

ENHANCING THE EFFECTIVENESS OF INTERNAL CONTROL SYSTEMS IN SMES: EVIDENCE FROM VIETNAM

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Abstract

This study investigates the determinants influencing the effectiveness of internal control systems in small and medium-sized enterprises (SMEs) in Binh Duong province, Vietnam. By applying the COSO 2013 framework, the research explores how control activities, information and communication, monitoring, control environment, and risk assessment impact internal control effectiveness. Data were collected through 150 surveys, with 125 valid responses analyzed using multivariate regression models. Findings indicate that control activities, information and communication, monitoring, and control environment significantly influence internal control effectiveness, while risk assessment does not show a notable impact. The study proposes practical recommendations for enhancing internal control systems, improving SMEs' operational efficiency and financial stability.

Keywords: Internal Control Systems, SMEs, COSO Framework, Control Activities, Vietnam

1. INTRODUCTION:

Currently, Vietnam's economic situation is becoming increasingly stable and starting to return to strong growth momentum, especially after gradually overcoming the challenges of the Covid-19 pandemic, however, there are still many great challenges for both the economy in general and businesses in particular. To ensure stable development in businesses, the main foundation of the economy, the management and administration of enterprises should be put first, especially in small and medium enterprises (SMEs), accounting for over 98% of the total number of enterprises in the country¹.

In the world, there have been many studies on the effectiveness of internal control systems such as the study by Micheal Jense (Micheal, 1993) which emphasizes the role of the internal control system headed by the board directors; the study of the design and implementation of internal control activities as well as acknowledging that internal control activities are performed ineffectively or inadequately for an organization (Jaehong et al., 2016). At the same time, the studies also emphasize that the reliability of financial statements is affirmed as a function of the effectiveness of the internal control of a particular enterprise. especially when the model of Internal Control by² COSO (COSO, 2003, 2013) was born, especially the studies of Otley (Otley & Soin,

¹ <https://www.gso.gov.vn/px-web-2/?pxid=V0525&theme=Doanh%20nghi%E1%BB%87p>

² Committee Of Sponsoring Organization

2014), Ashbaugh-Skaife et al. (2008, 2009, 2013) all show the role of internal control quality in influencing corporate governance activities.

In addition to studies at large enterprises, effectiveness studies at small and medium-sized enterprises have also been carried out by many researchers. Xiao (2011) and Wang et al. (2019) studied the factors affecting the effectiveness of internal controls in risk control, thereby affecting the sustainable growth of SMEs. In addition, Hidayah and Putra (2013) pointed out three problems of cooperatives: lack of management skills due to lack of capacity and supervision, lack of application of information technology to manage these are the two biggest problems affecting the effectiveness of cooperatives; and third, facing the need to develop the scale of enterprises. Further research on SMEs, with the authors (Olufemi, 2018) studying the effectiveness of cooperatives, Ditkaew (Ditkaew, 2019), and Adegboyegun et al (Adegboyegun, 2020) further pointed out the role of cost management factors, training issues affecting the effectiveness of cooperatives and operational efficiency in small and medium-sized enterprises.

In Vietnam, although there are many studies on cooperatives, according to the author's own research overview (Long, 2022), so far, research on the effectiveness of cooperatives, especially in SMEs, has not been carried out in Binh Duong province, where many businesses are concentrated and is one of the provinces and cities contributing a huge amount to GDP for Vietnam (3rd province the largest budget contribution³). Based on the above facts, the author is aware of the importance of internal control in the process of corporate governance and operation, and needs a more specific and clear view within the scope of Binh Duong province, focusing on identifying factors that can affect the effectiveness of the internal control system. In addition to the benefits of the internal control system, it is also the basis to facilitate future research on internal control.

