Factors affecting small and medium enterprises access to capital: Evidence from Vietnam

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ABSTRACT

Purpose: The capacity of a business to operate and grow depends on its capital, particularly for small and medium-sized businesses (SMEs). However, access to capital sources depends on many factors such as collateral assets, business plans requiring loans, the social relations of business owners, etc. This study identifies factors affecting SMEs' access to capital in Vietnam.

Design/Methodology/Approach: A typical survey was conducted on 450 SMEs in Vietnam, and structural model analysis methods were employed through PLS-SEM software to analyze the data.

Findings: Research results show that there are nine groups of factors affecting the ability of SMEs in Vietnam to access capital ranked from high to low level of influence, including (i) operational characteristics of the business, (ii) financial reporting, (iii) financial behaviour of enterprises, (iv) social relations of enterprises, (v) capability of the enterprise, (vi) production and business plan of the enterprise, (vii) ability to adapt to the risks of the enterprise, (viii) characteristics of the business owner and the lowest is institutional environment.

Conclusion: Regression analysis proved to be useful in identifying nine groups of elements that impact SMEs' access to capital in Vietnam. The study has proposed management implications to improve access to capital for SMEs in Vietnam.

Research Limitations and Implications: The study selected samples based on the principle of random convenience, so the study's sample does not represent all SMEs in Vietnam according to the distribution of regions and territories where the businesses are located.

Practical Implications: This research has practical significance in supporting managers at SMEs to make decisions to improve access to capital for businesses contributing to sustainable business development.

Contribution to the Literature: This research makes a significant contribution to the field of practical research on capital and capital access for SMEs in Vietnam.

Keywords: *Access to capital, Capital, SMEs, Vietnam.*

1. INTRODUCTION

The SME sector has been affirming its position as an essential component of local economic development in Vietnam's market economy in recent years. The development of SMEs has contributed to creating jobs, improving workers' lives, ensuring social security and increasing the socio-economic development of localities and the country in general. According to data from the General Statistics Office (2022) approximately 35.7 thousand businesses temporarily suspended operations for a specific period in the first quarter of 2022 and 11.3 thousand businesses ceased operations and were awaiting dissolution procedures due to the COVID-19 pandemic. More than 4.3 thousand enterprises completed dissolution procedures. This shows that the resilience of SMEs is very limited. A number of favourable and supportive policies have been implemented by the Vietnamese government to assist small and medium-sized enterprises (SMEs). These include Decree No. 34 of 2018 on the creation,

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management, and operation of the Credit Guarantee Fund for SMEs, Decree No. 38 of 2018 on investment for creative start-up SMEs, Decree No. 39 of 2019 on the management and operation of the SME Development Fund, etc. At the same time, the State Bank has also implemented many support policies such as issuing Decision No. 2416 of the State Bank of Vietnam on regulating short-term loan interest rate ceilings for SMEs, Circular No. 14 of 2021 of the State Bank of Vietnam on expanding subjects, debt restructuring time, etc. to support SMEs affected by the COVID-19 epidemic. It can be seen that these policies focused on increasing the accessibility of capital for SMEs.

Although the Vietnamese government has issued support policies, the stability and development of SMEs in Vietnam still face many difficulties due to the SMEs' lack of capital to maintain production and business activities, their inability to access loan and support capital sources due to many difficulties in terms of documents, legal procedures, beneficiaries of support and the level of support that is not commensurate with the difficulties of SMEs.

Therefore, there is a need to identify factors affecting the ability of SMEs in Vietnam to access capital in the post-COVID-19 context and propose governance implications that contribute to improving access to capital to support SMEs in Vietnam to develop sustainably. The researchers believe that this study makes an important contribution to the body of literature on SME's access to capital in Vietnam, providing further scientific arguments on the factors affecting the ability of SMEs to access capital in the post COVID-19 context through answering two research questions.

Question one: *What factors affect SMEs' access to capital in Vietnam and how influential are they?*

Second question: *What solutions are suitable to improve access to capital for SMEs in Vietnam?*

2. LITERATURE REVIEW

The study discovered that the three primary research directions are as follows after reviewing the literature on capital and access to finance to promote the development of SMEs:

The first direction is research on perceptions of capital, capital access and capital support models for SMEs.

According to studies by Ayyagari and Demirguc-Kunt (2007) and Tambunan (2008), the majority of SMEs in various countries have trouble obtaining financing. SMEs obtain capital from a variety of sources including both formal and informal sources such as banks, financial institutions and stock markets as well as initial internal sources like the owner or manager's savings and retained profits (Wu, Song, & Zeng, 2008). Informal external sources include financial support from friends and family (Abouzeedan, 2003), trade credit, venture capital and partners (Chittenden, Hall, & Hutchinson, 1996; He & Baker, 2007; Nguyen & Nguyen, 2022; Talib, Hasnan, Hussain, Ali, & Ismail, 2024; Tran & Nguyen, 2019).

Furthermore, the life cycle model was the preferred approach used in studies by Barton and Gordon (1987) and Kimhi (1997) to comprehend the financial behaviour of SMEs. In the same direction of research, Wu et al. (2008), La Rocca, La Rocca, and Cariola (2011) and Dang (2017) found that the financial behaviour of SMEs according to the life cycle model is quite consistent from time to time which is quite similar across different sectors and institutional contexts. However, Berger and Udell (1998) admit that the life cycle model does not apply to all SMEs operating in different industries implying that the firm size, age and availability of information intended to form the backbone of this particular model are imperfect. Gregory, Rutherford, Oswald, and Gardiner (2005) partially agree with the model stating that the sources of capital that SMEs access cannot be standardized and argue that the financial options to be accessed by SMEs depend on several sizes, levels, ages and information but only firm size is considered an important predictor of capital structure decisions in SMEs.

