

SMEs Operational Efficiency and Adoption of Management Accounting Information: Evidence from Thailand

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Abstract

The vitality of SME performance and its contribution to overall GDP has been extensively established in past studies. Similarly, the Management Accounting Information (MAI) is a vital organizational resource. Despite several studies on this topic, a paucity of studies identified the antecedents of MAI, hurting the SME's business performance (SME's-BP). Therefore, the present study intends to investigate the link between SME's business characteristics (SME's BC) and internal and external factors with MAI. Similarly, the study investigates the relationship between MAI and SMEs' business performance. The respondents of the survey were 399 SME managers working in Thailand. The sample of the study was selected using a basic random sampling approach. The acquired data was evaluated by multiple regression analysis using SPSS 22. The study results confirm the higher performance of SMEs; as a result, management needs to be worried about management accounting information. More specifically, two components of SME's-BC, i.e., Year of Business: (YOB) and Annual Revenues: (ARV); organizational structure from internal variables and economics from external factors, have a substantial effect on MAI. The study also indicated that two parts of MAI, i.e., scope and aggregation, substantially affect SME's-BP. The paper also highlights research limitations and ideas for future research.

Keywords: SMEs, Operational Efficiency, Management Accounting Information, Administrative.

Introduction

The bulk of industries is continuously adjusting, generally in response to consumer demand, rivals, or technology providers (Inks et al., 2019). Businesses are under continual pressure to alter their products and services to fit the ever-changing wants of their consumers as a result of this evolution. This is because there is no competitive advantage that cannot be overcome by rivals (Song & Lee, 2020). Therefore, it should not be surprising that executives and academics see continuous learning as a crucial element of an effective and sustainable organizational strategy (Ikram & Meslouhi, 2019). Perception and interpretation of information are prerequisites for initiating the learning process (Basten & Haamann, 2018). An extensive study has demonstrated that managers considerably benefit from having access to pertinent data (Vuori & Huy, 2022). Even though managers have access to a large diversity of internal and external information sources, the management accounting system remains one of the essential sources available to businesses (Rajendran et al., 2022). Senior managers must utilize the information offered by management accounting since they are the ones who perceive and interpret information for the whole organization and then act based on this information (Abatecola & Cristofaro, 2018). Due to their position, they have the most impact on their company's activities and, consequently, its performance (Nouchi et al., 2019). Although learning has been connected to the use of management accounting information (Ceptureanu et al., 2018), a model of the relationship between the use of management accounting information by managers and the performance of organizations has not yet been thoroughly developed.

Small and Medium-Sized Enterprises (SMEs) were the aim of economic development and the creation of economic variety at both the micro and macro levels. Business research could not refute these economic aspirations (Chienwattanasook & Jarinto, 2020). Utilizing historical and present data, such as management accounting information, as well as other ways, was intended to enhance performance via the

management process (Al-Delawi & Ramo, 2020; Chetthamrongchai & Jermstittiparsert, 2020; Nguyen & Nguyen, 2020; Pissar & Bilkova, 2019; Rao et al., 2021; Saengchai et al., 2019; Uyar, 2019). Nonetheless, it was discovered that SMEs had limitations in competition and access to funding, which were dictated by SMEs' Characteristics (SMEs-BC) (Rao et al., 2021), Internal Factors: (In-F) such as Organizational Culture, Organizational Structure (Al-Delawi & Ramo, 2020; Nguyen & Nguyen, 2020; Stegaroiu et al., 2020), and business supports required for management to accommodate future (Ikram & Meslouhi, 2019).

Such factors were found to have a positive effect on the use of management accounting information, the use of which needed to be consistent with external factors (Ex-F) such as different economics that turned SMEs into the development goal for economics at various levels Al-Delawi and Ramo (2020); Ikram and Meslouhi (2019); Nguyen and Nguyen (2020); Pissar and Bilkova (2019), in addition to Legal and Political (Ikram & Meslouhi, 2019). There were efforts to keep up with technology changes (TEC), which compelled the management process and behavior to adapt to these changes and uncertainties (Alshirah et al., 2021; Ikram & Meslouhi, 2019). SMEs were considered too restricting and imbalanced for the use of management accounting information for processes such as Directing, Planning Process, Controlling, and Decision Making that intended to enhance SMEs' Business Performance (SMEs-BP), both in financial and non-financial aspects (Al-Halabi et al., 2019).

When the same data was applied to larger businesses, there were likewise statistically significant changes (Uyar, 2019). (Cognitive biases) were discovered to be significantly influenced by the utilization of information and comprehension of SME financial reporting (Adomdza et al., 2016). Regarding the personal qualities of SME managers, it was discovered that their management styles depended more on their ownership, personal opinions, experience, and opinion of future trends than on management accounting facts (Rao et al., 2021; Wong et al., 2018). This led to the objectives of this study, particularly proficiency in the use of management accounting information in small and medium-sized enterprises (SMEs) through issues such as (1) the level of management accounting information usage by SME managers, (2) the effect of business characteristics of SMEs and internal and external factors on the use

of management accounting information, and (3) the effect of the level of management accounting information usage on business performance.

Literature Review

Management Accounting Information

Management accounting data has four primary informative characteristics (Hutahayan, 2020). This term is utilized extensively in academic research (Hertati et al., 2020). The four informational characteristics are depth, aggregation, integration, and timeliness. The breadth of the information begins with the following dimensions: concentration, quantification, and time frame. It gives information on the external environment and financial and time-related information. Second, "aggregation" refers to accumulating data relevant to different organizational functional areas. In conclusion, the phrase "integration" explains how different aspects and divisions of an organization exchange information and connect. Lastly, timeliness is defined as the rate and frequency of information dissemination (Le et al., 2020).