2. THEORY AND RESEARCH MODEL:

2.1 Foundation theory:

Derived from the agent theory initiated by Jensen and Meckling (Michael C. Jensen & Meckling, 1976), the agent theory explains the conflict of interest relationship between the principal and the agent and to derive measures to limit these conflicts. Therefore, it is necessary to take measures to reconcile parties' interests. Another study on representation costs and ownership structures was later conducted by Fama & Jensen (Fama & Jensen, 1983), which concluded that in a company where there is always a separation between ownership and control, the owner is not involved in the management of the company. Then it will have to spend representative costs, then it will appear because of the information asymmetry between managers and owners (shareholders). This theory explains the need to build an effective cooperative to improve the quality of information and effective operation.

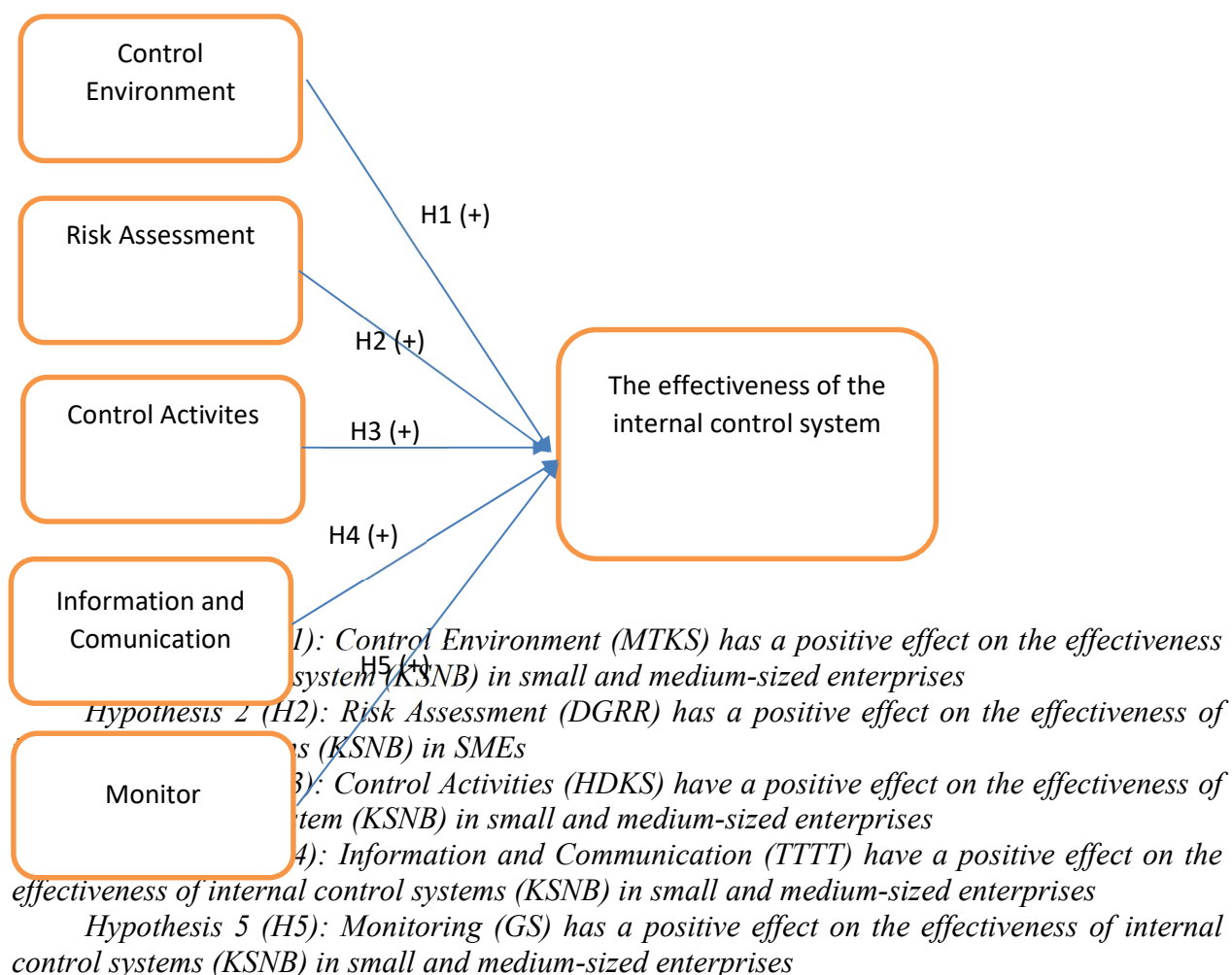
In addition, the social psychology of an organization is part of the theory of behavior, which aims to understand human thoughts, emotions, and behaviors as well as personality and cognition, which are fundamentally regulated by other individuals in the same group. or the same business. Typical research in this field is that of Douglas McGregor (1906-1964), who defined the approach to creating a work environment in which employees are motivated through direction and control. This theory explains that inherent limitations always exist and are latent in each unit; therefore, continuous control is needed to achieve the effectiveness of the cooperative at each unit.

