

The Use Of Management Accounting Techniques Among Small And Medium-Sized Enterprises: A Study In Selangor, Malaysia

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Abstract

Purpose Management accounting techniques provide numerous benefits to businesses by providing information that allows managers to understand the financial performance of the business and plan for necessary improvements in revenue earned, in managing the cost of operations, and in adding value to the organization. However, what was found from past studies is that studies on the use of management accounting techniques among SMEs are still scarce, especially in Malaysia. Having said that, this study was conducted by the authors with the aim of examining the possible relationships that may exist from certain influential factors, such as intensity of competition, extent of decentralization, top management support, and availability of resources on the use of management accounting techniques among SMEs in Selangor, Malaysia. This study was conducted with the objective that the research results will contribute to existing studies on the use of management accounting techniques among SMEs, and suggest possible government-led interventions for SMEs. This is to ensure that SMEs have access to assistance such as financial aid, programmes, training, and support for digitalization in the area of management accounting systems.

Design/methodology/approach The study design used a deductive approach and a quantitative method. Data was collected from 151 respondents who held the position of middle or senior level managers with accounting & finance experience working in SMEs that are located in the state of Selangor, Malaysia. A questionnaire survey using non-probability sampling, a convenient sampling method was used. Data analysis was done using the Statistical Package for Social Sciences (SPSS), followed by Partial Least Squares Structural Equation Modelling (PLS-SEM) to test the reliability, validity, and to test the hypotheses of the study.

Findings The research findings revealed that the intensity of competition and top management support had significant relationships with the use of management accounting techniques among SMEs in Selangor, Malaysia.

Practical Implications The study provides recommendations that the Malaysian government must continue to provide support to SMEs by providing grants, loans, tax incentives, and training and development to help SMEs navigate the competitive landscape and teach management on how to utilize the right management accounting techniques.

Social Implications The study would promote the use of management accounting techniques among SMEs. This study provides impetus for the need to provide SMEs with training and support in using management accounting techniques, subsequently supporting lifelong learning and upskilling.

Originality/value The scientific novelty of the study comes from being able to identify the possible factors that influence the use of management accounting techniques among SMEs in Selangor, Malaysia. Secondly, the test results of the extent of decentralization and availability of resources refuted the results of past studies. The study also provides practical implications based on the research findings.

Keywords— Management Accounting Techniques, Intensity of Competition, Extent of Decentralization, Top Management Support, Availability of Resources

1.0 INTRODUCTION

1.1 Management Accounting Practices

Management accounting is the sourcing, analysis, communication, and use of decision-relevant financial and non-financial information to generate and preserve value for organisations (CIMA, 2023), while management accounting techniques refer to the methods and tools used by management accountants to collect, analyse, and report financial and non-financial information, which will assist managers in making informed business decisions. Management accounting techniques, which include budgeting, cost analysis,

variance analysis, performance measurement, and strategic planning, are used effectively to meet organizational goals (Kaplan, 1984; Yaser Saleh et al., 2023). Over the years, management accounting techniques have evolved from basic cost determination and financial control to more sophisticated methods aimed at enhancing efficiency, planning, control, and value creation in organizations (Trinh, 2024; Dahal, 2019).

In the beginning, management accounting techniques were primarily used to allocate costs accurately and ensure financial stability; however, the emphasis shifted to providing information that could aid in management planning, control, and decision making. Moreover, management accounting techniques such as decision analysis and responsibility accounting became prevalent, focusing on reducing waste and improving efficiency in business processes (Tarigan, 2023). Process analysis and cost management technologies were developed to support these goals. In the 21st century, the focus of management accounting techniques shifted towards creating value for customers through the effective use of resources and examining drivers of customer value, shareholder value, and organizational innovation (Dahal, 2019; Szczerbak & Wikarczyk, 2023).

Modern management accounting involves the use of various tools and methods such as budgeting, forecasting, variance analysis, balanced scorecards, and activity-based costing (Ghandour, 2021). These techniques help organizations to plan, monitor, and evaluate their financial and operational performance, align their activities with strategic objectives, and make informed decisions to achieve competitive advantage. As such, the benefits of adopting the right management accounting techniques include better operational efficiency, increased competitiveness, and the ability to respond quickly to market changes (Alsharari & Daniels, 2024). No doubt management accounting techniques are important in multinational companies (MNCs) as there is a need to execute management control across borders and align foreign subsidiaries with the organizations mission, vision and goal (Sageder & Feldbauer-Durstmüller, 2019), the adoption of management accounting techniques in Small and Medium-Sized Enterprises (SMEs) is still low (Ylä-Kujala, A et al., 2023). SMEs are crucial providers of employment and income; however SMEs are struggling to compete with larger firms as they have limited access to resources and expertise and limited time to implement management accounting techniques (Trinh, 2024; Razak, 2023; Ylä-Kujala, A et al., 2023).