The second direction is research related to accessible capital sources for SMEs regarding four primary capital sources: equity capital, credit capital, support capital and other capital.

According to Ou and Haynes (2006), equity capital is money invested in a business that has no set deadline for payback. Both internal and external fundraising are options for equity capital. However, external equity is capital obtained from channels outside of existing partners and their relatives. Schäfer, Werwatz, and Zimmermann (2004) found that risky SMEs are more likely to acquire equity funding in their analysis of the factors influencing access to capital for new innovative SMEs in Germany. In the same direction of research, Reid (1996), Berger and Udell (1998) and Nguyen and Nguyen (2022) found that some owners or managers of SMEs may choose not to use equity capital as a source of finance to avoid any unwanted changes in the ownership of their company.

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In terms of credit capital, Berger and Udell (1998) and Nguyen, Nguyen, and Nguyen (2020) believed that issuing additional equity to meet the company's financial needs would likely lead to diluting ownership and operational rights. Therefore, SMEs owners or managers may prioritize seeking debt financing rather than issuing equity to retain full ownership and control of their business. However, short-term debt contains many payment risks so raising it is influenced by the benefits and disadvantages associated with its use (García-Teruel & Martínez-Solano, 2010; Nguyen, 2020).

According to Mensah (2004), official government plans are those created by the government or with assistance from donor organizations to boost financial flows for SMEs. These plans give SMEs access to support and other capital sources. It has been argued that such programmes and schemes have the potential to help SMEs gain easier access to additional credit (Boocock & Shariff, 2005). However, Riding, Madill, and Haines (2007) argue that government programmes to support access to finance for SMEs can only be effective under specific conditions. Zecchini and Ventura (2009) and Tran and Nguyen (2019) suggest that for these programmes to be effective, they should aim to reduce discrimination against SME borrowers regarding loan costs and unmet capital needs.

The third direction is research related to factors affecting the ability of SMEs to access credit.

Research by Ajagbe (2012) shows that gender, age, marital status, family history, capital, assets, interest rate and educational background are characteristics that influence SMEs' access to capital from credit institutions. Nguyen et al. (2020) also believe that the characteristics of the business owner will shape the business' style and borrowing method. Research by Ndungu (2016) and Le, Nguyen, Le, and Nguyen (2020) also found a relationship between the ability of business owners to create close relationships with banks which will contribute to increasing the ability to mobilize capital.

3. THEORETICAL BASIS AND RESEARCH DESIGN

3.1. Theoretical Basis

3.1.1. First, the Perspective on Capital

Currently, there are many different views on defining the capital of an entity depending on the perspective and legal form of the unit as a non-business unit, enterprise or financial institution such as funding capital, contributed capital, charter capital, business capital, mobilized capital etc.

According to the research team's accounting perspective for this study, "capital is the total capital that an enterprise raises to finance the assets of the enterprise in the course of business activities of the enterprise" as indicated by the total capital indicator on the balance sheet or financial position table of enterprises. Accordingly, the total capital consists of liabilities and equity.

Liabilities are loans or funds from other people that the enterprise has appropriated for use and that the enterprise is responsible for paying; liabilities include *(i) short-term debts* which are debts that enterprises are liable to pay for less than 12 months or less than 1 normal production and business cycle and *(ii) long-term debts*, which are debts that enterprises are liable to pay with long repayment terms, usually over 12 months or years.

Equity is the capital that belongs to the owner of an enterprise. This is capital originating from one owner (as for a private enterprise, a one-member limited liability company) or established by the parties to contribute capital (as for a joint-stock company, limited liability companies with two or more members, cooperatives, etc.) to conduct business activities that the enterprise does not have to commit to pay; in equity, including *(i) investment capital of the owner* which is the capital contributed initially by the owners when establishing the enterprise (such as charter capital, business registration capital) and supplemented during business operations, *(ii) undistributed after-tax profit*, means after-tax profits from an enterprise's operating activities but not yet distributed and *(iii) corporate funds and other sources*.

3.1.2. Second, the Perspective on Capital Access

The studies above have expressed the concept of "access to capital". However, they have not expressed the conceptual content when using the phrases "ability" and "access".

Therefore, the research team says: *"Access to capital is the ability that businesses research, identify, analyze and grasp to be able to source capital with the lowest capital costs and at the same time gain acceptance from both businesses and capital providers".*

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Therefore, capital plays an important role not only in the existence and development of SMEs themselves but also as a tool to realize macro goals and implement the government's social policies. Hence, access to capital for the development of SMEs has roles such as important financial leverage for the development of SMEs, improving the production and business efficiency of SMEs, expanding economic relations, improving the technology and quality of human resources and helping banks shift their investment structure reasonably and disperse risks.

