




# “Factors affecting the implementation of management accounting techniques in medium-sized enterprises of Vietnam”

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# FACTORS AFFECTING THE IMPLEMENTATION OF MANAGEMENT ACCOUNTING TECHNIQUES IN MEDIUM-SIZED ENTERPRISES OF VIETNAM

## Abstract

The main purpose of this paper is to find and evaluate the impact of unexpected factors and institutional factors that affect the implementation of management accounting techniques in medium-sized manufacturing enterprises of Vietnam. Mixed methods were combined in this study: specifically, qualitative research methods were used based on previous studies as well as background theory was used to build factors in the research model. The quantitative method used data based on surveying 129 small and medium business owners in Vietnam using SPSS 2020 software to test a multivariable linear regression model. The results show that there are three factors affecting the implementation of management accounting techniques in medium-sized manufacturing enterprises in Vietnam in the following order: (1) Viewpoints of business owners, (2) Advanced technology, and (3) Mimicry. Based on this research result, medium-sized manufacturing business owners, as well as macroeconomic managers, will have solutions to further develop management accounting techniques in medium-sized manufacturing enterprises of Vietnam.

## Keywords

implementation, management accounting, medium-sized enterprises, Vietnam

## JEL Classification

H83, M40, M41, M49

## INTRODUCTION

Mitchell and Reid (2000) said that SMEs have an extremely important position in the economy of a country; the flexibility of this type of enterprise is the reason why SMEs easily adapt to specific features of the new economy. In Vietnam, the number of SMEs accounts for 97% of the total number of enterprises across the country and creates about 60% of employment places for workers. Every year, these businesses also contribute about 45% to the country's GDP and 31% of the total state budget revenue. The above figures show that SMEs have a very strong influence on the country's economy and are an agent that promotes Vietnam's economic development strongly. Thus, it can be said that SMEs have a great influence in stimulating economic development. In Vietnam, the law to support SMEs was officially passed by the National Assembly with a high rate of consensus and came into effect on January 1, 2018.

It has been previously confirmed that management accounting techniques are an unexpectedly effective method that managers can apply to manage enterprises (Ghosh & Chan, 1997; Lybaert, 1998). Thanks to the application of management accounting techniques, the available financial and non-financial information also allows businesses to increase their competitiveness in the market and respond easily to events of the economic environment (Mia & Clarke, 1999).

Furthermore, among SMEs, the management accounting techniques are also an information system (Mitchell & Reid, 2000). However, up to the present time, there are a few scientific works on management accounting, especially concerning SMEs in Vietnam, leading to problems with the application of management accounting at SMEs. This is an obstacle for policymakers when they come up with suitable support options for SMEs, so this sector often encounters obstacles to survive and change in the competitive era. The study of management accounting techniques in medium-scale enterprises is an urgent issue nowadays.

## 1. LITERATURE REVIEW

### 1.1. Contingency theory

The first scientific works on this topic focus on environmental factors such as technological change and its impact on the corporate organization form (Burns & Stalker, 1961; Woodward, 1980). An example of a technological factor is the production system. This study explores how the production system currently used in the enterprise affects the organizational form of the enterprise. Chandler (1962) said that unexpected factors have been increasingly replicated, including corporate strategy factors, and commercial environment factors (Lawrence & Lorsch, 1967).

Donaldson (1999) observes that “the contingency theory of organizations can be rated as a success . . . [which] remains the mainstay of almost all serious textbooks on organizational structure and design”. Donaldson (1999) also observed that the success of contingency theory is partly due to the efforts of many scholars to expand the range of contingency factors. Brignall (1997) applied the contingency theory to design cost systems in businesses. Anderson and Lanen (1999) examined what identifies national cultural factors and competitive strategy factors as unpredictable situations that strongly affect the management accounting system. The contingency theory literature states that there is not a fixed set of surprises that affect organizations, but scholars tend to choose certain factors to test and analyze this issue. Therefore, this paper chooses four unexpected situations to take into consideration in the context of SMEs in the manufacturing sector in Vietnam. As a result, the following four factors are chosen to conduct the test: (1) The strength of the competitive market; (2) Advanced technology; (3) The views of the corporate authorities; and (4) Accountant’s qualifications. Here are the reasons why these four factors were chosen:

1. *The strength of the competitive market.* The strength of the competitive market can have a great influence on SMEs because the number of these types of enterprises accounts for a large proportion of the total number of enterprises in Vietnam, thus creating important competitive factors in the market. Khandwalla (1972) argued that the strength of the competitive market plays an important role in encouraging administrators to upgrade their management accounting systems and apply complex management accounting techniques. When competition intensifies, reliable management accounting information will be essential because they help businesses issue correct and effective decisions and avoid making unreasonable decisions due to wrong information (Cooper & Kaplan, 1988).
2. *Advanced technology.* In many large firms, the implementation of advanced technology in production has been shown to have an impact on the implementation of management accounting techniques, but this is not necessarily true for SMEs. Although modern production techniques may not have much impact on small businesses, manufacturing firms still have to use technology to support production. In addition, the current context has shown the rapid development and strong spread of technology. Thus, technology may be one of the potential factors that could explain which techniques are deployed in SMEs.
3. *Qualifications of accountants.* In small businesses, accountants often monitor the entire financial situation of the business. Therefore, qualified accountants are more likely to be a key factor in deciding which management accounting techniques will be implemented at the enterprise. Most large enterprises have a separate department responsible for financial

accounting. Moreover, because of abundant resources, they often hire highly qualified accountants to make reports and provide professional advice. In contrast, for SMEs, it is difficult to hire qualified accountants, and even if the company employs these employees, the employees are not sure to fully utilize their expertise in the context of SMEs.

4. *The views of the enterprise administrator.* A business administrator is someone who will participate in all activities in the enterprise but the level of participation can vary and this can determine which management accounting techniques will be implemented. Previous works on management accounting by Shields (1995), Lybaert (1998), and Brown et al. (2004) strongly support this statement.

## 1.2. Institutional theory

DiMaggio and Powell (1983) identified three problems for an organization to become similar due to the institutionalization process: the coercive similarity stems from political influences and an organization's process of seeking legitimacy. Coercive similarity occurs due to the formal and informal pressures that an organization imposes on organizations that depend on it or it occurs due to pressure from the cultural characteristics that the organization belongs to. The mimic similarity arises from the model-like response to uncertain events. Haverman (1993) explained that imitation similarity is a process by which organizations change over time to become more and more like other organizations in the environment in which they operate. It is argued that the normative similarity stems mainly from professionalization because the profession is also subject to pressures of coercion and imitation.

Oliver (1991) mentioned that institutional theory provides some unique knowledge about the link between the organizational environment and the responses of organizations to institutional processes. Tolbert (1985) showed that the non-beneficial behavior of the organization could still occur and exist due to habit, past convention, or social responsibility. The institutional theory also emphasizes the causal effects of state, social and cultural pressures on the effects of history, the organ-

ization's behavior, and the rules of the organization with constraints on the environment (Oliver, 1991). Scott (1995) said that institutional theory could be used in analyzing all types of organizations because any organization is an institutionalized organization, but the degree of institutionalization in each organization is different.

## 1.3. Background studies

Drury et al. (1993) conducted a review of management accounting techniques in 303 processing firms in the UK and found that these firms used many different management accounting techniques. In addition, management accounting tools applied in practice are not much different from the theory, but there is still a huge gap on this issue between theory and reality. Bruggeman et al. (1996) examined the implementation of management accounting tools in Belgian companies. It was found that traditional tools were still deployed. Along with that, businesses have also started to apply new management accounting techniques, such as the ABC technique. Chow et al. (1988) explained the synthesis of previous works on the application of management accounting techniques in five areas, namely: designing of cost measurement systems, making a decision, planning, controlling, and using a quantitative approach. The results show that many management accounting techniques are commonly applied in all professions, but there are still many management accounting tools that are widely deployed in some of these areas but rarely applied in some other fields and vice versa.