1.2 Small and Medium-Sized Enterprises

According to the United Nations Global Compact (2022), SMEs are the driving force for economic growth globally, both in developed and developing countries, as SMEs account for almost 90% of firms globally. The World Economic Forum (2025) stated that SMEs are the backbone of the global economy, as there are over 400million enterprises worldwide generating 70% of employment and contributing 70% of global GDP.

SMEs are defined by the European Commission as organizations with fewer than 250 employees and revenues below €50 million per year or an annual balance sheet total not exceeding €43 million (European Commission, n.d). In the United States of America (USA), SMEs are defined as small businesses having fewer than 500 employees or average annual receipts under a certain amount (United States Small Business Administration, n.d.). SMEs in Malaysia, on the other hand, are defined based on specific criteria about their annual sales turnover and the number of employees, which categorize them into micro, small, and medium enterprises (LHDN, 2024). Small enterprises have sales turnovers ranging from RM250,000 to RM10 million (manufacturing) or RM200,000 to RM1 million (services), employing between five and 50 people. Medium enterprises are classified as those generating sales between RM10 million and RM25 million (manufacturing) or RM1 million to RM5 million (services), with staff counts between 51 and 150 (SMECORP Malaysia, 2025).

SMEs are vital to Malaysia's economy, contributing approximately 32% to the GDP, making up around 94% of all businesses, and providing employment for over half of the workforce, particularly in the manufacturing sector. SMEs play a critical role in promoting economic diversification and innovation, yet they face challenges such as limited access to financing, insufficient branding knowledge, and operational difficulties. Nonetheless, the Malaysian government actively supports these enterprises through various initiatives aimed at bolstering entrepreneurship and enhancing the competitive landscape for SMEs, thereby unlocking their significant growth potential in both local and international markets (Yap, 2023). In Malaysia, SMEs are adopting practices such as environmental management accounting to tackle carbon emission, energy efficiency, and community investment, subsequently making changes to accommodate sustainability (Wong, 2025). Furthermore, Razak et al. (2023) stated that management

accounting techniques are vital for SMEs, especially in Malaysia, to stay competitive in the local and global markets.

The use of management accounting techniques in SMEs still remains under-researched (Ylä-Kujala, A et al., 2023). In fact, the study on management accounting techniques among SMEs in Malaysia has highlighted several gaps. Primarily, most studies have focused on larger enterprises, often overlooking the unique challenges and conditions faced by smaller firms. There is a lack of studies within emerging economies on the use of management accounting techniques in SMEs (Ludji & Yuliati, 2024). Azudin and Mansor (2018) stated that the majority of SMEs in Malaysia are still practicing the traditional management accounting techniques. Consequently, there is a lack of empirical research that specifically examines contingency factors influencing the adoption of management accounting techniques within SMEs, particularly in the Malaysian context (Sana et al., 2020). Although past studies have examined the use of management accounting techniques in SMEs, there are still considerable gaps in understanding the relationship that intensity of competition, extent of decentralization, top management support, and resources availability may contribute to the use of management accounting techniques (Wines, 2024). This study is important not only in contributing to existing research on the use of management accounting techniques, but it would also allow the Malaysian government to align training programmes, financial support for SMEs, and provide necessary mentorship based on the results of this study.

Intensity of competition may be a contributing factor for the use of management accounting techniques in Malaysia as SMEs face intense competition in both local and global markets. To stay competitive, they need to utilize management accounting techniques to optimize resource allocation, control costs, and make informed decisions. Furthermore, Malaysian SMEs are compelled to use management accounting techniques to integrate environmental, social, and governance (ESG) practices into their business operations and manage their cash flow to maintain their competitiveness in the market (Wines, 2024). Extent of decentralization may be a contributing factor to the use of management accounting techniques in Malaysia. In a decentralized structure, managers at various levels have more autonomy and responsibility, which necessitates the use of management accounting techniques to provide relevant and timely information for decision-making (Alamsa et al., 2019). SMEs in Malaysia that adopt a decentralized approach can benefit from management accounting techniques to enhance their operational efficiency and responsiveness to market changes. Furthermore, top management support may also be a driving force for the use of management accounting practices in Malaysia. With the need to sustain and expand businesses, top management support in Malaysian SMEs has led to an increase in enterprise resource planning packages being utilized for cost reduction and strategic planning (Hong et al., 2024). According to Wong (2023), SMEs in Malaysia have a shortage of working capital and labour, which, as a result, has led to SMEs operating below their production capacity. Furthermore, the use of management accounting techniques in SMEs is normally triggered by the resource availability in the organization (Dasanayaka et al., 2021).

