THE DETERMINANTS INFLUENCING MANAGERIAL ACCOUNTING IN VIETNAMESE MANUFACTURING AND TRADING ENTERPRISES

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ABSTRACT

Currently, there are few studies at the marco level to analyze the current development of managerial accounting in Vietnam. Based on literature review and multiple regression analysis, this study aims to examine the determinants influencing the development of managerial accounting in Vietnamese manufacturing and trading enterprises. The study collected primary data of 173 enterprises over 500 enterprises through a questionaire survey, representing the valid response rate of 34.6%. The research results show that age and size of enterprises, business environment, information needs of managers, product characteristics, and quality of accountants are the main determinants positively affecting the development of managerial accounting in the Vietnameses enterprises.

Keywords: Managerial Accounting, Determinants, Vietnamese, Manufacturing and Trading, Enterprises.

INTRODUCTION

Vietnamese market has become increasingly competitive than before because of the deep integration of Vietnam into the global economy. The Vietnamese enterprises need to enhance their management abilities to survive in severe market competition. The demands of applying modern management practices is extremely high in the enterprises. Managerial accounting is the accounting section which provides financial and non-financial information to help managers execute and control operations, forecast and make decisions, and build up strategies for their firms. The application of modern managerial accounting techniques to enhance the management ability has been recognized as one of the best solutions to be successful in the competition. Recently, in order to enhance their competitiveness, Vietnamese medium and big sized enterprises have been adopting modern managerial accounting techniques such as activity based costing, customer profitability analysis, balanced scorecard and so on. However, the development level of managerial accounting in Vietnamese enterprises is still much lower than enterprises in the Asian region and in the world. (Doan et al., 2011; Nguyen & Aoki, 2014). Currently, the numbers of marco-level empirical research on the determinants influencing the development of managerial accounting in Vietnamese enterprises are relatively limited. What are

the main determinants impacting the development of managerial accounting in Vietnam? Therefore, the main objective of this study is to determine the determinants influencing the development of managerial accounting in Vietnamese enterprises. We focus on manufacturing and trading enterprises because of the large propotion of these enterprises in the Vietnamese economy. Based on the results of this research, we would like to give recommendations to promote the adoption rates of modern managerial accounting techniques in Vietnamese enterprises.

THEORETICAL REVIEW AND HYPOTHESIS DEVELOPMENT

There are several previous studies on the determinants influencing the development of managerial accounting in many countries. Based on literature review, significant determinants could be summarized as follows.

Product Characteristics

Abdel-Kader & Luther (2008) agured that product characteristics such as the components, perishability of the product, the limited useful lives of products may affect the level of development of managerial accounting. They used a large scale survey in the food and drink industry in the United Kingdom. However, the statistic results did not support their innitial hypothesis. Duh et al. (2009) indicated that products sold in highly competitive markets is a factor that impacts the adoption of modern managerial accounting techniques in companies. In addition, Tsiforal & Chatzoglou (2016) found empirical evidences that the diversification of the production process or the large number of products created a need for more accurate and detailed costing system. Therefore, we propose the following hypothesis:

H1: Product characteristics positively impact the development of managerial accounting in the Vietnamese enterprises.

Production Technology

Drury & Tayles (1994) studied the impact of advanced manufacturing technologies (AMT) on the implementation of managerial accounting and found that the usage of advanced technologies positively affects the development of managerial accounting, especially in the field of controlling performance. Advanced production technologies used in companies also affect the development of managerial accounting system (Abdel-Kader & Luther, 2008). Sophisticated managerial accounting techniques are more likely adopted AMT because AMT requires a multidimensional performance measurement system to provide continuous signals of improvement to managers. Therefore, we propose the following hypothesis:

H2: The modern production technology positively impacts the development of managerial accounting in the Vietnamese enterprises.

Information Demand of Managers

To make suitable decisions, managers need information which is timely and accurately reported. Chenhall (2003) found that managerial accounting techniques can provide useful information for decision making and operational control. If the information is poorly or

inaccurately collected and analyzed, it will not only affect the quality of decisions of managers, but also put the enterprise in dangerous situations. Based on the information provided by managerial accounting, managers can make accurate decisions to improve the performance of their businesses (Cadez & Guiding, 2008). Therefore, we propose the following hypothesis:

H3: The information demand of managers positively impacts the development of managerial accounting in the Vietnamese enterprises.

