

THE ROLE OF MANAGEMENT ACCOUNTING INFORMATION IN IMPROVING THE PERFORMANCE OF THE MANUFACTURING INDUSTRY IN MALAYSIA DURING THE INTENSITY OF MARKET COMPETITION

Nur Farzanie Jaafar* and Raman Noordin

Faculty of Business, Economics and Accountancy
Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia.

*Corresponding author's email:
nurfarzaniebintijaafar@gmail.com

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ABSTRACT

This study aims to understand the impact of the intensity of market competition on the performance of the manufacturing industry in Malaysia. It also examines how management accounting information mediates the relationship between the intensity of market competition and the performance of the manufacturing industry in Malaysia. This study focuses on the manufacturing industry in Malaysia. Data consists of 74 electrical and electronics manufacturing companies that are listed in the Federation of Malaysian Manufacturers (FMM) directory. The analysis is conducted using the Statistical Package for the Social Sciences (SPSS) and Partial Least Square-Structural Equation (PLS-SEM). The findings suggest that the intensity of market competition is related positively to the performance of the manufacturing industry in Malaysia. Also, management accounting information plays a mediating role between the intensity of market competition and the performance of the manufacturing industry in Malaysia. This study contributes to the management accounting literature by expanding the understanding of using management accounting information in improving the performance of the manufacturing industry in Malaysia during the intensity of market competition. Also, the findings of this study give empirical evidence to the practitioners that the intensity of market competition positively influenced organizational performance, and that the use of management accounting information supports managers to improve organizational performance.

INTRODUCTION

The manufacturing industry in Malaysia is considered to be one of the largest contributors to economic growth which this industry contributes to Malaysia gross domestic product (GDP). The government has transformed the manufacturing industry as part of the country's development to ensure that it continues to contribute to the economy, especially over the long term. Manufacturing share to Malaysia GDP can be seen increasing from year to year. In 2019, the manufacturing share to GDP has increased to RM296.4 billion from RM283.1 billion in 2018 (Economic Planning Unit Malaysia, 2019). Besides being one of the largest contributors to Malaysia GDP, the manufacturing industry is also the main contributor to Malaysia export products. There are various products such as electrical and electronics, petroleum, chemicals, metals, liquefied natural gas, machinery, equipment and parts, optical and scientific equipment, palm oil, crude petroleum, rubber, and other products are exported abroad countries. In 2020, manufacturing gross exports increased to RM847.66 billion from RM834.15 billion in 2019 (MATRADE, 2019).

Electrical and electronics products are the most exported products in the manufacturing industry due to the high demand for parts and accessories for computers, parts and accessories of telephone sets and other telecommunication equipment, parts and accessories for office machines, computers, and semiconductors. In 2020, the contribution of the electrical and electronics sector towards manufacturing exports has increased to RM386.11 billion from RM372.67 billion in 2019 (MATRADE, 2019). The high demand for electrical and electronics products from countries like China, Singapore, Vietnam, the USA, South Korea, and Hong Kong has increased the performance of manufacturing gross exports.

However, the business environment in the manufacturing industry is changing rapidly due to the increase in globalization and increase in technology development which has affected the structures, operational processes, and managerial works of the Malaysian manufacturing industry (Ismail & Isa, 2011). Regarding this matter, the electrical and electronics manufacturing sector in Malaysia is facing problems in maintaining its performance, especially the export products performance. By referring to the statistic report prepared by Malaysia External Trade Development Corporation [MATRADE] (2020), there is an inconsistency in the performance of the electrical and electronics manufacturing sector for the past six years. Although there has been an increase in the performance of electrical and electronics export products for the past six years, the performance only slightly increases in a small percentage. For example, the performance of electrical and electronics export products in 2017 is increased by just 0.1 per cent compared to 2015, which increased by 2.1 per cent (MATRADE, 2019). Meanwhile, in 2019, the performance of electrical and electronics export products is declined by 0.2 per cent (MATRADE, 2019). Therefore, this matter is highlighted as a problem statement or the issue in this study.

The government is greatly concerned about this issue because the electrical and electronics manufacturing sector not only contributes to the growth of the Malaysian economy but also contributes to the advancement of Malaysian technology. The changing manufacturing business environment has exposed the Malaysian manufacturing industry to strong competition from countries such as China, Singapore, Taiwan, and ASEAN countries. Due to this strong competition, market competition has become highly intense and this has caused difficulty for the electrical and electronics manufacturing sector to maintain its global growth. Besides that, the intensity of market competition has led the manufacturing

industry to deal with some uncertainties (Clarke & Tagoe, 2002) like changes in technology, increase in the product range, and decrease in the product life cycle (Partiar & Mia, 2008; Ismail et al., 2018a). Additionally, prior studies have demonstrated that every organizational business environment has several external factors that can affect the performance of the organization (Chong & Rundus, 2004; Al Rfou, 2012). For example, external factors like market competition, globalization, and technologies can affect the performance of an organization (Sulaiman et al., 2008). Moreover, Kamal (2015) argued that external factors like market competition should be concerned more with enduring the intensity of market competition so that organization can maintain its growth in a long-term period.

As market competition gets highly intense, managers are demanding information that has a broader scope to assist them to endure the intensity of market competition and at the same time to achieve organizational goals and objectives (Brignall & Modell, 2000; Parl, 2006; Granlund, 2011; Ismail et al., 2018b; Ghasemi et al., 2019). As understood based on contingency theory, organizations are assumed to depend on management accounting to achieve the goals and objectives of the organization by using its information (Ismail & Isa, 2011). The information provided by management accounting is also known as management accounting information which contingency theory also proposed that the use of management accounting information leads managers to achieve goals and objectives (Haldma & Laats, 2003; Ismail & Isa, 2011; Ghasemi et al., 2019). Subsequently, when goals and objectives are achieved, the performance of an organization can be improved.

Managers in the manufacturing industry tend to be more demanding for management accounting information. This is because the manufacturing business environment is changing rapidly which has forced managers

in the manufacturing industry to carefully observe their production cost constantly, to set their target price better than their competitors, and to make a better and faster decision especially when market competition is highly intense (Ameen et al., 2018). Management accounting information is known to have a broader scope of information that could assist managers in performing managerial tasks such as planning better strategies, making better decisions, controlling resources, directing and motivating business activities, and measuring performance (Laitinen, 2014). For that reason, most managers today especially in the manufacturing industry are demanding management accounting information to endure the intensity of market competition in the manufacturing industry (Jaafar & Noordin, 2019) and at the same time to improve the organizational performance (Ismail & Isa, 2011). Furthermore, it is the main role of management accounting information in assisting managers to achieve organizational goals and objectives, and consequently to improve the performance of an organization (Tinuola et al., 2015).

Since the manufacturing industry in Malaysia plays a crucial role in the development of Malaysian economic growth, it is important to make sure that the manufacturing industry can improve its performance and maintain its growth in intense market competition. This can be achieved if the manufacturing industry is using management accounting information because management accounting is updated from time to time which made the information provided is in line with the changes in the current manufacturing business environment. Thus, to understand the role of management accounting information in improving manufacturing performance during market competition is highly intense, this study addresses the following research objective:

- 1) To examine the relationship between the intensity of market competition and the performance of the manufacturing industry in Malaysia.

- 2) To examine the mediating role of management accounting information in a relationship between the intensity of market competition and the performance of the manufacturing industry in Malaysia.

The remainder of this paper is organized as follows: Section 2 discusses the literature review. Section 3 provides the theoretical framework and hypotheses development. Section 4 presents the research methodology used in this study. Section 5 discusses the data analysis and findings. Section 6 provides the discussion and conclusion for this study which consists of the contributions, limitations, and future recommendations of this study.

