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Performance evaluation criteria system in management accounting: A study of manufacturing enterprises in Hanoi

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Abstract

If manufacturing enterprises in Hanoi want to operate effectively in a competitive environment, they must invest in capital and modern technology and be managed according to modern methods. In the technical groups of management accounting, the group of measurement systems for performance evaluation plays an important role in providing information to managers. The author conducts research in manufacturing enterprises in Hanoi, with 78 questionnaires sent to 78 companies in the first quarter of 2023. The author uses SPSS to process the collected data. The results show that competitive pressure, the degree of decentralization, and the professional qualifications of management accountants have a positive effect on the level of use of the business performance evaluation criteria system.

1. Introduction

In the context of globalization and increasing competition between domestic and foreign enterprises, the need to improve the business efficiency of enterprises to survive and develop in the market is becoming more and more urgent. To operate effectively in a competitive environment, enterprises must be invested in capital, modern technology and managed according to modern methods. Manufacturing enterprises in Hanoi are also not out of this context. Manufacturing enterprises in Hanoi must strengthen their management capacity in the global competitive environment. In management accounting technical groups, the group of measurement systems for performance evaluation plays an important role in providing information to managers. From the perspective of management accounting, the measurement system includes financial measures and non-financial measures. The construction of a measurement system to evaluate performance in different enterprises will be applied differently. Depending on the need to use information from administrators. And the use of financial and non-financial measurement systems is also heavily influenced by internal and external factors. With the factors inside the enterprise, depending on the information needs of the administrator, the ability to apply the indicator system to the relevant objects, etc. External factors, depending on the level of competition in the industry, require different levels of information.

This article aims to evaluate the factors affecting the application of performance evaluation criteria in management accounting in manufacturing enterprises in Hanoi city, thereby making suggestions for the this enterprise has increased the application of performance evaluation criteria to improve the operational efficiency of the enterprise.

2. Literature Review

Drury (2018) [6] argues that financial and non-financial measurement systems are widely used to evaluate corporate performance. Commonly used financial indicators such as ROI, EVA, revenue growth rate, etc. Non-financial indicators are often used as indicators of the satisfaction of stakeholders, indicators related to market share, indicators related to quality, indicators related to the level of environmental impact, etc.

ROI is an indicator used for the first time to evaluate the performance of General Motors (Kaplan, 1984) [7]. Dury (2018) reviewed the survey and found that ROI is the most widely used indicator to evaluate the performance in investment centers. ROI overcomes the limitation of profit spending, when it is possible to measure and evaluate investment centers using different capital sources. However, there are still limitations to ROI, which is using ROI as an investor focused on short-term goals, and there are many ROI use cases that have denied many high-yielding investment opportunities.

EVA has been around since the early 1990s (Bromwich and Walker, 1998) [4]. After the introduction, many large corporations and companies have applied to evaluate the performance of enterprises as well as the work results of managers. Anil K.

Sharma and Satish Kumar (2008), compared EVA with other traditional metrics and provided empirical evidence demonstrating the correlation between EVA and stock returns, etc., but also focus on researching development applications of EVA as well as combining EVA and other metrics is a common approach to help managers detect arising problems and identify resources for development.

Indicators related to the level of satisfaction of stakeholders: are indicators to measure satisfaction with the products and services of customers and satisfaction in relationships with suppliers and shareholders. Through the criteria of quality, service attitude, working method, etc.

Random theory has been used in many studies to explain uncertainties about the application of management accounting (Ahmad, 2012). According to Otley (1980) [10], the basic thesis in the contingent theory proposed in management accounting research is that there is no theoretical model that fits all organizations. Different organizations have different operational characteristics, have different operational goals, resulting in different organizational models. Applying the theory of stochastic, uncertain factors are selected to study their influence on the application of management accounting techniques, specifically, technical application of the system of performance evaluation indicators in enterprises, which includes competitive pressure and the level of decentralization in the enterprise.

Applying institutional theory to explain the application of management accounting in enterprises, considering management accounting as a set of principles or a habit. In a fiercely competitive environment, with global competitive pressure, businesses always face many difficult decisions, and providing necessary information for managers is important. Institutional theory deals with the issue of employee power in recommending and recommending management accounting techniques based on the needs and goals of the business. Institutional theory also shows obstacles in the application of management accounting when employees do not have knowledge and understanding. Thus, institutional theory is used to explain the influence of accountants' qualifications on the technical application of the performance evaluation criteria system in enterprises.