Scarborough et al. (1991) discovered some important management accounting tools that Japanese enterprises have applied in an advanced production environment. Survey results suggest that the management accounting system related to costing and estimating inventories in Japan also applies the same management accounting techniques as those that Western manufacturers use. That means Japanese businesses try to improve costing techniques to make decisions and apply control techniques such as target costing and performance-enhancing techniques (e.g., TQC, TPM, JIT, and ROS) instead of implementing new management accounting tools. Scholars argue that the most important thing in management is not to design sophisticated systems that reflect the characteristics

of the market or production line but to become the system to guide and communicate the organization's strategy and goals. After that, McMann and Nanni (1995) continued to summarize the documents on management accounting in Japan. They discuss the remaining issues by five themes: monitoring operations through regulations used as a market base, focusing on the quality of work, seeing waste as a measure of cost, improving methods of action, and sharing knowledge through many media. Much of the evidence suggests that the management accounting techniques of Japan, Western Europe, and North America are quite similar. The differences in management accounting techniques between them are mainly due to the application of management accounting techniques in the particular context of each country. However, most importantly, these five topics have been carried out regularly and periodically to create a valuable knowledge base of management accounting techniques to help Japanese enterprises to apply these techniques in business activities.

Chenhall and Langfield-Smith (1998) pointed that Australian firms have a rather high level of implementation of management accounting techniques when compared with firms in other countries. Moreover, the traditional management accounting tools are also applied more than the advanced management accounting techniques. Management accounting techniques with a high degree of application are mainly budgeting, planning, and assessment of action results, techniques with lower application levels are ABC techniques, value chains, and target cost. Firth (1996) conducted a survey on management accounting techniques in domestic public companies and foreign joint ventures. The survey results show that Chinese joint ventures have many changes in the management accounting system when compared with Chinese enterprises that do not cooperate with foreign countries. Islam and Kantor (2005) surveyed the development of management accounting techniques and found that a country's culture and intangible values have a strong impact on the development of management accounting techniques at businesses. They argue that the lack of knowledge of Chinese enterprises' management accounting techniques has made the development of management accounting techniques lagged behind in this country compared to the world.

Wu et al. (2007) found that the implementation of management accounting tools is most affected by the ownership form, not by the difficulty and complexity of the management accounting technique. Taking the example of a joint venture or a state-owned enterprise, cost estimation techniques, and targeted cost techniques are considered more beneficial to state-owned enterprises than to joint ventures. In contrast, responsible accounting and decision-making accounting are considered more beneficial to joint ventures than state-owned enterprises. Leftesi (2008) investigated the situation of applying traditional and advanced management accounting tools in the large and medium-sized production enterprises of Libya. The results show that the number of management accounting tools deployed in Libyan businesses is very small. Moreover, the use of traditional management accounting tools is much higher than advanced management accounting techniques. Overall, this result is quite similar to most previously published results.

Angelakis et al. (2010) investigated 83 large-scale manufacturing enterprises in Greece and found that these enterprises used a lot of both traditional and new management accounting techniques. Although the proportion of advanced management accounting tools is relatively high, in general, traditional management accounting tools are still deployed quite a lot. However, the most important achieved result is that businesses tend to pay more and more attention to implementing new management accounting techniques. Yalcin (2012) performed a comparative analysis of the application of management accounting techniques between countries in Turkey and six other studies by five themes, namely: budgeting, costing system, a decision-making system, performance evaluation system, and strategic analysis. The results also suggest that management accounting techniques for budgeting and costing are more commonly used than advanced management accounting techniques.

In Vietnam, since the early 1990s, the issues of management accounting have been noticed by many scholars and have only started to be considered systematically since 1999. In recent years due to the trend of a globalized economy with increasingly complex and fierce competition, enterprises began

to pay more attention to management accounting to increase their viability and development. Therefore, management accounting in Vietnam has gradually received more attention from scholars. Nghiem (2004) considered management accounting organization models of developed countries such as Russia, France, and the US to learn from their experience and use these models to apply management accounting in Vietnam's specific context circumstances. It was found that the accounting system with the integration between management accounting and financial accounting is the most suitable structural apparatus for Vietnamese enterprises. In addition, manufacturing enterprises were recommended to implement the combined organizational model like the one of the US, but in the immediate future, to ensure the model's possibility, enterprises should pay special attention to the contents of management accounting such as revenue, expenditure, and profit management accounting. Doan (2005) presented the content, advantages, disadvantages, methods, and conditions for implementing ABC techniques at Vietnamese enterprises. Dang (2010) studied BSC techniques and found they were one of the multidimensional and innovative management tools deployed by many organizations and enterprises in the world when evaluating performance. However, it is rarely used in Vietnam, especially in service enterprises. Advantages and disadvantages were evaluated when implementing this technique in service enterprises. After that, enterprises are encouraged to learn and apply BSC in their operations. Pham (2010) synthesized experiences from Asian countries and developed countries when organizing management accounting. Next, the reality of management accounting organization in SMEs was analyzed and solutions to support them in implementing management accounting were proposed.