This study was initiated due to the limited research on the use of management accounting practices among SMEs (Ylä-Kujala, A et al., 2023), especially among SMEs in Malaysia (Rozlan & Hashim, 2018). The study was conducted in Selangor, Malaysia, as it has one of the highest numbers of SMEs in Malaysia (SMECORP, 2025). Furthermore, the state of Selangor was allocated RM5 million to empower SMEs in 2025, focusing on promoting entrepreneurship and supporting business growth (Hisham 2024). Hence, this study's objective is to find the possible relationships that may exist between intensity of competition, extent of decentralization, top management support, and availability of resources with the use of management accounting techniques among SMEs in Malaysia. SMEs utilize external accounting services, especially family-run businesses (Sirdar et al., 2024). While some larger SMEs may have their own internal accounting staff, the majority rely on external accounting professionals for services such as bookkeeping, tax compliance, financial reporting, and audit. Therefore, the respondents of the study will be middle or senior-level managers working in SMEs in the state of Selangor Malaysia with accounting & finance knowledge.

2.0 LITERATURE REVIEW

2.1 Contingency Theory

Otley (1980) stated that the "contingency approach to management accounting is based on the premise that there is no universally appropriate accounting system which applies equally to all organisations in all circumstances; rather, it is suggested that particular features of an appropriate accounting system will depend upon the specific circumstances in which an organisation finds itself (p.413)". This framework is

essential for understanding the possible relationships that may exist between intensity of competition, extent of decentralization, top management support, and availability of resources with the use of management accounting techniques among SMEs in Malaysia. In this study, internal environment factors are the extent of decentralization, top management support, availability of resources while the external environment factors is intensity of competition (Otley, 1980).

2.1 Intensity of Competition

Intensity of competition is defined as the extent to which organizations compete for critical resources such as raw materials, distribution channels, and product differentiation factors like quality, variety, and price (Oyewo, 2021). Dasanayaka et al. (2021) stated that the intensity of competition was a driving factor for the use of sophisticated management accounting techniques. The relationship between competition intensity and the use of management accounting techniques is significant in shaping business strategies. As competition intensifies, companies are compelled to adopt a broader range of management accounting practices to enhance their decision-making and performance evaluation processes (Baird et al., 2024). The intensity of competition influences the strategic priorities of firms, which in turn affects their choice of management accounting practices. To remain competitive, businesses may implement cost control and reduction techniques, using management accounting information to identify and reduce non-value-added activities, ultimately leading to leaner operations (Rachmawati & Kristina, 2024).

According to Dung and Lien (2024), the authors found that the intensity of competition had a positive relationship with the use of management accounting techniques among Vietnamese manufacturing, commercial, and service enterprises. The authors stated that Vietnamese enterprises may have higher adoption rates of modern management accounting techniques in businesses to strengthen their positions in the market. Hence, based on the literature review above, the following hypothesis is proposed:

H1: There is a significant relationship between the intensity of competition and the use of management accounting techniques among SMEs in Selangor, Malaysia.

2.2 Extent of decentralization

The extent of decentralisation refers to the degree to which decision-making authority is distributed across various levels and branches of an organization (Darvishmotevali's, 2019). The relationship between the extent of decentralisation and the use of management accounting techniques is significant in understanding how organisations manage decision-making and resource allocation. As decentralisation increases, decision-making authority shifts to lower levels in the organisational hierarchy, enabling managers closer to the operational activities to respond quickly to changing circumstances and specific departmental needs (Tavares et al., 2024).

Management accounting tools, such as budgeting, variance analysis, and performance measurement, become crucial as they empower decentralised managers to analyze financial data effectively and align operational actions with organisational goals (Remali, 2020). While operational decentralization empowers managers to make more informed decisions aligned with their local business contexts, it also influences the type of management accounting techniques employed, the balance of which leans towards measures that capture qualitative aspects and local performance indicators rather than strictly financial outcomes (Jaradat et al., 2021). This insight supports the notion that accounting and operational decentralization are interconnected, suggesting a strategic alignment in organizational design that fosters both accurate reporting and effective management practices in varied business environments (Tavares et al., 2024). Hence, based on the literature review above, the following hypothesis is proposed:

H2: There is a significant relationship between the extent of decentralisation and the use of management accounting techniques among SMEs in Selangor, Malaysia.