According to a historical study, when MAI was first entering the business sector, the corporation concentrated primarily on the organization's finances and its internal culture (Fujita et al., 2018). After growing over time and adapting to the changing nature of the business world, MAI turned its focus to the non-financial components of the firm and its external environment (Cescon et al., 2019). These criteria include the level of customer satisfaction, the conduct of rivals, the competence of personnel, the time required to process items, the quality of products, and the innovativeness of new products (Hiromoto, 2019). According to the study performed by Otto et al. (2020), customer happiness is the aspect that has the most significant impact on an organization's total success. According to Otto et al. (2020), when business competition is high, managers may find it challenging to gain MAI, mainly based on customer satisfaction.

According to the conclusions of a study by Ameen et al. (2018), enterprises must use the most suitable MAI to meet their stakeholders' needs. This is also supported by Asiaei et al. (2022). They claimed that employing the proper MAI is feasible to meet the demands of stakeholders, hence enhancing the organization's performance. Both of these research provide evidence for this. A previous study by De Mendonca and Zhou (2019) determined that the degree of stakeholder satisfaction positively affects

an organization's financial performance and that this link contributes to a rise in the business's profit. In addition, a large body of research indicates that pleasing stakeholders has contributed to enhanced financial performance (Marinič, 2016).

Moreover, Ballestar et al. (2018) highlighted in their study that it is essential to comprehend the organizational stakeholder's demands to raise satisfaction. This is because satisfied stakeholders contribute to an organization's improved performance, which in turn contributes to the organization's profitability. In his study, Hiromoto (2019) found that not all stakeholders are lucrative, but they may have hidden worth such as knowledge or influence (Hertel et al., 2022). Jaafar and Noordin (2020) viewed these stakeholders as unexpected sources of revenue. Moreover, Asiaei et al. (2022) discovered that when there is a high degree of competition in the business environment, managers are more likely to meet the needs of their stakeholders. This is because addressing the needs of the organization's stakeholders will ensure its survival in the face of fierce market competition and ensure its long-term existence. However, this study stream does not adequately explain the influence of company features, internal and external variables, and MAI on business success.

SMEs Characteristics and Management Accounting Information.

Various studies have found that the level of management accounting information usage varies among SMEs based on their characteristics (Ibrahim et al., 2020; Vuong, 2020), particularly in the current economic context where a variety of factors influence SMEs, so they adapt their characteristics to better accommodate for threats and opportunities (Pisar & Bilkova, 2019). Studies on SMEs often revealed variations between SMEs and trust in SMEs that mainly focused on the Year of Business, Number of Employees, Initial Capital Amount, and Annual Revenues (ARV) of the SMEs (Kotane & Kuzmina-Merlino, 2011; Pisar & Bilkova, 2019). In contrast, several studies have demonstrated that SMEs require management accounting information-driven performance and operational changes to achieve more excellent performance and sustainability (Ibrahim et al., 2020; Vuong, 2020). Even though their unique features constrain SMEs' use of management accounting information, excellent accounting information utilization will encourage and facilitate decision-making processes that significantly impact the SMEs' success (Kotane & Kuzmina-Merlino, 2011). From the literature mentioned above review, a hypothesis may be drawn:

H1: Characteristics of SMEs had a positive effect on the level of management accounting information usage

Internal Factors (In-F), External Factors (Ex-F), and Management Accounting Information.

The hope is that SMEs will revolutionize the economy, while SMEs themselves have to contend with external variables that corporate management and strategy must consider (Uyar, 2019). Economics (EC), Law and Politics (LP), Social and Culture (SC), and Technology (TEC) were often the topics of studies on external variables (Al-Delawi & Ramo, 2020; Ikram & Meslouhi, 2019; Nguyen & Nguyen, 2020; Pissar & Bilkova, 2019). The variety of SMEs has become a problem with economic importance (Pissar & Bilkova, 2019). Legal & Political, Social & Cultural, and Technological Concerns exerted pressure on the management, and such uncertainties compelled businesses to adopt particular traits to accommodate these factors (Alshirah et al., 2021; Ikram & Meslouhi, 2019). In addition to external influences, internal elements such as Organizational Culture (CO), Organizational Structure (OS), and Business Supports (BS) were highlighted as being related to management and influencing the MAI (Al-Delawi & Ramo, 2020; Ikram & Meslouhi, 2019; Nguyen & Nguyen, 2020). CO was discovered to impact the quality of information and accounting information utilization for management decision support and display (Nguyen & Nguyen, 2020). The information utilization process still required a strong data collecting strategy (Rao et al., 2021), but information flow in businesses with excessive OS remained a contradictory problem. However, the management process had to accommodate expansion, increased competitiveness, and business support, which required management accounting information (Ikram & Meslouhi, 2019). From the literature mentioned above review, hypotheses might be drawn:

H2: Internal factors had a positive effect on the level of management accounting information usage

H3: External factors had a positive effect on the level of management accounting information usage

Management Accounting Information and SMEs Business performance (SMEs-BP)

The use of accounting information, or past and current accounting information,

to enhance future SMEs' Business Performance (SMEs-BP) (Pisar & Bilkova, 2019), with the expectation of improving future SMEs' Business Performance (SMEs-BP) in both financial and non-financial aspects. Utilization of accounting data in management processes (Pisar & Bilkova, 2019; Saengchamnonng & Viroonratch, 2019). This information was used to maintain performance, establish a direction, plan the operation, distribute tasks to subordinates, review the actual operation in comparison to the plan, and analyze options for future growth and sustainability of SMEs-BP (Pisar & Bilkova, 2019; Saengchamnonng & Viroonratch, 2019; Vuong, 2020). From the literature mentioned above review, a hypothesis may be drawn:

H4: Level of management accounting information usage was positively related to company performance

