174	0.156	0.202
	CC16	<i>0.810</i>	0.119	0.003	0.224	0.085	0.325	0.178	0.215	0.255
Planning control	CC2	<i>0.686</i>	0.088	0.059	0.145	0.047	0.229	0.099	0.122	0.242
	CC3	<i>0.553</i>	0.022	0.158	0.127	0.117	0.265	0.188	0.235	0.219
	CC5	<i>0.648</i>	0.021	0.082	0.170	0.050	0.288	0.244	0.263	0.188
	PLC10	0.155	<i>0.826</i>	0.518	0.599	0.074	0.122	0.311	0.320	0.137
	PLC2	0.093	<i>0.766</i>	0.472	0.695	0.094	0.179	0.528	0.441	0.185
Cybernetic control	PLC4	0.074	<i>0.849</i>	0.548	0.663	0.126	0.211	0.290	0.452	0.233
	PLC6	0.202	<i>0.915</i>	0.583	0.668	0.117	0.221	0.399	0.446	0.244
	PLC8	0.117	<i>0.902</i>	0.561	0.622	0.124	0.182	0.293	0.362	0.254
	PLC9	0.215	<i>0.843</i>	0.562	0.585	0.074	0.168	0.375	0.373	0.177
	CBC1	0.088	0.613	<i>0.730</i>	0.564	0.132	0.202	0.345	0.401	0.302
	CBC2	0.177	0.596	<i>0.779</i>	0.586	0.060	0.163	0.404	0.396	0.264
	CBC3	0.122	0.625	<i>0.804</i>	0.554	0.032	0.201	0.373	0.356	0.293
Rewards and compensation control	CBC4	0.068	0.354	<i>0.776</i>	0.357	0.024	0.234	0.309	0.361	0.297
	CBC5	0.087	0.451	<i>0.820</i>	0.440	0.048	0.267	0.322	0.387	0.320
	CBC6	0.031	0.444	<i>0.784</i>	0.423	0.025	0.232	0.255	0.362	0.252
	CBC7	0.079	0.377	<i>0.716</i>	0.271	0.030	0.226	0.205	0.264	0.225
	RWC1	0.037	0.615	0.496	<i>0.710</i>	0.049	0.252	0.592	0.426	0.203
Administrative control	RWC2	0.089	0.649	0.426	<i>0.741</i>	0.037	0.223	0.520	0.505	0.229
	RWC3	0.093	0.645	0.513	<i>0.750</i>	0.133	0.242	0.393	0.511	0.291
	RWC4	0.312	0.511	0.498	<i>0.872</i>	0.009	0.447	0.598	0.744	0.530
	RWC5	0.302	0.347	0.369	<i>0.745</i>	0.004	0.406	0.569	0.591	0.351
	ADC1	0.040	0.074	0.025	0.034	<i>0.879</i>	0.066	0.078	0.001	0.121
Entrepreneurial competency	ADC2	0.160	0.159	0.052	0.072	<i>0.877</i>	0.106	0.060	0.029	0.130
	ADC4	0.145	0.145	0.060	0.028	<i>0.826</i>	0.130	0.065	0.014	0.073
	ADC6	0.009	0.050	0.049	0.004	<i>0.815</i>	0.046	0.031	0.020	0.088
	ADC9	0.028	0.061	0.002	0.019	<i>0.848</i>	0.075	0.053	0.012	0.093
	SC1	0.348	0.434	0.393	0.558	0.050	<i>0.729</i>	0.611	0.588	0.434
Differentiation strategy	SC2	0.323	0.034	0.153	0.263	0.170	<i>0.846</i>	0.455	0.444	0.662
	SC4	0.362	0.160	0.196	0.349	0.011	<i>0.720</i>	0.357	0.445	0.484
	EC1	0.242	0.001	0.170	0.204	0.089	<i>0.799</i>	0.346	0.411	0.622
	EC2	0.238	0.022	0.114	0.216	0.131	<i>0.821</i>	0.388	0.411	0.634
	EC5	0.290	0.416	0.329	0.612	0.035	<i>0.754</i>	0.685	0.655	0.385
Cost leadership	DF1	0.261	0.322	0.303	0.567	0.099	0.491	<i>0.657</i>	0.513	0.245
	DF2	0.202	0.213	0.275	0.335	0.036	0.381	<i>0.593</i>	0.255	0.267
	DF3	0.111	0.318	0.278	0.468	0.120	0.364	<i>0.769</i>	0.503	0.307
	DF4	0.189	0.361	0.324	0.620	0.100	0.502	<i>0.829</i>	0.588	0.389
Business performance	CL1	0.109	0.388	0.363	0.500	0.077	0.487	0.614	<i>0.638</i>	0.314
	CL2	0.347	0.569	0.493	0.834	0.005	0.566	0.589	<i>0.857</i>	0.599
	CL4	0.170	0.343	0.336	0.584	0.055	0.498	0.518	<i>0.865</i>	0.463
	CL5	0.098	0.134	0.250	0.374	0.008	0.414	0.372	<i>0.758</i>	0.415
	BP11	0.313	0.177	0.250	0.368	0.075	0.611	0.402	0.489	<i>0.646</i>
Cross-loadings	BP1	0.116	0.249	0.294	0.303	0.073	0.377	0.321	0.361	<i>0.572</i>
	BP2	0.273	0.186	0.259	0.254	0.170	0.419	0.195	0.351	<i>0.728</i>
	BP3	0.197	0.238	0.346	0.470	0.111	0.544	0.354	0.526	<i>0.840</i>
	BP4	0.349	0.211	0.284	0.409	0.069	0.535	0.355	0.500	<i>0.875</i>
	BP5	0.241	0.183	0.277	0.326	0.015	0.555	0.327	0.452	<i>0.782</i>
	BP6	0.262	0.151	0.255	0.317	0.077	0.590	0.305	0.448	<i>0.808</i>
	BP8	0.229	0.152	0.272	0.353	0.160	0.571	0.352	0.457	<i>0.839</i>