2.3 Top Management Support

Top management support refers to the active involvement and backing of an organization's senior leadership in the adoption and implementation of various organizational strategies and systems. In the context of management accounting, top management support plays a critical role in the effective use of management accounting techniques to ensure that these tools align with the organization's strategic objectives, enhance decision-making processes, and contribute to overall performance (Pedroso & Gomes, 2024). Besides that, the low awareness and lack of knowledge about strategic management accounting among accounting staff are some of the challenges faced in SMEs. These issues are often exacerbated by insufficient top management support, leading to a cycle that hinders the successful adoption of strategic management accounting practices (Pavlatos & Kostakis, 2018).

Top management's commitment is crucial for allocating the necessary resources in labour, financial, and technology for strategic management accounting implementation. Their active support can mitigate resistance, ensure adequate resource allocation, and foster an environment conducive to the effective implementation of management accounting innovations (Pedroso & Gomes, 2024). Mkonya et al. (2018) indicate that top management support is crucial for the successful implementation of accounting information systems and management accounting techniques. Studies have shown that top management's involvement positively impacts the adoption and effectiveness of these systems. Management accounting practices, including strategic management accounting, are significantly influenced by top management support. Strategic management accounting techniques require integration with business strategy, and top managers play a key role in justifying the adoption of these techniques. Hence, based on the literature review above, the following hypothesis is proposed:

H3: There is a significant relationship between top management support and the use of management accounting techniques among SMEs in Selangor, Malaysia.

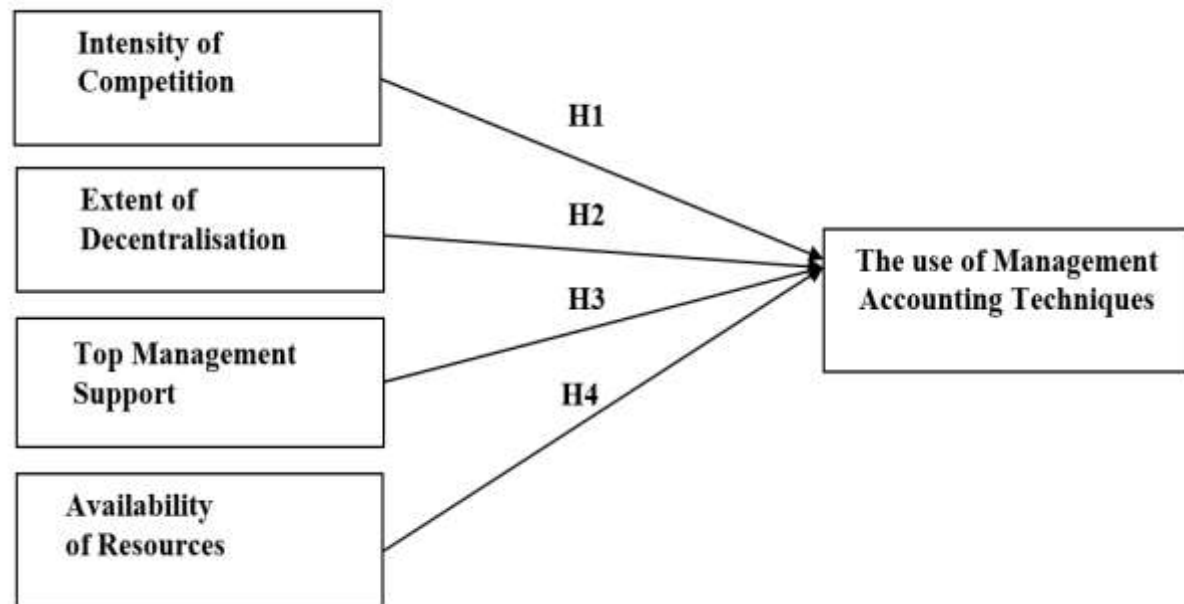
2.4 Availability of Resources

Availability of resources refers to the extent to which necessary resources, such as materials, personnel, technology, and information, are accessible and can be utilized for a specific purpose or project within an organization (Wang & Zhao, 2024). Availability of resources is a critical factor in planning and executing strategies, as sufficient resources are essential for the successful implementation of tasks and achieving organizational objectives. Availability can also pertain to the timing and quantity of resources required for different operations (Bygballe et al., 2022). Larger SMEs, characterized by greater resources, are more likely to adopt strategic management accounting tools effectively. Mbali et al.'s (2019) study on the factors influencing the use of management accounting practices by SMEs in Durban, KwaZulu-Natal, found that the availability of resources is one of the critical factors influencing the use of management accounting techniques. This suggests that resource availability plays a crucial role in the utilization of management accounting techniques.