Research Framework

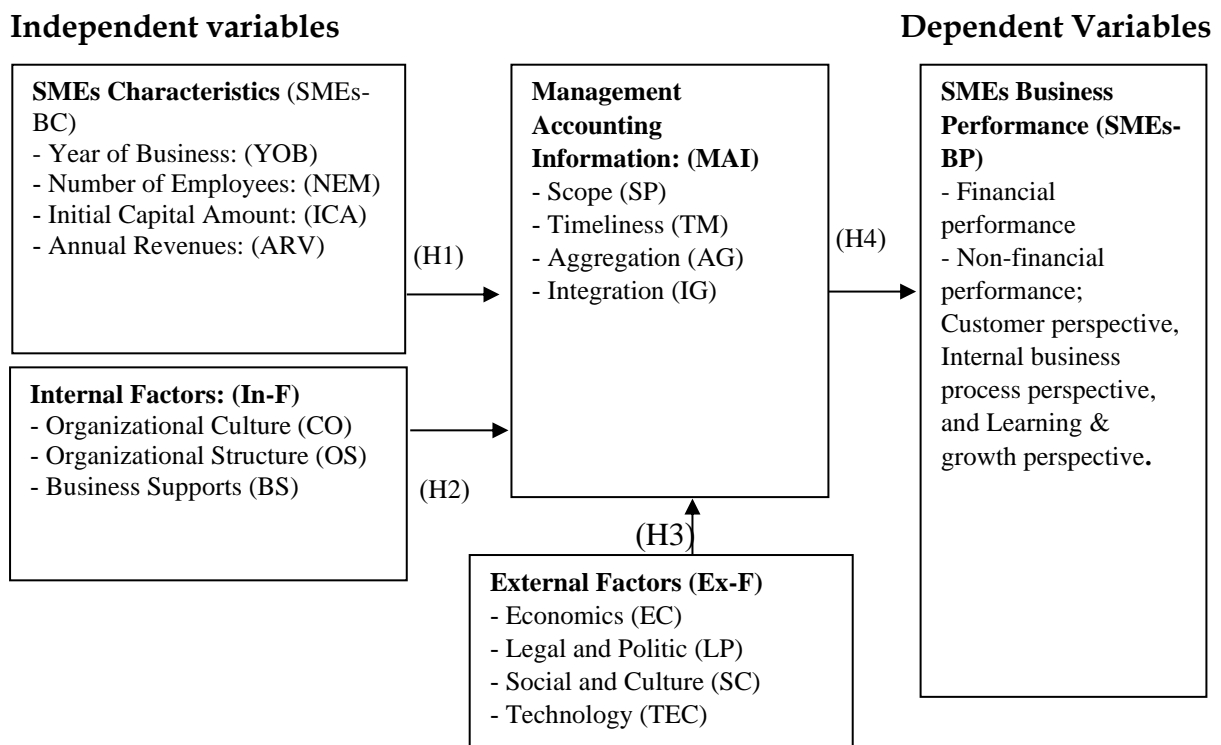


Figure 1 Research Framework

Research method

Population and Sample

This study's sample consisted of 368,838 SME managers in southern Thailand. Utilizing Yamane's formula, 399 samples were obtained by simple random sampling (Thasi et al., 2020).

Data collection

The questionnaire served as the instrument for data collection in this study. Four dimensions were used to quantify MAI: scope (SP), timeliness (TM), aggregation (AG), and integration (IG) (Maelah et al., 2021). Using demographic data, the business's attributes were evaluated. Internal variables were measured using the CO (Choiriah & Sudiby, 2020; Joseph & Gaba, 2020), and business support (Gorączkowska, 2018) scales. External influences were evaluated using four-dimensional scales: EC, LP, SC, and TEC (Abdullah & Shamsher, 2011). Last but not least, the SME's-BP construct was measured using the scales of financial performance, non-financial performance, customer viewpoint, internal business process perspective, and learning & growth perspective (Kotane & Kuzmina-Merlino, 2011). All the scales were measured on 5-point Likert scale (1 = "least important" and 5 = "most important") except demographics. The questionnaire had Index of Consistency (IOC) = 0.7, Cronbach's Alpha Coefficient > 0.8.

Data analysis

SPSS version 22 was utilized to evaluate descriptive statistics, variable relationships, and multiple regression analysis. Crosstabs were used to analyze the association between the amount of management accounting information used and the relationship between variables, with a statistical significance of 0.5. Following are the research equations:

$$\text{Equation 1: } MAI = \beta_{01} + \beta_1 YOB + \beta_2 NEM + \beta_3 ICA + \beta_4 ARV + \varepsilon$$

$$\text{Equation 2: } MAI = \beta_{02} + \beta_5 CO + \beta_6 OS + \beta_7 BS + \varepsilon$$

$$\text{Equation 3: } MAI = \beta_{03} + \beta_8 EC + \beta_9 LP + \beta_{10} SC + \beta_{11} TEC + \varepsilon$$

$$\text{Equation 4: } SMEs-BP = \beta_{04} + \beta_{12} SC + \beta_{13} TM + \beta_{14} AG + \beta_{15} IG + \varepsilon$$

Research Result

4.1 Sample Characteristics SMEs

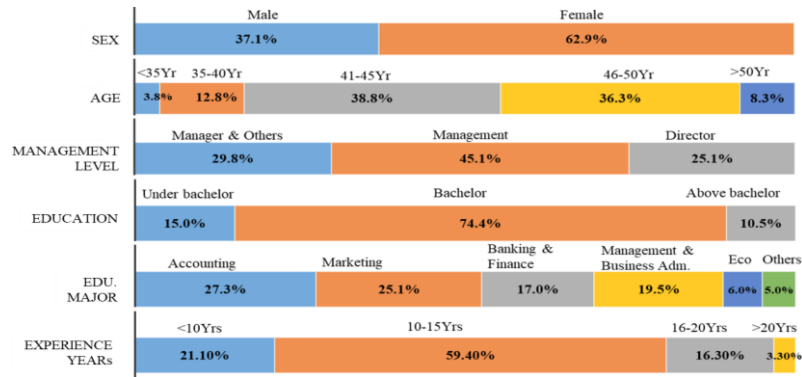


Figure 2 General information on the sampled SME entrepreneurs

Figure 2 shows general information on the sampled 399 SME entrepreneurs. Most of the entrepreneurs (62.9%) were female, aged between 41-45 years (38.8%), followed by 46-50 years (36%). 45.1% were in management positions, and 25.1% were directors. 74.4% had a bachelor's degree in accounting, marketing, and Management & Business Administration. 59.4% had experienced between 10-15 years.