³ <https://cafef.vn/diem-danh-nhung-dia-phuong-dong-gop-va-nhan-tro-cap-ngan-sach-trung-uong-nhieu-nhat-ca-nuoc-20220324085042769.chn>

The COSO framework and evaluation tool of the COSO is implemented by COSO and presented in the COSO Application Report 2013 to achieve the objectives of financial statements, reliable information, and effective operations. This theoretical foundation is widely applied by many researchers and businesses.

2.2 Research Model:

On the basis of inheriting previous studies in the world based on the COSO 2013 model, the research results of Olufemi, A.A. (Olufemi 2018) studied the determinants of the effectiveness of internal control among small- and medium-sized enterprises; research by Ho Tuan Vu (Vu, 2016) and Vo Thu Phung (Phung, 2016) studied the role of components of the cooperative. Based on this, the author proposes the following research model:



2.3 Research methods

Data collection: the author has collected the number of accountants, accounting managers, and professional employees working directly with enterprises and companies in Binh Duong province, then excluded inappropriate samples (inappropriate business size, Select an answer,...),

the total number of companies surveyed was 103 companies, choosing samples that fit the 125-panel research model. **The survey results were analyzed using SPSS 20.0, and Smart PLS 3.3.9.**

Scale construction

The scale of the research topic was inherited from the original scale of other researchers, which the author converted into a draft questionnaire. Then, through in-depth interviews to adjust words and implications to suit the research model, the study used a Likert scale (5 levels with 1 being completely disagreeable and 5 being completely agreeing). Due to differences in culture, socioeconomic level, and other aspects, the scales that have been established in other studies may have to be adapted to the environment in SMEs to make it easier for respondents to implement. To ensure the value of the content of the scale, in-depth interviews were conducted to ensure that respondents correctly understood and fully understood the meaning of the words of each statement, and the statements were adapted to the specific context of the current study. The scale is built complete with 25 observation variables

Sample size and analysis method: According to Tabachnick and Fidell (1991) and Nguyen Dinh Tho (2012), to achieve the best results in regression analysis, the sample size must satisfy the sample size calculation formula: $n \geq 50 + 8 p$. The author collected 125 samples from 103 companies that responded to achieve consistent regression results. After the survey was completed, SPSS software (version 20.0) was used for scale validation, exploratory factor analysis (EFA), Pearson photometric coefficient analysis, and multivariate linear regression analysis.

4. Research results

4.1 Testing the reliability of the scale using the Cronbach's Apha coefficient

Table 1: Results of testing Cronbach's Apha Coefficient scales

BTI	Scale	Number of Observed Variables	Cronbach's Apha	Notes
1	Control Environment	4	0.706	
2	Risk Assessment	3	0.691	
3	Control Activities	6	1st time: 0.698, 2nd time: 0.890	Observation variable type HDKS1
4	Information and Communication	5	0.887	
5	Monitor	3	0.901	
6	Effectiveness of internal control system	3	0.852	

The results of testing the Cronbach's alpha coefficient to evaluate the reliability of the scale shown in Table 1 show that these scales all have a Cronbach's alpha coefficient > 0.6 and a Corrected Item-Total Correlation > 0.3 . Thus, after testing Cronbach's alpha, the research scale eliminated one observation (HDKS1) to 24 observations to continue to be used in the exploratory factor analysis.

