

## Factors affecting SMEs' development in Vietnam

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### ABSTRACT

The enterprise's system, along with households and the government are the main factors in the production and consumption of the economy, which plays an extremely important role in the development of any country. Besides the large enterprises, which are often considered as the locomotives of the economy's development, people are increasingly interested in a significant number of small and medium enterprises (SMEs) whose position and role has been confirmed through the actual economic development of many countries and economies. In Vietnam, the development of SMEs has been creating a driving force for economic growth and has become an important strategic direction in the country's socio-economic development strategy. The article focuses on determining the factors affecting the development of small and medium-sized manufacturing enterprises in Vietnam. At the same time, the current paper evaluates factors affecting the development of these enterprises. The main factors expected to be focused on in the research include the level of production technology, government policies, raw materials, labor, management capacity, corporate social responsibility, green growth orientation, and global epidemics.

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## 1. Introduction

The development of small and medium-sized manufacturing enterprises (SMEs) in Vietnam in recent years has created significant production value. The strong growth rate of the manufacturing industry has increased in recent years, serving for industrialization and modernization, contributing significantly to growth and GDP. According to the General Statistics Office (2017) in 2017, Vietnam's GDP growth reached 6.81%, of which industrial production and construction (contributed 33.34%) were two important factors that contributed to the improvement in growth rate. The industrial production index has increased by 7.85%, of which the important contribution of the processing and manufacturing industry has achieved a growth rate of 14.5% (compared to 11.9% in 2016). Based on the general project for Vietnam's industrial development to 2020, with a vision to 2030, Vietnam's industry continues to be an important sector. However, due to the influence of the world economy, which has not recovered strongly after the crisis, manufacturing enterprises are facing many difficulties and challenges on the way of development such as competition, inappropriate use of resources, and limited supply of raw materials. The development of SMEs in the area is affected by different groups of factors that can be controlled or beyond the control of enterprises that have a great impact on the development of enterprises. Therefore, the identification of

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influential factors to promote the beneficial factors as well as limit the adverse effects of those factors to encourage and create some conditions for SMEs to develop quickly, sustainably and strengthen competitiveness in the market, create more jobs for workers, contribute more to the State budget. Those are necessary works that should be prioritized in the current situation in Vietnam. Moreover, the new situation is posing many problems for the development of SMEs, including: First, the situation of international integration is taking place widely, besides creating an environment for Vietnamese SMEs like to have a more favorable business operation environment, opportunities to acquire more modern technology, management skills, and more effective business motivation also creates significant challenges for SMEs such as fierce competition in the market and the ability to cope with the rapid transformation of the economy in the integration process. Second, the fourth industrial revolution with completely new capabilities and strong impact on Vietnamese SMEs is an opportunity for businesses to have the access to modern technologies, improving quality, price, speed, but at the same time face the pressure of improving and innovating technology lines, improving quality, recruiting technology-capable human resources, and the gradually severe competing of foreign enterprises. Third, climate change has made increasingly fierce natural disasters, besides the extreme factors caused by natural disasters which are affecting all aspects of Vietnamese SMEs such as the increasing production costs, capital costs, production capacity reducing, difficulty in input materials, demands reducing..., climate change also brings opportunities for businesses to change their development thinking, find models and methods for a sustainable business. Fourth, the global epidemic of COVID-19 has fundamentally changed the lives and lifestyles of countries around the world. The model of economic development is also deeply influenced and changed. Enterprises also must accordingly change the direction of production and business. Many new ideas and new models of production and business have been formed and developed in the coming time. Up to now, several studies about enterprise and SME development in Vietnam have been interesting and researched by some scientists. However, there has not been a direct and comprehensive study on the factors affecting the development of SMEs in Vietnam, which is clarifying the interrelationship between these factors in the model using the structural equation modeling (SEM), therefore, this study has great significance in both theory and practice (Peterson, 1994).

## 2. Literature review

Based on the synthesis of research results of related studies on the factors which affect the development of SMEs, especially some research on SME in Vietnam as well as in developing countries, and in developed countries, the authors found that the influencing factors can be divided into 2 groups:

The first group, the group of external factors, outside the enterprise: business environment, State policies and local implementation, legal system, local support policies, production premises, customers and markets, material sources of enterprises, international economic integration, the world economic situation, the progress of science - technology, digital economy and industrial revolution 4.0, and especially the impact of the global epidemic. These factors belong to the external environment of the enterprise, which has the characteristic that it is not under the control of the enterprise, it continuously affects the business activities of the enterprise according to different trends and creates opportunities at the same time limits the ability of enterprises to achieve their goals. Business activities require regularly grasping these factors, operating trends, and the influence of those factors on the entire business activities as well as the development of the enterprise.