3.2. Research Design

The researchers employ the research design as follows to answer the research questions:

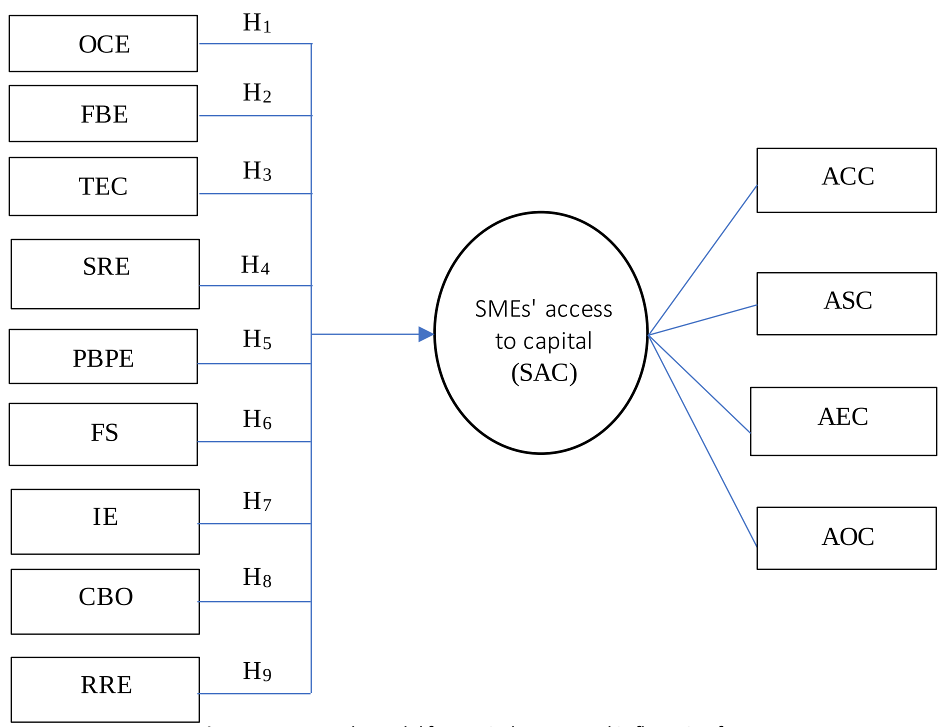

Figure 1. Research model for capital access and influencing factors.

Figure 1 Overview of the research model for capital access and influencing factors

Explanation for the symbols of the research model

- *For the dependent variables:* The following are the dependent variables and their components: SMEs' access to capital (SAC), access to credit capital (ACC), access to support capital (ASC), access to equity capital (ASC) and access to other capital AOC).
- *For independent variables: These are factors affecting the ability of SMEs to access capital:* OCE operational characteristics of the enterprise (OCE), financial behavior of the enterprise (FBE), capacity of the enterprise (TCE), social relations of the enterprise (SRE), production and business plan of the enterprise (PBPE), financial statements (FS), institutional environment (IE), characteristics of the business owner (CBO) and risk resilience of the enterprise (RRE).

Explanation of the hypotheses of the research model:

Operating characteristics of a business (OCE) are the operating characteristics associated with the business line, scale of operations, operating time, the legal form of the business, etc. Beck, Demirgüç-Kunt, and Martinez Peria (2008); Carey and Flynn (2005); Dang (2017); Tran and Nguyen (2019); Tien, Thanh, and Le Hang (2019) and Nguyen and Nguyen (2020) stated that the operating characteristics of businesses have an impact on SMEs' ability to access capital.

Hypothesis H_1: Operational characteristics of enterprises affect SMEs' access to capital in Vietnam.

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Financial behaviour of enterprises (FBE) is the behaviour of choosing capital structure based on the hypothesis that the choices of managers (business owners) are considered reasonable. These are scientifically calculated choices based on the best use of available capital minimizing capital costs to improve competitiveness and maximize profits. Therefore, the financial behaviour of businesses focuses on how to find an optimal debt ratio for the business. Studies by Allen, Qian, and Qian (2005); Tien et al. (2019) and Nguyen (2020) showed that businesses' financial behaviour affects SMEs' ability to access capital.

Hypothesis H_2: Corporate financial behaviour affects SMEs' access to capital in Vietnam.

The enterprise's capacity (TCE) is the ability to use combined resources to achieve a target state purposefully. The enterprise's capacity is often shown through evaluation criteria such as the enterprise's assets always ensuring sufficient payment of debts, the enterprise operating a profitable business, the brand and image of the enterprise being well known to consumers, etc. Studies by Ikeda and Kang (2011), Nakano and Nguyen (2011) and Tran and Nguyen (2019) indicated that the capacity of enterprises has an impact on SMEs' access to capital.

Hypothesis H_3: The capacity of enterprises affects SMEs' access to capital in Vietnam.

Social relations of enterprises (SRE) are the relationships between people formed in economic, social, political, legal, ideological, moral and cultural activities. All things and phenomena in society are interconnected. The relationship that an enterprise has with entities and people associated with it, such as banks and other financial institutions, the government and large organisations, investors and partners (consumers, suppliers, etc.) is referred to as the enterprise's social relationship. Studies by Peng and Luo (2000); Tagoe, Nyarko, and Anuwa-Amarh (2005); Bellucci, Borisov, and Zazzaro (2010); Khwaja, Mian, and Qamar (2011) and Aastha and Shazi (2019) found that the social relationships of enterprises have an impact on SMEs' access to capital.

Hypothesis H_4: Social relations of enterprises affect SMEs' access to capital in Vietnam.

Production and business plan of an enterprise (PBPE) is a systematic synthesis of analysis, evaluation, selection and operation based on a system of evaluation criteria about the business plan of a specific business deal. An organization can assess a production and business plan's viability, adaptability to changes in the market and other hazards and ability to return cash borrowed among other factors. Studies by Khwaja et al. (2011); Okręglicka, Mynarzová, and Kaňa (2015) and Nguyen and Nguyen (2022) show that enterprises' production and business plans impact SMEs' access to capital.

Hypothesis H_5: Production and business plans of enterprises affect SMEs' access to capital in Vietnam.