4.2 Exploratory Factor Analysis - EFA

In factor analysis, Principal Component Analysis accompanied by varimax rotation is often used. The results of the factor analysis must satisfy five conditions. The results of the analysis of the discovery factors are as follows:

1. The KMO coefficient = $0.776 \geq 0.5$ and the significance of the Barlet sig test = 000 (99%) ≤ 0.05 (According to Hoang Trong and Chu Nguyen Mong Ngoc, 2008).
2. Factor loadings were all ≥ 0.5 to create a convergence value. According to Hair and Anderson (1998,111). A factor load factor ≥ 0.5 is considered to be of practical significance.
3. The scale was acceptable when the total variance was 75.669% or $\geq 50\%$.
4. The eigenvalue coefficient was greater than 1 (Hair and Anderson, 1998).
5. The difference in the factor load coefficient of an observed variable between factors must be ≥ 0.3 , to create a differentiating value between factors (Jabnoun and Al-Tamimi, 2003).

Based on the results of the matrix table rotating the factors, the average group of variables command is used to group the satisfactory variables with a factor load factor of > 0.5 into eight factors. These eight factors were collected and named as follows.

- Factor 1: consists of four observation variables (MTKS1, MTKS2, MTKS3, and MTKS4) grouped by average command and named "Control Environment," symbol is MTKS;
- Factor 2: consists of three observation variables (DGRR1, DGRR2, and DGRR3) grouped by average command and named "Risk Assessment," symbol is DGRR;
- Factor 3 consists of five observation variables (HDKS2, HDKS3, HDKS4, HGKS5, HDKS6) grouped by the average command and named "Control Activities," symbol is HDKS.
- Factor 4: This consists of five observation variables (TTTT1, TT2, TT3, TT4, TT5) grouped by the average command and named "Communication and Information," symbol is TTTT.
- Factor 5: consists of 4 observation variables (GS1, GS2, GS3, GS4) grouped by the average command and named "Monitor," symbol is GS;
- Factor 6: consists of three observation variables (KSNB1, KSNB2, and KSNB3) grouped by the average command and named "Effectiveness of internal control system", symbol is KSNB;

4.3 Correlation coefficient matrix between variables in the model

The Pearson correlation coefficient matrix was used to examine the correlations between the variables. The results are shown in Table 2 below

Table 2: Pearson Correlation Matrix between Variables

Pearson correlation between variables							
		KSNB	TTTT	HDKS	GS	MTKS	DGRR
MTKS	Correlation coefficient	1	-.036	.456**	.091	.299**	.314**
	Significance level		.690	.000	.314	.001	.000
HDKS	Correlation coefficient	-.036	1	.026	.060	-.089	.300**
	Significance level	.690		.773	.509	.321	.001
DGRR	Correlation coefficient	.456**	.026	1	.205*	.223*	.245**
	Significance level	.000	.773		.022	.013	.006
TTTT	Correlation coefficient	.091	.060	.205*	1	.132	.330**
	Significance level	.314	.509	.022		.144	.000
GS	Correlation coefficient	.299**	-.089	.223*	.132	1	.306**

	Significance level	.001	.321	.013	.144		.001
KSNB	Correlation coefficient	.314**	.300**	.245**	.330**	.306**	1
	Significance level	.000	.001	.006	.000	.001	
**. Meaningful correlation at 0.01							
*. Meaningful correlation at 0.05							

Source: Author's results of data analysis

Based on the analysis results of the Pearson correlation matrix in Table 2, it can be seen that the correlation coefficient between the effectiveness of the internal control system (KSNB) and the five independent variables MTKS, TTTT, HDKS, DGRR, and GS is high, and the Sig value is small (< 0.05). Considering the factors that have tested the reliability and the discovery factor, the author retained five variables to continue analyzing the multivariate regression equation.