The second group, the group of internal factors, inside the enterprise such as the level of production technology, access to finance, labor, management capacity, and marketing policies of enterprises. This is a group of factors within the enterprise's potential that the enterprise can control to a certain extent. The right assessment of potential allows businesses to build the right strategy and business plan while taking advantage of business opportunities with high efficiency.

Research hypothesis:

**H<sub>1</sub>:** The level of modern production technology has a positive influence on the development of Vietnamese SMEs. The scale of *Production technology level* includes 4 observed variables from TE1 to TE4 which are built based on the research results of Le Ngoc Nuong (2018) and the qualitative research of the author. The results of the group discussion of experts - managers believe that the variables need to be rewritten in style to make them easier to understand.

**H<sub>2</sub>:** The Government policies related to the development of SMEs have a positive influence on the development of Vietnam's SMEs. The scale of *Government policies* in this study includes 04 observed variables (GO1 - GO4) which are built on the scale of Umar Ibrahim (2008) and the qualitative research of the author. In addition, the results of the group discussion of experts - managers suggested that the variables should be rewritten in style to make it easier to understand.

**H<sub>3</sub>:** Enterprises with raw material sources have a positive influence on the development of Vietnamese SMEs. The scale of *Raw material sources* in this study includes 04 observed variables from TN1 to TN4 which are inherited from the study of Le Ngoc Nuong (2018). In addition, the results of the discussion group of experts - managers suggested that one more scale should be added 'The unbroken supply chain of raw materials, and the variables should be rewritten to make it easier to understand.

**H<sub>4</sub>:** High-skilled labor in enterprises has a positive influence on the development of Vietnamese SMEs. The scale of *Labor* used in this study includes 4 observed variables from LA1 to LA4 which are used by Trinh Duc Chieu (2010), Le Ngoc Nuong (2018), and the qualitative research results. In addition, the results of the group discussion of experts - managers



suggested that scale 1 should be separated into two scales 'Employees in enterprises have the appropriate working skill' and 'Employees in enterprises have the appropriate working capacity', and the variables should be rewritten to make it easier to understand.

**H5:** The management system of an enterprise with good management capacity positively affects the development of Vietnam's SMEs. The scale of *Management capacity* includes 4 observed variables from QL1 to QL4 which are built based on the scale of Bouazza et al. (2015) and the results of the qualitative research process.

**H6:** Local support policies have a positive influence on the development of Vietnam's SMEs. The scale of Local support policy includes 5 observed variables from LO1 to LO5, of which 04 observed variables are built based on the scale of Muhammad, Mohd, and Gazi (2015) and Phan Thi Minh Ly (2011), variable LO5 is based on Le Ngoc Nuong (2018). In addition, the results of the group discussion of experts - managers suggested that the variables should be rewritten in style to make it readable.

**H7:** Enterprises can access various financial sources, positively affecting the development of SMEs in Vietnam. The scale of *Financial access* in this study includes 4 observed variables from FI1 to FI4 which are built based on the scale of Ibrahim (2008). In addition, the results of the group discussion of experts - managers suggested that the variables should be stated in the readable style.

**H8:** Enterprises that fully implement their social responsibilities have a positive influence on the development of Vietnamese SMEs. The scale of *Corporate social responsibility* in this study includes 6 observed variables from SR1 to SR6 which are based on (Do Thi Thu & Giang Thanh Long, 2020), (Le Ngoc Nuong, 2018), and the qualitative research of the author.

**H9:** Green growth-oriented enterprises have a positive influence on the development of Vietnamese SMEs. The scale of *Green growth orientation* in this study includes 3 observed variables from GG1 to GG3 which are built based on (Nguyen Ngoc Thia, 2020), (Phan Thi Song Thuong, Nguyen Thi Thuc, & Nguyen Minh Hai, 2019), (Hoang Hong Hanh, 2019), (Ho Cong Hoa, 2016), (Nguyen Thi Vu Ha, Vu Minh Dieu, Hoang The Hiep, & Tran Phuong Thao, 2016) and the qualitative research of the author.

**H10:** The impact of the global epidemic, such as COVID-19 has a negative effect on the development of Vietnam's micro-enterprises. The scale of the *Global epidemic* in this study includes 6 observed variables from CO1 to CO5 based on (Nguyen Van Dien & Huynh Thi Cam Tu, 2020), (Nguyen Van Thanh, 2020), (Thai Thi Thai, 2020). Nguyen & Vu Thi Quynh Chi, 2020) and the qualitative research of the author.