**Table 4.**  
Cross-loadings

Variables	Items	Factor loading	AVE	CR	Cronbach alpha	R <sup>2</sup>
Cultural control	CC1	0.646	0.519	0.895	0.864	
	CC10	0.836				
	CC13	0.789				
	CC14	0.755				
	CC16	0.810				
	CC2	0.683				
	CC3	0.553				
	CC5	0.648				
Planning control	PLC10	0.826	0.726	0.941	0.924	
	PLC2	0.766				
	PLC4	0.849				
	PLC6	0.915				
	PLC8	0.902				
Cybernetic control	CBC1	0.730	0.598	0.912	0.888	
	CBC2	0.779				
	CBC3	0.804				
	CBC4	0.776				
	CBC5	0.820				
	CBC6	0.784				
	CBC7	0.716				
Rewards and compensation control	RWC1	0.710	0.586	0.876	0.836	
	RWC2	0.741				
	RWC3	0.750				
	RWC4	0.872				
	RWC5	0.745				
Administrative control	ADC1	0.879	0.722	0.928	0.905	
	ADC2	0.877				
	ADC4	0.826				
	ADC6	0.815				
	ADC9	0.848				
	ADC9	0.848				
Entrepreneurial competency	SC1	0.729	0.608	0.903	0.870	0.342
	SC2	0.846				
	SC4	0.720				
	EC1	0.799				
	EC2	0.821				
Differentiation strategy	DF1	0.657	0.515	0.807	0.711	
	DF2	0.593				
	DF3	0.769				
	DF4	0.829				
	DF4	0.829				
Cost leadership	CL1	0.638	0.616	0.864	0.791	
	CL2	0.857				
	CL4	0.865				
	CL5	0.758				
	CL5	0.758				
Business performance	BP11	0.646	0.589	0.919	0.897	0.561
	BP1	0.572				
	BP2	0.728				
	BP3	0.840				
	BP4	0.875				
	BP5	0.782				
	BP6	0.808				
	BP8	0.839				

MCS package and entrepreneurial competency

**Table 5.**  
Convergent validity

3.5.1.3 Discriminant validity. Discriminant validity refers to a situation in which research examines two factors that are different in terms of statistics (Rehman *et al.*, 2019a). Discriminant validity ascertains by firstly taking the square roots of AVE, then this square root is compared with the correlations of other variables of the theoretical model (Chin, 2010; Fornell and Larcker, 1981). Moreover, the diagonal values of all constructs must be greater than that in both the same rows and columns (Fornell and Larcker, 1981). However, Table 6 demonstrates that the current study fulfils discriminant validity conditions.

The above-mentioned Table 5 demonstrates all diagonal upper values greater than other values in the same columns and rows, as suggested by Fornell and Larcker (1981).

#### 4. Empirical results

At first, a direct relationship was examined to compute the direct effect of cultural control, planning control, cybernetic control, rewards and compensation control and administrative control on business performance and entrepreneurial competency. Figure 3 and Table 7 show beta values as well as the *t*-value in confirming if the hypotheses are supported or not.

##### 4.1 Direct hypotheses' results

Table 7 shows that there are eight direct relationship hypotheses and all are supported. Cultural control influences entrepreneurial competencies ( $\beta = 0.267, t = 5.430$ , and  $p < 0.01$ ). Thus, hypothesis H1 is accepted. Planning control has an impact on entrepreneurial competency as  $\beta = 0.370, t = 4.383$  and  $p < 0.01$ . Thus, our hypothesis H2 is supported. Cybernetic control influences entrepreneurial competency as  $\beta = 0.143, t = 2.885$  and the *p*-value is less than 0.01. Hence, hypothesis H3 is accepted. Rewards and compensation control has a positive influence on entrepreneurial competency:  $\beta = 0.583, t = 6.870$  and  $p < 0.01$ . Thus, hypothesis H4 is supported. Administrative control influences entrepreneurial

**Table 6.**  
Discriminant validity  
(Fornell–Larcker)

Variable	CC	PLC	CBC	RWC	ADC	EC	DF	CL	BP
CC	0.721								
PLC	0.165	0.852							
CBC	0.118	0.636	0.774						
RWC	0.261	0.755	0.589	0.766					
ADC	0.089	0.123	0.016	0.041	0.850				
EC	0.384	0.217	0.284	0.461	0.104	0.780			
DF	0.257	0.426	0.409	0.699	0.070	0.603	0.718		
CL	0.253	0.473	0.468	0.757	0.001	0.626	0.658	0.785	
BP	0.328	0.248	0.363	0.461	0.121	0.695	0.429	0.591	0.768