3. Research Method
Implementation process

Step 1: We build a questionnaire on Google Forms, send it to accountants and business managers via email using a convenient sampling method, and send it to friends, relatives, and partners. …

Step 2: The number of survey questionnaires distributed was 90, sent to 90 enterprises, and the number of votes collected was 78 from 78 enterprises, reaching 86.6%. All receipts met the required information requirements.

Step 3: We analyzed the data on SPSS 22 software with the following tools: checking the reliability of the scale using Cronbach's alpha; EFA exploratory factor analysis; correlation analysis; and regression analysis.

Research scale

Inheriting from previous theoretical studies, the proposed hypotheses:

Hypothesis 1 (H1): Competitive pressure in the market has a positive effect on the level of application of performance evaluation criteria in manufacturing enterprises in Hanoi.

According to Halbouni (2014) [8], changes in the business environment, especially competition in the market, have a direct impact on management accounting. Competitive pressure requires businesses to use resources effectively. To evaluate the performance of an enterprise, it is necessary to build a system of measurement and evaluation criteria. Through the evaluation criteria system, it is a channel to provide necessary information for managers in business decisions.

Hypothesis 2 (H2): The degree of decentralization in enterprises has a positive effect on the level of application of performance evaluation criteria in manufacturing enterprises in Hanoi.

The decentralization and decentralization in enterprises will directly affect the selection of performance evaluation criteria (Abdel Kader *et al.*, 2008) [1]. When managers are assigned rights and responsibilities associated with their assigned rights, they need to be evaluated for the performance of their management activities.

Hypothesis 3 (H3): Professional qualifications of management accountants have a positive effect on the level of application of performance evaluation criteria in manufacturing enterprises in Hanoi.

The development and use of a system of performance evaluation criteria requires practitioners to have professional knowledge and capacity. In different businesses with different responsibility centers, the application of evaluation measures will also be different. The more qualified the accounting staff, the more effective the ability to build a system of indicators will be.

Based on the scale used in the studies of Cadez & Guilding (2008) [5], Doan Ngoc Phi Anh (2012) [3], the author inherits his research.

Apply the 5-point Likert scale: 1- Strongly disagree; 2 - Disagree, 3 - Normal, 4 - Agree, 5- Strongly Agree.

Table 1: Scale description table

S. No	Factor	Code	No. Variables
1	Competitive pressure	CP	3
2	Degree of decentralization	DE	3
3	Professional qualification of accountant	QA	2

4. Results
4.1 Evaluate the reliability of the scale

Table 2: Reliability Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Cronbach's Alpha = .726				
CP1	7.84	1.323	.601	.578
CP2	7.79	1.422	.449	.756
CP3	7.79	1.236	.603	.569
Cronbach's Alpha = .849				
QA1	3.78	.335	.739	.
QA2	3.72	.318	.739	.
Cronbach's Alpha =.755				
DE1	6.62	.657	.569	.689
DE2	6.60	.662	.530	.732
DE3	6.53	.554	.658	.581

The analysis results of the group of competitive pressure factors show that the Cronbach's Alpha coefficient of the scale is 0.726 > 0.6 and the total correlation coefficients of the observed variables in the scale are all greater than 0.3. Therefore, 3 observed variables (CP1, CP2, CP3) are accepted and will be used in the next factor analysis.

The analysis results of the decentralization factor group show that the Cronbach's Alpha coefficient of the scale is 0.755 > 0.6 and the total correlation coefficients of the observed variables in the scale are all greater than 0.3. This proves that 3 variables (DE1, DE2, DE3) are reliable enough in terms of coherence for the assessment of factors affecting the application of the performance evaluation criteria system.

The analysis results of the group of factors with professional qualifications of management accountants show that the Cronbach's Alpha coefficient of the scale is 0.849 > 0.6, and the correlation coefficients of the total variables of the observed variables in the scale are all the same. greater than 0.3. This proves that two variables (QA1, QA2) are reliable enough in terms of coherence for the assessment of factors affecting the application of the performance evaluation criteria system.