### 3. Data and Research methods

#### 3.1. Data

Collecting the qualitative analysis information: The time to collect qualitative analysis information was carried out in August - September 2020 and 08 experts were invited to discuss to review and detect new on the research model and the scales used in the research model. Collecting the official quantitative survey information: To ensure a high response rate, the survey process is conducted through the support of State managers of enterprises who are working at the Department of Planning and Investment. Some management boards of the industrial zones in Hanoi and Ho Chi Minh City. Through these officers, the survey method was carried out by sending and receiving questionnaires directly (or by post) from leaders of MSMEs in Hanoi and Ho Chi Minh City. The official investigation period is from September 2020 to October 11, 2020.

#### 3.2. Research methods

##### *Qualitative analysis method*

The appropriate tool for the qualitative research scale is a group discussion of experts - managers. This is a method to collect opinions of highly qualified experts - managers about a scientific problem or event to find out the explanation for that problem or event. This method is used in conjunction with other quantitative methods to reinforce the rigor of the research problem. The group of experts - managers in this study are managers in State agencies and Vietnam SMEs in Hanoi and Ho Chi Minh City - who are knowledgeable about the operation of the development process and especially the understanding of the factors that have an impact on the development of Vietnam's SMEs. The implementation period was carried out in August - September 2020 and 08 experts were invited to discuss to review and discover new findings of the research model and the scales used in the research model.

##### *Exploratory factor analysis method (EFA)*

The exploratory Factor Analysis method is a set of interrelated statistical analysis techniques used to reduce a set of K observed variables into a set F ( $F < K$ ) more significant factors. The basis of this reduction is based on the relationship of the factors with primitive variables (Hoang Trong & Chu Nguyen Mong Ngoc, 2008).

To ease the interpretation of EFA results, the factor rotation method is often used to interpret the results, which can be rotated perpendicularly or not perpendicularly. To determine the appropriateness of using EFA, the Bartlett test or the KMO (Kaiser-Meyer-Olkin) test can be used. KMO has a value from 0.5 - 1, variables with weight (factor loading) less than 0.5 will be excluded and the total variance extracted ( $\geq 50\%$ ), Eigenvalue coefficient  $\geq 1$  for each new factor that meets the



requirements.

### *Confirmatory Factor Analysis method (CFA)*

Confirmatory factor analysis is a method to determine the appropriateness of research data with the theoretical model. In the exploratory factor analysis (EFA), the researcher relies on research data to find the constitutive factors, while CFA aims to confirm the model of available constituent elements through previous research or predefined theoretical model. The EFA is responsible for surveying data, helping researchers find some suitable factors that characterize the data. Confirmatory Factor Analysis (CFA) is appropriate when the researcher has some knowledge about the underlying latent variable structure. In which the relationship or hypothesis (obtained from theory or experiment) between the observed variable and the baseline factor is assumed by researchers before conducting statistical testing. Thus, the CFA is the next step of the EFA to test whether there is a prior theoretical model that underlies a set of observations (Nguyen Dinh Tho & Nguyen Thi Mai Trang, 2009).

The criteria for implementing the CFA include general and content value aspect appropriateness standards. In which, to evaluate the overall fit of the model, the author uses the following criteria: Chi-square (CMIN), Chi-square adjusted for degrees of freedom (CMIN/df), TLI index (Tucker & Lewis Index), CFI index (Comparative Fit Index), RMSEA index (Root Mean Square Error Approximation). The model is considered suitable when the Chi-square test has a P-value > 0.05. However, Chi-square has the disadvantage that it depends on the sample size. If a model takes TLI, CFI, GFI values > 0.9 (Bentler & Bonett, 1980), CMIN/df < 0.2 (some cases CMIN/df < 0.3) (Carmines & McIver, 1981), RMSEA < 0.08, if the RMSEA index < 0.05 is considered very good, then the model is considered to fit the market data.

Criteria for evaluating model appropriateness in terms of content value aspect include:

- The reliability of the scale is assessed through composite reliability coefficient ( $p_c$  - Composite reliability), total variance extracted ( $P_{ve}$  - Variance extracted), reliability coefficient (Cronbach's Alpha).
- Unidimensionality

The unidimensionality of a scale represents that each observed variable is used to measure only one latent concept. According to (Steenkamp & Van Trijp, 1991), the fit of the measurement model with market data gives us the necessary and sufficient conditions to conclude that the set of observed variables achieves unidimensionality unless the error of a set of observed variables that are correlated with each other.