**Table 7.**  
Direct hypotheses' results

Hypotheses	Hypotheses' paths	Path coefficient	Std. Deviation	<i>t</i> -values	<i>p</i> -values	Decision
H1	CC → EC	0.267	0.049	5.430	0.000	Accepted
H2	PLC → EC	0.370	0.084	4.383	0.000	Accepted
H3	CBC → EC	0.143	0.051	2.885	0.005	Accepted
H4	RCC → EC	0.583	0.085	6.870	0.000	Accepted
H5	AC → EC	0.099	0.042	2.386	0.017	Accepted
H6	EC → BP	0.554	0.071	7.819	0.000	Accepted
H7	CL → BP	0.249	0.062	3.984	0.000	Accepted
H8	DF → BP	0.223	0.057	3.895	0.000	Accepted

competency  $\beta = 0.099$ ,  $t = 2.386$  and has a  $p$ -value less than 0.01. Hence, hypothesis H5 is accepted. Entrepreneurial competency has highly significantly and positively influenced business performance ( $\beta = 0.554$ ,  $t = 7.819$ ,  $p < 0.01$ ), so hypothesis H6 is accepted. Cost leadership strategy has an increasing influence on business performance ( $\beta = 0.249$ ,  $t = 3.984$  and  $p < 0.01$ ). Hence, hypothesis H7 is supported. Moreover, differentiation strategy has a positive influence on business performance and supported hypothesis H8 as  $\beta = 0.223$ ,  $t = 3.895$  and  $p < 0.01$ .

4.2 Testing moderating effect

This study uses a product indicator approach to test the moderating effect by using a PLS-SEM technique and Cohen’s (1988a) effect size criterion to identify and calculate the strength of the moderating effect.

Table 8 demonstrates that cost leadership significantly and positively moderates between entrepreneurial competency and business performance as  $\beta = 0.194$ ,  $t$ -value = 3.820 and  $p$ -value < 0.01. Hence, hypothesis H9 is supported. Moreover, differentiation strategy positively and significantly moderates between entrepreneurial competency and business performance as  $\beta = 0.171$ ,  $t$ -value = 3.266 and  $p$ -value < 0.01. Hence, hypothesis H10 is supported. Figures 2 and 3 demonstrate that cost leadership and differentiation strategy significantly strengthen the relationship between entrepreneurial competency and business performance.

4.3 Mediation analysis

The main consideration of the mediation analysis is that there should be a significant relationship between independent constructs and dependent constructs through the mediating variable (Memon et al., 2018). Researchers should follow Preacher and Hayes’ (2008) approach and bootstrapping the sampling distribution of the indirect/mediation effect. Significantly, bias-corrected bootstrapping is deemed as a powerful method to detect the

Hypotheses	Hypotheses’ paths	Path coefficient	Std. Deviation	t-values	p-values	Decision
H9	CL*EC → BP	0.194	0.051	3.820	0.000	Accepted
H10	DF*EC → BP	0.171	0.052	3.266	0.001	Accepted

Table 8.  
Indirect hypotheses’  
results (moderation)

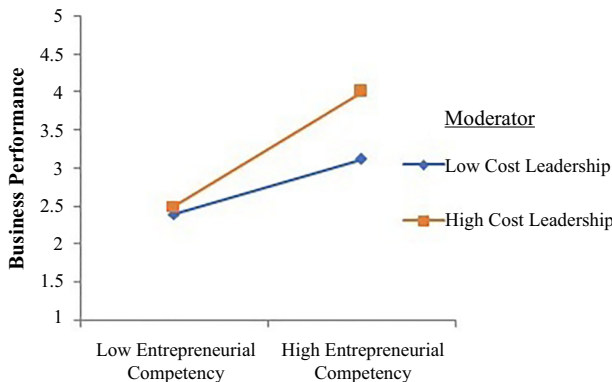


Figure 2.  
Moderating effect of  
cost leadership

mediation (Memon *et al.*, 2018). In this study, the bootstrapping technique is used: prior researchers argue that this method is superior to Baron and Kenny (1986)'s traditional method (MacKinnon *et al.*, 2007).

Table 9 demonstrates the following results. Entrepreneurial competency significantly mediates between cultural control and business performance ( $\beta = 0.148, t = 4.437, p < 0.01$ ), so hypothesis H11 is accepted. Furthermore, entrepreneurial competency significantly mediates between planning control and business performance ( $\beta = 0.205, t = 3.879, p < 0.01$ ). Hence, hypothesis H12 is supported. Moreover, entrepreneurial competencies mediate between cybernetic control and business performance ( $\beta = 0.079, t = 2.487, p < 0.01$ ). Thus, hypothesis H13 is accepted. Entrepreneurial competencies significantly mediate between rewards and compensation control and business performance ( $\beta = 0.323, t = 5.004, p < 0.01$ ), so hypothesis H14 is accepted. As administrative control has no direct relationship with business performance, entrepreneurial competencies significantly mediate the relationship between administrative control and business performance ( $\beta = 0.055, t = 2.467, p < 0.01$ ). Thus, hypothesis H15 is supported. The current research shows that entrepreneurial competencies significantly mediate between the MCS package and organisational performance.

4.4 The predictive relevance of the study model

In this research for the predictive relevance of the theoretical model, two things are used: *R*-square and *Q*<sup>2</sup>. *R*-square refers to the variance enlightened by collectively exogenous constructs.