4.2 Exploratory factor analysis

The coefficient KMO = 0.644 shows that the study has enough observed variables to constitute a factor. The significance level Sig.=0.00<0.05 shows that the Barlett test is statistically significant and shows that the analysis of factors is appropriate.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.644
Bartlett's Test of Sphericity	Approx. Chi-Square	255.034
	df	28
	Sig.	.000

Table 4: Rotated Component Matrix[a]

	Component		
	1	2	3
CP1	.852		
CP2	.649		
CP3	.867		
DE1		.704	
DE2		.865	
DE3		.819	
QA1			.939
QA2			.902

The results show that all 8 observed variables have factor loading coefficients larger than the standard (0.50). Thus, the group of factors affecting the application of the performance evaluation criteria system in manufacturing enterprises in Hanoi includes 3 groups with 8 variables, specifically: competitive pressure, level of decentralization in the business, and professional qualifications of management accounting staff.

4.3 Multivariate regression analysis
Correlation analysis
The results of the Pearson correlation test between the three independent variables CP, DE, and QA with the dependent

variable FI are all less than 0.05. Thus, there is a linear relationship between these independent variables and the dependent variable FI.

Table 5: Correlations

		FI	CP	DE	QA
FI	Pearson Correlation	1	.381**	.331**	.437**
	Sig. (2-tailed)		.000	.002	.000
	N	87	87	87	87
CP	Pearson Correlation	.381**	1	-.283**	.038
	Sig. (2-tailed)	.000		.008	.727
	N	87	87	87	87
DE	Pearson Correlation	.331**	-.283**	1	.103
	Sig. (2-tailed)	.002	.008		.342
	N	87	87	87	87
QA	Pearson Correlation	.437**	.038	.103	1
	Sig. (2-tailed)	.000	.727	.342	
	N	87	87	87	87

Regression analysis

Table 6: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.702[a]	.492	.474	.347	1.903

The coefficient R2 = 0.702 shows competitive pressure, decentralization and professional qualifications of management accountants, which can explain 70.2% of the total impact of factors on the application of the evaluation criteria system.

Hypothesis testing about the overall fit of the model, value F=26.832 with sig.=000 < 5%. Prove that the R squared of the population is not 0. It means that the built linear regression model is suitable for the population.

Table 7: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.677	3	3.226	26.831	.000[b]
	Residual	9.978	83	.120		
	Total	19.655	86			

Table 8: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.111	.544		-2.042	.044		
	CP	.433	.072	.489	5.978	.000	.915	1.093
	DE	.552	.105	.431	5.242	.000	.907	1.103
	QA	.336	.071	.375	4.751	.000	.984	1.016

The results in Table 8 show that the values in column Sig. All are <5%, showing that all 3 independent variables have a statistically significant impact on the dependent variable. The relationship between the variables is shown by the following equation:

$$FI = 0.489 * CP + 0.431 * DE + 0.375 * QA$$

5. Conclusion

Regression results have supported the hypothesis: competitive pressure, level of decentralization, and professional qualifications of management accountants all have a positive and statistical significance for the application of the system of performance evaluation criteria in manufacturing enterprises in Hanoi. Competitive pressure affects the application of the system of performance evaluation criteria in manufacturing enterprises in Hanoi with a coefficient of 0.489, while the level of decentralization and qualifications of management accountants have a lower impact with coefficients of 0.431 and 0.375, respectively. Therefore, in order to strengthen the application of the system of performance evaluation criteria in manufacturing enterprises in Hanoi, each enterprise needs to:

Firstly, focus on factors with a high degree of agreement, such as competitive pressure. In the context of globalization, businesses face increasingly fierce competition, and business managers need to be aware of the competitive pressure on their businesses to increase the use of indicators to evaluate the performance of the business as well as the performance of the managers.

Second, the degree of decentralization is a factor affecting the application of the performance evaluation criteria system. Therefore, enterprises need to strengthen decentralization. From low management level to high management level need to be assigned certain powers and be responsible for the assigned authority. At that time, the evaluation criteria system is one of the information bases for evaluating managers, thereby contributing to improving the efficiency of business operations.

Third, the professional qualifications of management accountants have a profound influence on the application of the performance evaluation criteria system. The more staff with high professional qualifications, the more effective the construction and use of the indicator system. Therefore, constantly improving the professional qualifications for accounting staff and continuously updating modern management accounting knowledge to support enterprises in using resources effectively. Thereby providing managers with valuable information.

6. References

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