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Management control systems package, corporate governance, and SME's performance in the context of Malaysia

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Abstract
This research aims to empirically explore the extent to which organisational learning and product innovation explain the relationship between Management Control System (MCS) package, corporate governance, and organisational performance. This research used cluster sampling for data collection. Collected data from 369 managers/owners of small and medium enterprises (SMEs) in Malaysia were used to run partial least square (PLS) regression models and test research hypotheses. The deductive reasoning method is used to develop the theoretical framework. MCS package and corporate governance are positively associated with product innovation and organisational learning. The results reveal that MCS package, corporate governance, organisational learning, and product innovation are positively associated with organisational performance. Organisational learning and product innovation significantly mediate the MCS package, corporate governance, and organisational performance. This research signifies that SMEs managers/owners in Malaysia that MCS package, corporate governance, organisational learning, and product innovation significantly determine organisational performance. In order to boost its performance, they may consider financial and non-financial aspects. The Malaysian government uses the outcomes of this research for the betterment of SMEs in Malaysia.

Keywords:
corporate governance; organisational learning; organisational performance; product innovation; MCS package.

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Introduction

In the development of any country, small and medium enterprises (SMEs) are critical, and these SMEs are considered as the backbone of Asian countries (Cosenz & Noto, 2015; Heinicke, 2018; Nasir et al., 2017). A proven fact shows that for more than three decades, studies have focused on the significant role of SMEs' contribution to the economic development sector

worldwide (Gamage et al., 2020). In 2019, SMEs represent more than 50% of employment and 90% of business worldwide. Thus, the contribution of formal SMEs to emerging economies' GDP reaches 40%. It may be significantly higher if the informal SMEs are included. Malaysia is one of the emerging economies that may be a reflection of this situation. In the Malaysian economy, only 1.5% of large-scale organisations and the remaining organisations are SMEs that contribute 36.6% to GDP (SMEinfo, 2018). Few studies show that SMEs are important for any economy but scant attention paid in the management accounting field (Chenhall & Langfield-Smith, 2003; Mitchell & Reid, 2000). Research from the SMEs perspective increased but still need more exploration (López & Hiebl, 2015). The major motive to work on SMEs is the inconsistent findings in different areas like entrepreneurship, accounting, and small business. There are some research focused on Performance Measurement Systems (PMS) in terms of SMEs which find the family firms' particular aspects, other comprehensive resume of empirical research use, development and design, consequences of PMS, and factors influencing PMS (Heinicke, 2018; Pešalj et al., 2018). Moreover, few studies used management control systems (MCS) separately in SMEs and elucidates that outcomes of these studies are fragmented (Cooper et al., 2017; Malagueño et al., 2018; Massaro et al., 2017). MCS in isolations widely used for joint-stock companies and scant attention paid on SMEs (Chalmeta et al., 2012; Gschwantner & Hiebl, 2016). MCS takes a significant and essential part in the furtherance of SMEs. SME's may get advantage by using sophisticated MCS. However, previous research ignore working over the MCS package for SMEs (Garengo et al., 2005; Heinicke, 2018; Taticchi et al., 2012). This study focused on MCS package and data collected from SMEs.

The terms organisational control (OC), management accounting (MA), PMS, and MCS are sometimes used reciprocally (Chenhall, 2003). MCS package is considered an essential resource for an organisation and boost organisational performance. MCS package is a combination of several organisational resources, including planning, cultural, automation (cybernetic), rewards and compensation, and administration that organisations use in their daily life to get an advantage over their competitors by enhancing organisational performance (Rehman et al., 2019). The current research focuses on MCS package as it is beneficial for developed and developing countries to strengthen organisational performance. In this era, high competition exists in the market, and most organisations have enough finance to purchase similar resources that are using their competitors, but organisations can differentiate from others by using unique MCS packages. Most resources can be purchased at any cost, but there is no technology available yet that can copy people minds. Hence, organisations can hire competent people who plan well, improve governance structure, and make better policies and procedures.

Corporate governance means a group of systems and processes by which organisations are managed and controlled to align employees' interest, society, and corporations optimally. Corporate governance is an indicator that is mostly used by large organisations in determining organisational performance (Chang et al., 2015; Das & Dey, 2016; Domadenik et al., 2016). Few research stated that corporate governance is not only useful for large organisations but also beneficial to SMEs (Al-Najjar, 2018; Huang et al., 2016; Shahrier et al., 2018). Corporate governance is important for SME's effective strategies and best practices to access various resources and improve better management decision-making. Less observation has been made on corporate governance concerning SMEs in developing countries (Al-Najjar, 2018; Roudaki, 2018). Besides, innovation activities in SMEs are less explored than large-scale organisations. There is a need to further explore innovation activities in the future (Martínez-Román & Romero, 2013). Previous study paid scant attention to organisational learning to enhance organisational performance (Law & Chuah, 2015). Literature reveals that SMEs failed to realise the importance of organisational learning that influences on organisational performance (Zhu et al., 2018).

This study objective is to determine MCS package and corporate governance influence on organisational performance with the mediating effect of product innovation and organisational learning. Conforming to the resource-based view (RBV) of Barney (1991), organisational capabilities (organisational learning and product innovation) explain relationship of firm resources (MCS package and corporate governance) and organisational performance. Rehman et al. (2019) stated that organisational performance is considered an important indicator for any kind of firm. For example, organisations that perform poorly consider that these organisations go to failure and vice versa. Malaysian SMEs face some major issues regarding innovation, such as variations in input prices, globalisation, increased production cost, and changes in customer preferences that constantly force to seize sustainability and competitive advantage. The Malaysian government also provides an innovative ecosystem and sufficient opportunities for manufacturing SMEs to enhance their practices (Anuar & Yusuff, 2011). Another observation conducted on Malaysian SMEs show that they lacked in technical and managerial expertise and undertook inadequate technological adoption (Hashim, 2000).

In Malaysia, SMEs faces issues regarding product innovation and organisational learning. There is a need to study these factors in determining SMEs performance (Mamun, 2018; Abdul-Halim et al., 2019). Hence, this study proposes that organisational learning and product innovation can mediate the relationship of MCS package, corporate governance, and organisational performance.

In the upcoming section, this study develops proposed hypotheses by briefly reviewing the literature on MCS package, corporate governance,

product innovation, organisational learning, and organisational performance. This research is quantitative; data were collected by using questionnaires. Then, this study empirically analyse the data and conclusions. Research implications, limitations, and future directions are explained in the final portion of this paper. This study is different than prior studies in terms of focusing on two mediators between MCS package, corporate governance, and organisational performance in accordance with RBV theory.