Financial statements (FS) are economic information presented by accountants in the form of tables providing information about the financial position, business situation and cash flows of the enterprise to meet the needs of those who use them in making economic decisions. The studies by Dang (2017), Xuan Quynh Le and Van Le (2019) and Nguyen et al. (2020) found that the financial statements of enterprises impact SMEs' access to capital.

Hypothesis H_6: Financial statements of enterprises affect SMEs' access to capital in Vietnam.

Institutional environment (IE) is a legal system including the constitution, laws, regulations, rules, institutions, etc. to harmonize the rights and responsibilities of each citizen and all organizations in a social order towards the synthesis of community interests, shape the behaviour of members of society and regulate the functioning of society. Therefore, the institutional environment plays a very important role in the development of SMEs. The researchers conducted interviews with institutional environment experts for this study and the experts said that the institutional environment has an impact on SMEs' access to capital.

Hypothesis H_7: The institutional environment affects SMEs' access to capital in Vietnam.

Characteristics of business owners (CBO) are characteristics related to the demographics of business owners such as gender, age, education level, management skills, etc. Coleman and Cohn (2000), Coleman (2007) and Nguyen (2020) found that banks and creditors are interested in the age, degree of education, managerial experience and other details of the business owner when they lend money or offer loans. Simultaneously, the researchers conducted interviews with experts on the demographic characteristics of business owners for this study and all experts suggested that the characteristics of business owners impact SMEs' access to capital.

Hypothesis H_8: Business owner characteristics affect SMEs' access to capital in Vietnam.

The risk resilience of enterprises (RRE) is the possibility of business damage due to circumstances. Accordingly, the ability of enterprises to adapt to risks refers to the degree to which enterprises respond well to risks from the input market, the market of output factors or epidemics, security, culture, society, etc. Studies by Coleman (2007) and

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Nguyen and Nguyen (2022) confirmed a relationship between enterprises' risk adaptability and credit institutions' decision to lend capital.

Hypothesis H_9: Employer characteristics affect SMEs' access to capital in Vietnam.

4. METHODOLOGY

The study uses analytical tools, including descriptive statistical analysis, assessing intrinsically consistent reliability through aggregate reliability (CR) and Cronbach alpha coefficient (CA), evaluating convergence values through mean quotation variance (AVE), evaluating differentiated values through the Fornell-Larcker coefficient and using structural modelling for analysis through PLS-SEM software to validate and analyze research objectives.

According to Hair, Hult, and Ringle (2017) the ratio of observations to an analytical variable is 5:1 or 10:1. The study's questionnaire has 58 questions using the Likert scale of 5 levels (corresponding to 58 observed variables belonging to different factors). Applying a sample ratio of 5:1, the minimum sample size of SMEs to be surveyed for this study would be 58 × 5 = 290 SMEs.

However, the researchers surveyed 600 SMEs and obtained 514 votes reaching 85.67% to ensure samples for the study. Through screening, many responses do not meet the requirements such as answers without information or micro-sized enterprises; business lines that the business field cannot delineate are also disqualified and 450 valid responses ensure representativeness. (i) The three business sectors are industry and construction, trade and services, agriculture, forestry and fishery. (ii) By legal forms: joint-stock companies, one-member limited liability companies, limited liability companies with two or more members, private enterprises, partnerships. (iii) By scale, regarding medium and small scale.

5. RESULTS

5.1. Overview of SMEs in the Survey

First, about the business sector

Table 1. Main business lines of enterprises.

Quota		Number of enterprises	Percentage (%)
The main business areas of the enterprises	Industry and construction	150	33.3%
	Trade and services	142	31.6%
	Agriculture, forestry and fisheries	158	35.1%
Total		450	100,0%

Table 1 shows the whole distribution of SMEs in Vietnam across business sectors: commerce and services (31.6%), industry and construction (33.3%) and agriculture, forestry and fisheries (35.1%). This shows that it is suitable for Vietnam to transition from agricultural and forestry production to promoting the attraction of industrial output, trade and services.

Second, about the legal form

Table 2. Legal form of enterprise.

Quota		Number of enterprises	Percentage (%)
Legal form of enterprises	Joint stock company	53	11.8%
	Partnerships	2	0.4%
	Limited liability companies with two or more members	148	32.9%
	One member limited liability company	213	47.3%
	Private enterprise	34	7.6%
Total		450	100.0%

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According to Table 2, limited liability companies (80.2%) and joint stock companies (11.8%) are the two most common legal forms for SMEs in Vietnam. The remaining 7.6% are private businesses. This shows that establishing a limited liability company will help SMEs facilitate mobilizing more capital in production and business processes.
Third, about the number of years of operation

Table 3. Years of business operation of enterprises.

Quota		Number of enterprises	Percentage (%)
Years of business operation for enterprises	Less than 10 years	258	57.3%
	From 10 to 20 years	155	34.4%
	Over 20 years	37	8.2%
Total		450	100.0%

The data in Table 3 depicts the number of years of operation. Most SMEs in Vietnam are quite young mainly under 10 years (57.3%) and from 10 to 20 years (34.4%). This shows that SMEs have only come into operation in recent years, so the potential for the technology is good, still new and capable of further development.

5.2. Scale Reliability Evaluation

The reliability of the scales for all study variables is presented in Table 4. The results showed that the aggregate confidence (CR) of the study variables ranged from 0.871 to 0.945 and all were above the minimum threshold of 0.70. The Cronbach alpha (CA) coefficients of the study variables ranged from 0.807 to 0.936 and all were greater than the minimum threshold of 0.70 demonstrating that the scales are highly reliable (according to Hair et al. (2017)).