- Convergent validity

Convergent validity represents the measured value of a concept that is closely correlated after some repeated measures. According to (Anderson & Gerbing, 1998), the scale is considered to have convergent validity when the standardized weights of the scale are all high (> 0.5) and statistically significant, i.e.  $p < 0.05$ .

- Discriminant validity

Discriminant validity represents the difference between the concepts in the research model and this occurs when the correlation coefficient between the concepts on the overall scale is different from 1 and statistically significant (Hair J.J.F. et al., 2010; Jöreskog, 1971; Kamunge et al. 2014). In particular, the evaluation of this standard, if tested by each pair of concepts, will have more advantages, because the correlation coefficient will change when other concepts are involved. Moreover, in case the test concept is in the higher order, this test will allow comparing the correlation coefficient between two concepts and the correlation coefficient between two components of the same concept. However, it is also possible to test the discriminant validity of concepts through a critical model (Saturated model - a model in which the research concepts are freely related to each other), but testing in this way requires a large sample size because the number of parameters to be estimated will increase.

- Nomological validity

The nomological validity represents the fit between the research model and the theoretical basis that builds the model. According to Anderson & Gerbing (1988), nomological validity is evaluated in the theoretical model.

## **4. Findings and discussions**

### *4.1. The results of testing the scale by the exploratory factor analysis (EFA)*

In this analysis, the Principal Axis Factoring method with Promax rotation is used with breakpoints when extracting factors with Eigenvalue  $\geq 1$  because they reflect the data structure more accurately than the Principal component method with the Varimax rotation, and the scale is accepted when the total variance extracted  $\geq 50\%$ . The results of Eigenvalue values > 1 in Table 1 show that the factor analysis is appropriate. Thus, conducting the Exploratory Factor Analysis explores the factors affecting the development of small and medium enterprises is satisfactory and statistically significant.



**Table 1**  
EFA analysis results of variables

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	7.2	17.56	17.56	7.2	17.56	17.56	4.322
2	4.71	11.489	29.049	4.71	11.489	29.049	4.71
3	4.213	10.274	39.323	4.213	10.274	39.323	3.873
4	3.361	8.198	47.521	3.361	8.198	47.521	3.851
5	3.007	7.335	54.856	3.007	7.335	54.856	3.519
6	2.331	5.686	60.542	2.331	5.686	60.542	5.367
7	1.78	4.34	64.882	1.78	4.34	64.882	4.485
8	1.626	3.965	68.847	1.626	3.965	68.847	3.231
9	1.307	3.187	72.034	1.307	3.187	72.034	3.326
10	1.021	2.491	74.525	1.021	2.491	74.525	2.902
11	0.817	1.992	76.517				
12	0.739	1.802	78.32				
13	0.679	1.655	79.975				
14	0.636	1.551	81.527				
15	0.544	1.327	82.854				
16	0.498	1.213	84.067				
17	0.466	1.136	85.204				
18	0.436	1.063	86.267				
19	0.411	1.001	87.268				
20	0.379	0.925	88.193				
21	0.376	0.916	89.109				
22	0.348	0.849	89.957				
23	0.335	0.817	90.774				
24	0.323	0.788	91.563				
25	0.302	0.736	92.298				
26	0.283	0.691	92.989				
27	0.276	0.674	93.663				
28	0.27	0.659	94.322				
29	0.253	0.617	94.939				
30	0.237	0.578	95.517				
31	0.221	0.538	96.055				
32	0.213	0.52	96.575				
33	0.208	0.507	97.083				
34	0.19	0.464	97.546				
35	0.188	0.458	98.004				
36	0.159	0.387	98.391				
37	0.154	0.375	98.766				
38	0.144	0.351	99.118				
39	0.135	0.33	99.448				
40	0.128	0.311	99.759				
41	0.099	0.241	100				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Source: Analysis results from the survey

Through a preliminary assessment by Cronbach's Alpha reliability coefficient and the exploratory factor analysis (EFA), the scales of research concepts are satisfactory. The scales after preliminary analysis will be used in the official research through the confirmatory factor analysis (CFA) and test hypothesis by the SEM structural equation modeling in the official research.