Table 10 reveals that 34.2% of entrepreneurial competencies are explained by cultural, planning, cybernetic, rewards and compensation and administrative control. Business

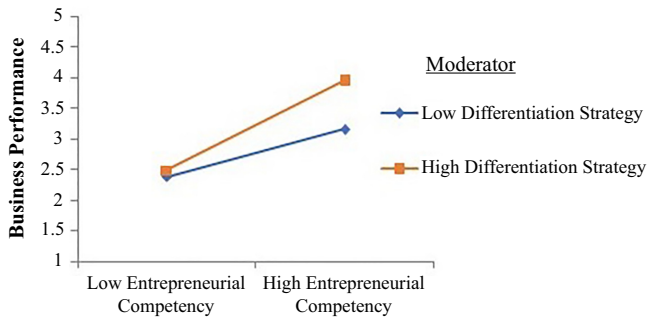


Figure 3. Moderating effect of differentiation strategy

Hypotheses	Hypotheses' paths	Path coefficient	Std. Deviation	<i>t</i> -values	<i>p</i> -values	Decision
H11	CC → EC → BP	0.148	0.033	4.437	0.000	Accepted
H12	PLC → EC → BP	0.205	0.053	3.879	0.000	Accepted
H13	CBC → EC → BP	0.079	0.032	2.487	0.006	Accepted
H14	RCC → EC → BP	0.323	0.065	5.004	0.000	Accepted
H15	AC → EC → BP	0.055	0.022	2.467	0.007	Accepted

Table 9. Indirect relationships

		<i>R</i> <sup>2</sup>
Entrepreneurial competency		0.342
Business performance		0.561

Table 10. The predictive relevance of the model



performance explained 56.1% by cultural, planning, cybernetic, rewards and compensation, administrative control, differentiation strategy, cost leadership and entrepreneurial competencies.  $R$ -square values within 0.02–0.13 are considered weak, 0.13–0.26 are considered moderate and more than 0.26 is considered substantial (Cohen, 1988a). In this study, in the case of entrepreneurial competencies and business performance,  $R$ -square is substantial. Cross-validated redundancy was assessed in PLS with the help of a blindfolding technique. Further, the value of  $Q^2$  must be greater than zero, as suggested by Chin (1998a).

In the current research, Table 11 reveals the above-mentioned criteria that  $Q^2$  meets, as  $Q^2$  for entrepreneurial competencies is 0.188, while for business performance, they are 0.299.

#### 4.5 The effect size of a model

According to Cohen (1988b), effect size is small effect ( $f^2 = 0.02$ ), medium effect ( $f^2 = 0.15$ ) and large effect ( $f^2 = 0.35$ ). However, this study shows that cultural, planning, cybernetic, rewards and compensation, administrative control, differentiation strategy and cost leadership have a small effect size: 0.008, 0.016, 0.036, 0.011, 0.014, 0.033 and 0.037, respectively. Moreover, entrepreneurial competency has a large effect size, such as 0.315.

## 5. Discussion and conclusion

The motive of this study is to examine the influence of cultural, planning, cybernetic, rewards and compensation and administrative control on business performance, alongside the mediating effect of entrepreneurial competency. Moreover, to determine the moderating role of business strategies (cost leadership, differentiation strategy) between entrepreneurial competencies and business performance. Cultural control has an influence on entrepreneurial competencies and H1 is supported. The findings are the same with prior conceptual studies that reveal that organisational culture can influence entrepreneurial competencies (Sajilan and Tehseen, 2015). Planning control has a significant and positive influence on entrepreneurial competencies and supported H2. This is a pioneer study that determines planning control influence on entrepreneurial competencies. Cybernetic control has a significant and positive influence on entrepreneurial competencies and supported hypothesis H3. This study determines cybernetic control influence on entrepreneurial competencies. Rewards and compensation control has an impact on entrepreneurial competencies and accepts H4. This is a pioneer study that determines the influence of rewards and compensation control on entrepreneurial competencies. Administrative control has significantly and positively impacted on entrepreneurial competencies and H5 is supported. This is pioneer research that determines administrative control influence on entrepreneurial competencies. The findings are consistent with the RBV theory that MCS package (cultural control, planning control, cybernetic control, rewards and compensation control and administrative control) is considered to be an organisational internal resource to determine organisational capabilities (for our study, entrepreneurial competencies) (Barney, 1991; Rehman *et al.*, 2019a).

Entrepreneurial competencies have a significant influence on measuring business performance and supported H6. The results are in line with prior studies on entrepreneurial competencies (Tehseen and Ramayah, 2015). Further, the results are also in line with the RBV theory that entrepreneurial competencies significantly improve firms' performance (Barney, 1991). Cost leadership and differentiation strategies have an impact on business performance

	SSO	SSE	$Q^2 = (1 - SSE/SSO)$
Entrepreneurial competency	2232.0	1811.681	0.188
Business performance	2976.0	2085.124	0.299

**Table 11.**  
Cross-validated  
redundancy

and supported H7 and H8. The results are in line with Kankam-Kwarteng *et al.*'s (2019) finding that cost leadership significantly improves a firm's performance. Moreover, differentiation strategies are positively associated with a firm's performance (Teeratansirikool *et al.*, 2013). Cost leadership and differentiation strategy significantly moderate between entrepreneurial competency and business performance. Hence, our hypotheses H9 and H10 are supported. Entrepreneurial competency significantly and positively mediates between cultural, planning, cybernetic, rewards and compensation, administrative control and business performance. Thus, H11, H12, H13, H14 and H15 are supported. The results are consistent with the RBV theory that entrepreneurial competencies significantly explain the relationship between organisational internal resources and a firm's performance (Barney, 1991; Rehman *et al.*, 2019a).