SMEs often face significant resource constraints, including financial, human, and technological resources. These constraints limit their ability to adopt and implement advanced management accounting techniques, such as strategic management accounting and decision support systems. Availability of Resource significantly influences the adoption and effectiveness of management accounting techniques in SMEs. Roffia et al.'s (2025) study on the relationship between management accounting techniques and financial performances in SMEs in Italy and Germany found that availability of resources had a significant impact on management accounting practices in SMEs. By optimizing resource use through management accounting practices, SMEs can improve their operational performance and strategic positioning in competitive markets. Hence, based on the literature review above, the following hypothesis is proposed:

H4: There is a significant relationship between availability of resources and the use of management accounting techniques among SMEs in Selangor, Malaysia.

Figure 1 shows the conceptual framework based on the literature review.



Source: Authors' own work

Figure 1: The Conceptual Framework

3.0 RESEARCH DESIGN

The research philosophy used in this study is the positivist approach, as this study involves generating a research strategy by collecting data based on existing theory. Next, the paradigm used in this study is the functionalist paradigm. The study is a quantitative study utilizing a deductive research approach that has a theory and a hypothesis. The research method is explanatory. The research strategy was a survey method, a mono-method using questionnaires as the data collection tool. The cross-sectional study was applied in this study due to time constraints; furthermore, it is mostly applied in survey strategies. Finally, the unit of analysis is middle or senior managers with accounting & finance experience working in SMEs that are situated in the state of Selangor, Malaysia.

3.1 Research Population

The research population consists of middle or senior managers with accounting and finance experience working in SMEs that are situated in Selangor, Malaysia. There are more than 1.15 million SMEs in Malaysia ("Access All Areas-European SMEs and Malaysia", 2023; Ramdan et al., 2022). The study was conducted in Selangor, as this state has the highest number of SMEs in Malaysia, with approximately 180,000 SMEs, accounting for 20 percent of the total shares in the region. ("Selangor Announces RM5 Million Digital Matching Grant for SMEs", 2023; SMECORP, 2025).

3.2 Research Method

An online survey questionnaire using Google Form was administered to middle or senior managers with experience in accounting and finance working in SMEs using non-probability convenience sampling. Convenient sampling is a non-probability sampling method where participants are chosen for a study because they are readily available and are easy to access by the researcher. Convenient sampling allowed the researcher to reach an available group to collect data from. The respondents who were middle or senior managers of SMEs were approached during a conference in Kuala Lumpur. The respondents were asked if they would agree to participate in the study. Participants who agreed were given the link to the questionnaire.

A total of 151 respondents answered the survey questionnaire. Respondents were asked to provide their demographic profile, such as gender, age, race, highest educational level, number of years of work experience in accounting and finance, and managerial position. Respondents were then requested to answer questions that were related to the variables in this study. To measure intensity of competition, extent of decentralization, top management support, availability of resources, and the use of management accounting techniques, this study embraced a list of items scale adapted from Ludji and Yuliati (2024). A Likert scale ranging from 1 representing strongly agree and 5 representing strongly disagree was employed in this study.

3.3 Data analysis

Since this study is a confirmatory study, data analysis was done using Statistical Package for Social Sciences (SPSS), followed by Partial Least Squares Structural Equation Modelling (PLS-SEM). SPSS was important for data cleaning, normality of data, producing the descriptive analysis of the demographic profile, and the mean and standard deviation of the variables. PLS-SEM was employed to analyse the measurement model and structural model. PLS-SEM was chosen as the sample size was small, which was less than 200. PLS-SEM is also suitable when the data are not normally distributed. Furthermore, PLS-SEM is more suitable for models with formative constructs.

4. RESULTS

4.1 Normality and Outliers

The Kolmogorov-Smirnov statistics test with Lilliefors significance level for testing normality was used for this study. The Kolmogorov-Smirnov statistics test was conducted as the sample was more than 50 (Mishra et al., 2019). As seen in Table 1, the normality test results for the dependent variable, use of management accounting technique, produced a statistic of 0.190 with a significance value of less than 0.001. This confirms that the data of this study is not normal and also justifies the use of PLS-SEM for data analysis. Next, the z-score was calculated to measure how far from the mean each of the data values is, using a standardized scale. An absolute z-value of ± 3.29 is required for medium-sized samples ($50 \leq n < 300$) in order to determine that the sample distribution is normal (Ibrahim, 2024). As seen in Table 2, the Z-score value is -0.515, which falls within the acceptable range of -3.29 to +3.29.

