Factors affecting access to finance for small and medium-sized agricultural enterprises in Vietnam

check for updates

🅳 **Dao Thi Huong**[1+]
🅳 **Nguyen The Anh**[2]

[1]Thuyloi University, Vietnam.
Email: huongdao@tlu.edu.vn
[2]Academy of Finance, Vietnam.
Email: nguyentheanh@hvtc.edu.vn

(+ Corresponding author)

ABSTRACT

This study explores the financial accessibility challenges faced by small and medium-sized enterprises (SMEs) in Vietnam's agricultural sector, a critical component of the national economy. This study reveals the various obstacles that hinder small and medium enterprises (SMEs) from accessing financial assistance. It highlights the need to have a thorough comprehension of how factors such as financial infrastructure, government laws, risk management, market connections, and financial literacy impact SMEs' ability to access finance. The research suggests that enhancing financial literacy, along with developing a solid financial infrastructure and supportive government policies, is crucial for SMEs. It highlights the importance of tailored banking services, strategic government actions, effective risk management, and integration into market linkages to improve SMEs' financial inclusion. The findings advocate for a holistic approach to address these challenges, offering insights for policymakers, financial institutions, and stakeholders in the SME ecosystem. The study offers practical guidance for enhancing the economic resilience of agricultural SMEs in Vietnam and other developing economies. It proposes strategies to strengthen financial infrastructure, support policies, and promote financial literacy. This study contributes valuable insights to both academic research and practical applications.

Contribution/ Originality: This study presents an innovative examination of the obstacles faced by (SMEs) in Vietnam's agriculture industry in terms of financial accessibility. The proposed method promotes a comprehensive strategy that encompasses the improvement of financial infrastructure, literacy, and the implementation of supporting policies. The significance of this contribution resides in its provision of a pragmatic framework for enhancing economic resilience as well as helpful perspectives for policymakers and stakeholders operating within comparable emerging nations.

1. INTRODUCTION

Vietnam's agricultural landscape, characterized by its diverse cultivation of crops and livestock, is a cornerstone of the nation's economic fabric and a testament to its rich agricultural heritage (Hayton, 2020). Within this vibrant sector, small and medium-sized enterprises (SMEs) emerge as pivotal players, driving economic growth, spurring innovation, and playing a crucial role in maintaining food security (Alharbi, Kanu, & Mamman, 2015). Despite their indispensable contribution, these enterprises frequently grapple with a critical challenge: financial access. This barrier threatens their operational viability and impedes their potential for expansion and innovation (Mujeri, 2015). This study aims to find the complex factors that affect the ability of small and medium-sized agricultural

businesses in Vietnam to obtain important financial resources. This highlights a significant gap in the current body of knowledge and practice regarding agricultural finance.

The research's importance stems from the stark contrast between the agricultural sector's vital role in Vietnam's economy and the financial access challenges that SMEs within this sector face (Harvie, 2004). By delving into the economic, regulatory, and socio-cultural factors that shape financial access, this study aims to provide a detailed understanding of the financial realities confronting agricultural SMEs in Vietnam (Thornton, Ribeiro-Soriano, & Urbano, 2011). It examines the influence of banking infrastructure, regulatory frameworks, government policy interventions, risk management perceptions, financial literacy, and the role of market linkages and socio-cultural practices in shaping the financial landscape for these enterprises.

The important role that banking infrastructure and the regulatory environment play in how easy it is for small businesses to do financial transactions shows how important it is to have easy access to and support for banking services and a regulatory policy framework that works well for businesses (St-Pierre, Foleu, Abdulnour, Nomo, & Fouda, 2015; Zarrouk & Ayachi, 2009). Additionally, the study underscores the impact of government policies, such as subsidies, credit guarantees, and grants, on enhancing or restricting financial access for these enterprises (Grilli, Mazzucato, Meoli, & Scellato, 2018).

Financial institutions identify risk management and their perceptions of risk as key factors influencing lending practices and financial access, necessitating a deeper exploration of how these perceptions and the effectiveness of risk mitigation strategies affect agricultural SMEs' ability to secure financing (Borio & Zhu, 2012; Pascaris, Schelly, Burnham, & Pearce, 2021). Furthermore, the research highlights the importance of financial literacy in empowering SME owners and managers with the knowledge and skills required to navigate financial challenges effectively (Nunoo & Andoh, 2011). It investigates how market linkages influence the availability of financial resources.