Table 4. Results of scale reliability assessment.

Scale	CA	CR
Independent variables		
1. Financial statements (FS)	0.807	0.871
2. Characteristics of the business owner (CBO)	0.882	0.913
3. Operational characteristic of the enterprise (OCE)	0.908	0.935
4. Financial behavior of the enterprise (FBE)	0.866	0.910
5. Institutional environment (IE)	0.881	0.889
6. Capacity of the enterprise (TCE)	0.852	0.889
7. Production and business plan of the enterprise (PBPE)	0.818	0.880
8. Social relations of the enterprise (SRE)	0.871	0.910
9. Risk resilience of the enterprise (RRE)	0.769	0.866
Dependent variables		
10. SMEs' access to capital (SAC)	0.936	0.945
10.1. Access to credit capital (ACC)	0.891	0.925
10.2. Access to supporting capital (ASC)	0.840	0.893
10.3. Access to equity capital (AEC)	0.854	0.902
10.4. Access other capital (AOC)	0.846	0.895

5.3. Evaluation of Scale Convergence Values

The results of the scale convergence assessment in Table 5 show that the load factors are all greater than the threshold of 0.708. In addition, the average variance extracted (AVE) value of 0.572 is higher than the minimum threshold of 0.50. Thus, it can be concluded that the scale for the studied variables has a full convergent value (according to Chin, Vinzi, Henseler, and Wang (2010); Hair et al. (2017) and Hair, Risher, and Sarstedt (2019)).

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Table 5. Convergence value assessment results.

Scale	Observation variables	Load factor	AVE
Independent variables			
Financial statements (FS)	FS1	0.742	0.629
	FS2	0.809	
	FS3	0.872	
	FS4	0.741	
Characteristics of the business owner (CBO)	CBO1	0.788	0.678
	CBO2	0.835	
	CBO3	0.880	
	CBO4	0.814	
	CBO5	0.796	
Operational characteristic of the enterprise (OCE)	OCE1	0.897	0.784
	OCE2	0.879	
	OCE3	0.928	
	OCE4	0.835	
Financial behavior of the enterprise (FBE)	FBE1	0.935	0.716
	FBE2	0.831	
	FBE3	0.828	
	FBE4	0.785	
Institutional environment (IE)	IE1	0.697	0.670
	IE2	0.752	
	IE3	0.888	
	IE4	0.917	
Capacity of the enterprise (TCE)	TCE1	0.765	0.572
	TCE2	0.748	
	TCE3	0.737	
	TCE4	0.828	
	TCE5	0.702	
	TCE6	0.754	
Production and business plan of the enterprise (PBPE)	PBPE1	0.793	0.646
	PBPE2	0.822	
	PBPE3	0.762	
	PBPE4	0.838	
Social relations of the enterprise (SRE)	SRE1	0.688	0.720
	SRE2	0.946	
	SRE3	0.856	
	SRE4	0.883	
Risk resilience of the enterprise (RRE)	RRE1	0.845	0.684
	RRE2	0.825	
	RRE3	0.810	
Dependent variables			
Access to equity capital (AEC)	AEC1	0.765	0.696
	AEC2	0.837	
	AEC3	0.856	
	AEC4	0.875	
Access to supporting capital (ASC)	ASC1	0.848	0.678
	ASC2	0.848	
	ASC3	0.723	

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Scale	Observation variables	Load factor	AVE
	ASC4	0.866	
Access other capital (AOC)	AOC1	0.852	0.682
	AOC2	0.834	
	AOC3	0.844	
	AOC4	0.770	
Access to credit capital (ACC)	ACC1	0.885	0.754
	ACC2	0.861	
	ACC3	0.899	
	ACC4	0.829	

5.4. Discriminant Validity Assessment

The researchers evaluated the discriminant values of the scales through Fornell-Larcker coefficient criteria, the results are as follows:

According to Table 6 findings, each variable's average extracted variance square root value ($\sqrt{AVE}$) (numbers located on diagonals, in bold) (represented by numbers on diagonals and in bold) is 0.722 or greater than the variables' correlation coefficient. Thus, the scales satisfied the Fornell-Larcker criteria for obtaining the distinguishing value.

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Table 6. Results of discriminant validity assessment by Fornell-Larcker criteria.

Variables	FS	CBO	OCE	FBE	IE	TCE	PBPE	SRE	RRE	ACC	ASC	AEC	AOC
FS	0.793												
CBO	0.011	0.823											
OCE	0.011	0.083	0.885										
FBE	-0.045	-0.027	0.018	0.846									
IE	-0.078	0.186	0.009	0.03	0.819								
TCE	0.044	0.098	-0.002	0.094	-0.009	0.757							
PBPE	0.031	0.233	0.019	0.078	0.215	0.209	0.804						
SRE	-0.031	0.031	0.044	-0.07	-0.003	0.017	0.069	0.849					
RRE	0.003	0.372	-0.019	0.105	0.161	0.169	0.272	0.087	0.827				
ACC	0.292	0.277	0.381	0.326	0.153	0.371	0.372	0.279	0.286	0.835			
ASC	0.245	0.286	0.341	0.284	0.135	0.276	0.387	0.297	0.362	0.641	0.823		
AEC	0.283	0.192	0.256	0.264	0.082	0.289	0.306	0.236	0.282	0.561	0.56	0.826	
AOC	0.333	0.268	0.374	0.335	0.14	0.356	0.356	0.278	0.28	0.956	0.618	0.577	0.869

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5.5. Results of Structural Model Analysis

5.5.1. The phenomenon of Linear Multi-Additive

The variance inflation factor (VIF) was employed by the study team to assess the linear multi-additiveness phenomenon. In addition, the adjusted R^2 coefficient value also considers the effect size f^2 to assess the contribution of exogenous variables to the R^2 value of endogenous latent variables (Hair et al., 2017). The results of the evaluation of the phenomenon of linear multi-addition and impact factor f^2 are summarised in Table 7 as follows:

Table 7. The variance inflation factor.