Table 1: Test of Normality

Kolmogorov-Smirnov ^a			
	Statistics	df	Sig.
Management Accounting Techniques	.190	150	<.001
Source: Authors' own work			

a. Lilliefors Significance Correction

Table 2: Descriptives

Descriptives				
			Statistics	Std., Error
Use of MAT	Mean		3.2078	.05926
	95%Confidence interval for	Lower Bound	3.0907	
		Upper Bound	3.3249	
	5% Trimmed Mean		3.2130	
	Median		3.1667	
	Variance		.527	
	Std. Deviation		.72583	
	Minimum		1.67	
	Maximum		5.00	
	Range		3.33	
	Interquartile Range		1.33	
	Skewness		-.102	.198
	Kurtosis		-1.116	.394
Source: Authors' own work				

4.2 Demographic Details

The demographic profile of the respondents is listed in Table 3. Female respondents accounted for 52.7% of the respondents, while males where 47.3%. In terms of age, 50.7% of the respondents fell between the ages of 36 and 45 years old. While 30.7% of the respondents were between the ages of 46 and 55 years old. 12.7% of the respondents were between the ages of 26 and 35 years old. Next, in terms of races,

54.7% of the respondents were Chinese, 17.3% were Indians, and 16.7% were Malays. As for the highest education level, 86% have a bachelor's degree, and 13.3% have a master's degree. As for work experience, 46.7% have more than 5 years of working experience in accounting and finance, 24.7% have 3 years of working experience in accounting and finance, while 22.7% have 2 years of working experience in accounting and finance. Lastly, 74.7% held middle level managerial positions while 25.3% held senior level managerial positions.

Table 3: Demographic Details

Demographic Features		Frequency	Percentage
Gender	Female	79	52.7
	Male	71	47.3
Age Group	≤ 25 years old	6	4.0
	26-35 years old	19	12.7
	36-45 years old	76	50.7
	46-55 years old	46	30.7
	56-65 years old	3	2.0
Races	Chinese	82	54.7
	Malay	25	16.7
	Indian	26	17.3
	Others	17	11.3
Highest Education Level	Bachelor's Degree	129	86.0
	Master's Degree	20	13.3
	Others	1	0.7
Work Experience In Accounting & Finance	≤ 1 year	8	5.3
	2 years	34	22.7
	3 years	37	24.7
	4 years	1	.7
	≥ 5 years	70	46.7
Managerial Position	Middle Level	112	74.7
	Senior Level	38	25.3
Source: Authors' own work			

4.3 Descriptive Details

The list of means, and standard deviations for each item scale of the variables in the study is presented in Table 4.

Table 4: Descriptive Details

Construct Item			Mean	SD
Intensity of Competition	IC1	Your company faces a high degree of price competition for products.	3.37	1.251
	IC2	There is a high degree of market competition in the new product development faced by your company.	3.60	.934
	IC3	There is a high degree of market competition in marketing and distribution faced by your company.	3.97	.741

	IC4	Your company faces a high degree of market competition in gaining market share.	3.92	.823
	IC5	Behaviours of competing companies bring a serious threat to your company.	3.95	.792
Extent of Decentralisation	ED1	I am able to influence beyond budget, the level of expenditure for advertising and promotion.	2.69	1.018
	ED2	I am able to influence the changing of the selling price on a major product or product line.	2.66	.968
	ED3	I am able to influence beyond budget, the level of expenditure for research and development.	2.66	.968
	ED4	I am able to influence beyond budget, the number of employees in our company.	2.80	.983
Top Management Support	TMS1	The management accounting system receives strong active support from top management.	3.77	.584
	TMS2	Upper management has provided adequate resources to implement/maintain the management accounting system.	3.75	.567
	TMS3	The management accounting system is closely tied to the competitive strategies of our business.	3.48	.692
	TMS4	Top management provides training for the use of management accounting techniques.	3.45	.848
Availability of Resources	RA1	Availability of financial resources to support the adoption and implementation of the management accounting techniques.	3.79	.630
	RA2	Availability of physical resources (e.g. hardware, equipment, building) to support the adoption and implementation of the management accounting techniques).	3.75	.580
	RA3	Availability of non-physical resources (e.g. software, database, information systems) to support the adoption and implementation of the management accounting techniques.	3.77	.647
	RA4	Availability of adequate funding to support the adoption and implementation of the	3.76	.692

		management accounting techniques)..		
The use of Management Accounting Techniques	MAT1	Operating processes are analysed and allocated into their component activities.	3.21	1.052
	MAT2	Operating costs are explicitly traced to activities.	3.35	.962
	MAT3	Product costs are determined using activity-based costing.	3.17	.901
	MAT4	Decisions about products (e.g., mix, pricing, production method) are based on activity-based product costs.	2.87	1.008
	MAT5	Activity cost information is used to manage production costs.	3.24	.774
	MAT6	Activity cost information is used for preparing budgets.	3.42	.830
Source: Authors' own work				