LITERATURE REVIEW

Performance

In management research, organizational performance is considered to be an important dependent variable that needs to be concerned with (Singh et al., 2016; Taouab & Issor, 2109). Additionally, organizational performance is considered an important indicator in determining the success of an organization in achieving the goals and objectives of the organization (Rehman et al., 2019). Therefore, many researchers have emphasized the importance of organizations to achieve goals and objectives to ensure that organizational performance can be continuously improved. By referring to Lebas and Euske (2006), organizational performance can be defined as a collection of financial and non-financial metrics that provide information on the level of accomplishment of goals and outcomes. Therefore, in the context of this study, financial performance and non-financial performance are considered to examine the influence of the intensity of market competition on the performance of the manufacturing industry in Malaysia.

Most organizations today are focusing more on financial performance rather than non-financial performance in measuring their overall organizational performance (Carton & Hofer, 2010). Financial performance can be defined as the amount of revenue generated as a result of successfully achieving a competitive advantage (Noordin et al., 2015). Iyibildiren and Karasioglu (2017) argued that financial indicators are typically used in measuring organizational performance because it provides accurate results. Prior studies often used return on assets (ROA), return on equity (ROE), return on investment (ROI), sales growth, profitability, and earnings per share (EPS) to measure the overall performance of the organization (Gnawali, 2017; Turner et al., 2017; Holopainen et al., 2019). Nonetheless, Kaplan and Norton (1996) argued that the financial details that are stated in the financial statement are inadequate for measuring the overall performance of an organization. This is because financial details in the financial statement do not concern other significant perspectives such as customer preferences, product quality, and product innovation. Due to that fact, organizations need to consider non-financial performance too when measuring the overall performance of the organization (Salleh et al., 2010).

Intangibles are matters relating to non-financial performance since non-financial indicators cannot be dealt with as currencies (Johanson et al., 2001). Non-financial performance can be defined as an advantage over the competition in terms of cost advantage, product quality, delivery time, sales volume, market share, and product innovation (Noordin et al., 2015). Since organizations cannot exclusively rely on financial information to measure their overall organizational performance, organizations used non-financial information to support them in bridging the difference between financial and non-financial information (O'Connell & O'Sullivan, 2014). Prior studies have used non-financial indicators like customer satisfaction,

product quality, product delivery time, speed of new product introduction, and flexibility to measure the performance of an organization (Lynch & Cross, 1995; Ittner & Larcker, 1998a; Atkinson et al., 2001; Ahmad & Schroeder, 2003; Parl, 2006; Taheri et al., 2019). The intensity of market competition has pushed managers to quickly respond to consumers' preferences and demands, which is why managers today are seeking more non-financial information. Moreover, improved non-financial performance would inevitably lead to improved financial performance (Fullerton & Wempe, 2009).

Even though prior studies have emphasized the significance of organizational performance, the question of performance measurement remains unsolved (McCracken et al., 2001). Since the business environment is changing rapidly due to some factors, it is crucial to always update the performance measurement so that it suits the organization's current business environment. Therefore, it is significant to examine the relationship between the intensity of market competition and the performance of manufacturing performance in Malaysia.

Intensity of Market Competition

Several factors can influence organizational performance such as market competition, globalization, development of technologies (Sulaiman et al., 2008), perceived environmental uncertainty, organizational structure, advanced manufacturing technology (AMT), and competitive strategy (Jaafar & Noordin, 2019). Additionally, these factors have been emphasized in prior studies because these factors are the primary causes of the development in management accounting (Allot, 2000). Moreover, based on contingency theory, it is proposed that the management accounting of an organization must develop consistent with the organizational current business environment, internally and externally (Yigitbasioglu, 2016).

Market competition and perceived environmental uncertainty are the factors that are often investigated in management accounting research (Ismail et al., 2010). Market competition is getting highly intense because the business environment is changing rapidly due to globalization and technological advancement (Jaafar & Noordin, 2019). The intensity of market competition can be defined as an environmental uncertainty factor that provides information about the number of competitors, the frequency of technologies development, the frequency of new product introduction, the range of price manipulations, package deals for consumers, access to marketing platforms, and changes in government regulation or policy (Mia & Clarke, 1999).

Furthermore, based on contingency theory, it is expected that organizations are motivated by their goals and objectives to increase their organizational performance (Haldma & Laats, 2002). As such, organizations are always conscious of any changes that occur in their current business environment as they strive to achieve goals and objectives. In regards to this matter, numerous prior studies have emphasized the importance to recognize the significant factors that can influence the growth of organizational performance such as prior studies by Konings (1998), Mia and Clarke (1999), Brown and Earle (2000), Allot (2000), Chong and Rundus (2004), Hoque (2011), Al-Rfou (2012), and Kamal (2015).

However, there are also a few prior studies that found factors like the market competition has an insignificant relationship with organizational performance such as prior studies by Patiar and Mia (2008), and Partiar and Mia (2009). This proves that studies investigating the relationship between the intensity of market competition and organizational performance are still vague. Therefore, it is significant to examine the impact of the intensity of market competition on organizational performance.

Management Accounting Information

Management accounting has been discussed in prior studies from various interesting perspectives. There are prior studies that have been discussing management accounting practices, while some prior studies discussed environmental management accounting, and some of the prior studies discussed the information provided by management accounting. Even so, most of the prior studies have focused more on management accounting information that is used in conducting business activities. When the economy gets globally competitive in the 1990s, management accounting users such as accountants and managers are vigorously observing the economic condition of their organization. This has increased the importance of management accounting. As Li (2019) argued in her prior study, management accounting supports the internal management of an organization with significant information that is used to do the planning, controlling, decision making, and measuring business tasks, which has made management accounting to be one of the important areas in accounting.

Management accounting information can be defined as information that analyses the possible actions and financial implications which the uncertainty of the business environment is efficiently translated into measurements (Chapman, 1997). Since the business environment is changing rapidly, manufacturing activities have become more complex as a result of today's intense market competition which prompts managers to demand information that has a broader scope to assist them to endure the intensity of market competition and to achieve goals and objectives. Management accounting information is known as information that has a broader scope which supports managers to achieve goals and objectives, and successively to improve organizational performance. The scope of management accounting information consists of financial information, non-financial

information, internal information, external information, historical information, and future-oriented information. For that reason, numerous prior studies have emphasized the significance of using management accounting information in achieving goals and objectives, enduring the intensity of market competition, making a better decision, and overall in improving organizational performance (Mia, 1993; Chenhall & Morris, 1995; Mia & Clarke, 1999; Schaffer & Steiners, 2004; Davis & Albright, 2004; Patiar & Mia, 2008; Ismail & Isa, 2011; Hoque, 2011; Hammad et al., 2013; Laitinen, 2014).

Contingency theory proposed that organizations are depending on management accounting in achieving their goals and objectives by using management accounting information (Haldma & Laats, 2002). Furthermore, contingency theory also suggested that organizations can produce the best outcomes when management accounting that they practised provides them with information that is fit to be used in their current business environment (Lee & Yang, 2011). That is the reason why management accounting needs to be updated from time to time so that it is always fit with the organization's business environment because the business environment is known to be changing rapidly (Chenhall & Langfield-Smith, 1998).

For that reason, it is significant to examine how management accounting information explains the relationship between the intensity of market competition and organizational performance. Moreover, contingency theory assumes that the relationship between the use of management accounting and the improvement of organizational performance exists (Haldma & Laats, 2002).