Literature review

RBV theory

RBV theory is used to develop a theoretical model. The theoretical framework is illustrated in Figure 1. By proposing this theoretical framework, this study contributes in different ways. First, the current research use MCS package, corporate governance, product innovation, and organisational learning to measures organisational performance using RBV theory. Second, this study introduces two mediating variables in this model, attempting to additionally describe the correlation between the MCS package, corporate governance, and organisational performance. Third, the previous research ignore working over the MCS package for SMEs (Heinicke, 2018; Taticchi et al., 2012). This study observed SMEs in Malaysia which represent the typical issues faced by emerging or developing economies (SMEinfo, 2018). Additionally, it highlights the significance of the MCS package for enhancing organisational learning and product innovation. This is because the MCS package supports groundbreaking research that quantifies these two concepts (Ittner et al., 2003; Rehman et al., 2019).

MCS package

According to Simons (1990), MCS means a formal information-based routine, and approaches that organisation managers use in their decisions to maintain firms actions. MCS package includes five elements such as planning, culture, automation (cybernetic), rewards and compensation, and administration, developed by Malmi & Brown (2008). The idea regarding MCS package is existed more than 40 years ago (Otley & Berry, 1980) and literature regularly calls to study MCS package (Chenhall, 2003; Rehman et al., 2019; Alvesson & Kärreman, 2004). Rehman et al. (2019) show that organisations perform their functions but face several issues regarding the MCS package, such as culture, planning, rewards and compensation, policies and procedures, and cybernetic-related issues that decrease their performance. Prior research mainly studied MCS in isolations to determine organisational performance in developed economies, but scant attention was paid to developing or emerging economies (Herath, 2007; Tsamenyi et al., 2011). Literature reveals that there is a need to examine MCS package in developing countries to determine the

influence of MCS package on organisational performance (Rehman et al., 2019).

Planning controls are deemed significant indicators that an organisation's management used in their decision making. Planning controls are divided into two major dimensions such as action or short-range planning and strategic or long-range planning in all kinds of organisations like small and large-scale organisations. Planning controls facilitate in directing employees' behaviour and play a crucial part in determining organisational performance. Moreover, planning controls should be a part of the organisation and cannot be ignored to determine firm performance. Cultural controls refer to a combination of symbols, attitudes, beliefs, norms, assumptions, rituals, practices, philosophies, behaviours, habits, characteristics, and shared values (persistence, honesty, discrimination avoidence, loyalty, and diligence) that an organisation uses to attain competitive advantage. The are three dimensions of cultural controls, i.e., clans-based control, value-based control, and symbol-based control, and the current study uses these three dimensions for cultural controls. In organisations, sometimes management does not control the organisation's culture; instead, the employees control. Moreover, organisations have some sub-cultures and these are called clan (Clegg et al., 2015; Rehman et al., 2019). Symbol-based culture showed visually like particular employees uniform or specific office design in the organisation (Malmi & Brown, 2008). Value-based culture means formally communicating top management to low-level management (Segon & Booth, 2013).

Cybernetic control is defined as a system that evaluates the gap between standard and actual performance. Rewards and compensation control include two-dimension such as intrinsic rewards and extrinsic rewards (Bonner & Sprinkle, 2002). Rewards and compensation control include two-dimensions such as intrinsic rewards and extrinsic rewards (Rehman et al., 2018). Incentive systems are used in organisations that are alternative to rewards and compensation controls to boost up employees and organisation performance (Rehman et al., 2019). Finally, administrative controls means firm systems which provide a path to management behaviour achieving specific objectives (Chhillar, 2013). Administrative controls include three components, i.e., policies and procedures, organisation structure and design, and governance structure (Malmi & Brown, 2008; Rehman et al., 2019).

Furthermore, levers of control signifies that the interactive use of MCS has an influence on product innovation (Bisbe & Otley, 2004; Davila et al, 2009; Henri, 2006). MCS package is considered as the most important resource for organisations that determines organisational performance (Chenhall, 2003; Ittner et al., 2003; Rehman et al., 2019). In addition, as mentioned by Hui Wee et al. (2014), MCS are significantly associated with levels of organisational

learning activities in organisations, and the use of MCS is found to be a more influential factor in it.

The capabilities that may lead to strategic choice, namely organisational learning and innovativeness, may lift one crucial aspect of MCS: performance measurement systems. Increasing the organisational performance focuses not only on improvement through learning, but also on innovation. Previous research also mentioned that organisational learning directly influences performance through innovation (Pastuszak et al., 2012; Rehman et al., 2019; Soomro, Mangi, & Shah, 2021).

On the other hand, one of the studies confirms that MCS has a weak influence on organisational performance (Junqueira, et al., 2016). Therefore, other variable is needed to explain this relationship more clearly. Based on other previous research, the integration of product innovation within the MCS framework is essential for enhancing organisational performance, as it allows firms to leverage innovative capabilities effectively (Chenhall, 2003; Ittner et al., 2003; Rehman et al., 2019). This study uses organisational learning and product innovation as mediators between the MCS package and organisational performance. Less attention has been paid to the MCS package to measure organisational learning and product innovation because literature demonstrates that MCS isolation is used to measure these variables. This is the pioneer study that uses MCS package to measure organisational performance with product innovation and organisational learning. Based on the explanation above, there are some proposed hypotheses.

H1: MCS package positively correlated with organisational performance.
H2: MCS package positively correlated with organisational learning.
H3: MCS package positively correlated with product innovation.
H4: Organisational learning meditates the correlation between MCS package and organisational performance.
H5: Product innovation meditates the correlation between MCS package and organisational performance.

Corporate governance

Corporate governance (CG) is considered a system for firms to enhance their performance (Al Nawaiseh et al., 2021). Ali (2018) highly focused on corporate governance since the big scandal in two famous companies, Enron and WorldCom. There is a need to protect stakeholders and organisations; the controlling agencies try to depress wicked practices to execute rules and regulations prohibit wicked practices, and the significant practice in corporate governance (Rankin et al., 2012). Corporate governance structure recognises a share of rights and duties among a range of participants within organisations, such as shareholders, the board of directors, and external auditors (Mansur & Tangl, 2018). A corporate governance system is pivotal for an organisations

success and due to weak corporate governance system organisations faces failure (Arora & Sharma, 2016). Hence, organisations need to develop a good corporate governance system to enhance organisational performance. This study covers five components of the corporate governance system such as board size, board diversity, board independence, board meetings held in a year, and the number of board committees. Prior research give more importance to corporate governance in examining organisational performance but scant attention paid in emerging or developing countries (Gompers et al, 2003; Al Nawaiseh et al., 2021; Pass, 2004). Findings in developed economies are different than findings in developing economies even with a similar framework and theory (Arora & Sharma, 2016). One of the recent studies shows that corporate governance and firm performance is the most vital topics, and these variables not conclusive and call further studies on this topic (Mardnly et al., 2018).