This comprehensive exploration of financial access for agricultural SMEs in Vietnam aims to bridge a significant research gap by offering a nuanced understanding of the multifaceted factors that impact these enterprises' financial capabilities. This research's significance lies in its ability to inform policymakers, financial institutions, and the agricultural community about the complexities of financial access within the agricultural sector. By elucidating the various determinants of financial access, the study seeks to facilitate the development of targeted interventions and policies designed to enhance financial inclusivity and foster sustainable growth for SMEs in Vietnam's agricultural sector. This endeavor is not merely academic; it presents a pragmatic roadmap to strengthen the financial foundations of Vietnam's agricultural SMEs, thereby ensuring their growth, innovation, and contribution to national food security and economic prosperity.

2. LITERATURE REVIEWS

2.1. Small and Medium-sized Agricultural Enterprises in Vietnam

The economic trajectory of Vietnam, particularly post-Doi Moi reforms initiated in 1986, underscores the transformative role small and medium-sized enterprises (SMEs) have played, especially within the agricultural sector, in propelling the country into a middle-income economy (Harvie, 2004; Revilla Diez, 2016). This systematic review endeavors to consolidate insights from various scholarly works, focusing on the pivotal impact of these SMEs on Vietnam's economic landscape and the multifaceted challenges they encounter, particularly in securing financial resources.

Vital to understanding the landscape in which these SMEs operate is the legal framework established by Vietnam's SME Support Law (Law 04/2017/QH14), which categorizes SMEs based on employee count, total revenues, and total capital (Chowdhury et al., 2022). Vietnam's SME Support Law (Law 04/2017/QH14) categorizes SMEs based on quantifiable parameters such as employee count, total revenues, and total capital (Chowdhury et al., 2022). The law identifies micro-enterprises as those with total revenue or capital below VND (The official currency of Vietnam) 3 billion and a workforce of up to 10 employees; small enterprises with total

revenue or capital below VND 50 billion and 11 to 100 employees; and medium-sized enterprises with total revenue or capital below VND 300 billion and staff ranging from 101 to 200 employees. This classification not only delineates the operational scope of these enterprises but also clarifies their regulatory context, laying the groundwork for targeted policy support and intervention.

Following the initiation of the Doi Moi reforms in 1986, Vietnam has experienced a profound transformation, evolving into a middle-income economy with small and medium-sized enterprises (SMEs) playing a pivotal role in this development (Revilla Diez, 2016). These enterprises have been instrumental in driving structural changes across the economy, notably facilitating labor migration from the agricultural sector to the manufacturing industry, underscoring the critical analysis of SMEs' evolving roles and the challenges they confront in this process (Gries & Naudé, 2010).

The impact of SMEs on Vietnam's economy extends well beyond mere economic contributions. They are vital agents of structural transformation, fostering significant labor shifts from agriculture to manufacturing, thereby highlighting their evolving roles and the complexities of their challenges. This emphasizes their indispensable contribution to sustainable economic transformation.

In agriculture, SMEs are essential in promoting economic development, enhancing rural sustainability, and ensuring food security. Characterized by their modest scale and traditional farming methods, these enterprises stand out from their larger counterparts, bringing to light their unique needs and the specific challenges they face, particularly in terms of accessing financial resources (Loan, Xuan, & Nam, 2023; Poulton, Dorward, & Kydd, 2010).

Scholarly research has explored agricultural SMEs' obstacles in securing financial resources, revealing an intricate network of economic, regulatory, social, and technological factors. These elements collectively forge the financial landscape these enterprises navigate. Researchers identify the banking infrastructure, regulatory frameworks, risk perceptions, financial literacy, and integration into market linkages as crucial factors that either facilitate or impede access to finance (Borio & Zhu, 2012; Manzoor, Wei, & Sahito, 2021; Omri, Chtourou, & Bazin, 2022).

2.2. Factors Affecting Access to Finance for SMEs

Financial Infrastructure: As highlighted by Lee, Sameen, and Cowling (2015) this review aggregates findings from both scholarly and industry analyses to elucidate the correlation between the quality of financial infrastructure and its influence on SME funding and, by extension, financial literacy and education, a relationship further explored by Mc Namara, Murro, and O'Donohoe (2017).