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Contingency Theory and Theoretical Framework

Management accounting has developed over the last few decades as a result of the emergence of globalization and the advancement of technology. Since then the practice of management accounting has expanded to include other significant areas such as the decision-making process, performance measurement, management control, strategy planning, and motivating activities, which are used in conjunction with management accounting information (Laitinen, 2014; Otley, 2016). Management practices have been refined over time as a result of these changes, and organizational structure has evolved too due to the increase in competition among organizations globally (Otley, 2016).

In management accounting research, contingency theory is extensively used (Malmi & Granlund, 2009) and this theory develops in tandem with management accounting development according to the changes in the business environment. The business environment is changing rapidly due to globalization and the development of technology. Due to this circumstance, managers are motivated to use contingency theory to have a better understanding of their organizational business environment because according to Tiessen and Waterhouse (1983), contingency theory is focusing on internal and external environmental factors that might affect the organizational performance. Prior studies have proved that contingency theory is significant to be used in understanding the impact of environmental factors on organizational performance (Reid & Smith, 2000). For example, a prior study by Burns and Stalker (1961) is the earliest study on this topic which illustrated the effect of technological uncertainty towards

the performance of an organization by using contingency theory. Besides that, prior studies such as by Kalagnanam and Lindsay (1999), Mia and Chenhall (1994), and Chenhall and Morris (1986) are also explaining the effect of technology advancement on the performance of an organization based on contingency theory.

Besides that, the effects of market competition and perceived environmental uncertainty (PEU) on the performance of an organization have also been investigated in prior studies. For example, the earliest study on this topic is by Lawrence and Lorsch (1967) which they are explaining the effect of market competition on the performance of an organization. Based on the findings, Lawrence and Lorsch (1967) highlighted in their study that market competition is an important environmental factor that affects the growth in organizational performance. Similarly, Khandwalla (1972) is also using contingency theory in understanding the effect of market competition on the use of management control. Also, a prior study by Hambrick (1981) used contingency theory too in explaining the relationship of environmental factors and strategy on the power of top management teams. Since the business environment is changing over time, there are more prior studies that have emphasized the effect of market competition on organizational performance since then, and to name a few, such as prior studies by Patiar and Mia (2008), Ax et al. (2008), Agbejule and Burrowes (2007), Chong and Rundus (2004), Anderson and Lanen (1999), Mia and Clarke (1999), Saudagaran and Diga (1999), Swamidass and Newell (1987), and Gordon and Narayanan (1984). As management accounting evolved due to globalization and technological advancement, contingency theory too has evolved by broadening its perspectives so that it fits with the current environment of an organization.

Contingency has developed some principles or assumptions that provide information on management accounting practices (Otley, 2016). Based on contingency theory, it is proposed that there is no optimal management accounting practice but only particular circumstances or possibilities that contribute to the correct option of management accounting practice in specific circumstances (Emmanuel et al., 1990). This later explained by Chenhall (2007) in his study that there is no clear contingency to explain the correct management accounting practice since the practices employed by the organizations are dependent on the actual organization’s business environment, which

leads them to find the most appropriate practice to be employed in achieving their goals and objectives.

Therefore, it is significant to use contingency theory in understanding the impact of the intensity of market competition on the performance of organizational performance. Moreover, prior studies have shown that it is essential in contingency theory to understand the factors that caused changes in management accounting so that organizational performance can be improved (Otley, 1980). Hence, based on contingency theory, the theoretical framework in Figure 1 is proposed:

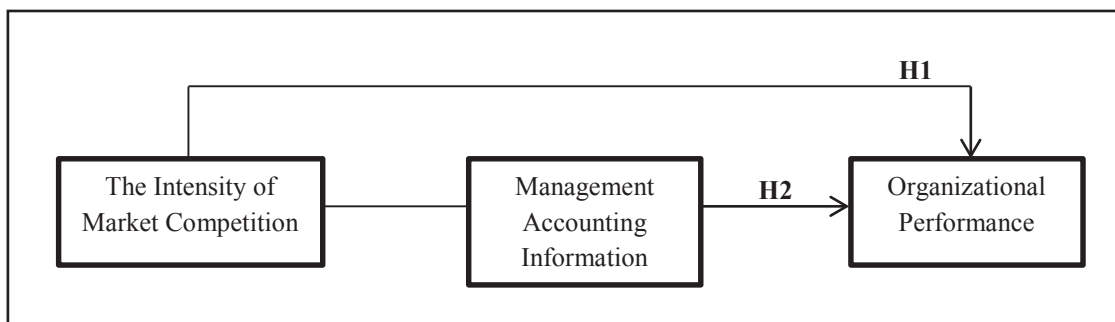


Figure 1 Theoretical framework

Hypotheses Development

As discussed earlier it is essential in contingency theory to understand the factors that caused changes in management accounting so that organizational performance can be improved (Otley, 1980). During market competition is highly intense, business operation is difficult to handle, and product quality and price are difficult to maintain (Gordon, 2000), and this could affect the growth in organizational performance. Based on prior studies by Konings (1998), Brown and Earle (2000), Chong and Rundus (2004), Hoque (2011), and Al-Rfou (2012), the intensity of market competition is proved to be positively and significantly have an impact on organizational performance. Therefore, the following hypothesis is developed:

H1: The intensity of market competition is positively related to the performance of the manufacturing industry in Malaysia.

Since market competition is highly intense today due to the rapid change in the business environment, managers are demanding information that has a broader scope to assist them in achieving goals and objectives, and the information that is relevant to be used is management accounting information. Based on prior studies by Mia and Clarke (1999) and Ismail and Isa (2011), it is proved that management accounting information mediates the relationship between significant factors and organizational performance. Therefore, the following hypothesis is developed:

H2: Management accounting information mediate the relationship of the intensity of market competition and the performance of the manufacturing industry in Malaysia.

METHODOLOGY

Sample and Data Collection

The samples in this study are the electrical and electronics manufacturing companies in Malaysia that have more than 100 employees and are listed in the Federation of Malaysian Manufacturers (FMM) directory. This study is a quantitative study that used a questionnaire survey. A questionnaire was emailed to 260 electrical and electronics manufacturing companies randomly selected from the FMM directory together with a cover letter. The cover letter clarified the details of the survey and the contact information. Besides that, the respondents were informed that all information gathered in the questionnaire survey would be deemed confidential. The respondents were inclusive of organizational top management (such as managing director and chief executive officer), senior management (such as general manager and branch manager), and junior management (such as a supervisor). After three months of emailing the questionnaires to the respondents, 33 companies out of 260 companies had participated in the questionnaire survey. A total of 33 answered questionnaires were used to conduct the pilot study. A pilot study was conducted to determine whether the proposed instruments

are appropriate or not by determining the Cronbach's Alpha. According to Hair et al. (2016), the Cronbach's Alpha value should not be lower than 0.70. As shown in Table 1.1, the value of the Cronbach's Alpha for the intensity of market competition was 0.775, for the organizational performance was 0.925, and for the management accounting information was 0.968. Therefore, the proposed instruments in this study were appropriate.

Table 1 Cronbach's Alpha

Variables	Number of Items	Cronbach's Alpha
Intensity of Market Competition	7	0.775
Organizational Performance	12	0.925
Management Accounting Information	6	0.968

Later three months after that, another 74 companies participated in the questionnaire survey. In determining whether this sample size is adequate or not, a calculation by using G*Power was used. G*Power is software that can determine the sample size accurately and it is used in a behavioural study to achieve variety in statistical tests (Faul et al., 2009). Therefore, G*Power was used with the effect size was 0.15 (medium) (Hair et al., 2014), alpha (α) value of 0.05 and the power of $(1 - \beta)$ 0.80 (minimum) based on one predictor. Based on this calculation, the sample size of this study was 55 participants (as shown in Figure 2). Thus, the 74 companies that participated in the questionnaire survey were acceptable.