Board size means a total number of directors, including independent or external directors, and executive directors, which consist of managing directors or chief financial officers (Pfeffer, 1972). Jensen & Meckling (1976) stated that agency theory shows that a board size with smaller members has higher management control rather than a large board size. Moreover, a smaller board facilitates organisations in increasing their performance; it also shows that a larger board (at least seven members) creates lots of issues like lack of commitment, moral hazard, more control from the CEO side, and ineffective operations. A reasonable board size is more effective rather than a large board in controlling organisational activities, and a large board size decreases organisational performance (García-Ramos & García-Olalla, 2011). Board independence refers to a situation where most board members are outsiders or independent and have no affiliation with top management and no or minimal business transactions with the organisation to avoid possible conflicts of interest. Board independence is considered an important factor that increases firm performance (Daily & Dalton, 1993). There are two theories, human capital theory (HCT) and resource dependency theory (RDT), that explain the relationship between board diversity and organisational performance. RDT suggests that firms depend on their surroundings (Pfeffer, 1972). HCT highlights that the knowledge and skills of the board of directors influence the effectiveness and implementation of resource provision and observing roles (Hillman et al., 2003). The compatibility of RDT and HCT is based on the assumption that board diversity improves organisational performance (Kim et al., 2013). Vafeas (1999) made a first-person gives argument that board meetings are considered important in increasing firms' performance. The board of directors is normally considered a critical control mechanism that examines decision-making actions (Lam & Lee, 2012). Meanwhile, the monitoring of the board of directors could be increased by creating a board committee, the

purpose of which is to highlight board responsibilities (Higgs, 2003). Furthermore, this committee provides better results when it includes non-executive directors (Lam & Lee, 2012). The explanations just show components of the corporate governance system.

When they stick to the postulates of corporate governance, businesses may create organisational learning (Kearney & Kruger, 2013; Belloc, 2012; Sidani & Reese, 2018). Similarly, Al Nawaiseh et al., (2021) mentioned that corporate governance have a significant effect on organisational learning dimension. Furthermore, this is not only organisational learning which is correlated by corporate governance, but the innovation's activity is also shaped by other previous research (Belloc, 2012; Shapiro et al., 2015; Rafferty & O'Connor, 2011). Those previous research also suggested that future study may focus more on the interrelation between corporate governance' dimensions and on firm innovation. Although Shapiro et al. (2015) mentioned that they find limited evidence that corporate governance affects innovation performance, still the results depend on the measure of innovation.

This study used organisational learning and product innovation to mediate variables between corporate governance and organisational performance. This is the pioneer study that uses corporate governance to examine organisational performance with product innovation and organisational learning. Based on the explanation above, this study proposed the following hypotheses.

H6: Corporate governance positively correlated organisational performance.
H7: Corporate governance positively correlated organisational learning.
H8: Corporate governance positively correlated product innovation.
H9: Organisational learning meditates the correlation between corporate governance and organisational performance.
H10: Productive innovation meditates the correlation between corporate governance and organisational performance.

Organisational learning and product innovation

Organisational learning refers to a procedure to create, keep, transfer, and deliver fresh knowledge in firms that significantly enhance organisational performance (Rehman et al., 2019). Additionally, if top management works over organisational learning, then it can gain an advantage over competitors. Organisations ought to be more responsive and adaptive to keep learning in every strategic decision to anticipate the internal environment and overlook a competitive market (Pawirosumarto et al., 2017). The literature demonstrates that organisational learning significantly increases organisational performance in accordance with the RBV theory. Previous study recommend that small organisations should focus on innovation (Martínez-Román & Romero, 2013). Although not all innovations can instantly provide financial benefits to

organisations, organisations can get benefits in the long run and attain a competitive advantage. Innovation and organisational learning significantly increase financial performance (Henri, 2006). Previous studies also found that organisations that prioritise learning are more likely to achieve and sustain competitive advantages, as they can quickly respond to market dynamics and internal challenges. Therefore, fostering a strong organisational learning environment is crucial for long-term success and enhanced performance (Zgrzywa-Ziemak, 2015; Xia, 2022; Yeo, 2023). Previous studies also found that product innovation is positively associated with organisational performance as it allows companies to differentiate themselves from competitors, meet changing consumer demands, and capture new market opportunities (Akgün & Keskin, 2014; Tatikonda & Montoya-Weiss, 2001; Guimarães et al., 2016). Based on the explanation above, there are some proposed hypotheses.

H11: Organisational learning positively associated with organisational performance.

H12: Product innovation positively associated with organisational performance.

Research method

This research follows a quantitative technique and data gathered from respondents by using questionnaires, since questionnaire is more legitimate and convenience method to collect data from a huge number of people within a period of time. The deductive reasoning approach is followed in a situation where the theoretical model of a study developed on the base of some existing well-established theories as suggested by Rehman et al. (2019). The theoretical model developed in light of the RBV theory. Hence, this study followed the deductive reasoning approach rather than the inductive reasoning approach.

This study covers a total of 5 main constructs, i.e., MCS as a package, organisational learning, corporate governance, product innovation, and organisational performance, as shows on Figure 1. The instrument used in this research is a structured questionnaire. The items are adapted from some prior studies regarding these variables to measure variables. MCS package consists of five elements, i.e., 16 measurement items of cultural control (Sampe, 2012), 13 measurement items of planning control, 8 measurement items of cybernetic control, 6 measurement items of reward and compensation control (Hanzlick & Brühl, 2013), and 9 measurement items of administrative control (Ramamurthy, 1991). Corporate governance includes five components, which are 5 measurement items of board size, 3 measurement items of board independence, 6 measurement items of board diversity, 5 measurement items of board committees numbers, and 4 measurement items of board meetings held in a year (Honghui, 2017). Organisational learning is measured using 4

items adapted from Hult (1998); financial performance is measured using 3 items adapted from Henri (2006); and non-financial performance is measured using 8 items adopted from Teeratansirikool et al. (2013). The current research measured production innovation using 4 items adopted from Bisbe & Otley (2004). The details of measurement items are available in Appendix 1. The questionnaires were distributed among SME's owners/directors in Malaysia by using personal administered and a postal survey.

