

FACTORS AFFECTING THE APPLICATION OF STRATEGIC MANAGEMENT ACCOUNTING AND THE IMPACT ON PERFORMANCE: A CASE STUDY OF MANUFACTURING ENTERPRISES IN VIETNAM

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Abstract: *This study aims to examine the factors affecting the application of strategic management accounting and the impact of this application on the performance of manufacturing enterprises in Vietnam. The results of this study show that firm size, competition, management decentralization, technology level, and business strategy positively impact the application of strategic management accounting in manufacturing enterprises in Vietnam, and applying strategic management accounting helps improve and enhance the performance of these enterprises.*

• **Keywords:** *manufacturing enterprises, management accounting, performance, strategic management accounting.*

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1. Introduction

In the trend of global economic integration and trade liberalization, Vietnam has signed many free trade agreements (FTAs) and committed to integration at all levels. The process of integration and participation in FTAs opens up many opportunities for the Vietnamese business community to develop their business. However, enterprises face many challenges and difficulties in production and business activities. To meet this problem, applying strategic management accounting (SMA) is considered one of the appropriate solutions to support and serve enterprise managers in making decisions that focus on strategy in today's modern business environment.

In recent years, many studies have delved into examining the factors affecting the application of SMA and its influence on the performance of enterprises. However, the results of the studies are still mixed and inconsistent. Moreover, previous studies on this issue were mainly carried out in developed countries with synchronous infrastructure and a complete system of guidelines. Empirical studies on this issue in countries with economies in transition, like Vietnam, are still modest. The results of this study can be an essential reference source for policymakers, professional associations, and training institutions in developing programs, plans, and training program guidelines to promote the application of SMA in manufacturing enterprises in Vietnam. In addition, this result can help enterprises realize the important role of SMA in the

performance of the enterprise, thereby, early planning to apply the SMA in the enterprise.

2. Theoretical basis, hypothesis building and research model

2.1. The concept of strategic management accounting

SMA is a management accounting system that provides information outside the enterprise, and the information source is created from within the enterprise to serve the process of strategic analysis, strategy selection, management strategy implementation, and assist managers in strategic decision-making in an integrated and competitive economy through the direction and control of strategic operations. SMA represents a group of techniques and methods that support an entity's goals within its strategy to inform organizational strategy formulation and support implementation, by encouraging behavior integrated with strategy and through MA techniques to reduce costs, increase product quality, and measure organizational performance.

2.2. The concept of performance

Performance is understood as a measure of the most critical factors for the success of an entity, and performance is understood as the extent to which the entity's objectives are achieved. To measure performance, it is necessary to use financial and non-financial measures. Many studies suggest that the key measures of financial performance include market share, return on assets, return on investment, profit margin,

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and profitability (e.g., Ojra, 2014), critical measures of non-financial performance include attitudes, ethics and employee performance, buyer satisfaction, and quality of goods/services (Ojra, 2014).

2.3. Research hypotheses

2.3.1. Firm size

Larger enterprises often have more complex structures, so control and management tools also become more complex, and the costs and time of information processing also increase. To meet the management requirements of the complex structure, enterprises need to apply new information systems more effectively, and it is necessary to choose the application of SMA. Many studies have also confirmed that firm size has a significant impact on the use of MA in the organization and business process of enterprises (e.g., Abdel-Kader & Luther, 2008) or using SMA techniques for decision making (e.g., Cadez & Guilding, 2008; Ojra, 2014). Based on the above arguments, the first hypothesis is formulated as follows:

H1: Firm size positively impacts the application of SMA in manufacturing enterprises.

2.3.2. Competition

In the context of the modern business environment with fierce competition, the actions and reactions of competitors can be very unpredictable in entering the market. Therefore, organizations must maintain an effective MA system to increase competitive advantage when the market is increasingly fierce or improve their application of SMA techniques. In addition, the higher the level of competition in the unit's industry, the higher the need to apply SMA to the unit's decision-making. In other words, the industry's competition level affects the implementation of SMA operations in enterprises. Based on the above arguments, the second hypothesis is formulated as follows:

H2: The competition positively impacts the application of SMA in manufacturing enterprises.

2.3.3. Management decentralization

Management decentralization refers to the degree of decentralization, assigning responsibility and authority for planning, operational control, and information to managers. Abdel-Kader & Luther (2008) argue that management decentralization will change the application of MA and SMA in enterprises. When authorized, managers at all levels in the enterprise will be more responsible for planning, implementing and controlling all enterprise activities. According to Chenhall (2008), management decentralization is of particular importance and is considered the focus of SMA. In other words, management decentralization influences the adoption of SMA (Ojua, 2016). Based on

the above arguments, the third hypothesis is formulated as follows:

H3: Management decentralization has positive effects on applying SMA in manufacturing enterprises.