Quality of Accountants

Accountants directly collect and provide most of the information to managers for decision making. Accountants play a vital role in providing information for business operations and management (Atkinson et al., 1997). According to Collis và Jarvis (2002), if enterprises have enough competent staffs, the managerial accounting systems are more effective and more professional reports are produced to support decision making process. Nowadays, in the modern managerial accounting system, the roles of management accountants are changing to proactively involve in strategic management, operational alignment and long-life improvement for enterprises (Zainuddin & Sulaiman, 2016). Therefore, we propose the following hypothesis:

H4: The quality of accountants positively impacts the higher the development of managerial accounting in the Vietnamese enterprises.

Business Environment

Alam (1997) showed research results when budgeting system just has limited functionality in companies operating in highly uncertain environment. Also, Abdel-Kader & Luther (2008) argued that the environment uncertainty was one of the external factors affecting the adoption of managerial accounting in large food and drink companies in the United Kingdom. Albu & Albu (2012) found an interesting result of the negative impact of the environment uncertainty on the existence and complexity of costing practices. The environment is significantly negatively correlated with the existence of many managerial accounting techniques and complexity of the techniques. Therefore, we propose the following hypothesis:

H5: The business environment positively impact the development of managerial accounting in the Vietnamese enterprises.

Size of Enterprises

Prior studies showed that size of enterprises was one of the most important factors affecting the application of managerial accounting. Specifically, big firms are likely to adopt advanced level of managerial accounting than medium and small firms in the food and drink companies in the United Kingdom (Abdel-Kader & Luther, 2008). The size of the enterprises should be large enough to be able to invest in a professional accounting system based on strong human and financial resources (Cadez & Guilding, 2008). Nguyen & Aoki (2014) also found that the large Vietnamese food and beverage enterprises adopted more modern managerial accounting techniques than the small and medium enterprises. Therefore, we propose the following hypothesis:

H6: Large enterprises have higher managerial accounting development than small and medium enterprises.

Age of Enterprises

O'Connor et al. (2004) hypothesized that older established SOEs may have a tendency of entrenching the existing managerial accounting practices, in other words, the older enterprises are fearful of changing. They finally found that enterprise age is a significant factor. However, in contrast to their first prediction, the adoption of Western managerial accounting practices in the older Chinese SOEs is greater than the young SOEs. Therefore, we propose the following hypothesis:

H7: The older enterprises have higher development of managerial accounting than the younger ones.

The International Federation of Accountants (IFAC) established a framework to analyze the development of managerial accounting in 1998 (IFAC, 1998). According to the IFAC model, the history of managerial accounting includes four stages. The stage one (prior to 1950) primarily focused on the determination of product cost and internal financial control with the techniques such as simple budgeting and costing. The second stage from 1960 to 1965 focused on planning and controlling purposes with the techniques such as decision analysis, responsibility accounting, and more complex budgeting techniques. In the third stage was from 1965 to 1985, the focus of managerial accounting shifted to waste reduction in using business resources. The widely adopted techniques were activity-based costing, sensitivity analysis, quality cost analysis and so on. The fourth stage or the current development level of managerial accounting had been developed by 1995. The widely adopted techniques were target costing, benchmarking, value chain analysis, total quality management and so on. Based on the IFAC model, Abdel-Kader & Luther (2008) studied the level of managerial accounting development in food and drinks industry in the United Kingdom. They found that the enterprises reached the highest development level of the IFAC model. Their research showed that there were essential determinants affecting the development of managerial accounting such as decentralization, size, total quality management, just in time, advanced manufacturing technology. Therefore, in this research, we also would like to apply the IFAC model and previous research to analyze determinants impacting the development level of managerial accounting in the Vietnamese manufacturing and trading enterprises.

RESEARCH METHODOLOGY

A questionnaire survey has been used based on the results of preliminary interviews and a pilot survey. The firms are chosen from the list of listed firms on Hanoi and Ho Chi Minh stock exchange, and Vietnamese General Statistics Office. Due to the availability of the data, 500 manufacturing and trading firms located in big cities in Vietnam like Hanoi, Ho Chi Minh, Danang cities are selected. The survey was conducted through emails to 500 chosen enterprises in the middle of May 2018. Respondents of the questionnaires were accountants and related positions to ensure the reliability of the collected data. At the end of June, 180 answers from the 500 chosen enterprises were collected, among which 7 questionnaires were removed due to the lack of necessary information of the enterprises. Finally, 173 questionnaires were processed, showing the actual response rate of 34.6%.