Figure 1.
Theoretical framework

Source: Authors' work (2024)

Population and sampling

The population of this study is on SMEs in Malaysia and the respondents are SMEs owners/directors. Malaysian SMEs is chosen as the study context since a lack of attention has been given over MCS package, corporate governance, organisational learning, and product innovation to measure organisational performance. The number of 907,065 SMEs recorded on Malaysian websites (SMEinfo, 2018). Malaysian SMEs are further divided into various heads such as construction, manufacturing, mining, services and quarrying, and one is agriculture. This study follows area cluster sampling

because SMEs are situated in a wide range area in geographical terms. The first step is to define the clusters and then select the clusters randomly. There are several benefits to choose cluster sampling. First, this research technique is more appropriate in a case where the population reaches over a broader region/scope. Second, this technique reduces data collection costs and covers a significant geographical area only in a short time (Sekaran & Bougie, 2016). Clusters are formed on the basis of states. There are 16 states in Malaysia where the SMEs situated. The demonstration of the percentage of SMEs in Malaysia can be seen in Appendix 2. Every state is deemed as a cluster and a total of 8 clusters such as Kedah, Sarawak, Perak, Kuala Lumpur, Sabah, Pinang, Johor, and Selangor randomly selected because 79.4 % SME's are operating.

Sample size

There are various categories of sample size presented by Comrey and Lee (1992). For instance, if sample size <50 is deemed weaker, in the range of 51 to 100 is deemed weak sample size, between 101 to 200 is adequate, within 300 is the sufficient sample size, then, 500 is very good, and 1000 is deemed to excellent sample. This research distributed a thousand questionnaires to SMEs' managers/owners. The reason to select managers/owners because they are more educated and know regarding MCS package, corporate governance, organisational learning, product innovation, and organisational performance. Out of 1,000 questionnaires, only 389 questionnaires received, 20 data were eliminated due to ambiguous values. The 369 questionnaires applied to final analysis that equals to 36.90% response rate.

Data analysis

This study used Partial Least Square – Structural Equation Modelling (PLS-SEM) to analyse the data. The rationale considered to choose PLS-SEM are: the technique is useful for complex and simple models, no need for test of normality, and this technique is preferable to execute estimation rather than regression. Besides this, the literature reveals that PLS-SEM is superior as compared to the CB-SEM technique. PLS-SEM have structural model and measurement. The PLS-SEM analysis in this study is used SmartPLS (Hair et al., 2014).

Results

Demographic profile

Table 1 shows the detail respondent's demographic profile. Based on gender, 58.54% respondents are male. Additionally, more than 90% respondents accomplished senior high school.

Table 1.

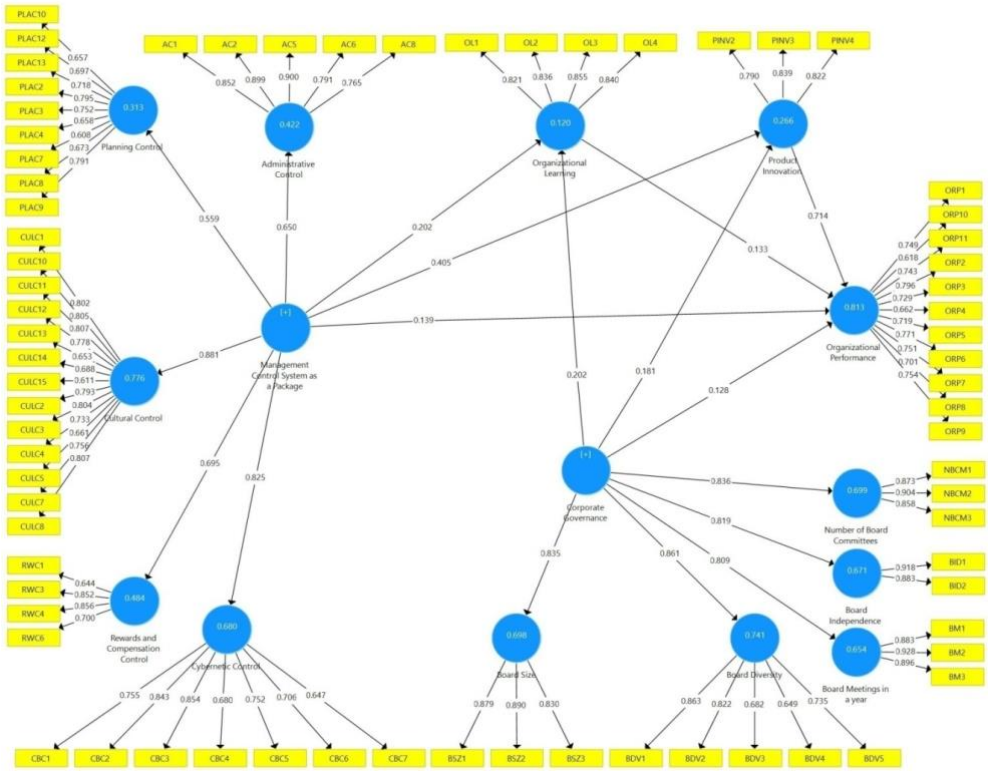
Respondent's demographic profile

Description	Categorisation	Frequency	Percentage
Gender	Male	216	58.54
	Female	153	
Qualification	Junior High School	9	2
	Senior High School	28	8
	Bachelor Degree	266	72
	Masters and Doctorate Degree	66	18

Source: Authors' work (2024)

Figure 2.

Measurement model



Source: Author's work (2024)

Measurement (outer model)

The models of measurement cover convergent and discriminant validity as stated by Hair et al. (2014). Figure 2 shows the measurement model. The details of convergent validity and discriminant validity analysis is explained in the below sections.

Convergent validity

This validity attributes a situation where researchers observe that specific items of variable measure that specific one (Rehman et al., 2019). Fornell and Larcker (1981) mentioned that factors loading, composite reliability (CR), and average variance extracted (AVE) required to compute convergent validity.

The factors loading value, CR, and AVE should be equals to or higher than 0.50, 0.60, and 0.50 respectively (Hair et al., 2014).

One of the studies confirms that eliminate all items having loading of factors less than 0.50 is needed to attain good results of both CR and AVE (Hayduk & Littvay, 2012). The items that have loadings of factor less than 0.50 should be deleted to strengthen the theoretical framework (Rehman et al., 2019). Nunnally (1978) stated that the value of Cronbach's alpha should be higher than 0.60. The results meet the criteria of convergent validity (Appendix 3).