Research variables	Variance inflation factor	Effect size f^2
FS	1.014	0.451
CBO	1.222	0.051
OCE	1.013	0.501
FBE	1.037	0.410
IE	1.089	0.020
TCE	1.074	0.222
PBPE	1.179	0.152
SRE	1.022	0.341
RRE	1.257	0.054
Adjustment factor	R^2	*0.744*
	R^2 adjustment	*0.739*

According to the results in Table 7, the research team found that the VIF values were all less than 3.0. The maximum VIF value of the model is 1.257 and the smallest VIF value of the model is 1.013, so both models satisfy the condition of less than 5 (Hair et al., 2017). Therefore, the study model is appropriate and not affected by the problem of linear multi-additive between independent variables. At the same time, the adjusted R^2 value of the model is 0.739 which is greater than 0.1. This shows the model is suitable.

5.5.2. Results of Testing Hypotheses in the Model

Table 8 shows that all nine independent variables (FS, CBO, OCE, FBE, IE, TCE, PBPE, SRE and RRE) have a direct and concurrent effect on SAC (because the p-value of the t-test of the variables is less than 5%). In particular, the order of decreasing impact of variables on SAC is as follows: OCE (level 0.360), FS (level 0.342), FBE (level 0.330), SRE (level 0.299), TCE (level 0.247), PBPE (level 0.214), RRE (level 0.132), CBO (level 0.126) and the lowest is IE (level 0.075).

Table 8. Model test results.

Observed variables	Model 1	
	Coefficient β	p – value
FS → SAC	0.342	0.000
CBO → SAC	0.126	0.000
OCE → SAC	0.360	0.000
FBE → SAC	0.330	0.000
IE → SAC	0.075	0.011
TCE → SAC	0.247	0.000
PBPE → SAC	0.214	0.000
SRE → SAC	0.299	0.000
RRE → SAC	0.132	0.000

The results of the PLS algorithm

Figure 2 shows the structural model of influencing factors according to the PLS algorithm.

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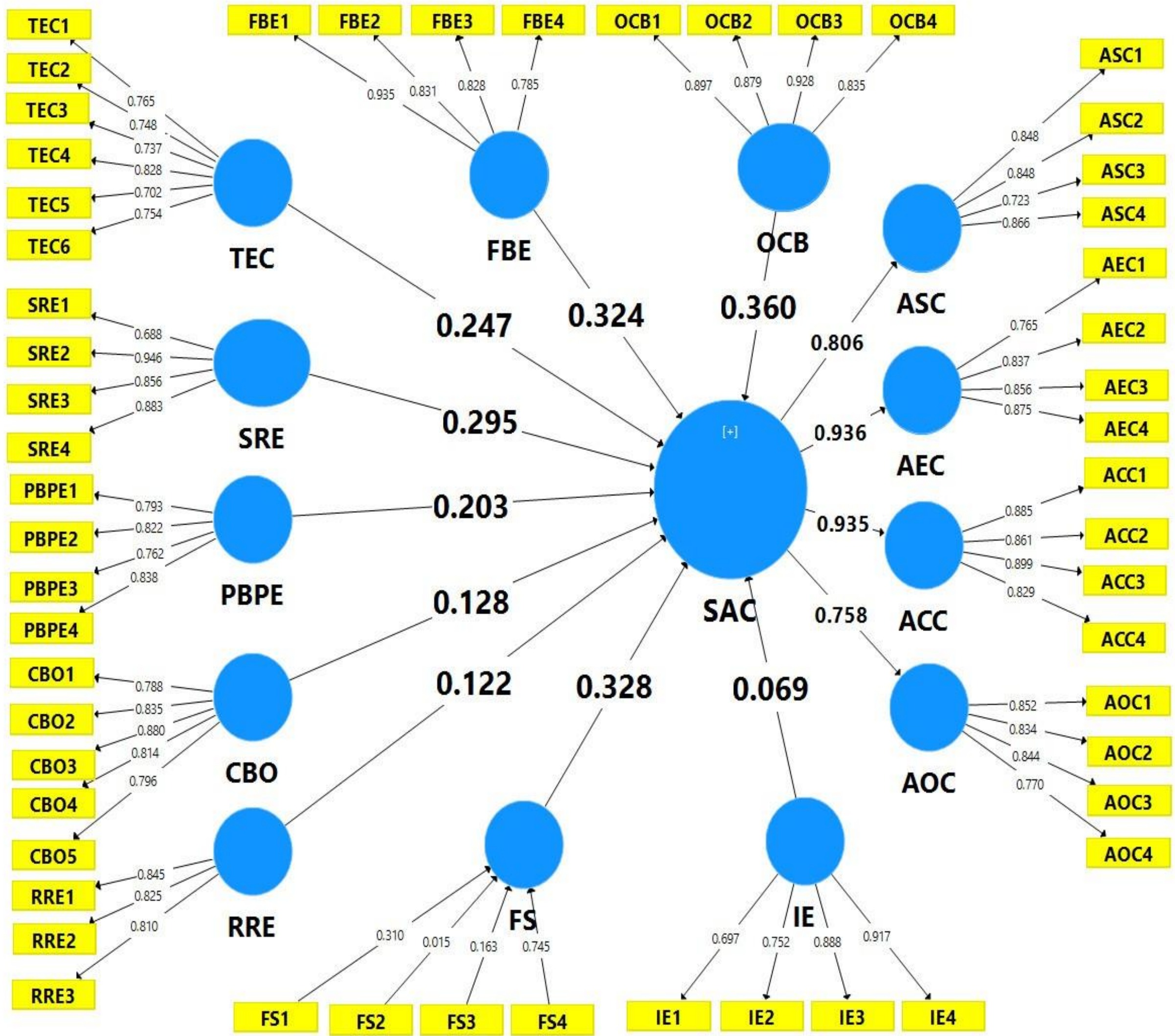