Central to this discourse is investigating the institutional framework and the spectrum of services that facilitate capital flow and contribute to businesses' financial knowledge base. Research by Di Giovanni (2005) and Kumar and Rao (2015) probes into the adequacy of these frameworks and services in bolstering SMEs' access to financial resources and literacy. The variance in the impact of financial infrastructure across different regions and countries, as detailed in the comparative studies by Palacín-Sánchez and Di Pietro (2016) underscores the nuanced influence of financial systems on SME financing and education.

SME-specific banking services, such as favorable loan conditions and specialized financial advisory services, receive particular attention. The works of De la Torre, Pería, and Schmukler (2010) and Uzzi (1999) assess how these custom services affect SMEs' borrowing experiences and satisfaction with banking relationships, thereby contributing to their financial acumen. Furthermore, Bruton, Khavul, Siegel, and Wright (2015) and Mullineux and Murinde (2003) critically evaluate the role of alternative financial institutions like microfinance in promoting financial inclusivity and education for smaller or higher-risk SMEs.

Kumar, Phani, Chilamkurti, Saurabh, and Ratten (2023) argue that a robust financial infrastructure can simplify lending processes and foster reciprocal trust between financial institutions and SMEs. Conversely, Quartey,

Turkson, Abor, and Iddrisu (2017) illuminate the negative consequences of infrastructural inadequacies, such as limited access to finance and increased borrowing costs, affecting SME growth and financial literacy.

This review corroborates the essential need for a comprehensive and well-structured financial infrastructure to facilitate SMEs' access to finance and significantly enhance their financial literacy and education. It implores policymakers and financial institutions to understand these dynamics profoundly (Wonglimpiyarat, 2011). This insight is crucial for crafting targeted policies and interventions to strengthen the financial ecosystem, thereby supporting the growth and development of SMEs and improving their financial literacy and education, highlighting the intricate role financial infrastructure plays in the broader economic and educational spheres.

Government Policies and Support: As highlighted by Osano and Languitone (2016) this review synthesizes findings from scholarly studies to illustrate the multifaceted impact of regulatory frameworks and government interventions on enhancing financial literacy and education for SMEs. Research into the regulatory environment established by governments reveals its profound impact on SME operations, particularly financial literacy and the capacity to secure funding. Chuong et al. (2020) offer an in-depth examination of licensing requirements, interest rate policies, and compliance standards, assessing how these regulatory aspects facilitate or hinder SMEs' financial knowledge and access. This analysis includes a discussion of bureaucratic barriers that obstruct SMEs' efforts to gain financial support and education.

Furthermore, researchers scrutinize the effectiveness of government initiatives like subsidies, grants, and credit guarantee schemes in easing financial constraints and enhancing financial literacy among SMEs. Baker, Judge, and Klein (2022) investigate these interventions, demonstrating their potential to improve SMEs' creditworthiness, contribute to their financial education, and reduce lending risks.

The literature also critically evaluates the efficacy of government policies in meeting SMEs' evolving educational needs within the changing economic landscape. Scholars like Lewis and Wiser (2007) and Pressey, Tzokas, and Winklhofer (2007) advocate for the ongoing revision of policies to support SMEs' financial literacy and adapt to broader economic conditions. Comparative studies provide insights into best practices and areas needing policy enhancement.

Additionally, Saad, Hagelaar, Van Der Velde, and Omta (2021) and Song, Yu, and Lu (2018) explore the impact of government interventions on SME lending practices, highlighting how these actions support SMEs' financial stability and literacy.

The body of literature underscores the crucial influence of government policies and support mechanisms in shaping SMEs' access to finance and significantly enhancing their financial literacy and education. It stresses the importance for policymakers and stakeholders to possess a nuanced understanding of these interactions. Such comprehensive knowledge is vital for refining strategies and developing targeted interventions to bolster financial literacy and resilience among SMEs, thereby contributing to their sustainable growth within the economic ecosystem.

Risk Perception and Mitigation: Financial institutions' perception and mitigation of risk have a significant and positive impact on SMEs' financial literacy and education and are thoroughly explored within the scholarly realm, as underscored by Asgary, Ozdemir, and Özyürek (2020). This review carefully breaks down the research on the things that affect how people think about risk, like how vulnerable small businesses are and how uncertain the market as a whole is, and how these things affect financial decisions like loan approvals, interest rates, and loan terms, just like Grant, Edgar, Sukumar, and Meyer (2014) did.