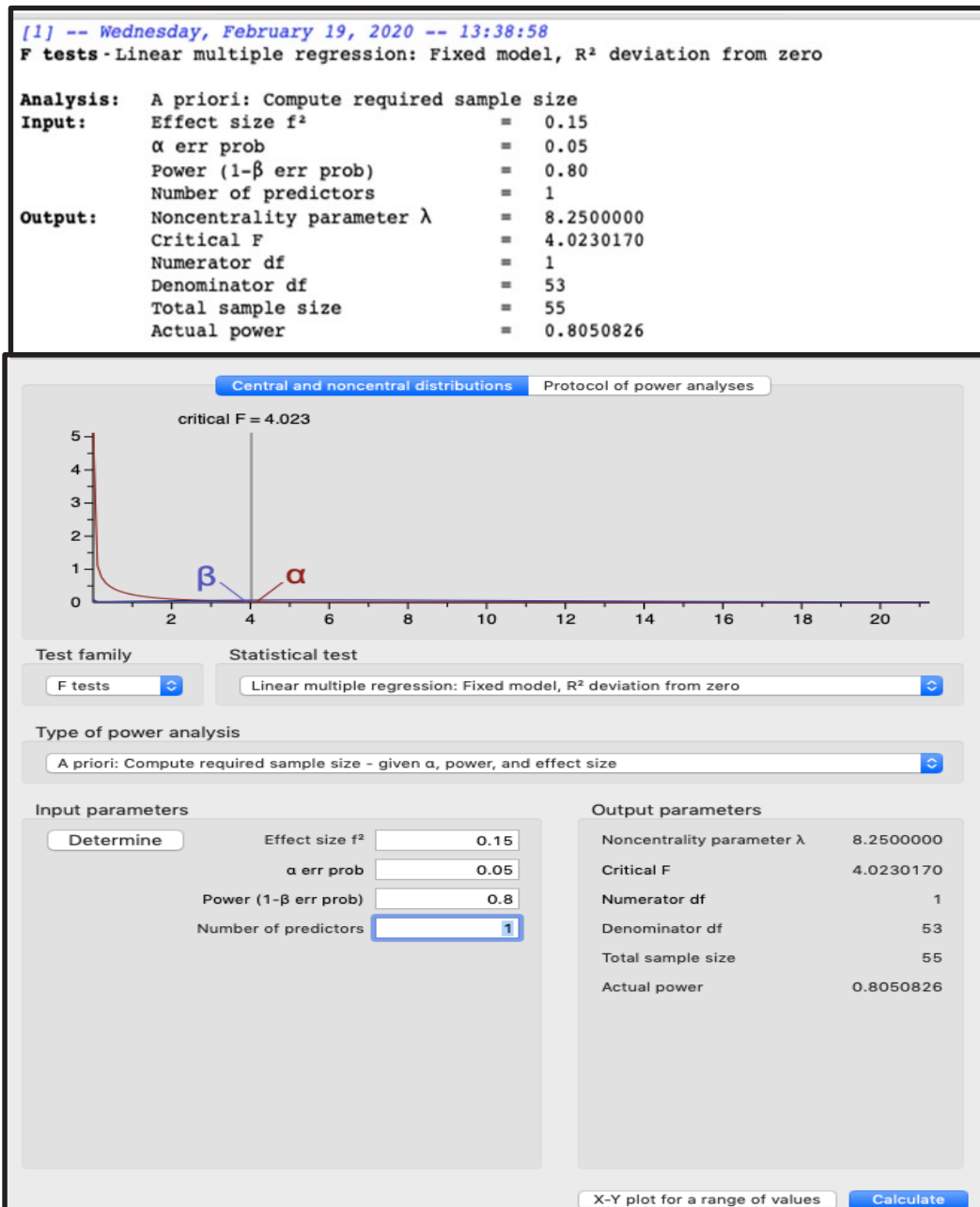


Figure 2 The result of sample size

Development of Test Measures

The measurements of each variable in this study are adapted from prior studies. The measures for the intensity of market competition are adapted from Mia and Clarke (1999) which focuses on the number of major competitors, frequency of technological change in the industry, frequency of new product introduction, the extent of price manipulations, package deals for customers,

access to marketing channels, and changes in government regulation or policy. The measures for organizational performance are adapted from Hoque and James (2000) which focuses on return on equity, return on investment, operating profit, sales growth, sales volume, market share, productivity, customize the product to customer's needs, continuous product innovation, continuous cost

reduction, product quality, and research and development. The measures for management accounting information (MAI) are adapted from Chenhall and Morris (1986) which focus on MAI relating to your company's budget, MAI relating to monitoring achievement of your company's budget, MAI relating to your company's production activities, MAI relating to overall actual performance trend of your company, MAI relating to your company's product markets, and MAI relating to your company's competitive threats.

FINDINGS

Profile of Responding Companies

As shown in Table 2, the majority of the respondents are from the electrical and electronics companies manufacturing electronic components (35.1%). This is followed by manufacturing electrical products (27.0%), other products such as electrical and automotive products (16.2%), manufacturing industrial electronics (14.9%), and manufacturing consumer electronics (6.8%). The sample in this study included both local-based and multi-national corporation (MNC) companies that are focusing on the local market, export market, and both. Furthermore, the sample in this study also included companies that have been operating for less than five years to more than 15 years, with sales of less than RM5 million to RM50 million and above. The respondents involved are from junior management to top management with their position period of fewer than two years to more than seven years.

Table 2 Samples by the industrial sector

	Frequency	Per Cent (%)
Manufacturing of electronic components	26	35.1
Manufacturing industrial electronics	11	14.9
Manufacturing consumer electronics	5	6.8
Manufacturing electrical products	20	27.0
Others	12	16.2
Total	74	100

Descriptive Analysis

As can be seen in Table 3, the mean values for all variables are ranged from 3.6610 to 3.8026 and the standard deviations are ranged from 0.55102 to 0.96676. All variables in this study are using a five-point Likert scale. As such, a mean score of less than 2 is rated as low and a mean score of greater than 4 is considered as high. Thus, all variables in this study are rated as average which means that the intensity of market competition has a moderate impact on organizational performance, and management accounting information is moderately used in improving organizational performance.

Table 3 Descriptive analysis

Variables	N	Mean	Standard Deviation
Organizational Performance	74	3.6610	0.56390
Intensity of Market Competition	74	3.7375	0.55102
Management Accounting Information	74	3.8026	0.96676
Valid N (listwise)	74		

Result Analysis of Measurement Model

The first step of PLS-SEM analysis is the measurement model analysis which allows determining if the items are related to a particular variable and represent the variable itself, and also allows determining if multiple variables in the model are different from one

another (Hair et al., 2016). The measurement model analysis consists of measurement on internal consistency reliability, reliability of indicators, convergent validity, and

discriminant validity (Hair et al., 2016). Figure 3 shows the measurement model of this study by using PLS-SEM.