#### 4.2. Confirmatory factor analysis results (CFA)

**Table 2**  
Overall reliability coefficient of the model

Components	Number of observed variables	Cronbach's Alpha
The sources of raw materials	5	0.860
The financial access	3	0.870
The management capacity	3	0.933
The local support policies	5	0.893
The impact of global epidemic	5	0.901
The production technology level	3	0.848
The government support	3	0.759
The labor	5	0.876
The corporate social responsibility	5	0.880
The green growth orientation	3	0.931
The development of MSMEs	3	0.859

Source: Analysis results from the survey



The results of the exploratory factor analysis (EFA) in Table 2 have shown 10 observed variables: level of production technology, government policies, raw materials, labor, management capacity, and local support policies, financial access, corporate social responsibility, green growth orientation, and global epidemic impact. This section will re-evaluate the scale by the confirmatory factor analysis (CFA) and test the combined reliability, extracted variance, convergent validity, discriminant validity, and unidimensionality with 400 valid votes is collected when interviewing the management staff of MSMEs. Thus, through the survey's results of managers in SMEs, the scale of production technology, State policies, raw materials, labor, management capacity, and local support policies and financial access, corporate social responsibility, green growth orientation, and global epidemic impact are all highly compatible with survey data and achieve convergent validity, unidimensionality, assure the reliability value to include in subsequent analyses. The scale of factors affecting the development of SMEs includes 10 components including production technology level, State policies, raw materials, labor, management capacity, and local support policies, financial access, corporate social responsibility, green growth orientation, and global epidemic impact, with 41 variables included in the analysis. The results show that the model has a good fit to the data with Chi-squared = 679,795, degrees of freedom = 436, CMIN/df = 1,559 < 2, P-value = 0.000. Other measurement criteria also met the required value: TLI = 0.950, CFI = 0.956 > 0.9, RMSEA = 0.046 < 0.05. All the weights of the variables are > 0.5, the P = 0.000 values should be statistically significant. Thus, the scale of concepts has satisfactory reliability. Besides, the discriminant validity between the research concepts is evaluated through examining the correlation between them in the confirmatory factor analysis (CFA) model of the factors affecting the development of SMEs (Table 3). The discriminant validity between the research concepts will be achieved if the correlation coefficient of the concepts is less than 1 provided that the model fits well with the data.

**Table 3**  
Testing the discriminant validity between the concepts in the model

			Estimate	S.E.	C.R.	P
The development of SMEs	↔	The financial access	0.431	0.045	9.666	***
	↔	The management capacity	0.342	0.047	7.264	***
	↔	The local support policies	0.286	0.049	5.804	***
	↔	The impact of global epidemic	0.535	0.038	14.003	***
	↔	The production technology level	0.523	0.041	12.781	***
	↔	The green growth orientation	0.714	0.026	26.966	***
	↔	The government support	0.074	0.057	1.3	0.194
	↔	The labor	0.046	0.054	0.845	0.398
	↔	The sources of raw materials	0.891	0.045	19.667	***
	↔	The corporate social responsibility	0.102	0.053	1.918	0.55
The financial access	↔	The management capacity	0.219	0.052	4.225	***
	↔	The local support policies	-0.042	0.055	-0.775	0.438
	↔	The impact of global epidemic	0.408	0.046	8.858	***
	↔	The production technology level	0.248	0.053	4.706	***
	↔	The green growth orientation	0.347	0.047	7.376	***
	↔	The government support	0.017	0.058	0.299	0.765
	↔	The labor	-0.04	0.055	-0.721	0.471
The management capacity	↔	The corporate social responsibility	0.056	0.055	1.014	0.311
	↔	The local support policies	-0.062	0.053	-1.151	0.25
	↔	The impact of global epidemic	0.218	0.051	4.255	***
	↔	The green growth orientation	0.246	0.049	5.005	***
	↔	The production technology level	0.054	0.054	0.985	0.324
	↔	The government support	0.046	0.057	0.803	0.422
	↔	The labor	0.022	0.054	0.403	0.687
The local support policies	↔	The corporate social responsibility	0.041	0.054	0.773	0.44
	↔	The impact of global epidemic	0.014	0.054	0.253	0.8
	↔	The production technology level	0.293	0.051	5.747	***
	↔	The green growth orientation	0.25	0.05	5.039	***
	↔	The government support	-0.01	0.058	-0.169	0.866
	↔	The labor	-0.059	0.054	-1.086	0.277
	↔	The corporate social responsibility	0.07	0.054	1.286	0.198
The impact of global epidemic	↔	The production technology level	0.296	0.051	5.863	***
	↔	The green growth orientation	0.361	0.045	7.958	***
	↔	The government support	-0.05	0.058	-0.857	0.392
	↔	The labor	0.081	0.054	1.496	0.135
	↔	The corporate social responsibility	-0.033	0.054	-0.599	0.549
The production technology level	↔	The green growth orientation	0.531	0.04	13.29	***
	↔	The government support	0.012	0.059	0.208	0.835
	↔	The labor	0.058	0.055	1.038	0.299
	↔	The corporate social responsibility	0.058	0.055	1.038	0.299
The green growth orientation	↔	The government support	-0.014	0.057	-0.253	0.8
	↔	The labor	0.136	0.052	2.605	0.0009
	↔	The corporate social responsibility	0.022	0.053	0.42	0.0675
The government support	↔	The labor	-0.102	0.057	-1.781	0.075
	↔	The corporate social responsibility	0.828	0.025	33.744	***
The labor	↔	The corporate social responsibility	-0.137	0.053	-2.589	0.01