Significantly, the research scrutinizes the effectiveness of risk mitigation tools such as collateral requirements, insurance policies, and credit guarantees (Ibtissem & Bouri, 2013). These studies evaluate how such tools reduce perceived risks and bolster SMEs' creditworthiness, impacting their financial literacy by educating them on the nuances of financial risk management while navigating the balance between rigorous risk controls and maintaining accessible finance for SMEs.

A pivotal focus of the literature is on the role of risk perception in the credit evaluation process for SMEs (Grant et al., 2014). Analysts like Hillary (2017) delve into the complex negotiation financial institutions undertake between meeting SMEs' financial needs and safeguarding their interests, which inherently educates SMEs about the financial ecosystem and risk management strategies.

Aerts et al. (2018) thoroughly examine the dynamics of risk assessment and mitigation, including an analysis of the factors that influence financial institutions' risk evaluations and the effectiveness of various mitigation strategies. The literature frequently proposes enhancements to risk assessment and mitigation practices to support SMEs more effectively.

In summary, the academic discourse emphasizes the importance of understanding risk perception and mitigation in fostering financial literacy and education among SMEs. It highlights the necessity for stakeholders, policymakers, and financial institutions to grasp these dynamics fully (Vasi & King, 2012). This understanding is crucial for developing strategies and policies designed to strengthen the financial ecosystem for SMEs. It aims to achieve a balanced approach to risk management by simultaneously facilitating SMEs' sustainable economic growth and enhancing their financial literacy and education, thus preparing them to better navigate the financial challenges of entrepreneurship. Financial Literacy and Education: The market linkages and value chains that positively and meaningfully impact financial literacy and education among SMEs are increasingly supported by recent scholarly investigations. This review methodically synthesizes findings from research exploring the influence of SMEs' integration into market linkages and value chains on their financial management capabilities and access to resources, as initially proposed by Eniola and Entebang (2016). According to research, financial literacy and education are critical for SMEs in effectively leverage market linkages and value chains. Studies by Gao, Sung, and Zhang (2013) demonstrate that an in-depth understanding of financial principles and risk management is crucial for SMEs to engage successfully with financial institutions and improve their creditworthiness, thereby facilitating access to finance. This connection underscores how integration into broader market systems enhances financial knowledge and competencies among SME owners and managers. Financial education programs' role in equipping SME entrepreneurs with essential financial management skills is also a focal point of analysis (Aassouli & Ahmed, 2023). Ehrhart and Brigham (2011) scrutinize these programs for their effectiveness in covering fundamental topics such as budgeting, cash flow management, and investment strategies, highlighting their importance in promoting financial literacy among SMEs. Furthermore, the literature delves into more complex financial knowledge critical for SMEs, such as comprehending intricate financial products and strategies for navigating credit markets (Hussain, Salia, & Karim, 2018). Advanced financial literacy empowers SMEs to make informed decisions, optimizing their financial operations and strategies within market linkages and value chains.

As financial landscapes evolve, the demand for sophisticated financial literacy and education among SMEs becomes more pronounced (Eniola & Entebang, 2017). Research emphasizes the need for SME owners to adapt to these changes, focusing on enhancing their integration into market linkages and value chains (Weaven et al., 2021).

The body of literature collectively illustrates the interconnection between financial literacy, education, and enhanced access to finance through market linkages and value chains. The literature suggests a close link between advancements in financial literacy and education and improved finance access, which in turn strengthens the resilience and sustainability of SMEs within these networks (Hussain et al., 2018).

In conclusion, academic work highlights the critical role of market linkages and value chains in improving financial literacy and education among SMEs. They advocate for strategic educational programs that enhance SME owners' financial management skills, facilitating their successful navigation of financial challenges and bolstering their growth and stability within the sector (Hussain et al., 2018). Market Linkages and Value Chains: As highlighted by Baumüller et al. (2023) the interconnection between market linkages, value chain integration, and their influence on financial literacy and education among small and medium-sized enterprises (SMEs) emerges as a

pivotal theme in the discourse on SME finance. This review aggregates insights from a range of scholarly works to illuminate how these factors collectively enhance SMEs' financial acumen and growth trajectories.