Doan (2012) looked for factors that govern the implementation of strategic management accounting in Vietnamese enterprises. It was shown that the organizational form of decentralized management and the competition intensity strongly dominates the implementation of strategic management accounting in Vietnamese enterprises. Moreover, when applying these techniques, the enterprise performance is also more positive. Tran (2014) said that advanced techniques are used to determine costs such as ABC techniques and target

costs and help businesses to use all resources optimally in the context of advanced production. Dao (2015) investigated the interdependence between information needs and the designed cost system. The findings show that each specific circumstance of the business will need appropriate management accounting methods. Therefore, with the characteristics of their own business organization, Vietnamese steel enterprises can choose specific techniques suitable for their businesses.

Anderson and Lanen (1999) identified competition as the most important external factor that encouraged managers to apply a new cost system in enterprises while the development of management accounting techniques in 14 enterprises in India. It was also found that when the external environment changes, management accounting techniques deployed in enterprises also change. Luther and Longden (2001) said that contingency factors such as the intensity of competition and fluctuations in the trading environment cause changes in management accounting in South Africa.

In addition, a contingency factor, namely "production technology" was included to test the degree of dominance in the implementation of management accounting techniques. Tayles and Drury (1994) analyzed the impact of modern manufacturing technologies on the management accounting system and found that the use of advanced technology has a significant effect on changing the performance measurement and evaluation system. Abdel-Maksoud et al. (2005) found that complex management accounting techniques deployed in enterprises have invested significantly in advanced production technologies such as total quality management and just-in-time system. Merchant (1984) and Abdel-Kader and Luther (2008) showed that the use of management accounting techniques in business organizations is affected by the size of the enterprise. Pierce and O'Dea (1998) also showed that the level of implementation of management accounting techniques is positively correlated with the size of an enterprise.

Business strategy is often included in the test on the impact level on the implementation of management accounting techniques in many enterprises. Collins et al. (1997) examined the correlation between business strategy and implementa-

tion of estimation systems in the context of a perception crisis in Latin America. Miles et al. (1978) found a single important relationship between the “Seeker” strategy and the use of the estimation system. Gosselin (1997) said that the corporate strategy affects the deployment level of ABC techniques at strategic units. Brown et al. (2004) has found an organizational factor that dominates the implementation of management accounting techniques, which is “senior management support”. The results demonstrated that subordinates’ perception of activity-based costing techniques is greatly influenced by senior management’s encouragement. Jones (1985) concluded that the design of the management accounting system in the subsidiaries is governed by the factor “influence of the parent enterprise on the subsidiary”, and from there, it also affects the implementation of the management accounting techniques in subsidiaries. This is justified when an acquisition occurs.

Tran (2016) found factors that affect the application of management accounting and how they affect the application of management accounting in service and commercial SMEs in Vietnam. To improve the competitiveness of SMEs, suggestions to help SMEs easily apply management accounting were given. The research technique used was a mixed technique, with the qualitative strategy of interviewing experts and quantitative techniques to collect data. As a result, seven factors have the potential to influence the implementation of management accounting in SMEs, including corporate culture, the level of state ownership, the fierce competition of the market, knowledge of the enterprise owner, size of the enterprise, expenses for the organization of accounting, management, and strategy of the enterprise. Doan (2012) examined the effects of two factors of decentralization and competition on the deployment of management accounting tools. The impact of the deployment of these tools on the business results of enterprises was considered when the Vietnamese economy is in transition. Doan (2012) surveyed 220 enterprises and obtained the results that both of these factors have a strong impact on the implementation of advanced management accounting tools, but are not related to the implementation of traditional management accounting techniques. Moreover, enterprises that implement management accounting tools all have better business results than before.

## 2. AIM AND HYPOTHESIS DEVELOPMENT

This study aims to measure the influence of unexpected factors and institutional factors that affect the implementation of management accounting techniques in medium-sized manufacturing enterprises in Vietnam.