Source: Analysis results from the survey



Table 3 presents the results of the discriminant validity test between the concepts in the critical model. All correlation coefficients with standard deviation show that they are  $< 1$  and have significance level  $P = 0.000$ . Therefore, the concepts in the research model all have discriminant validity. Thus, the CFA results of the critical model of the scales of factors affecting the development of microscopy confirm the unidimensionality, convergent validity, discriminant validity as well as reliability and fit the research investigation data.

#### 4.3. Testing the theoretical model and research hypothesis by the structural equation modelling (SEM)

After the overall structural model has been analyzed and verified, the next step is to look at the estimates to check for causal relationships. Through Table 4, we see that (1) the corporate social responsibility factor (normalized weight is 0.590), (2) the source of raw materials (normalized weight is 0.573), (3) the government support (normalized weight is 0.501), (4) the labor (normalized weight is 0.500), (5) the production technology level (normalized weight is 0.280), (6) the financial access (normalized weight is 0.270), (7) the global epidemic impact (normalized weight is 0.211), (8) the local support policies (normalized weight is 0.160), and (9) the management capacity (normalized weight of 0.096) influenced the development of SMEs. Thus, all hypotheses H1, H2, H3, H4, H5, H6, H7, H8, H9, H10 are accepted in the theoretical research model.

**Table 4**  
Standardized regression coefficients of the theoretical model

				Estimate	S.E.	C.R.	P
H1	The development of SMEs	←	The sources of raw materials	0.573	0.056	10.154	***
H2	The development of SMEs	←	The financial access	0.270	0.034	7.941	***
H3	The development of SMEs	←	The management capacity	0.096	0.031	3.138	0.002
H4	The development of SMEs	←	The local support policies	0.160	0.032	5.000	***
H5	The development of SMEs	←	The impact of global epidemic	0.211	0.037	5.767	***
H6	The development of SMEs	←	The production technology level	0.280	0.038	7.272	***
H7	The development of SMEs	←	The green growth orientation	0.124	0.044	2.815	0.005
H8	The development of SMEs	←	The government support	0.501	0.067	7.463	***
H9	The development of SMEs	←	The labor	0.500	0.029	17.241	***
H10	The development of SMEs	←	The corporate social responsibility	0.590	0.064	9.219	***

Source: Analysis results from the survey

**Hypothesis H1:** The source of raw materials has a positive impact on the development of SMEs. From the results of SEM analysis, it is shown that the normalized regression coefficient with + sign represents the positive relationship between the source of raw materials and the development of the SMEs with the significance level  $P = 0.000 < 0.05$  and  $\beta = 0.573$ , meaning the hypothesis H1 is accepted by experimental data. The scale of raw materials is a new scale developed for this study and the test results show that it influences the development of SMEs (the 1st effect out of 10 factors). Unlike other fields such as trade or services, we see all four types of enterprises in the industrial sector such as mining SMEs, processing SMEs, manufacturing and distribution SMEs of electricity and gas, and supplying SMEs. The role of raw materials cannot be ignored because it is an important input factor that determines the efficiency of production and business activities as well as the development of SMEs. The source of raw materials has been mentioned as an input factor affecting the production and business activities of enterprises in some previous research works (Le Ngoc Nuong, 2008; Nunnally, 1994), and the current study confirms that the source of raw materials proved to influence the development of SMEs.