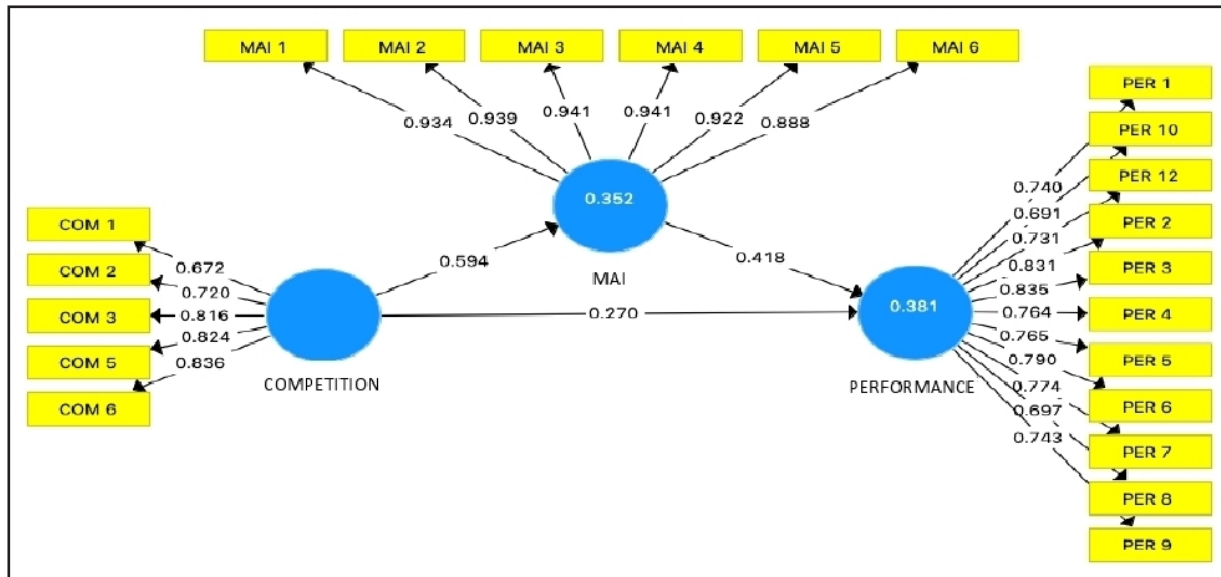


Figure 3 Measurement model

The measurement on internal consistency reliability, reliability of indicators, convergent validity, and discriminant validity are shown in Table 1.4. The internal consistency is measured by the composite reliability (CR) which the CR values should be greater than 0.70 (Gefen et al., 2000; Hair et al., 2016). The measurement of CR determines how closely related are the items of a variable to one another (Hair et al., 2016). As shown in Table 4, all variables have CR that is greater than 0.7 which means all variables have satisfied the internal consistency reliability.

The reliability of indicators is shown by the loadings which Hair et al. (2016) stated should be greater than 0.708. On the contrary, Ramayah et al. (2017) stated that the loadings with values that are ranged between 0.40 up to 0.70 are satisfactory, with the loading values of other items complementing the average variance extracted (AVE) value of at least 0.50, and the CR values of at least 0.70. As such, COM7, COM4 and PER11 are eliminated from the total of 25 items because the loadings are below 0.70. Thus, only 22 items are engaged for the whole model in this study because these items have loadings that are at least 0.70 as shown in Table 4.

The convergent validity determines how close are the items in representing the variable being studied (Hair et al., 2016). The convergent validity is measured through the values of outer loadings and the AVE which the loadings should be greater than 0.70 and the AVE should be greater than 0.50 (Hair et al., 2016). As shown in Table 4, all variables have loadings that are greater than 0.70 and AVE values that are greater than 0.50 which shows that convergent validity is satisfied.

Table 4 Result analysis of measurement model

Variable	Measurement item	Loadings	AVE	CR
Competition	COM 1	0.672	0.603	0.883
	COM 2	0.720		
	COM 3	0.816		
	COM 5	0.824		
	COM 6	0.836		
	MAI	MAI 1		
	MAI 2	0.939		
	MAI 3	0.941		
	MAI 4	0.941		
	MAI 5	0.922		
	MAI 6	0.888		
Performance	PER 1	0.740	0.580	0.938
	PER 10	0.691		
	PER 12	0.731		
	PER 2	0.831		
	PER 3	0.835		
	PER 4	0.764		
	PER 5	0.765		
	PER 6	0.790		
	PER 7	0.774		
	PER 8	0.697		
	PER 9	0.743		

Discriminant validity is the extent to which a variable is different from other variables which can be assessed through cross-loadings, Fornell-Larcker criterion, and heterotrait monotrait riation (HTMT). The cross-loading of an item should be greater than its loading on other constructs (Hair et al., 2016). As for Fornell-Larcker, the square root value of AVE for the variable should be greater than its correlation with other variables, while for the HTMT ratio, the values should be not greater than 0.90 (Hair et al., 2016). In this study, the assessment satisfied the criteria of cross loading, Fornell-Larcker, and HTMT ratio as shown in Table 5 and Table 6

Table 5 Fornell-Larcker

	Competition	MAI	Performance
Competition	0.776		
MAI	0.594	0.928	
Performance	0.518	0.578	0.761

Table 6 HTMT ratio

	Competition	MAI	Performance
Competition			
MAI	0.643		
Performance	0.561	0.597	

Result Analysis of Structural Model

The second step of PLS-SEM is the structural model analysis which allows determining the significance of the relationship between the variables, determining whether the relationship is positive or negative, and to determine the contributions of the independent variable towards the dependent variable (Hair et al., 2016). The structural model comprises of analysing the relationships between the variables and testing the proposed hypotheses (Hair et al., 2016) as shown in Table 6. Hypothesis one (H1) is supported at a significance level of $p < 0.05$ ($p = 0.005$). This shows that the intensity of market competition positively influenced organizational performance. Hypothesis two (H2) is supported at a significance level of $p < 0.01$ ($p = 0.002$). This shows that management accounting information influenced the relationship between the intensity of market competition and organizational performance. Therefore, it can be concluded that management accounting information is relevant to be used to improve organizational performance when market competition is highly intense.

Table 6 Result analysis of structural model

Hypo-thesis	Relationship	Std. Beta	Std. Error	t-value	P Value	Decision	f ²	Q ²	R ²
H1	Competition > Performance	0.27	0.137	1.968*	0.005	SUPPORTED	0.076	0.202	0.381
H2	Competition > Mai > Performance	0.248	0.078	3.169**	0.002	SUPPORTED			

Note: t-value >1.65* (p<0.05); t-value >2.33** (p<0.01)

DISCUSSION

The first hypothesis (H1) in this study proposed that the intensity of market competition is positively related to the performance of the manufacturing industry in Malaysia. Based on the finding, it shows that the intensity of market competition is positively and directly related to the performance of the manufacturing industry in Malaysia. This finding is similar to prior studies by Konings (1998), Brown and Earle (2000), Chong and Rundus (2004), Hoque (2011), and Al-Rfou (2012). The finding shows that the manufacturing industry in Malaysia is aware of any factors, either internal or external, that might affect their organizational performance. Since globalization and technological development have caused a rapid change in the manufacturing business environment, the intensity of market competition has increased at the same time. The increase in the intensity of market competition in the manufacturing industry has steered the manufacturing industry in Malaysia to increase its competitive advantage. Hence, this concludes that the higher the intensity of market competition, the higher the competitive advantage of the manufacturing industry in Malaysia to produce products that are better than other manufacturers in the industry, especially in the global market. Even though market competition gets highly intense, but the circumstance influences the manufacturing industry in a positive way which is it forces the manufacturing industry to improve their performance by increasing their competitive advantage. Since the intensity of market competition caused difficulty in business operations, difficulty in

maintaining quality and price of products, thus, by increasing competitive advantage could help the manufacturing industry in Malaysia to deal with the circumstances and challenges efficiently. This will lead the manufacturing industry in Malaysia to achieve its goals and objectives, and subsequently, their organizational performance can be improved.