The study develops the following hypotheses:

- H1: *Competition intensity has a positive (+) impact on the use of a decision-making system.*
- H2: *Viewpoints of business owners have a positive (+) impact on the use of a decision-making system.*
- H3: *Advanced technology has a positive (+) impact on the use of a decision-making system.*
- H4: *Qualifications of corporate accountants have a positive (+) impact on the use of a decision-making system.*
- H5: *Mimicry has a positive (+) impact on the use of a decision-making system.*
- H6: *Coercion has a positive (+) impact on the use of a decision-making system.*
- H7: *Legal regulations have a positive (+) impact on the use of a decision-making system.*

## 3. METHODS

The topic uses quantitative methods to test hypotheses. All scales used to measure concepts are inherited from previous studies. The scale of the decision-making system is selected based on Lazaridis (2004), Abdel-Kader and Luther (2005), Joshi (2001), Szychta (2002), and Hermes et al. (2007). The scale of the competitive intensity is taken from the scales developed by Hansen and Van der Stede (2004). The scale of the business owners’ point of view is based on a work by Ismail (2007). Advanced technology measured with a tool developed by Tayles and Drury (1994). The qualifications of an accountant in the enterprise are measured by considering the qualifications that

an accountant owns. The point is to see the highest level of an accountant in the enterprise. The scale of the three institutional factors on each group of businesses was measured with a tool modified by Abidin (2000).

The data was collected through the survey sent by emails. To obtain good data for testing, people in charge of management accounting were asked to complete a survey. Besides, SPSS 20 software was used to process the model.

### 4. RESULTS

Although 202 respondents returned the questionnaires, some invalid data (e.g. missing values) were rejected. Finally, the sample comprised a total of 129 respondents in the manufacturing sector in SMEs.

Validation of measures was done. As provided in Tables 1 and 2, all Cronbach's alpha values were higher than 0.6, and the corrected item-to-total correlation was higher than 0.3. Thus, the reliability of the constructs was demonstrated. Furthermore, it was found that the results of EFA analysis with KMO coefficient = 0.620 and Barlett test is significant (sig = 0.000 < 0.5); this indicates that factor analysis is appropriate, data and observed variables are correlated with each other overall. The Eigenvalue value is 1.052 and the total variance obtained is 69.131%, indicating that the total variance extracted can explain 69.131% of the variation of the sample. The load factor of all factors > 0.55; this indicates that the factors are satisfactory and have a very large convergence (Hair et al., 2007).

**Table 1.** Cronbach's alpha values

Factors	Items	Observed variables are excluded	Cronbach's alpha
Competition intensity	3	No	0.673
Viewpoint of business owner	3	No	0.700
Advanced technology	2	No	0.606
Mimicry	3	No	0.654
Coercion	3	No	0.629
Normality	3	No	0.636

**Table 2.** Explanation level of the model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.512 <sup>a</sup>	.262	.220	.68365	1.240

Note: a. Predictors: (Constant), QP, CT, TD, CN, CB, BC, CD. b. Dependent Variable: HTRQD.

According to Table 2, adjusted R2 of 0.220 indicates that about 22% of the variation in the decision-making aid system can be explained by independent variables of the model. Therefore, the outcome variable is moderately well explained by the independent variables.

**Table 3.** Appropriateness of the model

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.097	7	2.871	6.143	.000 <sup>b</sup>
	Residual	56.552	121	.467		
	Total	76.649	128			

Note: a. Dependent Variable: HTRQD. b. Predictors: (Constant), QP, CT, TD, CN, CB, BC, CD.

Results of analysis of variance (ANOVA) in Table 3 with sig = 0.000 (Sig. ≤ 0.01) show that with a 99% confidence level, the theoretical model is completely consistent with the actual data. That is, the independent variables are linearly correlated with the dependent variable.

The results of the multicollinearity test through VIF in Table 4 show that the VIF coefficients of all the factors in the model are much smaller than 10, proving that the independent variables are not closely related. Therefore, there is no multicollinearity phenomenon.

According to Fomby et al. (1984), an improved d-test was performed, if 1 < d < 3, there is no autocorrelation. According to the results of Table 2, the Durbin-Watson value d = 1.240. Thus, it is concluded that the residues do not have autocorrelation.

Implementing the sub-regression model, Table 5 shows the results of the heteroscedasticity test.