**Hypothesis H2:** There is a positive relationship between financial access and the development of SMEs. The estimation results show that this hypothesis is accepted and achieved  $\beta = 0.270$  with significance level  $P = 0.000 < 0.05$ . This result confirms the positive relationship between financial access and the development of SMEs, similar to the study of Trinh Duc Chieu (2010), Arbiana Govori (2013), and Asma Benzazoua Bouazza et al. (2015). If in the study of Arbiana Govori (2013), the financial access factor has the strongest influence on SMEs, then in this study, the financial access factor is the 6th most influential factor out of 10 factors, behind the factor of production technology. For SMEs, the financial access factor plays a very important role because most of them are short of capital, poor ability to mobilize capital, etc., but especially the type of SMEs in the industrial sector in the recent period, the factor of production technology level is considered more important because in general, the technology support policies for SMEs as well as the active investment in technology of SMEs are not commensurate with the demand while the technology that enterprises in the province are currently using is quite outdated, so it will be very difficult to exploit new markets as well as compete with large domestic and foreign competitors.

**Hypothesis H3:** There is a positive relationship between management capacity and the development of SMEs. The estimation results show that this hypothesis is accepted with  $\beta = 0.096$  with significance level  $P = 0.002 < 0.05$ . This result affirms that when studying the reality at SMEs, the managers of SMEs have the same opinion that the factor of management capacity has a positive influence on the development of SMEs, similar to the research results of Asma Benzazoua Bouazza et al. (2015) and Muhammad Abrarul-haq (2015). If in the study of Muhammad Abrarul-haq (2015), he believed that the management capacity factor has the greatest influence on the development of SMEs, in this study, the management capacity factor has the 10th most influence out of a total of 10 proven factors. Thus, managers do not appreciate the role of the management capacity factor of business owners in the existence and development of SMEs. They still face many difficulties in financial access, so investment in technology is still limited, leading to poor competitiveness, a big obstacle to the development of enterprises in the future.



*Hypothesis H4:* Local support policies have a positive impact on the development of SMEs. From the results of SEM analysis, it is shown that the normalized regression coefficient with + sign represents the positive relationship between local policies and the development of SMEs with the significance level  $P = 0.000 < 0.05$  and  $\beta = 0.160$ , meaning the hypothesis H4 is accepted by experimental data, similar to the study of Phan Thi Minh Ly (2011) and Muhammad Abrar-ul-haq (2015). If in the study of Phan Thi Minh Ly (2011), the local support policy factor is the second influencing factor out of the total of four factors, in this study, the local support policy factor has the 8th influence out of 10 factors. Here, we see that the assessment of the SME managers on the local support policy factor is lower than the State policy factor to see that for this type of enterprise, local incentives' perceived impact is not clear on the beneficiaries (SMEs) compared to the support from the government.

*Hypothesis H5:* The influence of global epidemic has a positive impact on the development of SMEs. From the results of SEM analysis, it is shown that the normalized regression coefficient with + sign shows the positive relationship between the influence of the global epidemic and the development of SMEs with the significance level  $P = 0.000 < 0.05$  and  $\beta = 0.211$ , meaning the hypothesis H5 is accepted by experimental data. The influencing factor of the global epidemic has the 8th most influential out of 10 factors. It can be explained that the long-term global epidemic causes the change of business production and strategies to suit the changes in supply chains, market competition and the level of social distancing. In the short term, the negative effects of the global epidemic cannot be avoided. The results of this survey were conducted in September 2020 at a time when Vietnam was successful in fighting against the epidemic and was the highlight in the world on this issue. It is possible that optimism and confidence are covering business and society at that time. It is also found that at that time, the global supply chain tended to shift to the countries with good resistance or less effected by the Covid-19 epidemic.

*Hypothesis H6:* There is a strong correlation between the level of production technology and the development of SMEs. The estimation results show that this hypothesis is accepted and achieved  $\beta = 0.280$  with the significance level  $P = 0.000 < 0.05$ . This result confirms the positive relationship between the level of production technology and the development of SMEs, similar to the study of Trinh Duc Chieu et al. (2010) and Asma Benzazoua Bouazza et al. (2015). In the study of Trinh Duc Chieu et al. (2010), the factor of production technology level was included in the analysis with the results showing that this factor has a great influence on labor productivity and hence, on the development of SMEs in Vietnam. Thus, managers in SMEs highly appreciate the role of this factor in the development of their enterprises. Especially, for SMEs with the characteristics of little capital and many difficulties in financial access, the level of production technology is currently the biggest barrier when Vietnam in general and to enter the international market with many difficulties and challenges in competing with domestic and foreign competitors.

*Hypothesis H7:* There is a close correlation between the green growth orientation and the development of SMEs. The estimation results show that this hypothesis is accepted and achieved  $\beta = 0.124$  with significance level  $P = 0.005$ . This result confirms the positive relationship between the green growth orientation and the development of SMEs. However, the level of statistical significance is not really high compared to other factors. Thus, on one hand, managers in SMEs can evaluate the role of this factor in the development of their enterprises. However, in fact, the implementation of business development in the direction of green growth still has a lot of work to do, and the laws and regulations are still incomplete and synchronous.