The second hypothesis (H2) in this study proposed that the management accounting information mediate the relationship of the intensity of market competition and the performance of the manufacturing industry in Malaysia. Based on the finding, it shows that management accounting information roles as a mediating in the relationship of the intensity of market competition and the performance of the manufacturing industry in Malaysia. This finding is similar to prior studies by Mia and Clarke (1999), and Ismail and Isa (2011). Even though there is a dearth of studies investigating the mediating role of management accounting information, but there are numerous studies that have emphasized the importance of management accounting information to improve organizational performance. For example, prior studies by Mia (1993), Chenhall and Morris (1995), Partiar and Mia (2008), Hoque (2011), and Ismail et al. (2018a) have emphasized the importance of using management accounting information to improve organizational performance. This finding shows that the manufacturing industry in Malaysia requires management accounting information to perform their

business operation efficiently and also to do the managerial task such as making better decisions, planning better strategies, having better control on their resources, and also leading their employees towards the goals and objectives of the organization. This is because, during the intensity of market competition, managers need to act and think fast in making decisions, thus, a broader scope of information is demanded by the managers. Due to this fact, management accounting is mostly demanded by managers because management accounting information is able to support managers with a broader scope of information that covers financial matters, non-financial matters, external matters, internal matters, historical matters, and also future-oriented matters. Furthermore, management accounting information is not only known for having a broader scope of information, but the information provided by management accounting is also relevant to be used in the current business environment. This is because organizations are updating their management accounting system from time to time which made the information provided is relevant to be used. After all, it fits the organization's current business environment. Thus, when the manufacturing industry is using management accounting information in dealing with the intensity of market competition, goals and objectives can be achieved, and consequently, their organizational performance can be improved.

Theoretical and Managerial Contribution

Numerous prior studies have emphasized the importance of using management accounting information to improve organizational performance especially when the market competition gets highly intense. This is because the broader scope of management accounting information supports managers to make better decisions, to plan better strategies, to have proper control on their resources, and also to direct and motivate in more efficient ways. Nonetheless, the studies

specifically explaining the mediating role of management accounting information in the relationship between the intensity of market competition and organizational performance are still dearth. Therefore, this study contributes to the scarcity of management accounting literature with regards to the use of management accounting information in improving organizational performance.

Besides that, this study contributes to the improvement of the Malaysian manufacturing industry's performance and competitive advantage. Since the manufacturing industry is the main contributor to Malaysia export products, the performance of Malaysian export products should be improved continuously. Moreover, the government has planned to include the manufacturing industry in the 4.0 Industrial Revolution under the 12th Malaysia Plan for economic empowerment. This shows how crucial the manufacturing industry is to the development of the Malaysian economy. Thus, this study is not only contributing to the improvement of the Malaysian manufacturing industry's performance and competitive advantage but also contributing to realizing the Malaysia Plan.

Research Limitations

Many electrical and electronics manufacturing companies in Malaysia have shut down their business operation due to COVID-19 and the movement control order (MCO). Due to this, the number of respondents for this study is limited. Besides that, some electrical and electrical manufacturing companies in Malaysia refused to participate in the questionnaire survey due to the confidentiality of their company's information. Hence, this limits the number of respondents for this study too.

Future Research Recommendations

Malaysia has various industries that contribute to its economic development besides the manufacturing industry, such as the services

industry, construction industry, agriculture industry, and mining and quarrying industry. Thus, this study recommends considering non-manufacturing industries for future research. For example, future researchers can consider the services industry because this industry is the main contributor to Malaysia GDP.

Besides market competition, other external factors need to be considered such as the development of technology, globalization, and the perceived environmental uncertainty (PEU). Each of the external factors has a different impact on organizational performance. Thus, this study recommends considering other external factors for future research. Also, internal factors such as organizational structure, just-in-time (JIT), total quality management (TQM), and advanced manufacturing technology (AMT) should be considered too. As the business environment is shifting rapidly, it is important to consider all factors that might affect the organizational performance, either external factors or internal factors.

CONCLUSION

Globalization and the development of technology have shifted the business environment and caused the intensity of market competition. Due to the intensity of market competition, manufacturers are struggling to improve their organizational performance. However, despite the strong pressure of the intensity of market competition, manufacturers managed to increase their competitive advantage. This shows that the intensity of market competition is positively influenced organizational performance. Moreover, by using management accounting information, goals and objectives can be achieved efficiently and effectively because the broader scope of management accounting information supports manufacturers to make better decisions, to plan better strategies, and to have proper control. Subsequently, when goals and objectives are achieved, organizational performance is improved.

REFERENCES

- Agbejule, A., & Burrowes, A. (2007). Perceived environmental uncertainty, supply chain purchasing strategy, and use of management accounting system information: An empirical study of Finnish firms. *Managerial Auditing Journal*, 22 (9), 913 – 927. <https://doi.org/10.1108/02686900710829417>
- Ahmad, S., & Schroeder, R. S. (2003). The impact of human resource management practices on operational performance: Recognizing country and industry differences. *Journal of Operations Management*, 21, 19 – 43. [https://doi.org/10.1016/S0272-6963\(02\)00056-6](https://doi.org/10.1016/S0272-6963(02)00056-6)
- Allot, A. (2000). Management accounting change. *Management Accounting* (July/August), 54 – 55.
- Al-Rfou, A. N. (2012). Competition and organizational performance: Empirical evidence from Jordanian firms. *Journal of Economics*, 3 (1), 13 – 17. <https://doi.org/10.1080/09765239.2012.11884947>
- Ameen, A. M., Ahmed, M. F., & Hafez, M. A. A. (2018). The impact of management accounting and how it can be implemented into the organization culture. *Dutch Journal of Finance and Management*, 2 (1), 1 – 9. <https://doi.org/10.20897/djfm/91582>
- Anderson, S., & Lanen, W. (1999). Economic transition, strategy and the evolution of management accounting practices: The case of India. *Accounting, Organizations and Society*, 24, 379 – 412. [https://doi.org/10.1016/S0361-3682\(97\)00060-3](https://doi.org/10.1016/S0361-3682(97)00060-3)
- Atkinson, A. A., Banker, R. D., Kaplan, R. S., & Young, S. M. (2001). *Management accounting* (3 ed.). Prentice-Hall.
- Ax, C., Greve, J., & Nilsson, U. (2008). The impact of competition and uncertainty on the adoption of target costing. *International Journal of Production Economics*, 115, 92 – 103. <https://doi.org/10.1016/j.ijpe.2008.04.010>
- Brignall, S., & Modell, S. (2000). An institutional perspective on performance measurement and management in the “new public sector”. *Management Accounting Research*, 11 (3), 281 – 306. <https://doi.org/10.1006/mare.2000.0136>
- Brown, J. D., & Earle, J. S. (2000). *Competition and firm performance: Lessons from Russia*. Working Paper No. 2444, London: Centre for Economic Policy Research. <http://dx.doi.org/10.2139/ssrn.222229>
- Burns, T., & Stalker, G. (1961). *The management innovation*. Tavistock Institute.