4.2 SMEs Characteristics

Characteristics of sampled SMEs;

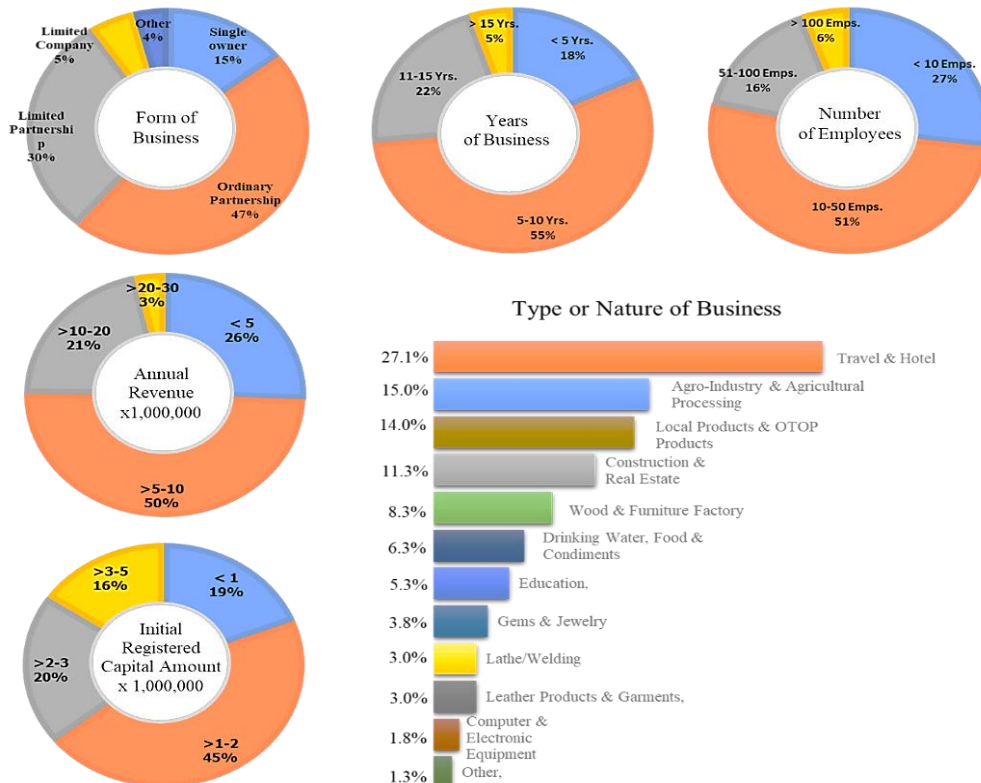


Figure 3 Characteristics of sampled SMEs

Figure 3 shows the characteristics of the sampled 399 SMEs. Overall, 47% were Ordinary Partnership, and most were in Travel & Hotel (27.1%), Agro-Industry & Agricultural Processing (15.0%), and Local Products & OTOP Products (14.0%). 55.0% of the sample group had operated for more than 5-10Yrs. 51.0% of the sample group had 10-50 Employees, 45.0% of the sample group had an Initial Registered Capital Amount of over 1-2 Million THB, and 50% with Annual Revenue of over 5-10 Million THB.

Table 1 Rating of internal and external factors and management accounting information use.

Variables	Mean	SD.	Level
CO	4.25	0.860	HIGH
OS	4.28	0.744	HIGH
BS	4.15	0.873	HIGH
Overall In-F	4.20	0.822	HIGH
EC	2.85	0.958	MODERATE
LP	3.47	0.992	MODERATE
SC	3.53	0.937	HIGH
TEC	3.66	1.000	HIGH
Overall Ex-F	3.40	0.914	MODERATE
SP	4.43	0.836	HIGH
TM	4.26	0.834	HIGH
AG	4.29	1.036	HIGH
IG	3.33	0.865	MODERATE
Overall MAI	4.06	0.921	HIGH

Table 1 showed that the rating of overall In-F was "HIGH" (Mean = 4.20, SD = 0.822). CO, OS, and BS were likewise "HIGH" in all aspects. Overall, Ex-F was "MODERATE" (Mean = 3.40, SD = 0.914), with SC and TEC being "HIGH" while EC and LP being "MODERATE." Overall, MAI was "HIGH" (Mean = 4.06, SD = 0.921), with SP, TM, and IG being "HIGH" and AG being "MODERATE."

Table 2 Correlation Analysis

	NEM	ICA	ARV	CO	OS	BS	EC	LP	SC	TEC	SP	TM	AG	IG
YOB	-0.098	-0.081	-15**	-0.038	0.071	-0.088	-0.092	-0.08	0.54	-0.044	-0.136	-0.034	-0.05	-0.045
NEM		.185**	.127*	-.13**	-.22**	0.013	-0.083	-0.01	0.012	-0.009	0.029	-0.058	0.081	0.065
ICA			.19**	-0.024	-.26**	0.027	-0.023	0.035	.15**	0.063	-0.025	-0.052	0.016	0.019
ARV				-0.038	-0.03	.107*	0.032	227**	-14**	0.001	-0.079	-.128*	-0.059	-0.01
CO					.110*	0.019	0.033	-23**	0.029	0.025	-0.009	0.033	-118*	-0.015
OS						-0.01	0.089	-0.043	0.058	-0.046	-0.034	0.017	-0.011	0.003
BS							-0.037	-0.014	-0.061	.146**	0.087	0.035	-0.006	0.045
EC								-188**	-0.076	-.21**	-117*	-0.03	-0.033	-0.066
LP									-0.021	-0.007	-0.032	-0.004	0.085	-0.014
SC										.198*	.107*	0.068	-0.036	-0.006
TEC											0.085	0.013	-0.011	-0.01
SP												.213**	0.077	0.029
TM													0.021	0.066
AG														0.091

**Statistical significance of 0.01, * Statistical significance of 0.05

Table 2 showed that the highest relationship between variables in each aspect was 0.54, less than the 0.7 limits for Multicollinearity, thus Multiple Regression Analysis (MRA) (Shrestha, 2020)

Table 3 Multiple Regression Analysis.