4.4 Regression patterns

A multivariate regression model was built and tested as follows:

$$KSNB = \beta_0 + \beta_1 MTKS + \beta_2 DGRR + \beta_3 HDKS + \beta_4 TTTT + \beta_5 GS$$

The corrected R² determination coefficient = 0.295 shows that the degree of relevance of the regression model for this research topic is average. The results of the statistical value test F, with the value of sig=0.000 (< 0.05) from the ANOVA table, show that the built multiple linear regression model is suitable for the dataset and can be used.

Table 3: Regression Results

Factor		Unnormalized coefficients		Normalized coefficients	T value	Significance level	Multiline Statistics	
		B	Standard Error	Beta			Tolerance	BRIGHT
1	Constant	.467	.440		1.062	.290		
	MTKS	.231	.092	.218	2.505	.014	.750	1.334
	HDKS	.302	.074	.312	4.108	.000	.985	1.016
	DGRR	.028	.069	.035	.404	.687	.758	1.319
	TTTT	.223	.068	.255	3.289	.001	.946	1.057
	GS	.148	.052	.227	2.833	.005	.885	1.129
Dependency variable: KSNB								

Source: Author's results of data analysis

The regression results in Table 3 show that there are Sig values corresponding to the variables MTKS, HDKS, TTTT, and GS of less than 0.05, and VIF of less than 2. Therefore, with a significance of 5%, it can be concluded that the independent variables of MTKS (Control Environment), HDKS (Control Activities), TTTT (Information and Communication), and GS (Monitor) affect the dependent variable of KSNB (effectiveness of the internal control system). Risk Assessment (DGRR) variable type because it has a Sig value > 0.05 .

The linear regression equation that represents the factors affecting the effectiveness of a standardized internal control system is represented as follows:

$$KSNB = \beta_0 + 0.218 * MTKS + 0.312 * HDKS + 0.255 * TTTT + 0.227 * GS$$

4.5 Multivariate Regression Model Analysis with Partial Least Squares (PLS) Method

The use of multivariate regression analysis by the covariance method with SPSS software to process data, the process ensures all step by step to ensure that the linear regression results are in accordance with the standard distribution law. In addition, according to the partial least squares (PLS) method, there are differences in the approaches, as follows:

PLS is a nonparametric statistical method that does not require a standard distribution of data and can handle anomalous or large skewed data (Hair et al., 2017).