4.4 Analysis of the Measurement Model

Table 5 shows the summary of the validity and reliability of the instrument used in the study. All constructs had excellent reliability and validity. The outer loading of items was between the ranges of 0.640 and 0.969. According to Hair (2022), outer loadings should be higher than 0.708 to establish indicator reliability, although loadings higher than 0.5 are acceptable if the measurement model passes the threshold of internal consistency using Cronbach's alpha and composite reliability and convergent validity criteria (Hair et al., 2017a). For this study, internal consistency was achieved as the Cronbach alpha for all constructs was more than 0.70. Furthermore, composite reliability for all constructs was above 0.70. Furthermore, convergent validity was achieved as the average variance extracted (AVE) was above 0.50.

Table 5: Validity and Reliability of Construct

Construct	Item	Outer loading	Cronbach alpha	Composite reliability(rho-a)	Composite reliability(rho-c)	Average variance extracted (AVE)
Intensity of Competition	IC1	0.936	0.873	0.926	0.911	0.721
	IC2	0.911				
	IC3	0.809				
	IC4	0.724				
	IC5	0.936				
Extent of Decentralisation	ED1	0.927	0.930	0.982	0.951	0.830
	ED2	0.969				
	ED3	0.969				
	ED4	0.763				
Top Management Support	TMS1	0.755	0.802	0.843	0.862	0.610
	TMS2	0.762				
	TMS3	0.791				
	TMS4	0.814				
Resources Availability	RA1	0.940	0.949	1.012	0.962	0.863
	RA2	0.827				

	RA3	0.974				
	RA4	0.967				
The use of Management	MAT1	0.846	0.871	0.903	0.904	0.613
Accounting Techniques	MAT2	0.802				
	MAT3	0.828				
	MAT4	0.895				
	MAT5	0.640				
	MAT6	0.651				
Source: Authors' own work						

Next, in PLS-SEM, to demonstrate discriminant validity, the "Heterotrait-Monotrait ratio (HTMT)" between two constructs should be less than 0.85 or 0.9. This indicates that the correlation between the constructs should be notably lower than the correlation within each construct. Table 6 shows that the discriminant validity is below 0.85, indicating appropriate discriminant validity.

Table 6: Discriminant Validity-Heterotrait -monotrait (HTMT) -Matrix

	Extent of Decentralisation	Intensity of Competition	Resource Availability	The Use of Management Accounting Techniques	Top Management Support
Extent of Decentralisation					
Intensity of Competition	0.570				
Resource Availability	0.121	0.074			
The Use of Management Accounting Techniques	0.374	0.575	0.191		
Top Management Support	0.312	0.173	0.388	0.566	
Source: Authors' own work					

4.5 Structural Model Analysis

To analyse the structural model, a model test was performed to analyse the relationship between the construct, significance and R-square of the research model. Structural models were evaluated using R-square for t-test dependency constructs as well as signatures of the coefficients of structural path parameters. Figure 2 shows the structural model; the effect of intensity of competition, extent of decentralization, top management support, resources availability, on the use of management accounting techniques among SMEs in Selangor, Malaysia. As seen in Figure 2, the independent variables in this model account for 51% of the variance in the use of management accounting techniques, according to the R-squared value of 0.51. Other factors that were not taken into account in this study could be responsible for the remaining 49%. The model's reliability is further supported by the Adjusted R Square score of 0.497, which takes into consideration the number of predictors utilised. The next analysis was to analyze the relationship between the effect of intensity of competition, extent of decentralization, top management support, and resources availability, on the use of management accounting techniques among SMEs in Selangor Malaysia. In PLS-SEM, the relationship analysis was conducted by calculating the path coefficients for each path. To analyze these relationships, the bootstrapping method was first applied to resample the data, addressing potential issues with informal data. After bootstrapping, the relationship data between variables were obtained as follows.



Source: Authors' own work

Figure 2 Structural Model with path coefficients and p-value.