Finally, MCS package (cultural control, planning control, cybernetic control, rewards and compensation control and administrative control) is positively associated with entrepreneurial competency. Hence, the first research objective was fulfilled. Moreover, entrepreneurial competency significantly improves the performance of Malaysian SMEs. Thus, the second research objective was considerably achieved. Business strategies, such as cost leadership and differentiation strategy, significantly improve SMEs' performance. Therefore, the third research objective is fully achieved. Besides, business strategies significantly moderate the relationship between entrepreneurial competency and business performance. Thus, the fourth research objective was fulfilled. Finally, entrepreneurial competency significantly explains the relationship between MCS package (cultural control, planning control, cybernetic control, rewards and compensation control and administrative control) and business performance. Therefore, the fifth research objective is fully achieved.

### 5.1 Theoretical implications

This study has created theoretical implications. Firstly, our study contributes in terms of literature by developing and then testing a new empirical theoretical model by incorporating MCS package (cultural, planning, cybernetic, rewards and compensation, administrative control) with the mediating effect of entrepreneurial competency (strategic competency and ethical competency) and business performance. Furthermore, this study used business strategies (cost leadership and differentiation strategy) as a moderating variable between entrepreneurial competency and business performance that prior studies ignored. Secondly, this study adopts the RBV theory to explain the theoretical framework that provides some interesting outcomes. A few of the organisational resources give contradictory results, as these resources do not explain business performance directly, but rather explained it through mediation. Thirdly, the current study contributes to the body of knowledge in terms of cultural, planning, cybernetic, rewards and compensation, administrative control, entrepreneurial competency and business strategies, as scant research has been conducted in this area regarding SMEs. Barney and Arikan (2001) conclude that the RBV theory ignores business strategy, as it plays a crucial role in determining business performance. Hence, this study used business strategies in light of the RBV theory.

### 5.2 Practical implications

The findings of this study provide some practical implications for the management of SMEs. This study suggests that the managers of SMEs should focus on the MCS package to determine business performance through entrepreneurial competencies. Moreover, a sole use of organisational resources might not provide better results, but, with the help of entrepreneurial competencies, they could. This study recommends the management of SMEs that pays much to attention on MCS's package as a whole because some time individual element of the MCS package does not give many benefits that provide the whole package. This study practically contributes to owners and managers by giving an idea that

resources, such as cultural, planning, cybernetic, rewards and compensation, administrative control, entrepreneurial competency, cost leadership and differentiation strategy, all are important and should not be ignored whilst measuring business performance for SMEs in Malaysia. This is a pioneer study that determined the influence of the MCS package (cultural, planning, cybernetic, rewards and compensation, administrative control), with entrepreneurial competencies as a mediating variable, on SMEs throughout Malaysia. This will attract top management in their decision-making processes to determine business performance. Moreover, this study shows that business strategies, such as cost leadership and differentiation strategy, provide fruitful results, for they strengthen the relationship between entrepreneurial competencies and business performance.

### 5.3 Future directions

As discussed, most studies between MCS (levers of control) and business performance have been conducted in developed countries, meaning less attention has been paid on MCS as a package in developing countries. Therefore, future research is needed to add another mediating variable, such as culture. Moreover, research was conducted to see the impact of the MCS package on business performance through the mediating effect of entrepreneurial competencies (strategic competencies and ethical competencies) in both developed and developing countries. Future research should be conducted on the MCS package and business performance by using RBV theory, as well as resource orchestration theory. Recently, researchers measured environmental performance through corporate social responsibility, green innovation and environmental strategy (Kraus *et al.*, 2020). In the future, researchers can measure environmental performance through the environmental MCS package and green constructs, such as green human resource practices, green capability and green supply chain management in light of natural RBV theory.

### References

- Abu-Jarad, I.Y., Yusof, N.A. and Nikbin, D. (2010), "A review paper on organizational culture and organizational performance", *International Journal of Business and Social Science*, Vol. 1 No. 3, pp. 26-46.
- Adaileh, M.J., Alrawashdeh, M., Elrehail, H. and Aladayleh, K.J. (2020), "Assessing the nexus between knowledge management and firm performance: a data article", *Data in Brief*, Vol. 32, 106283.
- Agbejule, A. (2011), "Organizational culture and performance: the role of management accounting system", *Journal of Applied Accounting Research*, Vol. 12 No. 1, pp. 74-89.
- Ahmad, N.H. (2007), "A cross-cultural study of entrepreneurial competencies and entrepreneurial success in SMEs in Australia and Malaysia", Unpublished PhD Thesis, University of Adelaide, Adelaide.
- Ahmad, N.H., Wilson, C. and Kummerow, L. (2011), "A cross-cultural insight into the competency-mix of SME entrepreneurs in Australia and Malaysia", *International Journal of Business and Management Science*, Vol. 4 No. 1, p. 33.
- Ahmad, N.H., Suseno, Y., Seet, P.S., Susomrith, P. and Rashid, Z. (2018), "Entrepreneurial competencies and firm performance in emerging economies: a study of women entrepreneurs in Malaysia", in Ratten, V., Braga, V. and Marques, C. (Eds), *Knowledge, Learning and Innovation, Contributions to Management Science*, Springer, Cham.
- Alatailat, M., Elrehail, H. and Emeagwali, O.L. (2019), "High performance work practices, organizational performance and strategic thinking: a moderation perspective", *International Journal of Organizational Analysis*, Vol. 27 No. 3, pp. 370-395, doi: [10.1108/IJOA-10-2017-1260](https://doi.org/10.1108/IJOA-10-2017-1260).
- Ali, M. (2017), "Effect of firm size on the relationship between strategic planning dimensions and performance of manufacturing firms in Kenya", Unpublished Thesis.