Figure 2. Structural model of influencing factors according to the PLS algorithm.

The results of Bootstrap 5.000:

Figure 3 illustrates a structural model of influencing factors according to Bootstrap 5.000.

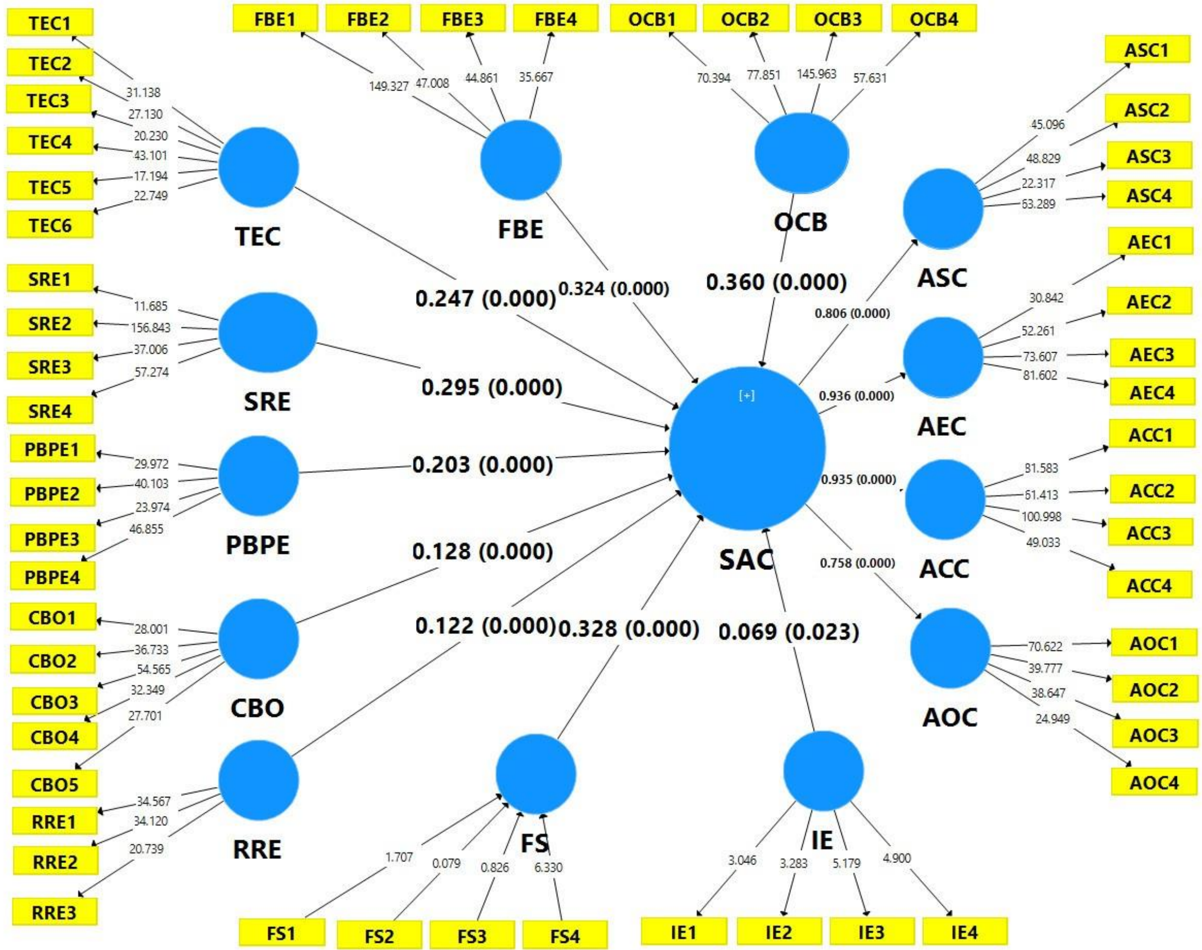

Figure 3. Structural model of influencing factors according to Bootstrap 5.000.

5.5.3. *Management Implications from Research Results*

According to the results of the research model, there are 09 factors that directly and similarly affect the access to capital of SMEs in Vietnam (SAC) namely financial statements (FS), characteristics of the business owner (CBO), operational characteristics of the enterprise (OCE), financial behaviour of the enterprise (FBE) institutional environment (IE), capacity of the enterprise (TCE), production and business plan of the enterprise (PBPE), social relations of the enterprise (SRE) and risk resilience of the enterprise (RRE). This is an important basis for the research team to propose management implications corresponding to each factor affecting SMEs in Vietnam as follows:

First, for factors belonging to the operational characteristics of small and medium-sized enterprises:

SMEs must enhance their capital structure, increase the number of members and shareholders who contribute capital and focus on the collected portion of retained earnings in order to increase their equity capacity and their access to capital. Increasing equity and self-financing is also the basis for SMEs to increase access to capital from organizations. SMEs must focus on managing the components of the production and business cycle such as inventory and receivables management in addition to building equity. Other sources of offset capital such as supplier credit should also be considered.