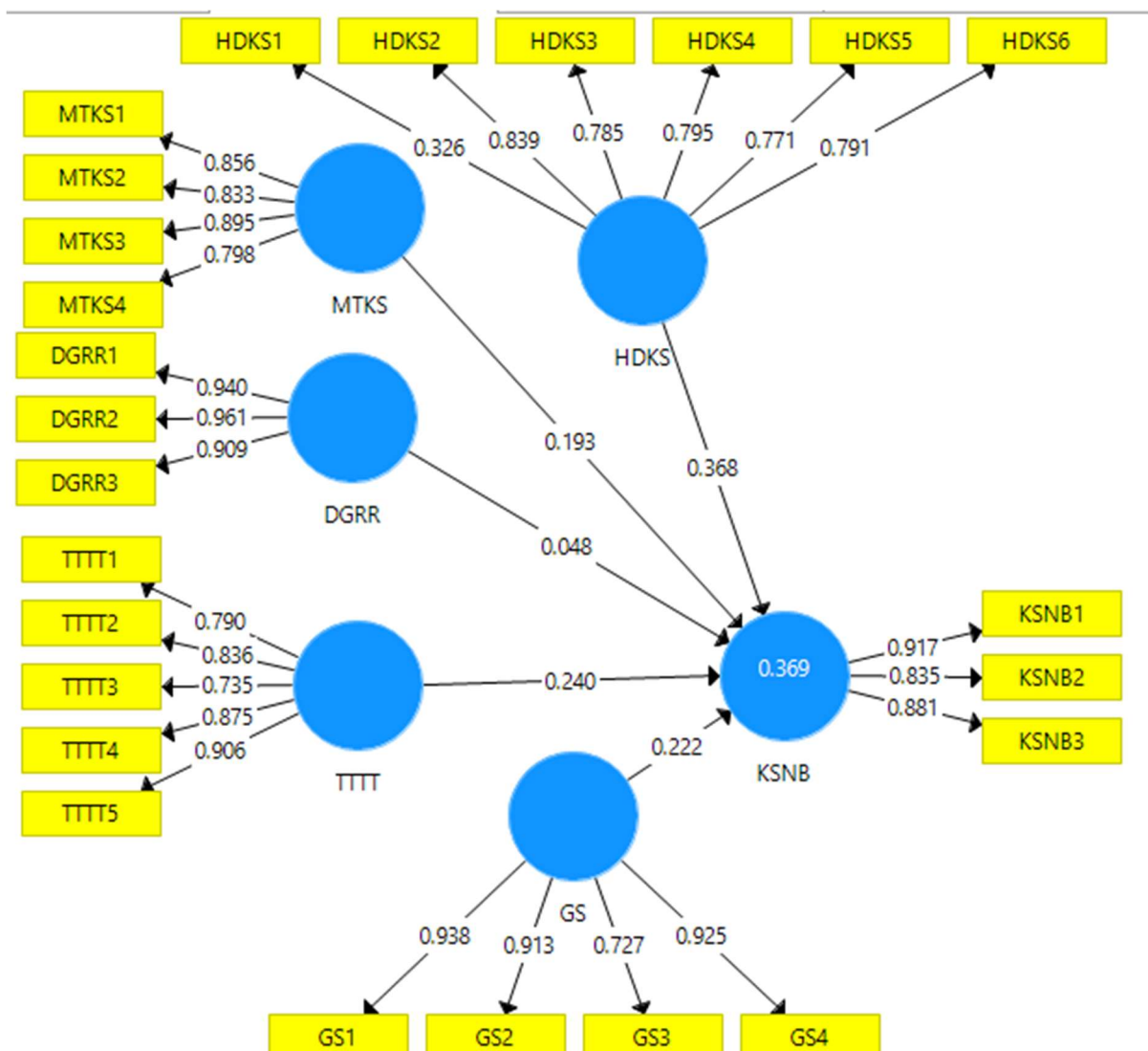
PLS is effective for small sample sizes and complex models (Hair et al., 2017), even in cases where there are fewer than 100 observations, even if there are up to several million components overall.

Therefore, the large number of SMEs, while the survey is still difficult and costly, in order for the multivariate regression results to be more generalized, the author uses Smart PLS 3.3.9 software to perform multivariate regression based on the existing survey results. The results of the multivariate regression analysis are as follows:

Table 4: Results of running a multivariate regression model on Smart-PLS software

Direction of Impact	Impact Coefficient	Standard deviation	T Analysis	Reliability (P Values)
DGRR -> KSNB	0.048	0.077	0.626	0.532
GS -> KSNB	0.222	0.066	3.379	0.001
HDKS -> KSNB	0.368	0.055	6.654	0.000
MTKS -> KSNB	0.193	0.076	2.545	0.011
TTTT -> KSNB	0.240	0.055	4.343	0.000

Figure 1: Analysis results from Smart PLS software



5. Discussion and Implications

5.1 Comparison of research results of the two methods:

Table 5: Comparison of the impact of factors according to 2 analysis methods

Factor			Covariance analysis		Minimal squared analysis	
			Regression coefficients	Location	Regression coefficients	Location
HDKS	---	KSNB	0.312	1	0.368	1
TTTT	---	KSNB	0.255	2	0.240	2
GS	---	KSNB	0.227	3	0.222	3
MTKS	---	KSNB	0.218	4	0.193	4
DGRR	---	KSNB	0.035 (sig>0.05)	Kind	0.048 (sig>0.05)	Kind