- Anwar, J. and Hasnu, S. (2016), "Business strategy and firm performance: a multi-industry analysis", *Journal of Strategy and Management*, Vol. 9 No. 3, pp. 361-382.
- Barney, J.B. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.
- Barney, J.B. and Arikian, A.M. (2001), "The resource-based view: origins and implications", *Handbook of Strategic Management*, p. 124188.
- Barney, J.B., Wright, M. and Ketchen, D.J. Jr (2001), "The resource-based view of the firm: ten years after 1991", *Journal of Management*, Vol. 27 No. 6, pp. 625-641.
- Baron, R.M. and Kenny, D.A. (1986), "The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 6, p. 1173.
- Bhatti, A. and Rehman, S.U. (2019), "Perceived benefits and perceived risks effect on online shopping behavior with the mediating role of consumer purchase intention in Pakistan", *International Journal of Management Studies*, Vol. 28 No. 1, pp. 33-54.
- Bruque, S. and Moyano, J. (2007), "Organisational determinants of information technology adoption and implementation in SMEs: the case of family and cooperative firms", *Technovation*, Vol. 27 No. 5, pp. 241-253.
- Busse, C., Kach, A.P. and Wagner, S.M. (2017), "Boundary conditions: what they are, how to explore them, why we need them, and when to consider them", *Organizational Research Methods*, Vol. 20 No. 4, pp. 574-609.
- Chin, W. (1998a), "Issues and opinion on structural equations modeling", *MIS Quarterly*, Vol. 22 No. 1, pp. vii-xvi.
- Chin, W.W. (1998b), "The partial least squares approach to structural equation modeling", *Modern Methods for Business Research*, Vol. 295 No. 2, pp. 295-336.
- Chin, W.W. (2010), "How to write up and report PLS analyses", in Esposito, V.V., Chin, W.W., Henseler, J. and Wang, H. (Eds), *Handbook of Partial Least Squares: Concepts, Methods and Applications in Marketing and Related Fields*, Springer, Berlin, pp. 655-690.
- Clegg, S.R., Kornberger, M. and Pitsis, T. (2015), *Managing and Organizations: An Introduction to Theory and Practice*, Sage, New York, NY.
- Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed., Lawrence Erlbaum Associates, Hillsdale, NJ.
- Comrey, A.L. and Lee, H.B. (1992), *A First Course in Factor Analysis*, Psychology Press, Oxfordshire.
- Conway, J.M. and Lance, C.E. (2010), "What reviewers should expect from authors regarding common method bias in organizational research", *Journal of Business and Psychology*, Vol. 25 No. 3, pp. 325-334.
- Day, G. (1994), "The capabilities of market-driven organizations", *Journal of Marketing*, Vol. 58 October, pp. 37-52.
- Eisenhardt, K.M. and Martin, J.A. (2000), "Dynamic capabilities: what are they?", *Strategic Management Journal*, Vol. 21, pp. 1105-1121.
- Elrehail, H., Emeagwali, O.L., Alsaad, A. and Alzghoul, A. (2018), "The impact of transformational and authentic leadership on innovation in higher education: the contingent role of knowledge sharing", *Telematics and Informatics*, Vol. 35 No. 1, pp. 55-67.
- Fisher, J.G. (1998), "Contingency theory, management control systems and firm outcomes: past results and future directions", *Behavioral Research in Accounting*, Vol. 10, p. 47.
- Flamholtz, E.G. (1983), "Accounting, budgeting and control systems in their organizational context: theoretical and empirical perspectives", *Accounting, Organizations and Society*, Vol. 8 Nos 2-3, pp. 153-169.
- Fornell, C. and Larcker, D. (1981), "Evaluating structural equation models with unobservable variable and measurement error", *Journal of Marketing Research*, Vol. 18, pp. 39-50.