Discriminant validity

Discriminant validity defines as a position where the researchers confirm that 2 indicators vary in terms of statistics (Rehman et al., 2019). Besides, it explains the degree to which a construct varies from other variables on some empirical gauges (Hair et al., 2014). This research measures discriminant validity to use one of the approach presented by Fornell and Larcker (1981). The first step to analysis this validity is by comparing the values of AVE with the squared correlations. The next step is to compare the AVE square root with correlation. This research utilised the second method to measure discriminant validity. According to Rehman et al. (2019), upper diagonal values in the discriminant validity table should be greater than beneath values. In this research, traditional metric of discriminant validity that proposed by Fornell-Larker is not suitable for discriminant validity.

Table 2.
Discriminant validity (HTMT)

Variables	CG	MCSP	OL	ORP	PINV
Corporate Governance (CG)					
Management Control System as a Package (MCSP)	0.487				
Organisational Learning (OL)	0.331	0.341			
Organisational Performance (ORP)	0.537	0.647	0.453		
Product Innovation (PINV)	0.430	0.590	0.316	0.802	

Source: Authors' work (2024)

For instance, Henseler et al. (2015) stated that Fornell-Larker criterion for discriminant validity does not present well, primarily when all indicators has the loadings with a smaller differentiation like factor loadings between 0.65 to 0.85. Heterotrait-monotrait ratio (HTMT) of correlation replace used to measure discriminant validity on the replacement of Fornell-Larker. The HTMT's value should be smaller than 0.85 for variables that are highly distinct. Moreover, the value of HTMT can be at most 0.90 for those constructs that are conceptually similar. Table 2 and Appendix 3 demonstrate that there is no issue of discriminant validity.

Structural (inner model)

The inner model consists of an algorithm of PLS and the technique of bootstrapping. Bootstrapping with the 5,000 subsamples should be run to get better results (Hair et al., 2017). This research has 8 direct and 4 indirect hypotheses sequentially.

The MCS package increases organisational performance as (beta=0.148, t=3.989, ρ=0.000) and H1 supported. MCS package enhances organisational learning as (beta=0.346, t=4.971, ρ =0.000) and accepted H2. MCS package significantly enhances product innovation as (beta=0.478, t=8.522, ρ =0.000) and H3 supported.

Organisational learning and product innovation mediate MCS package and organisational performance. This results support H4 and H5. Corporate governance significantly increases performance (beta=0.135, t=4.513, ρ =0.000) and accepted H6. Corporate governance significantly improves organisational learning (beta=0.136, t=2.114, ρ =0.035) and supported H7. Corporate governance significant influence on product innovation (beta=0.151, t=2.843, ρ =0.005) and supported H8. Organisational learning and product innovation significantly mediate corporate governance and performance. This results support H9 and H10. Organisational learning and product innovation significantly enhance organisational performance. This results support H11 and H12.

The predictive relevant of research model

Predictive relevance of this study framework requires R-square (R^2) and cross-validated redundancy (Q^2) (Geisser, 1974; Stone, 1974). R^2 refers explanation of endogenous construct by all endogenous variables. This study shows that 12% organisational learning and 26.6% product innovation enlighten MCS package and corporate governance, while 81.3% organisational performance explains all exogenous variables (Appendix 4). According to Cohen (1988), R^2 divided into different categories: weak (0.02 to 0.13), moderate (0.13 to 0.26), and substantial where R^2 greater than 0.26.

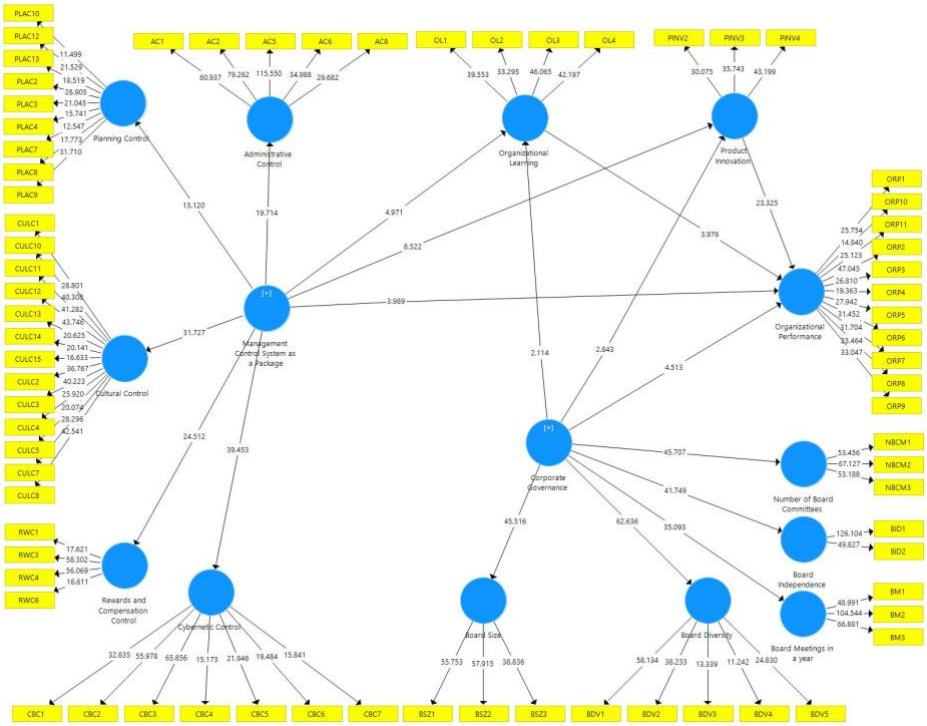
Hence, organisational learning falls under small. Product innovation and organisational performance lie in the substantial. Q^2 is used to examine theoretical framework quality. For this purpose, blindfolding technique is use to eliminate data that includes missing values. The literature demonstrates that the value of $Q^2 > 0$ (Chin, 1998). Appendix 5 reveals that the requirement is fulfilled.

The effect side of the model

The effect size refers to how an individual exogenous variable influences an endogenous variable. Cohen (1988) mentioned that effect sizes can be categorised as large (f^2=0.35), medium (f^2=0.15), and small (f^2=0.02). It means

that the MCS package, corporate governance, and organisational learning have a small effect size of 0.067, 0.074, and 0.057 respectively. Product innovation has a large effect size of 1.779.

Figure 3.
Structural model



Source: Authors' work (2024)

Discussion

The outcomes elucidate that the MCS package significantly enhances organisational performance. The findings show that SMEs in Malaysia provide the importances of MCS package to measure organisational performance. The outcomes are consistent with previous studies (Chenhall, 2003; Ittner et al., 2003; Rehman et al., 2019) that the MCS package advances organisational performance. This result is also consistent with previous research, which shows a positive significant effect of enabling MCS on performance (Ismail et al., 2019). MCS provides direction for innovative and efficient strategic efforts with limited resources. MCS helps top managers formulate strategies, determine operational actions, implement strategies, clarify expectations, identify priorities for operational improvement, and set targets and improve performance (Simons, 1995). However, another finding argues that not all management control practices are relevant when studied simultaneously as a package (Bedford et al., 2016).