According to Table 5, the adjusted R2 coefficient is 0.110. It is possible to calculate the coefficient White test, nR2 = 129 (0.11) = 14.25. Given the distribution of Chi-squared, with a confidence level



**Table 4.** Multicollinearity test

Source: Authors' elaboration.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	.841	.538		1.564	.120		
	CT	.111	.084	.112	1.334	.185	.866	1.155
	CD	.378	.104	.313	3.641	.000	.823	1.215
	CN	.197	.090	.184	2.190	.030	.866	1.154
	TD	.016	.022	.056	.708	.480	.983	1.017
	BC	.206	.085	.202	2.432	.016	.888	1.127
	CB	-.051	.076	-.055	-.675	.501	.924	1.082
	QP	-.013	.092	-.012	-.145	.885	.938	1.066

Note: a. Dependent Variable: HTRQD.

**Table 5.** Heteroskedasticity test

Source: Authors' elaboration.

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.463 <sup>a</sup>	.215	.110	1.34744	1.991

Note: a. Predictors: (Constant), CDSQUARE, QP, BC, CB, CTSQUARE, CN, TD, TICH, CBSQUARE, TDSQUARE, CT, CNSQUARE, BCSQUARE, QPSQUARE, CD. b. Dependent Variable: USQUARE\_HTRQD.

of 90%, the number of dependent variables of the sub-regression model is 15, the critical value of Chi-squared is 30.58. The White test (White, 1980) shows  $nR^2 < \text{critical value of Chi-square}$  ( $14.25 < 30.58$ ); thus, it can be concluded that residual variance is constant.

According to Table 4, the variables CT, TD, CB, QP had  $\text{Sig.} > 0.05$ , which showed no significant correlation with the variable HTRQD. The variables CN, CD, BC have  $\text{Sig.} < 0.05$ , so the correlation is statistically significant with the variable HTRQD at the confidence level of 95% or more. Therefore, the regression equation looks as follows:

$$HTRQD = 0.313 \cdot CD + 0.184 \cdot CN + 0.22 \cdot BC. \quad (1)$$

The test results show that the standardized regression coefficients of the variable CD, variable CT, and variable BC have  $P\text{-value} < 0.05$ , proving that the respondents perceive that the view of the business owner, advanced technology, and imitation are important predictors for using a decision-making aid system.

In addition, all the variables in the model have positive regression coefficients that are consistent with the hypothetical direction of the relationship,

proving that when the enterprise applies advanced technology, when the business owner is well aware of the importance of management accounting and when businesses imitate each other, the application of the decision-making system in enterprises also increases. However, among these three factors, the business owner's point of view has the strongest influence, followed by the imitation factor and, finally, advanced technology.

## 5. DISCUSSION

Research results have proved that the view of business owners is one of the factors that is related to the implementation of management accounting techniques in SMEs in the manufacturing sector in Vietnam. Recommendations are given to help change the views of business owners in a positive direction.

On the government side, the government needs to have policies to encourage and support raising awareness about the role of business owners in the implementation of management accounting techniques, richness of management accounting techniques, as well as benefits of these techniques. In addition, such policies should support businesses to connect and participate in professional asso-

ciations to receive seminars or fee-funded training programs to develop management accounting skills in the SMEs sector of Vietnam.

On the side of the professional association, the professional knowledge training courses on financial accounting are still organized regularly and widely, but the training courses on management accounting skills are still not popular. Government-sponsored training courses will encourage enterprises, especially SMEs, to participate, thereby helping business owners have more in-depth knowledge and a better understanding of the importance of deploying and using these management accounting techniques, especially the implementation of advanced management accounting techniques in business activities of enterprises. Therefore, the association needs to strengthen the organization of thematic reporting sessions and training courses on management accounting to help businesses understand and apply management accounting in business activities.

On the business side, business owners need to accumulate and regularly update knowledge about management accounting and quickly change their perception of management accounting. Business owners need to have the right view of management accounting, and most importantly, be proactive and promote the implementation of management accounting in production and business operations to achieve the highest management efficiency. In addition, enterprises also need to promptly grasp international accounting standards, prepare data according to international regulations in case it is accepted when needed, and at the same time need to plan and copy programs carefully keeping all necessary documents so as not to be damaged if there is a risk. The more foresight the business owner has, the more proactive he will be in deploying management accounting techniques into business activities.

Research results have proved that advanced technology is one of the factors that are really related to the implementation of management accounting techniques in SMEs in the manufacturing sector in Vietnam.