Second, small and medium-sized businesses (SMEs) may better control information and gain the trust of lending and financing institutions by closely adhering to the financial reporting system. This is evident in the elements included in SMEs' financial statements. To do this, SMEs need to pay attention to the following issues: (i) Professionalization in the organization of accounting apparatus, increasing transparency in financial statements.

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(ii) Enhancement of payment transactions for economic activities through lending and financing institutions. This is very beneficial for SMEs in ensuring regulations on loan disbursement and on the other hand, helping SMEs establish professional relationships with lending and financing institutions. It is necessary to promote non-cash transactions especially when SMEs access loans from banks for debt payments and staff salaries. This contributes to improving SMEs' transparency and financial capacity when applying for loans from lending and financing institutions. (iii) SMEs should conduct annual independent audits of financial statements to improve transparency in accounting books and financial statements and create credibility for lending and financing institutions.

Third, for factors belonging to the characteristics of owners and financial behaviour of small and medium-sized enterprises: (i) It is necessary to improve the organizational and management skills and leadership capacity of SME owners because these are the operators directly determining the existence and development of enterprises and are the legal representatives of the enterprise that commits and enforces debt repayment obligations. The qualifications of business leaders are the criteria used by lending and financing organizations to decide on loans to SMEs. (ii) It is necessary to have the efforts of SME owners themselves and the support of relevant agencies and organizations in which the proactive and active efforts of managers and operators of enterprises are decisive factors in improving management qualifications and experience. SME owners should actively participate in vocational training courses trained by experts and participate in relevant organizations and associations. (iii) SME owners must regularly update legal documents related to business activities and carefully find out information related to capital financing sources that their enterprises need such as loan interest rates, collateral etc.

Fourth, for factors belonging to the social relationships of small and medium-sized enterprises: (i) Strengthening joint ventures and links with reputable large enterprises in establishing, administering and implementing investment projects; supply of inputs and consumption of enterprise products. Cooperate to become a supplier of raw materials, perform subcontracting, gradually form a supporting industry network, and especially create a satellite network for product distribution. (ii) It is necessary to link with micro-enterprises in the chain model to have mutual support in production when the output of the enterprise is the input factor of another enterprise. This will limit the amount of capital required for a short time. (iii) Join associations and associations with businesses to use resources, reduce costs and increase competition. (iv) Strengthen the establishment of professional and social relationships with lending and financing institutions such as by opening transaction accounts, enhancing payment activities, transferring salaries through banks, etc.

Fifth, for factors belonging to the capacity of small and medium-sized enterprises: (i) Self-improvement of management mechanisms, business administration capacity, financial management in the direction of transparency and clarity, investment in technological innovation, improvement of competitiveness, business restructuring to focus on key production and business segments with strengths and stable cash flow generation, strengthening the linkage in business especially between enterprises with the same industry and business field, so that businesses can support and supplement resources to overcome difficult periods and develop sustainably, etc. (ii) Application of 4.0 technology in improving SME capacity in many aspects to both help enterprises save fees and improve SME initiative.

Sixth, for factors in the production and business plan and risk adaptation of small and medium-sized enterprises: (i) Determine the appropriate capital structure to serve the set needs including the ratio of own capital to loans, financing from lending institutions, financing capital or collecting money in advance from customers, hiring and buying finance, issuing bonds, shares, etc. (ii) Have a periodic repayment strategy to always be proactive in borrowing and financing and avoid a bad credit history that causes SMEs to have poor credit ratings that will affect access to capital. (iii) It is necessary to develop long-term business plans and strategies from time to time so that SMEs can take initiative with their capital sources and avoid risks.

Seventh, concerning environmental factors and macroeconomic policies: (i) The government should diversify financial support programs for SMEs. Specifically, the government and the state bank need to promote the role of several funds using state capital such as the credit guarantee fund, the export support fund, the SME development assistance fund etc. (ii) The government needs to strengthen the unsecured loan credit package. Lending and financing institutions always consider that the loan must be safe so the lending process must be strict.

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6. CONCLUSION

This research result shows nine factors affecting SMEs' access to capital including financial statements, characteristics of business owners, characteristics of enterprises, financial behaviour of enterprises, institutional environment, capacity of enterprises, production and business plan of the enterprise, social relations of the enterprise and risk adaptability of the enterprise. Simultaneously, the qualities of business owners, financial statements, the financial conduct of the firms and the social relationships of the enterprises are among the elements mentioned above that have a significant impact on SMEs' access to finance. This shows that most factors strongly affecting SMEs' access to capital in Vietnam are internal factors of SMEs.

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INSTITUTIONAL REVIEW BOARD STATEMENT

The Ethical Committee of the Thu Dau Mot University, Vietnam has granted approval for this study on 28 April 2023 (Ref. No. NNC.21.3.001).

TRANSPARENCY

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

Conceptualization, H.T.N. and N.T.N.; methodology, T.L.H.N. and N.T.N.; software, Q.T.D. and N.T.N. formal analysis, investigation, data curation, writing original draft preparation, H.T.N, N.T.N., T.L.H.N. and Q.T.D.; writing review and editing, N.T.N. All authors have read and agreed to the published version of the manuscript.

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