Variables	MAI)						SMEs-BP	
	Equation 1		Equation 2		Equation 3		Equation 4	
	B	t(sig.)	B	t(sig.)	B	t(sig.)	B	t(sig.)
(Constant)	1.286	7.207	1.043	11.582	1.049	17.524	3.750	18.617
SMEs Business Characteristics (SMEs-BC)								
YOB	.028	2.625*						
NEM	-.064	1.233						
ICA	-.004	-.223						
ARV	.071	1.957*						
Internal Factors (In-F)								
CO			-.035	-1.143				
OS			.052	1.942*				
BS			.04	1.333				
External Factors (Ex-F)								

EC					.048	1.814*		
LP					.004	.145		
SC					.028	.95		
TEC					.01	.374		
Management accounting information: MAI								
SP							.028	1.682*
TM							-.004	-.411
AG							.036	-1.792*
IG							.014	1.339
R Square		1.93		.088		.115		.127
Adjusted R		.373		.480		.413		.561
F-Value(Sig)		3.826**		1.021**		1.330**		3.83**

*Statistical Significance of 0.05

From Table 3, Multiple Regression Analysis could be concluded as follows:

Equation_1 It was found that SMEs-BC, affecting MAI, could explain 37.7% of the overall picture as indicated by ARV ($\beta_4 = .071$; $t(\text{sig.}) = 1.957^*$) and YOBS ($\beta_1 = .028$; $t(\text{sig.}) = 2.625^*$) Relationship between the negative effect of NEM and ICA could not be drawn.

Equation_2 It was found that In-F, affecting MAI, could explain 48.0% of the overall picture as indicated by OS ($\beta_6 = .052$; $t(\text{sig.}) = 1.942^*$). The relationship between the negative effect of CO and BS could not be drawn.

Equation_3 It was found that Ex-F, affecting MAI, could explain 41.3% of the overall picture as indicated by EC ($\beta_8 = .048$; $t(\text{sig.}) = 1.814^*$) Relationship of negative effect of LP, SC and TEC could not be drawn

Equation 4 It was found that MAI could explain the effect of SMEs-BP and could explain 56.1% of the overall picture as indicated by SP ($\beta_{12} = .028$; $t(\text{sig.}) = 1.682^*$) and AG ($\beta_{14} = .036$; $t(\text{sig.}) = -1.792^*$) Relationship between the negative effect of TM and the positive effect of IG could not be drawn, with a statistical significance of .05. Hence, all the hypotheses of the study, i.e., H1, H2, H3, and H4, are partially accepted.

Discussion

1. SMEs Characteristics and level MAI.

The results demonstrated a high degree of Overall Deployment of Accounting Data. Most information was utilized in management processes such as Controlling, Planning Process, Directing, and Decision Making. [Pisar and Bilkova \(2019\)](#) discovered that in the "4.0" business setting, where SMEs were a significant economic driver, globalization and technology improvements, as well as challenges to company operations, impacted SME operations. The success of small and medium-sized enterprises depended on having information that could be applied realistically and examined in-depth to identify new possibilities, security, and long-term growth, as well as strategies to enhance performance under management principles. [Vuong \(2020\)](#) discovered that SMEs improved their operational efficiency for maximum benefit and result through management procedures, mainly accounting information for planning, intent, strategy execution, management control, and budget considerations. [Kotane and Kuzmina-Merlino \(2011\)](#) discovered that accounting information impacted the performance of SMEs as it was used in the management's decision-making and policy-making processes, including facilitating and supporting such decisions for enhanced success. According to [Ibrahim et al. \(2020\)](#), the information was utilized to ensure the SMEs' long-term viability.

2. SMEs Characteristics effect and relation to MAI.

Year of Business (YOB) and Annual Revenues (ARV) were shown to have a statistically significant relationship with the amount of management accounting information utilization among SMEs. Using management accounting information, [Putra \(2019\)](#) discovered that the YOB of SMEs demonstrated the latter's adaptability to various business perspectives and circumstances, as well as their sustainability. [Santosa and Wulandari \(2019\)](#) discovered that YOB was the number of years the SME had been in operation. The longer a company existed, its accounting information requirements became sophisticated. YOB was advantageous for using accounting information and the knowledge of SME owners on the maintenance of sustainability

and growth. [Kahsay and Zeleke \(2019\)](#) discovered that YOB was a significant contributor to enterprise confidence that demonstrated the usage of accounting information, influencing the confidence of creditors, co-investors, and lenders. Thus, younger SMEs faced constraints, and their lack of a reliable track record resulted in increased financial expenditures. [Putra \(2019\)](#) came to a contradictory conclusion on the usage of accounting information when he discovered that the Number of Employees (NEM) indicated the firm's size and might indicate more trustworthiness. [Wijewardana \(2018\)](#) demonstrated that Initial Capital Amount (ICA) and Net Economic Margin (NEM) might also demonstrate sustainability and dependability using accounting data.