Through the regression results from the two methods, we have shown that there is no difference in the results of hypothesis model testing, we have the hypothesis testing results as follows:

Table 6: Summary of hypothesis test results

BTI	Hypothesis	Inspection results
H1	<i>The control environment has a positive effect on the effectiveness of internal control.</i>	Accept
H2	<i>Risk assessment has a positive effect on the effectiveness of internal controls.</i>	Not Accepted
H3	<i>Control activities have a positive effect on the effectiveness of internal control.</i>	Accept
H4	<i>Information and communication have a positive effect on the effectiveness of internal control.</i>	Accept
H5	<i>Monitoring has a positive effect on the effectiveness of internal controls.</i>	Accept

Both models produce similar results when analyzing the factors of Control Activities, Communications, Monitoring and Control Environment, which have a strong impact on the effectiveness of the internal control system, partly due to the characteristics of SMEs. The following conclusions were drawn:

First, control activities are the most powerful factor affecting the effectiveness of the internal control system, especially in the SME environment, because the size of a small business requires strict operational management, decentralization, and the responsibility of each individual in the enterprise requires clarity, and control activities are often directly carried out by business leaders and departments. SMEs should continue to apply strict control activities and regularly carry out them, such as monitoring analysis, checking for irregularities in operations, and clear assignments.

Second, SMEs operate in an extremely complex socio-economic environment, and information is disturbed; therefore, to enhance the effectiveness of the internal control system, thereby enhancing operational efficiency, the information within SMEs and the communication of activities and results need to be properly focused and increasingly occupied. a bigger role.

Thirdly, SMEs must also strengthen supervision activities from the highest leadership level such as strengthening inventory, using supervisory boards, hiring independent controllers,... so that production and business activities at SMEs are substantive, "effective" and truly effective, especially when the risks of epidemics, economic-political crises, and supply chains interrupt production and business activities, for that reason, supervision must be carried out throughout and continuously.

Fourth, the control environment with a series of regulations, qualities, and management capacity from leaders still plays an important role, but has been modeled when SMEs are being cared for by the state and organizing support, training, and participating in seminars, thereby having a strong development in the management model.

Fifth, the risk assessment of SMEs is still a huge gap, with the characteristics of SMEs often coming from individual business models or a small group of individuals, so operational control and operational activities are prioritized. In the process of operation, the identification of risks, especially business risks, market risks, socio-political risks, or most recently, the epidemic, has not been paid attention to or focused on by SMEs.

Finally, through the research results, the author hopes that SMEs will pay more attention to the organization and improvement of the internal control system so that SMEs can improve their operational efficiency, especially in an increasingly competitive environment with many potential risks, as in the current period. However, the research was carried out in a short time, along with limited economic potential, and the use of convenient sampling methods led to limited sampling,, leading to a small number of samples compared to the size of the market in Binh Duong province and being selected in the group of small and medium-sized enterprises. In terms of research methods, the small sample size leads to the analysis of affirmative factors and linear structures that cannot be done, with the aim of assessing the impact of the effectiveness of the internal control system on other aspects of the enterprise in general and SMEs in particular, such as competitiveness, operational efficiency, and capital use efficiency. This is also the author's next research orientation with the expansion of the survey and the application of a stronger research model, and further studies can expand the scope of enterprise-scale research with a larger research sample size.

6. Limitations

While this study provides valuable insights into the effectiveness of internal control systems in SMEs, certain limitations should be acknowledged. The research sample was limited to SMEs in Binh Duong province, which may restrict the generalizability of the findings to other regions or larger enterprises. Additionally, the study relied on self-reported survey data, which may introduce response bias. Future research could expand the sample size, explore additional influencing factors, and adopt longitudinal data to enhance the robustness of the findings.

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