- Carton, R. B., & Hofer, C. W. (2010). Organizational financial performance: Identifying and testing multiple dimensions. *Academy of Entrepreneurship Journal*, 16 (1), 1 – 22.
- Chapman, C. S. (1997). Reflections on a contingent view of accounting. *Accounting, Organizations and Society*, 22, 189 – 205. [https://doi.org/10.1016/S0361-3682\(97\)00001-9](https://doi.org/10.1016/S0361-3682(97)00001-9)
- Chenhall, R. (2007). Theorizing contingencies in management control systems research. In C. S. Chapman, A. G. Hopwood, & M. Shields (Eds.), *Handbook of management accounting research* (pp. 163 – 205). Elsevier. [https://doi.org/10.1016/S1751-3243\(06\)01006-6](https://doi.org/10.1016/S1751-3243(06)01006-6)
- Chenhall, R. H., & Langfield-Smith, K. (1998). Adoption and benefits of management accounting practices: An Australian study. *Management Accounting Research*, 9 (1), 1 – 19. <https://doi.org/10.1006/mare.1997.0060>
- Chenhall, R. H., & Morris, D. (1986). The impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *The Accounting Review*, 61, 16 – 35.
- Chenhall, R. H., & Morris, D. (1995). Organic decision and communication processes and management accounting systems in entrepreneurial and conservative business organizations. *International Journal Management Science*, 23 (5), 485 – 497. [https://doi.org/10.1016/0305-0483\(95\)00033-K](https://doi.org/10.1016/0305-0483(95)00033-K)
- Chong, V. K., & Rundus, M. J. (2004). Total quality management, market competition and organizational performance. *The British Accounting Review*, 36, 155 – 172. <https://doi.org/10.1016/j.bar.2003.10.006>
- Clarke, P., & Tagoe, N. (2002). Strategic management accounting – do we need it? *Accountancy Ireland*, 34 (6), 10.
- Davis, S., & Albright, T. (2004). An investigation of the effect of Balanced Scorecard implementation on financial performance. *Management Accounting Research*, 15, 135-153. <https://doi.org/10.1016/j.mar.2003.11.001>
- Economic Planning Unit. (2019). *The Malaysian Economy in Figure – 2019*. <https://www.epu.gov.my>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses. *Behaviour Research Methods*, 41 (4), 1149 – 1160.
- Fullerton, R. R., & Wempe, W. F. (2009). Lean manufacturing, non-financial performance measures, and financial performance. *International Journal of Operations and Production Management*, 29 (3), 214 – 240. <https://doi.org/10.1108/01443570910938970>
- Gefen, D., Straub, D. W., & Boudreau, M. C. (2000). Structural equation modelling and regression: Guidelines for research practice. *Communication of the Association for Information Systems*, 4 (7), 2 – 77. <https://doi.org/10.17705/1CAIS.00407>
- Ghasemi, R., Habibi, H. R., Ghasemlo, M., & Karami, M. (2019). The effectiveness of management accounting systems: evidence from financial organizations in Iran. *Journal of Accounting in Emerging Economics*, 9 (2), 182 – 207. <https://doi.org/10.1108/JAEE-02-2017-0013>
- Gnawali, A. (2017). Management accounting systems and organizational performance of Nepalese commercial banks. *The Journal of Nepalese Business Studies*, 10 (1), 8 – 19. <https://doi.org/10.3126/jnbs.v10i1.19129>
- Gordon, L. A. (2000). *Managerial accounting: Concepts and empirical evidence* (3 ed.). McGraw-Hill.
- Gordon, L. A., & Narayanan, V. K. (1984). Management accounting systems, perceived environment uncertainty and organization structure: An empirical investigation. *Accounting Organizations and Society*, 9 (1), 33 – 47. [https://doi.org/10.1016/0361-3682\(84\)90028-X](https://doi.org/10.1016/0361-3682(84)90028-X)
- Granlund, M. (2011). Extending AIS research to management accounting and control issues: A research note. *International Journal of Accounting Information Systems*, 12 (1), 3 – 19. <https://doi.org/10.1016/j.accinf.2010.11.001>
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modelling (PLS-SEM)*. Sage Publications.
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modelling (PLS-SEM): an emerging tool in business research. *European Business Review*, 26 (2), 106 – 121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Haldma, T., & Laats, K. (2002). Contingencies influencing the management accounting practices of Estonian manufacturing companies. *Management Accounting Research*, 13 (4), 379 – 400. <https://doi.org/10.1006/mare.2002.0197>

- Hambrick, D. C. (1981). Environment, strategy, and power within top management teams. *Administrative Science Quarterly*, 6 (2), 253 – 275. <https://doi.org/10.2307/2392472>
- Hammad, S. A., Jusoh, R., & Ghozali, I. (2013). Decentralization, perceived environmental uncertainty, managerial performance and management accounting system information in Egyptian hospitals. *International Journal of Accounting and Information Management*, 21 (4), 314 – 330. <https://doi.org/10.1108/IJAIM-02-2012-0005>
- Holopainen, R. M., Niskanen, M., & Rissanen, S. (2019). Management accounting and profitability in private healthcare SMEs. *International Journal of Public and Private Perspective on Healthcare, Culture, and the Environment*, 3 (1), 28 – 44.
- Hoque, Z. (2011). The relations among competition, delegation, management accounting systems change and performance: A path model. *Advances in Accounting*, 27 (2), 266 – 277. <https://doi.org/10.1016/j.adiac.2011.05.006>
- Hoque, Z., & James, W. (2000). Linking size and market factors to balanced scorecards: impact on organizational performance. *Journal of Management Accounting Research*, 12, 1 – 17. <https://doi.org/10.2308/jmar.2000.12.1.1>
- Ismail, K., & Isa, C. R. (2011). The role of management accounting systems in advance manufacturing environment. *Australian Journal of Basic and Applied Sciences*, 5 (9), 2196 – 2209.
- Ismail, K., Isa, C. R., & Mia, L. (2018a). Market competition, lean manufacturing practices and the role of management accounting systems (MAS) information. *Jurnal Pengurusan*, 52, 47 – 61.
- Ismail, K., Isa, C.R., & Mia, L. (2018b). Evidence on the usefulness of management accounting systems in integrated manufacturing environment. *Pacific Accounting Review*, 30 (1), 2 – 19. <https://doi.org/10.1108/PAR-04-2015-0010>
- Ismail, K., Zainuddin, S., & Sapiei, N. S. (2010). The use of contingency theory in management and accounting research. *Journal of Accounting Perspectives*, 3, 22 – 37. <https://doi.org/10.22452/AJAP.vol3no1.3>
- Ittner, C. D., & Larcker, D. F. (1998a). Innovations in performance measurement: trends and research implications. *Journal of Management Accounting Research*, 10, 205 – 238.
- Jaafar, N. F., & Noordin, R. (2019). The use of management accounting information among manufacturing industries in Malaysia. *Malaysian Journal of Business and Economics*, 6 (2), 1 – 11.
- Johanson, U., Martensson, M., & Skoog, M. (2001). Measuring to understand intangible performance drivers. *European Accounting Review*, 10 (3), 407 – 437. <https://doi.org/10.1080/09638180126791>
- Jusoh, R. (2008). Environmental uncertainty, performance, and the mediating role of balanced scorecard measures use: evidence from Malaysia. *International Review of Business Research Papers*, 4 (2), 116 - 135.
- Kalagnanam, S. S., & Lindsay, R. M. (1999). The use of organic models of control in JIT firms: Generalizing Woodward's findings to modern manufacturing practices. *Accounting, Organizations and Society*, 24, 1 – 30. [https://doi.org/10.1016/S0361-3682\(97\)00062-7](https://doi.org/10.1016/S0361-3682(97)00062-7)
- Kamal, S. (2015). Historical evolution of management accounting. *The Cost and Management*, 43 (4), 12 – 19.
- Khandwalla, P .N. (1972). The effects of different types of competition on the use of management control. *Journal of Accounting Research*, 10 (2), 275 – 285. <https://doi.org/10.2307/2490009>
- Konings, J. (1998). *Firm performance in Bulgaria and Estonia: the effects of competitive pressure, financial pressure and disorganization*. Working Paper Series No. 185, The Davidson Institute.
- Laitinen, E. K. (2014). The association between CEO work, management accounting information, and financial performance: evidence from Finnish top managers. *Journal Management Control*, 25, 221 – 257.
- Lawrence, P. R., & Lorsch, J. W. (1967). *Organizations and environment: managing differentiation and integration*. Harvard University, Graduate School of Business Administration. <https://doi.org/10.2307/2391211>
- Lebas, M., & Euske, K. (2006). A conceptual and operational delineation of performance. *Business Performance Measurement: Theory and Practice*, 1, 65 – 79.
- Lee, C. L., & Yang, H. J. (2011). Organization structure, competition and performance measurement systems and their joint effects on performance. *Management Accounting Research*, 22, 84 – 104. <https://doi.org/10.1016/j.mar.2010.10.003>