Statistical package of SPSS ver.24 was employed for data processing. The statistical description, mean, standard deviation and cluster analysis are used to give information on the

development of managerial accounting in the chosen enterprises. The hypotheses are tested with a multipe regression as follows:

$$MADEV = \beta0 + \beta1*CHA + \beta2*PRO + \beta3*INF + \beta4*QUA + \beta5*ENV + \beta6*SIZ + \beta7*AGE + \varepsilon$$

Where:

MADEV = The development level of managerial accounting
CHA = Product characteristics
PRO = Production technology
INF = Information demand of managers
QUA = Qualification of accountants
EVN = Business Environment
SIZ = Size of enterprises
AGE = Age of enteprises

The five independent variables, namely CHA, PRO, INF, QUA and EVN are measured by the average value of representative characteristics of the group which are built based on the similarities in meaning and references from previous research. The detailed content of the five variables are shown in Table 1. To investigate the impact of these determinants of the development levels of managerial accounting in the enterprises, we employed a question based on a 5 level Likert scale where 1 means Lowest; 2 –Low; 3 – Average; 4 – High; 5 – Highest.

The two control independent variables are AGE - Age of the enterprises and SIZ - Size of the enterprises. The AGE is 1 if the enterprise has operated for more than 10 years; otherwise, the value is 0. The SIZ is 1 if the enterprises is large enterprise, otherwise, the value is 0.

To study the development levels of managerial accounting, we asked the enterprises to evaluate the application rates of management accounting techniques which are based on the IFAC model. We employed a question based on a 5 level Likert scale where 1 means Never use; 2 –Almost Never use ; 3 – Sometimes use; 4 – Almost everytime use; 5 – Everytime Use. The dependent variable MADEV has been measured according to the binary scale. For enterprises achieving the development level of managerial accounting at stage 1 and 2 of the IFAC model, the value is 0. For enterprises achieving the development level of managerial accounting at the stage 3 and 4 of the IFAC model, then the value is 1.

Table 1
GROUP OF INDEPENDENT VARIABLES

Variables	Code	Meaning
1. Characteristics of products	CHA1	Variety of products
	CHA2	Short life - cycle
	CHA3	The complexity of product details
	CHA4	The large number of production lines
	CHA5	Products in high competitive market
2. Production technology	PRO1	Use advanced automation production lines.
	PRO2	Application of Total quality management system (TQM)
	PRO3	Application of Just in time management system (JIT)
4. Information demand of managers	INF1	Managers need detailed information for decision making
	INF2	The decentralization between board of management and divisions
	INF3	The concentration of power
	INF4	Knowledge and abilities of managers in planning and controlling
5. Qualification of accountants	QUA1	Accountants have high degrees
	QUA2	Accountants are regularly updated knowledge

	QUA3	Knowledge and skills of the chief accountant
	QUA4	Accountants have international certificates such as CMA, ACCA, ICAEW
6. Business Environment	ENV1	The stability of the socio-economic environment
	ENV2	The stability of the political system
	ENV3	The stable guidance documents of state agencies
	ENV4	The culture of business innovations

RESULTS AND DISCUSSION

General Information of The Data

In our sample of 173 enterprises, there are 92 manufacturing firms, accounting for 53.2% and 81 trading enterprises, accounting for 46.8%. There are approximately 83% of respondents working for accounting and finance departments and the Board of Management. These related working positions of the respondents ensure the quality of the responses in this research.

In this study, the size of chosen enterprises is classified based on their total assets. Approximately 47% of the respondents are large firms, and the rates of medium and small firms are 18.5 % and 34.7% respectively. Regarding the age of the enterprises, the average age is 18 years. The age of oldest enterprise is 58 years and the youngest enterprise is 1 year.

Determinants Influencing The Development of Managerial Accounting In The Vietnamese Manufacturing And Trading Enterprises

Reliability testing-Cronback's alpha

Reasonable Cronback's alpha coefficients have been transparently represented by all five factor groups, fluctuating around 0.7 and 0.8, greater than the threshold level of 0.5. Factor group 3 - Information demand of management reaches the highest Cronback's alpha (0.824) and in contrast, factor group 4 - Competence level of accountants demonstrates lowest number (0.762). Undoubtedly, these results confirm the representativeness of factor group. Moreover, with the satisfactory variable correlation coefficients greater than 0.3, the variable construction has been consistent with the criteria of testing.