- 
- Goyal, P., Rahman, Z. and Kazmi, A. (2013), "Corporate sustainability performance and firm performance research: literature review and future research agenda", *Management Decision*, Vol. 51 No. 2, pp. 361-379.
- Grabner, I. and Moers, F. (2013), "Management control as a system or a package? Conceptual and empirical issues", *Accounting, Organizations and Society*, Vol. 38 Nos 6-7, pp. 407-419.
- Hair, J.F. (2010), *Multivariate Data Analysis, a Global Perspective*, Pearson, New Jersey, Vol. 7, p. 816.
- Hair, J.F., Ringle, C.M. and Sarstedt, M. (2013), "Partial least squares structural equation modeling: rigorous applications, better results and higher acceptance", *Long Range Planning*, Vol. 46 Nos 1-2, pp. 1-12.
- Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2014), *A Primer on Partial Least Squares Structural Equation Modeling*, Sage, Thousand Oaks, CA.
- Hanzlick, M. and Brühl, R. (2013), "Management control systems as a package", *Chartered Institute of Management Accountants*, Vol. 13 No. 2, p. 17.
- Harazneh, I., Adaileh, M., Thbeitat, A., Afaneh, S., Khanfar, S., Harasis, A. and Elrehail, H. (2020), "The impact of quality of services and satisfaction on customer loyalty: the moderate role of switching costs", *Management Science Letters*, Vol. 10 No. 8, pp. 1843-1856.
- Henri, J.-F. (2006), "Management control systems and strategy: a resource-based perspective", *Accounting, Organizations and Society*, Vol. 31 No. 6, pp. 529-558.
- Jamil, C.Z.M. and Mohamed, R. (2011), "Performance measurement system (PMS) in small medium enterprises (SMEs): a practical modified framework", *World Journal of Social Sciences*, Vol. 1 No. 3, pp. 200-212.
- Janka, M. and Guenther, T.W. (2018), "Management control of new product development and perceived environmental uncertainty: exploring heterogeneity using a finite mixture approach", *Journal of Management Accounting Research*, Vol. 30 No. 2, pp. 131-161.
- Kankam-Kwarteng, C., Osman, B. and Donkor, J. (2019), "Innovative low-cost strategy and firm performance of restaurants", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 13 No. 3, pp. 266-281.
- Khan, S.N., Hussain, R.I., Rehman, S.-u., Maqbool, Q., Engku ALI, E.I. and Numan, M. (2019), "The mediating role of innovation between corporate governance and organizational performance: moderating role of innovative culture in Pakistan textile sector", *Cogent Business and Management*, Vol. 6, p. 1631018.
- Kraus, S., Rehman, U.S. and García, F.J.S. (2020), "Corporate social responsibility and environmental performance: the mediating role of environmental strategy and green innovation", *Technological Forecasting and Social Change*, Vol. 160, p. 120262.
- MacKinnon, D.P., Fairchild, A.J. and Fritz, M.S. (2007), "Mediation analysis", *Annual Review of Psychology*, Vol. 58, pp. 593-614.
- Maina, J. (2016), "Influence of organizational culture on performance of commercial banks in Kenya: school of business", Unpublished Thesis, University of Nairobi.
- Malmi, T. and Brown, D.A. (2008), "Management control systems as a package—opportunities, challenges and research directions", *Management Accounting Research*, Vol. 19 No. 4, pp. 287-300.
- Man, T.W. and Lau, T. (2000), "Entrepreneurial competencies of SME owner/managers in the Hong Kong services sector: a qualitative analysis", *Journal of Enterprising Culture*, Vol. 8 No. 3, pp. 235-254.
- Memon, M., Cheah, J., Ramayah, T., Ting, H. and Chuah, F. (2018), "Mediation analysis issues and recommendations", *Journal of Applied Structural Equation Modeling*, Vol. 2 No. 1, pp. 1-9.
- Miles, R.E. and Snow, C.C. (1978), *Organizational Strategy, Structure, and Process*, MacGraw Hill, New York, NY.
- Miller, D. (1992), "The Icarus paradox: how exceptional companies bring about their own downfall", *Business Horizons*, Vol. 35 No. 1, pp. 24-35.

- Mitchelmore, S. and Rowley, J. (2010), "Entrepreneurial competencies: a literature review and development agenda", *International Journal of Entrepreneurial Behavior and Research*, Vol. 16 No. 2, pp. 92-111.
- Mitchelmore, S. and Rowley, J. (2013), "Entrepreneurial competencies of women entrepreneurs pursuing business growth", *Journal of Small Business and Enterprise Development*, Vol. 20 No. 1, pp. 125-142.
- Mutai, N.K. (2015), "Influence of balanced scorecard on performance of Safaricom Kenya Limited", School of Business, Unpublished Thesis, University of Nairobi.
- Narver, J.C. and Slater, S.F. (1990), "The effect of a market orientation on business profitability", *Journal of Marketing*, Vol. 54 No. 4, pp. 20-35.
- Nikpour, A. (2017), "The impact of organizational culture on organizational performance: the mediating role of employee's organizational commitment", *International Journal of Organizational Leadership*, Vol. 6, pp. 65-72.
- Nunnally, J.C. (1978), *Psychometric Theory*, McGraw-Hill, New York, Vol. 226.
- Ormanidhi, O. and Stringa, O. (2008), "Porter's model of generic competitive strategies", *Business Economics*, Vol. 43 No. 3, pp. 55-64.
- Otley, D.T. (1980), "The contingency theory of management accounting: achievement and progress", *Accounting, Organization and Society*, Vol. 5 No. 4, pp. 413-428.
- Otley, D. (2016), "The contingency theory of management accounting and control: 1980-2014", *Management Accounting Research*, Vol. 31, pp. 45-62.
- Parnell, J.A. (2010), "Strategic clarity, business strategy and performance", *Journal of Strategy and Management*, Vol. 3 No. 4, pp. 304-324.
- Parthasarthy, R. (2007), *Fundamentals of Strategic Management*, Houghton Mifflin, Boston, MA.
- Pimpong, S. and Laryea, H. (2016), "Budgeting and its impact on financial performance: the case of non-bank financial institutions in Ghana", *International Journal of Academic Research and Reflection*, Vol. 4 No. 5, pp. 12-22.
- Porter, M.E. (1980), *Competitive Strategy*, The Free Press, New York, NY.
- Preacher, K.J. and Hayes, A.F. (2008), "Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models", *Behavior Research Methods*, Vol. 40 No. 3, pp. 879-891.
- Rahman, N.A.A. and Ramli, A. (2014), "Entrepreneurship management, competitive advantage and firm performances in the craft industry: concepts and framework", *Procedia-Social and Behavioral Sciences*, Vol. 145, pp. 129-137.
- Ramamurthy, K. (1990), "Role of environmental, organizational and technological factors in information technology implementation in advanced manufacturing: an innovation adoption-diffusion perspective", Unpublished Doctoral Dissertation, University of Pittsburgh.
- Rehman, S.-U., Mohamed, R. and Ayoup, H. (2018), "Cybernetic controls, and rewards and compensation controls influence on organizational performance. Mediating role of organizational capabilities in Pakistan", *International Journal of Academic Management Science Research*, Vol. 2 No. 8, pp. 1-10.
- Rehman, S.-u., Bhatti, A. and Chaudhry, N.I. (2019a), "Mediating effect of innovative culture and organizational learning between leadership styles at third-order and organizational performance in Malaysian SMEs", *Journal of Global Entrepreneurship Research*, Vol. 9 No. 1, pp. 1-24.
- Rehman, S.-u., Mohamed, R. and Ayoup, H. (2019b), "The mediating role of organizational capabilities between organizational performance and its determinants", *Journal of Global Entrepreneurship Research*, Vol. 9 No. 1, pp. 1-23.
- Sajilan, S. and Tehseen, S. (2015), "Cultural orientations, entrepreneurial competencies and SMEs business success: the contingent roles of environmental turbulence and network competence", *Review of Integrative Business and Economics Research*, Vol. 4 No. 2, p. 20.