MCS package enhances organisation learning and product innovation. This research measures organisation learning and product innovation with the

support of the MCS package. Organisational learning and product innovation significantly mediate between the MCS package and organisational performance. This result is in line with previous research that found the mediating effect of organisational learning on the relationship between MCS use and individual performance in an organisation (Beuren et al., 2021). It is consistent with the resource-based theory (RBV) approach, which states that resources can provide more economic advantage to owners with limited availability of resources. RBV assumes that a business entity must have resources as the capabilities to achieve competitive advantage (Ismail et al., 2019). In reference to RBV theory, organisational capabilities (organisation learning and product innovation) significantly describe the organisational performance.

Corporate governance significantly enhances organisational performance. The outcomes show that corporate governance is importance in determining Malaysian SMEs' organisational performance. This study used five elements of corporate governance in a single study to decide the organisational performance. It aligns with previous research, enlightening SME owners and managers on the benefits of corporate governance for SMEs (Singh & Rastogi, 2023).

In addition, corporate governance boosts up organisational learning and product innovation. Organisational learning and product innovation significantly mediate between corporate governance and organisational performance. RBV theory supported these findings that organisational capacities (organisational learning and product innovation) significantly meditate between organisational assets (corporate governance) and organisational performance. Innovation is a process through which entrepreneurs convert through workable, profitable market opportunities and valuable ideas. This process is from the point of view of RBV. Successful innovation is valuable, rare, inimitable, and irreplaceable with other products (Barney, 1991). Innovation in SMEs is an active response to their main competitors by adopting new ways of doing things (such as innovations in processes). SMEs that desired to use new ways of doing things, tried unusual ways, solved problems in new ways, and encouraged employees to think and work differently had higher performance than their competitors. SMEs with high levels of innovation would get high performance (Ismail et al., 2019; Saunders et al., 2014).

Finally, organisational learning, as well as production innovation, significantly boosts the performance of Malaysian SMEs. The results are in accordance with Henri (2006) that organisational learning and product innovation significantly elevate organisational performance. In another word, the capabilities which may lead to strategic choice, namely innovativeness and organisational learning may lift up one crucial aspect of MCS, that is

performance measurement systems as mentioned above. Increasing the organisational performance focuses not only on improvement through learning, but also on innovation (Chenhall, 2003; Ittner et al., 2003; Pastuszak et al., 2012; Rehman et al., 2019).

The study contributes in theory to examine the mediating effect of organisational learning and PINV between MCS package, corporate governance, and organisational performance as previous studies ignored. Besides, organisational learning and product innovation can be used in the future to clarify between MCS package, corporate governance, and organisational performance for any kind of organisation.

This research has a variety of practical contributions and facilitates Malaysian SMEs' owners/managers in improving organisational performance. This study reveals that MCS package, corporate governance, organisational learning and product innovation enhance organisational performance. This research suggests that owners/managers should focus on MCS package, corporate governance, organisational learning, and product innovation if they want to boost organisational performance. SME owners and managers should align their interests with external investors to maintain good governance and make long-term financial stability viable (Singh & Rastogi, 2023). Innovation presence in SME organisations was supported by the active role of all organisational members in finding creative ideas (Ismail et al., 2019). SMEs should appreciate the employees who bring up helpful new ideas for improving their business activities. Additionally, the results provide insights to managers by revealing that MCS can boost performance through organisational learning, which has several attitudes, such as generating cooperative, persistent and initiative-taking behaviours (Beuren et al., 2021). The findings demonstrate organisational capabilities (organisational learning and product innovation) significantly mediate between firm resources (MCS package, corporate governance) and organisational performance. The findings can be used by Malaysian government iniciatives to increase SME's performance, for example by providing easy access or simple procedure to obtain the working capital as well as providing training and consultancy program.

This study has profound implications for understanding the interconnectedness of management control systems (MCS), corporate governance, organisational learning, and product innovation in driving organisational performance within SMEs in Malaysia. The findings underscore the critical role that MCS and corporate governance play in providing a structured framework that facilitates organisational learning and fosters product innovation. These elements, in turn, serve as key catalysts for enhancing overall organisational performance, as posited by the Resource-Based View (RBV) theory. The RBV theory emphasizes that organisational resources, when effectively managed and developed, can lead to sustained

competitive advantages. In this context, the study's results highlight that MCS and corporate governance are not just mechanisms of control but also enablers of dynamic capabilities, such as learning and innovation, which are essential for SMEs to thrive in competitive markets.

Conclusion, limitation, and future research

The research reveals that MCS package, corporate governance, organisational learning, and product innovation significantly increase the organisational performance in Malaysian SMEs. Besides, the current research reveals that organisational learning and product innovation explain the MCS package, corporate governance, and the organisational performance. Organisational learning and product innovation significantly enlighten the MCS package, corporate governance, and organisational performance as recommended by the RBV theory. This study is carried out in Malaysia and future research can carry out another study on the similar theoretical framework in other countries. Further research can also include several countries that have similiarities.

Moreover, the research contributes to the existing body of knowledge by demonstrating that organisational learning and product innovation are not only outcomes of effective MCS and corporate governance but also vital components that mediate the relationship between these systems and organisational performance. This bidirectional relationship suggests that SMEs that invest in learning and innovation are better equipped to leverage their MCS and corporate governance structures to achieve superior performance. This insight is particularly valuable for SMEs in emerging economies like Malaysia, where resource constraints often necessitate a more strategic and integrated approach to management.

Future research should expand on these findings by exploring the applicability of this theoretical framework in other national contexts, especially in countries with similar economic environments and challenges as Malaysia. Cross-country comparative studies could provide deeper insights into how cultural, economic, and regulatory differences influence the effectiveness of MCS, corporate governance, organisational learning, and product innovation in enhancing organisational performance.

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Author contribution

Irma Tyasari: Designed and performed experiments, analysed and intepreted the data, wrote the paper. **Imran Arshad**: Designed and performed experiments, analysed and intepreted the data, wrote the paper. **Supami Wahyu Setiyowati:** collected data and materials, analysed data, wrote paper.

Declaration of interest

We declare that there have no financial or non-financial interest which may consider as potential conflict of interest

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Appendix 1.