On the government side, it needs to allocate a budget to finance science and technology projects and programs to create motivation for enterprises

to quickly put advanced technologies into operation; establish strong linkages between enterprises and science and technology management agencies to promote research and application of science and technology. In addition, the government also needs to develop regulations to support enterprises to import advanced and modern machinery and encourage enterprises to boldly innovate technology.

On the side of the professional association, it is necessary to regularly arrange and organize seminars, share experiences and advantages of applying advanced technology. In addition, it is necessary to continue to organize programs to honor successful businesses for boldly investing in advanced technology into production and business activities to create motivation for other businesses.

On the side of enterprises, enterprises also need to actively improve their internal resources to be able to stand firm in the international arena. To cope with competitive pressure, businesses need to be proactive, not only relying on the government's policies and support but also need to build a roadmap to invest in improving production equipment and technology, modernization of machinery and equipment, boldly abandoning obsolete equipment. Abdel-Kader and Luther (2008) concluded that when enterprises use advanced production technology equipment, they will pay attention to advanced management accounting techniques.

To increase the mutual simulation, the following solutions are suggested.

On the government side, the government should quickly issue guidelines on management accounting techniques, especially advanced management accounting techniques. Currently, the documents related to management accounting are quite a few, so enterprises also face many difficulties in learning new management accounting techniques. Along with the promulgation of the 2015 Law on Accounting, which has already taken effect from January 1, 2017 with very few regulations on management accounting, the government should soon publish documents guiding the organization and implementation of management accounting in Vietnamese enterprises to replace "Circular 53/2006/TT-BTC".

On the side of the professional association, it continues to closely associate with the media to organize and widely promote programs to honor successful entrepreneurs and businesses for being at the forefront of innovation, new management methods, having good achievements in business activities, and making great contributions to the social community. This is an opportunity for entrepreneurs to exchange and share business secrets. Through that, the program will find new typical faces and effective business models as an example and motivation for other businesses to learn and strive. In addition, the association needs to learn more from the experiences of neighboring countries or countries with development conditions such as Vietnam and advanced countries in the world by participating in seminars, exchanging information and personnel, or inviting experts for advice on management accounting. At the same time, educational institutions and researchers need to be responsible for learning and disseminating new knowledge about management accounting to students. Professional associations need to organize more international seminars, national seminars, seminars on management accounting, continuously update the contents and

development trends of management accounting in the future, as a basis to compiling and publishing guiding documents in Vietnam. All these efforts of the association will create conditions for Vietnam to smoothly apply international accounting techniques, helping businesses to successfully deploy to mature in the integration period.

On the business side, businesses need to change their perception of the role of professional associations. Currently, many businesses think that associations are just places to meet and exchange experiences, where this is just a symbol, not a real power, has no voice on hot and urgent issues in society. That is why many businesses have not thought of joining the association. However, the role of the association in the new era has changed. It has the role of a bridge between enterprises and the world, between enterprises and public authorities, and between businesses, so active participation in the association will not only create opportunities for businesses to quickly grasp the regulations issued by the government but also help businesses learn and share knowledge and experiences from national and international businesses in the region.

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## CONCLUSION

The results showed that three factors can predict the implementation of decision-making techniques, which are the business owner's point of view, imitation, and advanced technology. Moreover, the forecasting level of these three factors is different; among these three factors, the point of view of the business owner has the best predictability and advanced technology has the lowest predictability.

This result may suggest that in order to increase the implementation of decision-making techniques, the most important factor is the business owner's point of view. If the owner has a good knowledge of these techniques and is properly aware of the role and position of the accountant management in providing information for decision-making, the enterprise will be able to apply many decision-making techniques. In addition, businesses also need to increase the learning of successful domestic and foreign enterprises to imitate them deploying these techniques into business activities to minimize the risk of failure when implementing these techniques. The results also show that the application of advanced technology to business activities also helps businesses apply more decision-making techniques. The reason may be that advanced technology provides businesses with more available information, so businesses also have more advantages when applying these techniques.

Besides the results achieved, the paper still has the following shortcomings: (1) the response rate to the survey questionnaire is low; (2) it is only focusing on the manufacturing sector, so the sample limits the generality of the results for all medium-sized enterprises; (3) the number of contingency factors included in the survey is quite small; (4) the data is collected via mail and email, which may cause the respondents to misunderstand the question; and (5) there are inherent limitations of using Likert-scale questions.

## AUTHOR CONTRIBUTIONS

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