2.3.4. Technology level

When the technological process is complex, the accounting system is very likely to become more difficult (Ojra, 2014) because new production technology causes the cost structure to change, and as technology continues to evolve, MA can become complex and needs to be further developed to adapt to technology, so the speed of technological change increases, affecting the MA system. In other words, there exists a significant relationship between the level of production technology and the information provided to management by MA, and the use of advanced production technology significantly affects the ability to implement SMA (Kariuki & Kamau, 2016). Based on the above arguments, the fourth hypothesis is formulated as follows:

H4: The technological level significantly and positively impacts the application of SMA in manufacturing enterprises.

2.3.5. Business strategy

According to the contingency theory framework, strategy impacts the implementation of SMA. Implementing SMA helps advise managers in strategic planning, implementation, and analysis. In addition, many studies support the view that strategic factors significantly impact the implementation of SMA (e.g., Ojra, 2014). MA is also designed to support a firm's strategy to increase performance. Types of business strategies in enterprises play an important role in implementing SMA (Cadez & Guilding, 2008). Based on the above arguments, the fifth hypothesis is formulated as follows:

H5: Business strategy has a positive impact on applying SMA in manufacturing enterprises.

2.3.6. Applying strategic management accounting affects performance

In the modern business environment, to survive and develop, organizations must pay attention to maintaining an effective performance measurement management system through SMA. Using SMA in an organization will make decision-making more efficient and help improve operational performance and competitive advantage for enterprises, positively impacting financial and non-financial performance. Many studies support the view and confirm that there is a positive relationship between the application of SMA and performance or that the implementation of SMA has helped organizations improve their performance

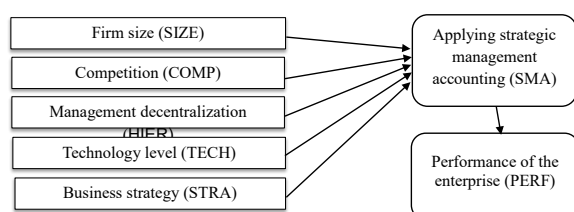
(e.g., Cadez & Guilding, 2008; Ojra, 2014). Based on the above arguments, the sixth hypothesis is formulated as follows:

H6: Applying SMA positively influences the performance of manufacturing enterprises.

2.4. Research models

Based on the review of the studies discussed above, six hypotheses were formulated for this study and described through the research model in Picture 1.

Picture 1. Proposed research model



3. Research Methods

Sampling method: according to Tabachnick & Fidel (2001), using SEM analysis is recommended to use a sample size of 300 to 1,000 observations. In this study, due to using SEM to test the relationship between investigated structures, the author selected a sample size of 300 observations, which is entirely appropriate.

Data collection method: The data of this study were collected through a survey questionnaire with a 5-point Likert scale (from 1: Strongly disagree to 5: Strongly agree) using interviews, direct consultation, or sent by email or post to 350 manufacturing enterprises. The survey subjects are managers (directors, deputy directors, chief accountants) with knowledge of SMA in manufacturing enterprises in provinces and cities of Vietnam. The survey results collected 300 valid questionnaires (response rate 85.7%) and were used for inclusion in this study. The survey period is from October 2023 to February 2024.

4. Research results

4.1. Cronbach's Alpha test and EFA analysis

The results of testing the reliability of Cronbach's Alpha scale of variables (independent and explanatory variables) are presented in Table 1 shows that all variables have Cronbach's Alpha coefficient > 0.6, so the scales are significant, and the component variables in the scale are reliable, used for EFA analysis. The results of EFA analysis (Table 1) show that the Kaiser-Mayer-Olkin coefficient (KMO) meets the criteria of $0.5 \leq KMO \leq 1$, so it is satisfactory; Barlett's test with $Sig < 5\%$ shows that these observed variables are closely related and suitable for EFA analysis. The total variance extracted > 50% at Eigenvalues > 1, so it is satisfactory (Anderson & Gerbing, 1988). Thus, after

testing the reliability of Cronbach's Alpha scale and analyzing the EFA, it can be confirmed that the scales are reliable, the variables all satisfy the conditions of the EFA analysis, and the research data is entirely suitable for CFA analysis and SEM analysis.