- 
- Sampe, F. (2012), "The influence of organizational learning on performance in Indonesian SMEs", Unpublished Thesis, Southern Cross University, Lismore.
- Sekaran, U. and Bougie, R. (2016), *Research Methods for Business: A Skill Building Approach*, John Wiley & Sons, Hoboken, NJ.
- Singh, H. (2008), "Watching (out for) each other: the role of clan controls in managing project teams", *Paper Presented at the Academy of Management Proceedings*.
- Sirmon, D.G., Hitt, M.A., Ireland, R.D. and Gilbert, B.A. (2011), "Resource orchestration to create competitive advantage: breadth, depth, and life cycle effects", *Journal of Management*, Vol. 37 No. 5, pp. 1390-1412.
- Spector, P.E. (2006), "Method variance in organizational research: truth or urban legend?", *Organizational Research Methods*, Vol. 9 No. 2, pp. 221-232.
- Taamneh, A., Alsaad, A.K. and Elrehail, H. (2018), "HRM practices and the multifaceted nature of organization performance: the mediation effect of organizational citizenship behavior", *EuroMed Journal of Business*, Vol. 13 No. 3, pp. 315-334, doi: [10.1108/EMJB-02-2018-0010](https://doi.org/10.1108/EMJB-02-2018-0010).
- Teeratansirikool, L., Siengthai, S., Badir, Y. and Charoenngam, C. (2013), "Competitive strategies and firm performance: the mediating role of performance measurement", *International Journal of Productivity and Performance Management*, Vol. 62 No. 2, pp. 168-184.
- Tehseen, S. and Ramayah, T. (2015), "Entrepreneurial competencies and SMEs business success: the contingent role of external integration", *Mediterranean Journal of Social Sciences*, Vol. 6 No. 1, p. 50.
- Tehseen, S., Qureshi, Z.H. and Ramayah, T. (2018), "Impact of network competence on firm's performances among Chinese and Indian entrepreneurs: a multigroup analysis", *International Journal of Entrepreneurship*, Vol. 22 No. 2, pp. 1-14.
- Tehseen, S., Ahmed, F.U., Qureshi, Z.H., Uddin, M.J. and Ramayah, T. (2019), "Entrepreneurial competencies and SMEs' growth: the mediating role of network competence", *Asia-Pacific Journal of Business Administration*, Vol. 11 No. 1, pp. 2-29.
- Treacy, M. and Wiersma, F. (1995), *The Discipline of Market Leaders*, HarperCollins, London.
- Uyar, A. and Kuzey, C. (2016), "Does management accounting mediate the relationship between cost system design and performance", *Advances in Accounting*, Vol. 35, pp. 170-176.
- Venkatraman, N. and Ramanujam, V. (1986), "Measurement of business performance in strategy research: a comparison of approaches", *Academy of Management Review*, Vol. 11 No. 4, pp. 801-814.
- Yoshino, N., Taghizadeh-Hesary, F., Charoensivakorn, P. and Niraula, B. (2016), "Small and medium-sized enterprise (SME) credit risk analysis using bank lending data: an analysis of Thai SMEs", *Journal of Comparative Asian Development*, Vol. 15 No. 3, pp. 383-406.
- Zhou, T. (2013), "Understanding continuance usage of mobile sites", *Industrial Management and Data Systems*, Vol. 113 No. 9, pp. 1286-1299.

### Further reading

- Hopper, T., Tsamenyi, M., Uddin, S. and Wickramasinghe, D. (2009), "Management accounting in less developed countries: what is known and needs knowing", *Accounting, Auditing and Accountability Journal*, Vol. 22 No. 3, pp. 469-514.

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