3. Internal Factors (In-F) effect and relation to MAI

It was discovered that In-F indicators under Organizational Structure (OS) had a beneficial impact on the amount of management accounting information used. [Nguyen and Nguyen \(2020\)](#) discovered that inconsistencies influenced by Organizational Culture (CO), which impacted the quality of information system and management accounting information usage, demonstrated the management's determination to manage In-Fs through the use of accounting information and OS management. [Al-Delawi and Ramo \(2020\)](#) discovered that the association between management accounting information consumption and OS features indicated that financial information was essential for formulating organizational measures and improving internal management. Still, there were contradictory conclusions on the restricted information transfer between OS layers. [Rajendran et al. \(2022\)](#) validated the multilayered difficulties associated with using management accounting information in operating systems. Therefore, there is an excellent chance to make the management accounting information consumption system more simple, appropriate, and accurate. [Ikram and Meslouhi \(2019\)](#) still discovered business supports that were inconsistent with this study, as the company had to emphasize management more to accommodate future expansion, boost data accessibility, and have more business support that may impact future performance.

4. External Factors (Ex-F) effect and relation to MAI

Regarding various external factors that affected management accounting information, the findings of this study could not refute that economics was an Ex-F that affected the level of management accounting information usage and led to SMEs being the development objective to generate economic impact at various levels, from local to national, along the line of economic diversification (Al-Delawi & Ramo, 2020; Nguyen & Nguyen, 2020; Pizar & Bilkova, 2019). Nonetheless, Ibrahim et al. (2020); Ikram and Meslouhi (2019) discovered that operations must be compatible with external elements such as Legal & Politics, Social & Culture, and Technology. Alshirah et al. (2021) noted that several influences unavoidably affected and influenced management processes and had to serve as a foundation for establishing the organization's strategy and operations. As a result of environmental unpredictability, which influenced organizational behavior, these factors tended to follow a similar pattern across sectors.

5. Management accounting information (MAI) for Administration effect and relation to SMEs Business performance (SMEs-BP)

The findings of this study suggest that the utilization of management accounting information in the planning and control of management processes affects the business performance of SMEs (SMEs-BP) Al-Halabi et al. (2019) discovered that several research advocated for greater awareness of accounting information utilization in the planning process (PP) and decision making (DC), both of which are crucial in management. The acquisition and utilization of management accounting information depended on data analysis to get accounting, environment, and financial information to evaluate the company's performance. This was the basis for utilizing past and present knowledge for improved management prediction and planning. Hiromoto (2019) indicated that despite the utmost significance of data used in business planning, SMEs still had constraints and statistically significant differences when the same strategy was applied to larger organizations. Uyar (2019) discovered supporting evidence for a promising approach for SMBs in volatile times that might yet preserve their competitiveness. Thus, competency in the use of accounting

information was crucial for managers, as it would affect decision making, strategy adjustment, planning, and controlling by the management, as well as performance that would be reflected in accounting information and affirm the management's success.

In contrast, [Adomdza et al. \(2016\)](#); [Rao et al. \(2021\)](#) reported that cognitive biases such as planning error, optimism, and overconfidence led to erroneous planning and negatively impacted the performance of SMEs when using financial statements. The study could not infer that the usage of management accounting information influenced the performance of small and medium-sized enterprises (SMEs). [Rao et al. \(2021\)](#) proposed that SME owners choose a financial management strategy for their enterprises based on their aims and essential variables such as their perspective, experience, and opinion on future trends. It may be concluded that these variables in the definition of operation aim and the management choice stem from the human traits of the management ([Wong et al., 2018](#)).

Conclusion

The objective of the present study was to determine (1) the level of management accounting information usage by SME managers; (2) the impact of SME business characteristics and internal and external factors on the use of management accounting information; and (3) the impact of management accounting information usage level on business performance. The investigation found that the MAI had the highest coefficient of determination in the entire research model, i.e., 0.561. This indicates that the SME-BP variation attributable to MAI is 56,1%. Similarly, internal variables, external factors, and SME-BC each account for 48.3%, 41.3%, and 37.3% of the variance in MAI.

Limitations and suggestions for future research

Several of the study's flaws may be an opportunity for future researchers. First, because the present study is cross-sectional, it is impossible to make judgments from the data. The research model was analyzed using the linear regression model to satisfy the investigation's objectives. Additional studies may examine the research model

based on structural equation modeling to obtain valuable data. In conclusion, management accounting information utilization and performance of small and medium-sized enterprises (SMEs) still require attention from various perspectives, even though SMEs are today's business pivot point. Nonetheless, the limits of SME use of management accounting information for management improvement should at least serve as a basis for further research.

Reference

- Abatecola, G., & Cristofaro, M. (2018). Hambrick and Mason's "Upper Echelons Theory": evolution and open avenues. *Journal of Management History*, 26(1), 116-136. <https://doi.org/10.1108/JMH-02-2018-0016>
- Abdullah, M. N., & Shamsher, R. (2011). A study on the impact of PEST analysis on the pharmaceutical sector: the Bangladesh context. *Journal of Modern Accounting and Auditing*, 7(12), 1446-1456.
- Adomdza, G. K., Åstebro, T., & Yong, K. (2016). Decision biases and entrepreneurial finance. *Small Business Economics*, 47(4), 819-834. <https://doi.org/10.1007/s11187-016-9739-4>
- Al-Delawi, A. S., & Ramo, W. M. (2020). The Impact of Accounting Information System on Performance Management. *Polish Journal of Management Studies*, 21(2), 36-48. <https://doi.org/10.17512/pjms.2020.21.2.03>
- Al-Halabi, N. B., Al Theebah, Z. A. H., & Hassan, R. M. (2019). The Impact of Designing Accounting Information Systems on the Level of Accounting Conservatism-A Field Study. *Academy of Strategic Management Journal*, 18(2), 1-12.
- Alshirah, M., Lutfi, A., Alshirah, A., Saad, M., Ibrahim, N., & Mohammed, F. (2021). Influences of the environmental factors on the intention to adopt cloud based accounting information system among SMEs in Jordan. *Accounting*, 7(3), 645-654. <https://doi.org/10.5267/j.ac.2020.12.013>
- Ameen, A. M., Ahmed, M. F., & Abd Hafez, M. A. (2018). The impact of management accounting and how it can be implemented into the organizational culture. *Dutch Journal of Finance and Management*, 2(1), 02. <https://doi.org/10.20897/djfm/91582>
- Asiaei, K., Bontis, N., Alizadeh, R., & Yaghoubi, M. (2022). Green intellectual capital and environmental management accounting: Natural resource orchestration in