The main's construct of the study

Variable and dimension	Items	Source
Organisational Performance		
Financial Performance	The organisation profit increase gradually within the last three years.	(Henri, 2006)
	The organisation sales volume increases gradually within the last three years.	
	The organisation return on investment increase gradually within the last three years.	
Non-Financial Performance	The number of new products in my organisation increase within the last three years	(Teeratansirikool et al., 2013)
	The organisation market share increases significantly within the last three years	
	The organisation market development increase significantly within the last three years	
	The organisation quality of product/services of organisation increase within the last three years	
	The organisation employee commitment or loyalty to the organisation increases within the last three years	
	The organisation employee productivity increase within the last three years	
	The organisation personnel development increases the last three years	
	The organisation employee job satisfaction increases the last three years	
Management Control Systems		
Planning Control	My organisation planning control has vision, strategic intent, new markets, and new technologies.	(Hanzlick & Brühl, 2013)
	My organisation planning control focuses on EVA (economic value added), ROCE (return on capital employed), sales turnover, market share, brand value.	
	My organisation planning control clearly outlined the organisation aims and how to proceed.	

Variable and dimension	Items	Source
	My organisation planning control accurate (e.g., implementation/ achievement can be decided with confidence). My organisation planning focus on the organisational objectives. My organisation planning gives emphasis to build strong competitive advantages. My organisation subordinates short-term plan contains information about Progress in activities. My organisation subordinate short-term plan contains about coordinating activities. My organisation short-term plan contains information about financial resource requirements. My organisation short-term plan contains information about human resource requirements. My organisation short-term plan contains information about skills and competency requirements. My organisation short-term plan contains information about information technology-resource requirements. My organisation focuses attention on strategic uncertainties (i.e. threats and opportunities)	
Cybernetic Control	My organisation identifies crucial performance variables that indicate progress towards strategic objectives. My organisation set targets for crucial performance variables. My organisation monitor's progress in order to correct deviations from pre-set performance targets (diagnostic use). My organisation provides a recurring and frequent agenda for top management activities. My organisation provides a recurring and frequent agenda for subordinate activities. My organisation enables continual challenge of fundamental data, assumptions and plans of action with subordinates. My organisation allocates resources efficiently among different units in an organisation. My organisation encourages and facilitates dialogue/discussion and information sharing with subordinates (interactive use)	(Hanzlick & Brühl, 2013)
Rewards and Compensation Control	My organisation uses financial reward to increase commitment of the staffs. My organisation uses financial reward to motivate staff. My organisation uses financial reward to direct the attention of staffs toward goals achievement. My organisation uses non-financial reward to increase commitment of the staffs My organisation uses non-financial reward to motivate staff	(Hanzlick & Brühl, 2013)

Variable and dimension	Items	Source
	My organisation uses non-financial reward to direct the attention of staffs towards goals achievement	
Cultural Control	My organisation all decision-making is prepared through a rational process.	(Sampe, 2012)
	My organisation examines the impact of decisions on workers morale.	
	My organisation prepares systems to measure gaps between current and expected performance.	
	My organisation all members share a common sense of mission that most think is worth striving to achieve.	
	My organisation co-operation amongst departments.	
	Innovation is the most important goal or achievement of the organisation	
	My organisation culture to receive new ideas from organisational customers.	
	The structure supports its strategic direction.	
	My organisational culture is innovative.	
	My organisational structure allows workers to work effectively.	
	My organisation has built a culture of trust amongst workers.	
	My organisation has developed operational procedures to help workers to work efficiently	
Administrative Control	Decisions on the introduction of new products/services are made only at the level of top management.	(Ramamurthy, 1991)
	In addition to smaller investments, decisions about the capital budget are usually made only at the level of top management.	
	Pricing is adopted only at the level of top management.	
	Decision to enter a new market is made at the level of top management.	
	Decision of important changes in the production process is made at the level of top management.	
	Decisions on personnel policy usually bring top management.	
	The rules and procedures are clearly documented.	
	A lot of reliance on the rules and procedures in order to meet operational needs.	
	Violations documented procedures are not tolerated	
Organisational Learning	Ability to learn is the key improvement	(Hult, 1998)
	Basic values include learning as a key to betterment	
	Once we quit learning, we endanger our future	
	Employee learning is an investment, not an expense	
Product Innovation	For the last 3 years, we have launched more new products in the market than the average of industry.	Bisbe & Otley (2004)

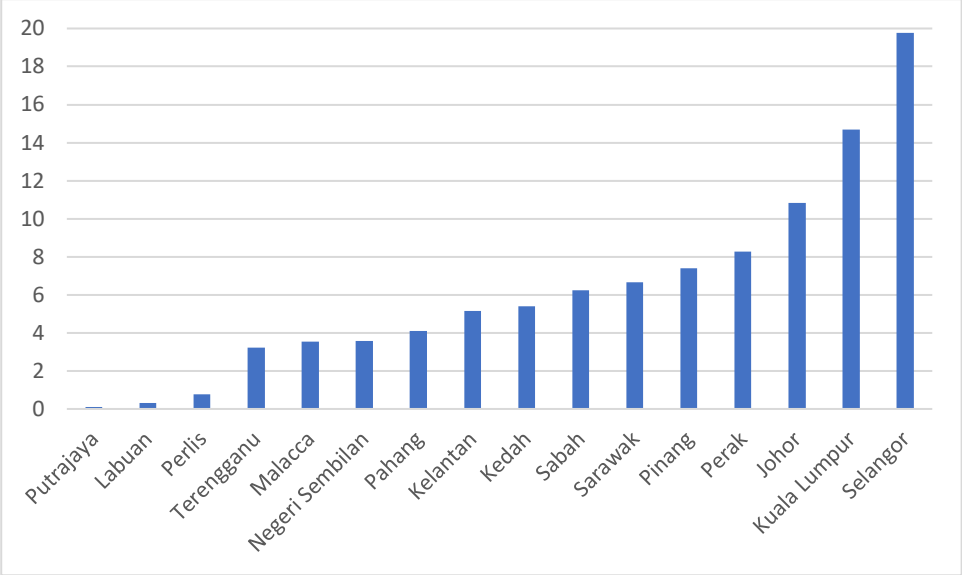
Variable and dimension	Items	Source
	The organisation is more often first-in-market with new products compared with the average of industry.	
	The percentage of new products launched in the product portfolio is much higher than the average of industry.	
	The organisation has probably more new products at the developmental phase to be launched next year than the average of industry	
Corporate Governance		
Size of Board	Smaller board enhance firm performance	
	Larger size of board is more adept in the resources' provision	
	Large board of directors are given to more conflicts among board members which makes it more difficult to achieve agreement	
	The firm benefit from larger boards since they provide effective oversight of management and escalate or rise resource availability in the organisation which lead to the improvement of organisational performance	
	A large board will bring more expertise and experience to the board	
Independence of Board	The number of executive directors is higher than that of non-executive directors	(Honghui, 2017)
	The board is more independent when the portion of outside directors' increase	
	Executive directors are better placed in handling the affairs of the organisation since they have a deeper understanding of the organisation's operations.	
Diversity of Board	Appointment of board members has always considered a mix of skills required in the stewardship of the organisation	(Honghui, 2017)
	The organisations board appointment process has been political	
	A member academic qualification has been considered before for appointment of the organisation board	
	All stakeholders have been involved in the board's appointment	
	The board has been composed of both gender	
	The board members have been relevant industry experience required to steward the organisation	
The meeting of Board held in a year	There is poor attendance in board meetings	(Honghui, 2017)
	All the board meetings have been relevant to the organisations mandate	
	The meetings of board have been chaired by board members with the relevant qualifications	
	There have been other members attending board meetings even when they are not gazette as its members	
	The total of board meetings has an influence on firm performance	