*Hypothesis H8:* There is a positive correlation between government policy and the development of SMEs. The results of the SEM analysis show that the normalized regression coefficient with + sign represents the positive relationship between the State policy and the development of SMEs with the significance level  $P = 0.000 < 0.05$  and  $\beta = 0.501$ , meaning the hypothesis H8 is accepted by experimental data. The research results presented above are consistent with those of the previous two authors, Arbian Govori (2013) and Muhammad Abrar-ul-haq et al. (2015), showing that the State policy factors are both influential to the development of SMEs. However, in the research results of Muhammad Abrar-ul-haq et al. (2015), the State policy factor has the third strongest influence out of 6 factors, and in this research, State policy has a similar effect. This can be explained that the Government of Vietnam has developed many support policies for SMEs and made a positive impact and started to make an impression and to the managers in these enterprises, they still expect more support from State policy.

*Hypothesis H9:* There is a positive correlation between labor and the development of SMEs. The results of SEM analysis show that the regression coefficient is normalized with + sign, showing the positive relationship between labor and the development of SMEs in Thai Nguyen province with the significance level  $P = 0.000 < 0.05$  and  $\beta = 0.500$ , meaning that the hypothesis H9 is accepted by experimental data. This result is like the research results of Trinh Duc Chieu et al. (2010), Ghosh and Kwan (2010) as well as that of Asma Benzazoua Bouazza et al. (2015). This study also proves that the influence of the labor factor on the development of SMEs is high with the coefficient  $\beta = 0.500$  (ranked 4th out of 10 factors). The reason is that most managers when surveyed are middle-aged people (over 46 years old, accounting for 67.1%), basically, they still do not appreciate the role of the labor factor in the development of their business. However, this result is considered as an information channel to help business owners and policymakers to reconsider the role of that factor in the type of SMEs to develop training policies for employees to improve labor productivity and create a premise for the development of this



type of enterprise.

*Hypothesis H10:* There is a positive correlation between the corporate social responsibility and the development of SMEs. The results of SEM analysis show that the normalized regression coefficient with + sign represents a positive relationship between the corporate social responsibility and the development of SMEs with the significance level  $P = 0.000 < 0.05$  and  $\beta = 0.590$ , meaning the hypothesis H10 accepted by experimental data. This study also proves that the influence of corporate social responsibility on the development of SMEs is the highest with the coefficient  $\beta = 0.590$  (ranked 1st out of 10 factors). The reason is that most managers when surveyed are middle-aged people (over 46 years old, accounting for 67.1%), they basically appreciate the role of the corporate social responsibility for the development of their businesses. This result is considered as an information channel to help business owners and policy makers to reconsider the role of the corporate social responsibility for SMEs to develop appropriate social policies to improve labor productivity and create a premise for the development of this type of enterprise.

Thus, the results of testing the theoretical model and the research hypothesis by the structural equation modelling (SEM) have shown all the hypotheses H1, H2, H3, H4, H5, H6, H7, H8, H9, H10 included in the analysis have an influence on the development of SMEs. These are the level of production technology, State policies, raw materials, labor, management capacity, local support policies, and financial access. In particular, the two most influential factors are the level of production technology and financial access. From that, it helps policymakers, State management agencies and SMEs have the orientation to make policies and solutions to develop this type of enterprise in the future.

## 5. Conclusions

This study identified, analyzed, and quantified the influential level of factors on the development of SMEs. By reviewing theory, conducting qualitative research, the research proposes 10 factors summarized from the review of research documents and actual conditions in Vietnam that all affect the development of Vietnamese SMEs. These are *the level of production technology, government policies, raw materials, labor, management capacity, local support policies, financial access, corporate social responsibility, green growth orientation, and global epidemics*.

The results of in-depth analysis and assessment of factors affecting the development of Vietnamese SMEs with a research sample of 400 Vietnamese SMEs by using the exploratory factor analysis (EFA), the confirmatory factor analysis (CFA), and the linear structural modeling (SEM) have proven that 10 factors summarized from the review of research documents and actual conditions in Vietnam influence the development of Vietnamese SMEs. These are *the level of production technology, government policies, raw materials, labor, management capacity, local support policies, financial access, corporate social responsibility, green growth orientation, and the global epidemic*, in which the level of production technology and financial access has the greatest influence on the development of Vietnam's SMEs.

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