- favor of environmental performance. *Business Strategy and the Environment*, 31(1), 76-93. <https://doi.org/10.1002/bse.2875>
- Ballestar, M. T., Grau-Carles, P., & Sainz, J. (2018). Customer segmentation in e-commerce: Applications to the cashback business model. *Journal of Business Research*, 88, 407-414. <https://doi.org/10.1016/j.jbusres.2017.11.047>
- Basten, D., & Haamann, T. (2018). Approaches for organizational learning: A literature review. *Sage Open*, 8(3). <https://doi.org/10.1177/2158244018794224>
- Ceptureanu, S. I., Ceptureanu, E. G., Bogdan, V. L., & Radulescu, V. (2018). Sustainability perceptions in Romanian non-profit organizations: An exploratory study using success factor analysis. *Sustainability*, 10(2), 294. <https://doi.org/10.3390/su10020294>
- Cescon, F., Costantini, A., & Grassetti, L. (2019). Strategic choices and strategic management accounting in large manufacturing firms. *Journal of Management and Governance*, 23(3), 605-636. <https://doi.org/10.1007/s10997-018-9431-y>
- Chetthamrongchai, P., & Jernsittiparsert, K. (2020). Entrepreneurial Orientation and the SMEs Performance in Thailand: The Mediating Role of Strategic Orientations. *Journal of Security and Sustainability Issues*. *Journal of Security & Sustainability Issues*, 9(M), 348-361. [https://doi.org/10.9770/jssi.2020.9.M\(28\)](https://doi.org/10.9770/jssi.2020.9.M(28))
- Chienwattanasook, K., & Jarinto, K. (2020). The Impact of International Entrepreneurship On the Internationalization of Thai SMEs: The Mediating Role of Strategic Planning Practices. *Asian Administration & Management Review*, 3(2), 39-52. <https://doi.org/10.2139/ssrn.3900524>
- Choiriah, S., & Sudibyoy, Y. A. (2020). Competitive Advantage, Organizational Culture and Sustainable Leadership on the Success of Management Accounting Information System Implementation. *Saudi Journal of Economics and Finance*, 4(9), 481-486. <https://doi.org/10.36348/sjef.2020.v04i09.009>
- De Mendonca, T. R., & Zhou, Y. (2019). Environmental performance, customer satisfaction, and profitability: A study among large US companies. *Sustainability*, 11(19), 5418. <https://doi.org/10.3390/su11195418>
- Fujita, S., Iwasawa, K., & Yoshida, E. (2018). Enterprise risk management in accounting research: A. *Journal of Modern Accounting and Auditing*, 14(7), 380-

389. <https://doi.org/10.17265/1548-6583/2018.07.003>

- Gorączkowska, J. (2018). Influence of business support organizations on innovation activity in manufacturing companies in the Masovian Voivodeship in Poland. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 13(4), 741-759. <https://doi.org/10.24136/eq.2018.036>
- Hertati, L., Safkaur, O., & Simanjuntak, A. M. (2020). How to align management commitments to the successful implementation of management accounting information systems in manager decision making. *Ilomata International Journal of Tax and Accounting*, 1(2), 89-102. <https://doi.org/10.52728/ijtc.v1i2.63>
- Hertel, C., Bacq, S., & Lumpkin, G. T. (2022). A Holistic Perspective on Social Performance in Social Enterprises: Disentangling Social Impact from Operational Sustainability. In *Social Innovation and Social Enterprises* (Vol. 62, pp. 137-172). Springer. https://doi.org/10.1007/978-3-030-96596-9_7
- Hiramoto, T. (2019). Restoring the relevance of management accounting. In *Management Control Theory* (pp. 273-288). Routledge.
- Hutahayan, B. (2020). The mediating role of human capital and management accounting information system in the relationship between innovation strategy and internal process performance and the impact on corporate financial performance. *Benchmarking: An International Journal*, 27(4), 1289-1318. <https://doi.org/10.1108/BIJ-02-2018-0034>
- Ibrahim, F., Ali, D. N. H., & Besar, N. S. A. (2020). Accounting information systems (AIS) in SMEs: Towards an integrated framework. *International Journal of Asian Business and Information Management (IJABIM)*, 11(2), 51-67. <https://doi.org/10.4018/IJABIM.2020040104>
- Ikram, K., & Meslouhi, O. E. (2019). The role of accounting information in the company's decision-making process. *International Journal of Engineering, Science and Mathematics*, 8(4), 70-90.
- Inks, S. A., Avila, R. A., & Talbert, G. (2019). The evolution of the sales process: Relationship selling versus “the Challenger Sale”. *Journal of Global Scholars of Marketing Science*, 29(1), 88-98. <https://doi.org/10.1080/21639159.2018.1552527>
- Jaafar, N. F., & Noordin, R. (2020). The Use of Management Accounting Information among Manufacturing Industries in Malaysia. *Malaysian Journal of Business and Economics (MJBE)*,