The results of Cronback's alpha analysis also indicate the necessity of QUA4 variable elimination (accountants with international professional certificates such as CMA, ACCA, ICAEW ...) because of the greater performance of factor group without this variable. Obviously, QUA4 removal out of the model will implement the reliability and consistency of factor group 4 - Quality of accountants, achieving the largest Cronback's alpha coefficient.

Factor Analysis

Factor loading is an indicator ensuring the level of constructive significance of Exploratory Factor Analysis (EFA). The condition for EFA must satisfy the requirements: Factor loading factor> 0.5 (Meyers et al., 2013).

The Bartlett's test has statistical significance (Sig. <0.05). This is a statistical quantity used to consider the hypothesis that variables are not correlated in overall testing model. If this test is statistically significant (Sig. <0.05), the observed variables are correlated with each other.

Table 2 KMO AND BARLETT TESTING		
Kaiser-Meyer-Olkin (KMO) testing		0.780
Bartlett testing	Approx. Chi-Square	1545.421*
	df	171
	Sig.	0.000

*: significant level lower than 0.05

As shown in Table 2, KMO coefficients reaches 0.78, between 0.5-1.0, showing the appropriateness when using factor analysis for data. The Bartlett's test also demonstrated the significance of the hypothesis about overall correlation of variables (sig = 0.00 <0.05). Moreover, testing model percentage of variance reaches positive number (67.67%), indicating that all factor groups explains nearly 70%.

Table 3 PRINCIPAL COMPONENT ANALYSIS					
	Factor Groups				
	1	2	3	4	5
CHA3	0.811				
CHA2	0.763				
CHA1	0.741				
CHA4	0.737				
CHA5	0.507				
INF4		0.788			
INF1		0.778			
INF3		0.778			
INF2		0.724			
ENV2			0.835		
ENV4			0.757		
ENV3			0.750		
ENV1			0.664		
QUA2				0.885	
QUA3				0.808	
QUA1				0.745	
PRO2					0.856
PRO3					0.775
PRO1					0.595
*Principal Component Analysis, Varimax with Kaiser Normalization					

As shown in Table 3, the factor loading of variables is greater than 0.5, ensuring the significance of EFA, according to standards of convergence and divergence. The group number after rotation remains five. Five representative variables are used for the five factor groups: CHA, PRO, INF, QUA, ENV. These representative variables are determined by the average of the component variables.

Regression Model

The regression model is composed of one dependent variable and five independent variables, representing five factor groups. As shown in Table 4, the testing model establishes R equal 0.65 and R squared equal 0.398, indicating that the independent variables explain 39.8% of

the dependent variable. Durbin Watson (1.820) appropriately adapts with condition range, from 1 to 3, showing no autocorrelation in model.

ANOVA test gives F value = 17,212 with sig = 0 <0.05. F test proves model meaningful and significance. Regression result can be used for assessment.

The regression model shows that with a confidence level of 90%, only the PRO variable is eliminated. Therefore, we obtain the following model:

MADEV= -1.357 + 0.082*CHA + 0.112*INF + 0.072*QUA + 0.116*ENV + 0.373*AGE+ 0.128*SIZ

Table 4
REGRESSION RESULT

	The development of managerial accounting (1)
Part A: Regression Coefficient	
CHA	0.082* (0.05)
PRO	0.039 (0.043)
INF	0.112** (0.045)
QUA	0.072* (0.043)
ENV	0.116** (0.054)
AGE	0.128** (0.065)
SIZE	0.373*** (0.06)
Constant	-1.357*** (0.210)
Part B: Model Suitability	
R	0.650
R Square	0.422
Adjusted R Square	0.398
Sig F change	0.000
F	17.212
Durbin Watson	1.820

*** Significant at 0.01, ** Significant at 0.05, * Significant at 0.10

DISCUSSIONS

Thus, according to the results of the regression model, six variables: product characteristics, information demand of managers, quality of accountants, business environment, age and size of enterprises have positive impacts on the development of managerial accounting practices in the enterprises. Therefore, the hypothesis *H1, H3, H4, H5, H6* and *H7* are confirmed and *H2* can not be confirmed.

First, age of enterprises has the most significant impact on the development level of managerial accounting in the Vietnamese enterprises. This result shows that the longer the enterprises operate, the more likely they apply more modern managerial accounting methods. This finding is also quite interesting compared to the study of O'Conor et al. (2004) which also found that the older Chinese enterprises applied more Western modern management accounting

techniques than the younger ones. Thus, there is existence of similarity between Vietnamese enterprises and Chinese enterprises that long-lived enterprises tend to use more modern managerial accounting techniques.