- Li, Y. (2019). Research on the synchronization of effective fusion and coordination between financial accounting and management accounting based on the integration of industry, education and research. *International Conference on Education Technology, Management and Humanities Science*, 869 – 873.
- Lynch, R. L., & Cross, K. F. (1995). *Measure up!* Blackwell Publishers.
- Malaysia External Trade Development Corporation (MATRADE). (2019). *Malaysia's Trade Statistics 2019*. Retrieved from <https://www.matrade.gov.my>
- Malaysia External Trade Development Corporation (MATRADE). (2020). *Malaysia's Trade Statistics 2020*. Retrieved from <https://www.matrade.gov.my>
- Malmi, T., & Granlund, M. (2009). In search of management accounting theory. *European Accounting Review*, 18 (3), 597 – 620. <https://doi.org/10.1080/09638180902863779>
- McCracken, M. J., Mcllwain, T. F., & Fottler, M. D. (2001). Measuring organizational performance in the hospital industry: An exploratory comparison of objective and subjective methods. *Health Services Management Research*, 14, 211 – 219. <https://doi.org/10.1258/0951484011912717>
- Mia, L. (1993). The role of MAS information in organizations: an empirical study. *British Accounting Review*, 25, 269 – 285. <https://doi.org/10.1006/bare.1993.1026>
- Mia, L., & Chenhall, R. (1994). The usefulness of management accounting systems, functional differentiation and managerial effectiveness. *Accounting, Organizations and Society*, 19 (1), 1 – 13. [https://doi.org/10.1016/0361-3682\(94\)90010-8](https://doi.org/10.1016/0361-3682(94)90010-8)
- Mia, L., & Clarke, B. (1999). Market competition, management accounting systems and business unit performance. *Management Accounting Research*, 10 (2), 137 – 158. <https://doi.org/10.1006/mare.1998.0097>
- Noordin, R., Zainuddin, Y., Fuad, Mail, R., & Sariman N. K. (2015). Performance outcomes of strategic management accounting information usage in Malaysia: Insights from electrical and electronics companies. *Procedia Economics and Finance*, 31, 13 – 25. [https://doi.org/10.1016/S2212-5671\(15\)01127-2](https://doi.org/10.1016/S2212-5671(15)01127-2)
- O'Connell, V., & O'Sullivan, D. (2014). The influence of lead indicator strength on the use of non-financial measures in performance management: Evidence from CEO compensations schemes. *Strategic Management Journal*, 35 (6), 826 – 844. <https://doi.org/10.1002/smj.2124>
- Otley, D. (1980). The contingency theory of management accounting: achievement and prognosis. *Journal of Accounting, Organizations and Society*, 5 (4), 413 – 428.
- Otley, D. (2016). The contingency theory of management accounting and control: 1980-2014. *Management Accounting Research*, 31, 45 – 62. <https://doi.org/10.1016/j.mar.2016.02.001>
- Parl, U. (2006). Choice of measures for performance measurement models on the example of successful Estonian companies. *Entrepreneurship in Estonia: Policies, Practices, Education and Research*, 228 – 247.
- Patiar, A., & Mia, L. (2008). The interactive effect of market competition and use of MAS information on performance: evidence from the upscale hotels. *Journal of Hospitality and Tourism Research*, 32 (2), 209 – 234.
- Patiar, A., & Mia, L. (2009). Transformational leadership style, market competition and departmental performance: evidence from luxury hotels in Australia. *International Journal of Hospitality Management*, 28, 254 – 262. <https://doi.org/10.1016/j.ijhm.2008.09.003>
- Rehman, S., Mohamed, R., & Ayoup, H. (2019). The mediating role of organizational capabilities between organizational performance and its determinants. *Journal of Global Entrepreneurship Research*, 9 (1), 1 – 23. <https://doi.org/10.1186/s40497-019-0155-5>
- Reid, G. C., & Smith, J. A. (2000). The impact of contingencies on management accounting system development. *Management Accounting Research*, 11, 427 – 450. <https://doi.org/10.1006/mare.2000.0140>
- Salleh, N. A. M., Jusoh, R., & Isa, C. R. (2010). Relationship between information systems sophistication and performance measurement. *Industrial Management and Data Systems*, 110 (7), 993 – 1017. <https://doi.org/10.1108/02635571011069077>
- Saudagaran, S. M., & Diga, J. G. (1999). Evaluation of the contingency based approach in comparative international accounting: A case for alternative research paradigms. *Journal of Accounting Literature*, 18, 57 – 95.

- Schaffer, U., & Steiners, D. (2004). The use of management accounting information, learning and organizational performance. *European Business School Working Papers on Management Accounting and Control*, No. 11 (Revised Version).
- Singh, S., Darwish, T. K., & Potocnik, K. (2016). Measuring organizational performance: A case for subjective measures. *British Journal of Management*, 27, 214 – 224. <https://doi.org/10.1111/1467-8551.12126>
- Sulaiman, S., Ramli, A., & Mitchell, F. (2008). What factors drive change in management accounting in Malaysian organizations? *Malaysian Accounting Review*, 7 (1), 61 – 76. <http://dx.doi.org/10.24191/mar.v7i1.274>
- Swamidass, P. M., & Newell, W. T. (1987). Manufacturing strategy, environmental uncertainty and performance: A path analytic model. *Management Science*, 33 (4), 509 – 524. <https://doi.org/10.1287/mnsc.33.4.509>
- Taheri, B., Bititci, U., Gannon, M. J., & Cordina, R. (2019). Investigating the influence of performance measurement on learning, entrepreneurial orientation and performance in turbulent markets. *International Journal of Contemporary Hospitality Management*, 31 (3), 1224 – 1246. <https://doi.org/10.1108/IJCHM-11-2017-0744>
- Taouab, O., & Issor, Z. (2019). Firm performance: definition and measurement models. *European Scientific Journal*, 15 (1), 93 – 106. [10.19044/ESJ.2019.V15N1P93](https://doi.org/10.19044/ESJ.2019.V15N1P93)
- Tiessen, P., & Waterhouse, J. H. (1983). Towards a descriptive theory of management accounting. *Accounting, Organizations and Society*, 8 (2/3), 251 – 267. [https://doi.org/10.1016/0361-3682\(83\)90033-8](https://doi.org/10.1016/0361-3682(83)90033-8)
- Tinuola, O. F., Adegbola, A. S., & Adebisi, A. M. (2015). Managerial accounting information: A key to organisation success. *EPRA International Journal of Economic and Business Review*, 3 (10), 43 – 50.
- Turner, M. J., Way, S. A., Hodari, D., & Witteman, W. (2017). Hotel property performance: the role of strategic management accounting. *International Journal of Hospitality Management*, 63, 33 – 43. <https://doi.org/10.1016/j.ijhm.2017.02.001>
- Yigitbasioglu, O. (2016). Firm's information system characteristics and management accounting adaptability. *International Journal of Accounting and Information Management*, 24 (1), 20 – 37. <https://doi.org/10.1108/IJAIM-10-2014-0066>