- 6(2), 1-11. <https://jurcon.ums.edu.my/ojums/index.php/mjbe/article/view/2216>
- Joseph, J., & Gaba, V. (2020). Organizational structure, information processing, and decision-making: A retrospective and road map for research. *Academy of Management Annals*, 14(1), 267-302. <https://doi.org/10.5465/annals.2017.0103>
- Kahsay, G., & Zeleke, G. (2019). Factors Affecting Use of Accounting Records on Small & Micro Enterprises (the Case of Debre Birhan City, Ethiopia). *Journal of Investment and Management*, 8(1), 1-7. <https://doi.org/10.11648/jjim.20190801.11>
- Kotane, I., & Kuzmina-Merlino, I. (2011). Non-financial indicators for evaluation of business activity. *European integration studies*, (5), 213-219. <https://doi.org/10.5755/j01.eis.0.5.1099>
- Le, H. M., Nguyen, T. T., & Hoang, T. C. (2020). Organizational culture, management accounting information, innovation capability and firm performance. *Cogent Business & Management*, 7(1), 1857594. <https://doi.org/10.1080/23311975.2020.1857594>
- Maelah, R., Al Lami, M. F. F., & Ghas, G. (2021). Usefulness of management accounting information in decision making among SMEs: the moderating role of cloud computing. *Asia-Pasific Management Accounting Journal*, 16(1), 59-92. <https://doi.org/10.24191/APMAJ.V16i1-04>
- Marinič, P. (2016). Customer Satisfaction and Financial Performance. *Proceedings of 3rd International Multidisciplinary Scientific Conference on Social Sciences and Arts SGEM* (pp. 229-236). <https://www.researchgate.net/publication/344391308>
- Nguyen, H., & Nguyen, A. (2020). Determinants of accounting information systems quality: Empirical evidence from Vietnam. *Accounting*, 6(2), 185-198. <https://doi.org/10.5267/j.ac.2019.10.004>
- Nouchi, R., Kobayashi, A., Nouchi, H., & Kawashima, R. (2019). Newly developed TV-based cognitive training games improve car driving skills, cognitive functions, and mood in healthy older adults: evidence from a randomized controlled trial. *Frontiers in aging neuroscience*, 11, 99. <https://doi.org/10.3389/fnagi.2019.00099>
- Otto, A. S., Szymanski, D. M., & Varadarajan, R. (2020). Customer satisfaction and firm performance: insights from over a quarter century of empirical research. *Journal of the Academy of Marketing science*, 48(3), 543-564. <https://doi.org/10.1007/s11747->

[019-00657-7](#)

- Pisar, P., & Bilkova, D. (2019). Controlling as a tool for SME management with an emphasis on innovations in the context of Industry 4.0. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 14(4), 763-785. <https://doi.org/10.24136/eq.2019.035>
- Putra, Y. M. (2019). Analysis of factors affecting the interests of SMEs using accounting applications. *Journal of Economics and Business*, 2(3), 818-826. <https://doi.org/10.31014/aior.1992.02.03.129>
- Rajendran, N., Kang, D., Han, J., & Gurunathan, B. (2022). Process optimization, economic and environmental analysis of biodiesel production from food waste using a citrus fruit peel biochar catalyst. *Journal of Cleaner Production*, 132712. <https://doi.org/10.1016/j.jclepro.2022.132712>
- Rao, P., Kumar, S., Chavan, M., & Lim, W. M. (2021). A systematic literature review on SME financing: Trends and future directions. *Journal of Small Business Management*, 1-31. <https://doi.org/10.1080/00472778.2021.1955123>
- Saengchai, S., Mitprasat, M., & Jermstittiparsert, K. (2019). How the adoption of sustainable technology affects the organizational performance of SMEs in Thai Sports industry. *Journal of Human Sport and Exercise*, 14(5proc), S2157-S2171. <https://doi.org/10.14198/jhse.2019.14.Proc5.36>
- Saengchamngong, M., & Viroonratch, B. (2019). An automotive part management methods of plant managers in managing Thai-oversea manufacturing parts: A case study of effectiveness and efficiency of organizational instruction management. *Journal of Multidisciplinary in Social Sciences*, 16(1), 48-54. <https://www.researchgate.net/publication/352363030>
- Santosa, I. M. E. S., & Wulandari, P. R. (2019). Accounting Information of Micro, Small, Medium Enterprise in Gianyar Regency. *International Journal of Sustainability, Education, and Global Creative Economic (IJSEGCE)*, 2(3), 368-376. <https://doi.org/10.1234/ijsegce.v2i3.128>
- Song, S., & Lee, S. (2020). Motivation of internationalization and a moderating role of environmental conditions in the hospitality industry. *Tourism Management*, 78, 104050. <https://doi.org/10.1016/j.tourman.2019.104050>
- Stegaroiu, I., Radu, V., Simsek, H., & Tabirca, A. I. (2020). Impact of leadership team values and performance on organizational behavior. *LUMEN Proceedings*, 10,

- 241-251. <https://doi.org/10.18662/lumproc/gidtp2018/27>
- Thasi, C., Romyen, B., & Thongrod, N. (2020). Desirable Characteristics of Accountants for Entrepreneur in Bangkok. *Rajapark Journal*, 14(37), 94-108. <https://so05.tci-thaijo.org/index.php/RJPI/article/view/246975>
- Uyar, M. (2019). The management accounting and the business strategy development at SMEs. *Problems and perspectives in management*, 17(1), 1-10. [https://doi.org/10.21511/ppm.17\(1\).2019.01](https://doi.org/10.21511/ppm.17(1).2019.01)
- Vuong, K. T. (2020). A review of the management process with the mediating role of the budget process on the performance of Vietnamese SMEs. *Management Dynamics in the Knowledge Economy*, 8(3), 277-296. <http://www.managementdynamics.ro/index.php/journal/article/view/363>
- Vuori, T. O., & Huy, Q. N. (2022). Regulating top managers' emotions during strategy making: Nokia's socially distributed approach enabling radical change from mobile phones to networks in 2007–2013. *Academy of Management Journal*, 65(1), 331-361. <https://doi.org/10.5465/amj.2019.0865>
- Wong, A., Holmes, S., & Schaper, M. T. (2018). How do small business owners actually make their financial decisions? Understanding SME financial behaviour using a case-based approach. *Small Enterprise Research*, 25(1), 36-51. <https://doi.org/10.1080/13215906.2018.1428909>