Table 4 shows all the hypotheses from H1 to H4 with the t-statistic value. If the t-value is greater than 1.645 ($p < 0.05$) or greater than 2.33 ($p > 0.01$) for 1 1-tailed test or if the t-value is greater than 1.96 ($p < 0.05$) or greater than 2.58 ($p > 0.01$) for 2 2-tailed test, then the relationships are significant between the independent variables and the dependent variable. As such, based on the results from Table 4, hypotheses H1 and H3 are supported while hypotheses H2 and H4 are not supported. Furthermore, the highest B value obtained in this study belongs to the intensity of competition, which is 0.508. This means that the intensity of competition is the independent variable that is the most crucial factor in this study of the use of management accounting techniques.

Table 7: Hypotheses

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Decision
Intensity of Competition -> The Use of Management_	0.508	0.508	0.058	8.771	0.000	Supported

Accounting Techniques						
Extent of Decentralisation -> The Use of Management_ Accounting Techniques	-0.020	-0.015	0.071	0.283	0.777	Not Supported
Top Management Support -> The Use of Management_ Accounting Techniques	0.438	0.442	0.061	7.180	0.000	Supported
Resource Availability -> The Use of Management_ Accounting Techniques	0.035	0.039	0.071	0.496	0.620	Not Supported
Source: Authors' own work						

5.0 DISCUSSION AND IMPLICATIONS

As shown in Table 7, the results of this study have revealed that the intensity of competition has a significant relationship with the use of management accounting techniques, which is similar to past studies (Baird et al., 2024; Dung & Lien, 2024). Furthermore, the intensity of competition is the most crucial factor affecting the use of management accounting techniques among SMEs in Selangor, Malaysia. This can be explained by the intense competition SMEs face when competing with large and foreign competition, hence this may be driving SMEs to use management accounting techniques to gain a competitive advantage (Keelson et al., 2024). Likewise, similar to past research, top management support also has a significant association with the use of management accounting techniques among SMEs in Selangor, Malaysia (Mkonya et al., 2018; Pedroso & Gomes, 2024). This is because top management's strategic direction for the business is a driving force towards the use of management accounting techniques in SMEs (Saedon et al., 2023). Top management support is crucial in the utilization of management accounting techniques. The scientific novelty of this study is that both the extent of decentralization and resources availability did not have significant relationships with the use of management accounting techniques among SMEs in Selangor, Malaysia. It may be that decentralization in SMEs does not permit managers the authority to make decisions on the use of management accounting techniques, and managers may still require top management's involvement. Likewise, resources availability may not be a primary determinant for the use of management accounting techniques.

The findings of this study have theoretical implications that will enhance the current studies on the use of management accounting techniques. The study provides valuable insights for future investigations into the impact of intensity of competition and top management support on the use of on management accounting techniques. The study helps point out influential factors that are important in Contingency Theory that can affect the use of management accounting techniques. The findings of this study have revealed that the external factor, which is the intensity of competition, and the internal factor, top management support, are the most influential factors affecting the use of management accounting techniques among SMEs, especially in Selangor, Malaysia.

Practical implications are needed to address the impact that the intensity of competition and top management support have on the use of management accounting techniques. SMEs are continuously facing intense competition and threats from new entrants, besides existing competition; hence, top management involvement is necessary to determine the type of management accounting techniques to be used as per the vision, mission, and strategic direction of the business. It is important that the Malaysian government continue to provide support to SMEs by providing grants, loans, tax incentives, and also

training and development to help navigate the competitive landscape and to teach management on utilising the right management accounting techniques. The Malaysian government may also provide assistance in technology adoption or business advisory solutions to top management as well (Thomas, 2024). This study has contributed to the existing body of knowledge on the use of management accounting techniques. Firstly, as much as we strive to achieve SDG 8, decent work and economic growth, and SDG 9, industry, innovation, and infrastructure policies must be implemented to facilitate and help SMEs to use management accounting techniques in facing competitors. Furthermore, top management must be aware of the importance of using the right management accounting techniques to sustain and grow the business. Firstly, training programmes must be offered in partnership with accounting bodies and universities in the delivery of the management accounting programmes. Secondly, providing grants and tax deductions to SMEs is crucial when SMEs invest in accounting systems, as SMEs may face challenges with the cost of digitalization (Mahalingam, 2024).

6.0 LIMITATION AND FUTURE RESEARCH

There are a few limitations in this study that may be used to conduct future studies. Firstly, this research only involved 151 respondents; hence, a larger sample size would allow for a better representation of the population being studied. Next, the study was done in Selangor, Malaysia. Future studies should consider states such as Johor, Perak, and Penang, which also have one of the highest numbers of SMEs in Malaysia (SMECORP, 2025). A comparative study may be done among states, highlighting the independent variables that have significant relationships with the use of management accounting techniques. Finally, the study may look into the effectiveness of existing policies in promoting the use of management accounting techniques among SMEs.

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