Table 1. The results of Cronbach's Alpha test and EFA analysis of variables

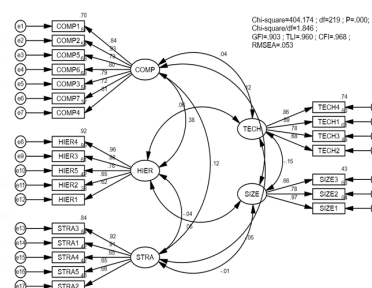
Variable	N of items	Cronbach's Alpha coefficient	EFA analysis
SIZE	3	0.831	KMO = 0.781; Sig. = 0.000; Total = 1.956; Cumulative % = 71.796
COMP	7	0.918	
HIER	5	0.921	
TECH	4	0.817	
STRA	5	0.894	KMO = 0.768; Sig. = 0.000; Total = 3.095; Cumulative % = 61.896
SMA	5	0.840	
PERF	7	0.919	KMO = 0.698; Sig. = 0.000; Total = 1.044; Cumulative % = 82.510

Source: research results

4.2. Confirmatory factor analysis - CFA

The results of CFA analysis (Picture 2) show that the model achieves good compatibility with the data, as demonstrated by indicators such as Chi-square is 404,174 with 219 degrees of freedom (df), p-value = $0.000 < 0.05$ (Kaplan & Atkinson, 1989). If adjusted for degrees of freedom, Chi-square/df = $1.846 < 3$, different criteria such as GFI = 0.903, TLI = 0.960, CFI = 0.968 (Tabachnick & Fidel, 2001) and RMSEA = 0.053 are less than 0.080 (Taylor et al, 1993) all met the compatibility requirements.

Picture 2. The results of confirmatory factor analysis CFA



Source: research results

The research results in Picture 2 shows that the observed variables' normalized weights are all greater than 0.5. The weights (unnormalized) are statistically significant (at a 1% significance level), so the scales achieve unidirectionality and convergent value (Anderson & Gerbing, 1988). The correlation coefficient between the factors' components (observed variables) < 1, statistically significant at 1%. Therefore, the above concepts all gain discriminant value. The composite reliability (CR) and average variance extracted (AVE) of each factor are greater than 50% (Table 2), so the concepts are satisfactory.

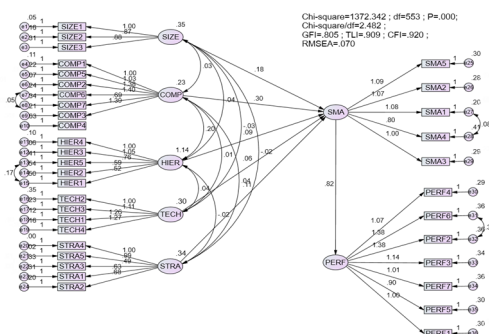
Table 2. Composite reliability and average variance extracted test results

Indicator	Variable				
	SIZE	COMP	HIER	TECH	STRA
Composite Reliability (CR)	0.849	0.910	0.903	0.882	0.875
Average Variance Extracted (AVE)	0.657	0.601	0.658	0.653	0.590

Source: research results

4.3. Structural Equation Model Analysis - SEM

SEM analysis results (Picture 3) show that this model is suitable for market data, shown through statistical values such as Chi-square of 1372.342 with 553 degrees of freedom (df), p -value = $0.000 < 0.05$. If adjusted for degrees of freedom with Chi-square/df = $2.482 < 3$, other criteria such as GFI = 0.805, TLI = 0.909, CFI = 0.920, and RMSEA = 0.070 (< 0.080) all meet the similarity requirements.

Picture 3. Structural equation model analysis results

Source: research results

The estimated results in Table 3 show that the relationships are statistically significant at 5% (P -values < 0.05), which proves that the variables of this study, including SIZE, COMP, HIER, TECH, STRA, which demonstrates that the variables of this study include SIZE, COMP, HIER, TECH, and STRA all have a positive effect on the SMA variable, and the SMA variable has a positive impact on the PERF variable. Furthermore, the research results confirm that all the study's 06 (six) hypotheses, including H1, H2, H3, H4, H5, and H6, are accepted at the 5% significance level.

Table 3. The results of testing the research hypotheses

Impact		Estimate	S.E.	C.R.	P-value
SMA	<--- SIZE	0.181	0.033	5.580	***
SMA	<--- COMP	0.299	0.048	6.214	***
SMA	<--- HIER	0.094	0.018	5.314	***
SMA	<--- TECH	0.060	0.024	2.442	.015
SMA	<--- STRA	0.108	0.027	4.058	***
PERF	<--- SMA	0.816	0.162	5.033	***

Note: ***: Statistical significance is 1%, S.E.: Standard Error; C.R.: Critical Ratio.

Source: research results

5. Discussing research results**5.1. Firm size**

Research results show that firm size positively impacts the application of SMA in manufacturing

enterprises (Estimate = 0.181). This implies that the larger the enterprises, the more favorable the conditions to apply SMA to the enterprise. Therefore, the large scale can be an advantage for manufacturing enterprises to apply SMA successfully. This result is consistent with the expectations built by the contingency theoretical framework and is similar to the findings of Cadez & Guilding (2008) and Ojra (2014). Firm size relates to how organizations design and apply MA techniques to decision-making and the sophistication and complexity of MA systems used in the unit. Larger organizations will generally have more complex MA systems to meet their governance needs as well as develop business strategies to improve operational efficiency.