Second, product characteristics represents a positive impact on managerial accounting development. Product characteristics, product diversity, number of production lines, product life cycle, and product competitiveness affect positively on the complexity of managerial accounting techniques that the Vietnamese enterprises are adopting. This result complements the study of Tsifora & Chatzoglou (2016) which found the positive relationship between the sophisticated management accounting techniques and the characteristics of products. The Vietnamese enterprises

Third, production technology variable has not been identified to have impact on the development level of managerial accounting in the Vietnamese manufacturing and trading enterprises. Although this variable, according to foreign studies, has shown a positive impact on changing the company's managerial accounting system to more modern ways (Abdel- Kader & Luther, 2008; Drury & Tayles, 1994). However, the result of the regression model can not confirm this impact on the Vietnamese enterprises.

Forth, information demand of managers has been proved to impact positively on the application of modern managerial accounting techniques. The needs for accounting information to make decisions, as well as managers' knowledge and capabilities in using information for planning and control, are decisive determinants for applying modern managerial accounting methods in the Vietnamese manufacturing and trading enterprises. This result has been supported by previous studies that managerial accounting provides information depending on manager demands for decision making and operational control (Chenhall, 2003; Cadez & Guiding, 2008).

Fifth, the regression model confirms that quality of accountants has a positive influence on the application of managerial accounting methods in Vietnamese manufacturing and trading enterprises. Specifically, if accountants acquire high level degrees and their knowledges are regularly updated are the determinants positively affecting the adoption of more modern managerial accounting practices. Also, the enterprises which have chief accountants owns good knowledge and skills will positively affect the application of modern managerial accounting methods in the enterprises. Thus, this result is consistent with the findings of McChlery et al (2004). The result indicating that if the accountants in the Vietnamese enterprises meet the requirements for quality and competence, the enterprises can effectively apply more complex managerial accounting techniques.

Sixth, business environment is a variable that positively impact on the application of modern managerial accounting methods in Vietnamese manufacturing and trading enterprises. Specifically, the stability of the socio-economic environment, the stability of the political system, the completeness of the State guiding documents as well as social culture encourage innovation are determinants positively affect the application of modern managerial accounting methods replacing traditional methods. Thus, Vietnamese enterprises highly appreciate the stability of the business environment to managerial accounting. This finding is consistent with Kallunki & Silvola (2008) which found that managerial accounting techniques are used to a higher extent and provide more useful information in a more stable environment and Albu & Albu (2012) which found the negative impact of the environment uncertainty on the existence and complexity of costing practices.

Lastly, size of enteprises is comfirmed as an important prerequisite for existence and the adoption of managerial accounting practices. Precisely, large enterprises tend to apply modern

managerial accounting methods more than small and medium enterprises. This finding is also consistent with the study of Abdel-Kader & Luther (2008) and Nguyen &Aoki (2014).

CONCLUSIONS

This study provides empirical evidences on the determinants affecting the development of managerial accounting in Vietnamese manufacturing and trading enterprises. It is found that age and size of enterprises, business environment, information needs of managers, product characteristics, and quality of accountants are determinants positively affecting the development of managerial accounting practices in the Vietnameses enterprises. First, age of enterprises has the strongest impact on the level of managerial accounting development of Vietnamese enterprises. Second, enterprise size has a greater impact than other determinants in the business of applying modern managerial accounting methods, because large enterprises tend to apply more advanced managerial accounting methods than small and medium enterprises in Vietnam. Third, the stability of the socio-economic, political environment, the availability of the State guiding documents and the social culture towards innovation positively affect the Vietnamese enterprises to apply advanced managerial accounting methods and replace traditional methods. Fourth, the need of accounting information for decision making, managers' knowledge are determinants that have a positive impact on the application of the advanced managerial accounting methods in the firms. Fifth, product characteristics, product diversity, number of production lines, product life cycle, and product competitiveness have positive impact on managerial accounting methods in Vietnamese firms. Finally, the quality of accountants has a positive influence on the application of managerial accounting methods in the Vietnamese enterprises.

In the near future, we would like to expand this research to other sectors in the Vietnamese economy to understand the whole determinants which influence the development level of management accounting systems. Based on the findings, we can give reliable suggestions for promoting the adoption of modern managerial accounting techniques in Vietnam.

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