Variable and dimension	Items	Source
Number of board committees	There is an audit committee established on the board Independent committee would focus on improving the company competitive and performance Audit committee are not effective against risk they are just overloaded The existence of independent committee enhances financial performance of the organisation	(Honghui, 2017)

Source: Author's work (2024)

Appendix 2.

SME's Percentage in States of Malaysia



Source: Author's work (2024)

Appendix 3.

Convergent validity

1st Order Constructs	2nd -Order Construct	Items	Factor Loading	AVE	CR	R^2	Cronbach's Alpha
Controls of Planning		PLAC 10	0.657	0.501	0.900		0.875
		PLAC 12	0.697				
		PLC 13	0.718				
		PLC 2	0.795				
		PLC 3	0.752				
		PLC 4	0.658				
		PLC 7	0.608				
		PLC 8	0.673				
		PLC 9	0.791				
Cultural Control		CLC 1	0.802	0.561	0.943		0.934
		CLC 10	0.805				
		CLC 11	0.807				
		CLC 12	0.778				
		CLC C 13	0.653				
		CLC 14	0.688				
		CLC 15	0.611				
		CLC 2	0.793				
		CLC 3	0.804				

1st Order Constructs	2nd -Order Construct	Items	Factor Loading	AVE	CR	R^2	Cronbach's Alpha
		CLC 4	0.733				
		CLC 5	0.661				
		CLC 7	0.756				
		CLC 8	0.807				
Cybernetic Control		CBC 1	0.755	0.565	0.900		0.871
		CBC 2	0.843				
		CBC 3	0.854				
		CBC 4	0.680				
		CBC 5	0.752				
		CBC 6	0.706				
		CBC 7	0.647				
Rewards' Control and Compensation		RWC 1	0.644	0.591	0.851		0.764
		RWC 3	0.852				
		RWC 4	0.656				
		RWC 6	0.700				
Administrative Control		AC 1	0.852	0.711	0.924		0.897
		AC 2	0.899				
		AC 5	0.900				
		AC 6	0.791				
		AC 8	0.765				
	Management Control System as a Package	Control of Planning	0.559	0.535	0.849		0.939
		Cultural Control	0.881				
		Cybernetic Control	0.825				
		Rewards' Control and Compensation	0.695				
		Administrative Control	0.650				
Organisational Learning		OL 1	0.821	0.703	0.904	0.120	0.859
		OL 2	0.836				
		OL 3	0.855				
		OL 4	0.840				
Product Innovation		PINV 1	0.790	0.668	0.858	0.266	0.751
		PINV 3	0.839				
		PINV 4	0.822				
Board Size		BSZ 1	0.879	0.751	0.900		
		BSZ 2	0.890				0.834
		BSZ 3	0.830				
Diversity of Board		BRV 1	0.863	0.569	0.867		
		BRV 2	0.822				
		BRV 3	0.682				0.814
		BRV 4	0.649				
		BRV 5	0.735				
Number of Board Committees		NBCM 1	0.873	0.772	0.910		
		NBCM 2	0.904				0.852
		NBCM 3	0.858				
Board Independence		BID 1	0.918	0.812	0.896		
		BID 2	0.883				0.769
		BM 1	0.883	0.815	0.930		0.886

1st Order Constructs	2nd -Order Construct	Items	Factor Loading	AVE	CR	R^2	Cronbach's Alpha
Board Meetings in a Year		BM 2	0.928				
		BM 3	0.896				
	Corporate Governance	Size of Board	0.835	0.693	0.918		
		Diversity of Board	0.861				
		Number of Board Committees	0.836				0.930
		Board Independence					
		Board Meetings in a Year	0.819				
			0.809				
Organisational Performance		OGP 1	0.749	0.530	0.925	0.813	
		OGP 10	0.618				
		OGP 11	0.743				
		OGP 2	0.796				
		OGP 3	0.729				
		OGP 4	0.662				0.911
		OGP 5	0.719				
		OGP 6	0.771				
		OGP 7	0.751				
		OGP 8	0.701				
		OGP 9	0.754				

Source: Author's work (2024)

Appendix 4.

Direct and indirect relationships

Hypotheses	Paths	Beta value	Std. Dev.	T-values	P-values	Results
H1	MCSP → ORP	0.148	0.037	3.989	0.000	Significant
H2	MCSP → OL	0.346	0.070	4.971	0.000	Significant
H3	MCSP → PINV	0.478	0.056	8.522	0.000	Significant
H4	MCSP → OL → ORP	0.040	0.013	2.989	0.003	Significant
H5	MCSP → PINV → ORP	0.336	0.039	8.539	0.000	Significant
H6	CG → ORP	0.135	0.030	4.513	0.000	Significant
H7	CG → OL	0.136	0.065	2.114	0.035	Significant
H8	CG → PINV	0.151	0.053	2.843	0.005	Significant
H9	CG → OL → ORP	0.016	0.009	2.882	0.003	Significant
H10	CG → PINV → ORP	0.106	0.037	2.871	0.004	Significant
H11	OL → ORP	0.114	0.029	3.976	0.000	Significant
H12	PINV → ORP	0.703	0.030	23.325	0.000	Significant

Note. MCSP= Management control system as a package; CG= Corporate governance; OL= Organisational learning; PINV= Product innovation; ORP = Organisational performance.
Source: Author's work (2024)

Appendix 5.

Predictive relevance of the model

Variables	R^2	SSO	SSE	Q^2(=1-SSE/SSO)
Organisational learning	0.120	1476.0	1362.4	0.077
Product Innovation	0.266	1107.0	923.16	0.166
Organisational Performance	0.813	4059.0	2492.4	0.386

Source: Author's work (2024)