5.2. Management decentralization

Research results show that management decentralization positively impacts the application of SMA in manufacturing enterprises (Estimate = 0.094). This indicates that in manufacturing enterprises, the higher the management decentralization, the more motivated these enterprises are to implement SMA. This finding is consistent with the expectation developed by the theoretical framework of contingency on the important role of an organizational structure affecting the implementation of SMA in manufacturing enterprises; and similar to the research results of Chenhall (2008), Abdel-Kader & Luther (2008). In the current period of globalization, enterprises face increasingly fierce competition, so the management structure needs to be organized according to a decentralized model to decentralize department decision-making.

5.3. Technology level

Research results continue to find that technology level positively impacts the application of SMA in manufacturing enterprises (Estimate = 0.060). This implies that the more advanced technology is, the more it will promote the application of MA in manufacturing enterprises. This finding is consistent with research results of Ojra (2014) and Kariuki & Kamau (2016). The level of advanced production technology will penetrate all aspects of production and business activities of enterprises, so it positively affects the respective MA information system and management system. The use of advanced production technology means that the information needed to serve managers' decision-making will change. Therefore, the MA system must change the direction of SMA to support management activities, creating great motivation for manufacturing enterprises to apply SMA.

5.4. Competition

The results show that the competition positively impacts SMA's application in manufacturing enterprises (Estimate = 0.299). This means that the higher the level

of competition, the greater the need to apply SMA for manufacturing enterprises. This result is entirely consistent with the comments of Kariuki & Kamau (2016). Therefore, any enterprise engaged in producing and trading specific goods on the market must accept competition. Considering the current context that Vietnam's economy is transitioning to integrate into the global economy, the issue of competitiveness is one of the difficulties and challenges facing the business community, especially the manufacturing enterprises have to compete in terms of quality, product prices, raw materials, human resources, meeting customer needs, etc. To solve this problem, the collection, analysis, and handling of Information related to competitiveness both inside and outside the enterprise are essential, and the SMA plays a vital role in providing this information.

5.5. Business strategy

Research results show that business strategy positively impacts the application of SMA in manufacturing enterprises (Estimate = 0.108). This means the higher the awareness of the business environment fluctuations, the more SMA techniques are used. This result is consistent with the comments in the studies of Cadez & Guilding (2008), Ojra (2014). Manufacturing enterprises in Vietnam have great opportunities to expand their potential markets in the period of integration with the world economy. However, they also face challenges due to the economic environment's instability, with solid competition in price and product quality when many manufacturing enterprises from other countries penetrate the Vietnamese market. Therefore, Vietnamese manufacturing enterprises must develop and plan appropriate and effective business strategies through SMA techniques to maintain market share, penetrate and expand new markets, and improve competitiveness.

5.6. Applying SMA influences the performance

Research results show that applying SMA positively affects the performance of manufacturing enterprises in Vietnam (Estimate = 0.816). This means that changing the level of application of SMA will change the performance of manufacturing enterprises positively. The findings of this study are consistent with the the research results of Cadez & Guilding (2008) and Ojra (2014). This explains that Vietnam's economy is transitioning to a market economy to integrate with the world economy, so manufacturing enterprises in Vietnam face competition pressure that is increasingly fierce from domestic and foreign competitors, and the requirements of customers for product quality are increasingly high for all production fields. The SMA system is considered suitable for the enterprise's

organizational and environmental factors to achieve better results in management, production, and business activities.

Conclusion

The findings of this study confirm that: (i) the larger the scale of the manufacturing enterprise, the more favorable the application of SMA; (ii) the higher the level of competition, the greater the need to apply SMA for manufacturing enterprises; (iii) business strategy impacts SMA's application in Vietnam's manufacturing enterprises; (iv) management decentralization authority to departments in decision-making will help enterprises respond quickly to changes in the business environment, seize opportunities and distribute organizational structures management level by the organization and implementation of SMA; (v) manufacturing enterprises in Vietnam have advanced technology, the more the application of SMA; and (vi) enterprises that change SMA's application level will positively change their performance.

Although this study has achieved certain results, there are still some limitations, and future follow-up studies need to consider and expanded to provide more valuable results. Firstly, the data used in the study is collected through surveys of many different types of enterprises, so it is not representative of every kind of business. Therefore, further studies should examine the impact of enterprise type on SMA adoption. Secondly, other factors can affect the application of SMA in enterprises, such as customer resources, environmental instability, etc., which have yet to be considered in this research. Therefore, further studies should examine other factors that may influence the application of SMA. Thirdly, the sample size is small, so the generalizability could be higher, affecting the quality of the study. Therefore, further studies should consider increasing the sample size so that the research results are highly valued.

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