Ren, Eisingerich, and Tsai (2015) found that market access plays a critical role in revenue generation and overall financial health, garnering significant attention in the literature. This, in turn, directly influences SMEs' ability to secure external finance, highlighting the importance of market connections in fostering financial literacy and enabling informed financial decisions. Integrating SMEs into value chains through partnerships with suppliers, manufacturers, and distributors is also examined. Carissimi, Creazza, Pisa, and Urbinati (2023) discuss below how such integration strengthens SMEs' credibility and enhances their opportunities for financial support, including obtaining favorable financing terms from financial institutions. This integration serves as a platform for SMEs to gain financial knowledge and navigate financial relationships more effectively.

Further, the literature explores the advantages of heightened visibility for SMEs within value chains. Nkansah-Sakyi (2023) and Tsambou and 1er Ndokang Esone (2016) note that increased visibility makes SMEs more attractive to financiers, easing access to a broader spectrum of financing options. As SMEs engage with diverse financial products and services, this visibility leads to enhanced financial literacy.

On the other hand, the literature addresses barriers to market access and suboptimal value chain integration, such as constrained growth opportunities and limited financial options. Proposed strategies aim to mitigate these challenges by bolstering SMEs' integration into markets and value chains.

The complex relationship between market linkages, value chains, and financial literacy is thoroughly explored, emphasizing how these elements are foundational to SMEs' financial resilience and sustainability. The synthesis of this literature underscores the criticality of market linkages and value chain integration in improving access to finance and significantly advancing financial literacy and education among SMEs.

In conclusion, the research posits that deepening SMEs' involvement in market linkages and value chains is indispensable for enhancing their financial literacy and education. This understanding is crucial for stakeholders, policymakers, and financial institutions as it guides the formulation of strategies to strengthen SMEs' market presence and financial knowledge, thereby supporting their sustained growth and stability.

Based on literature reviews, the following research hypotheses are proposed:

Hypothesis 1 (H₁): Financial infrastructure impacts financial literacy and education positively and meaningfully.

Hypothesis 2 (H₂): Government policies and support positively and meaningfully impact financial literacy and education.

Hypothesis 3 (H₃): Risk perception and mitigation positively and meaningfully impact financial literacy and education.

Hypothesis 4 (H₄): Market linkages and value chains positively and meaningfully impact financial literacy and education.

Hypothesis 5 (H₅): Financial literacy and education have a positive and meaningful impact on access to finance for SMEs.

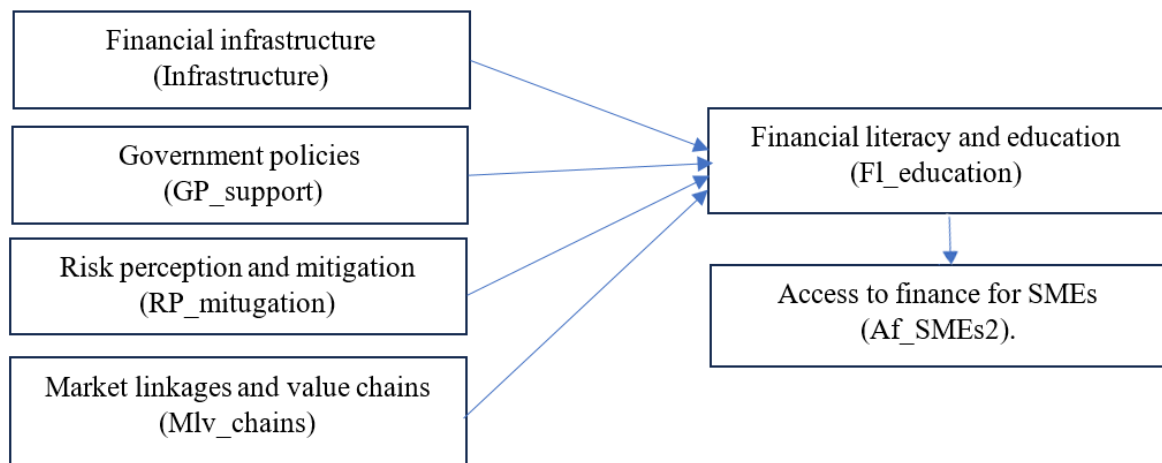Based on the research hypotheses, the following research model is proposed (Figure 1):

Figure 1. Proposed research model.

3. METHODOLOGY

3.1. Instrumentation

The questionnaire's development was based on a comprehensive review of relevant literature and refined through consultations with two experts in corporate finance (Oosterveld, 1996). Cheung (2021) structured it into two sections for distinct research purposes. The first section gathered demographic information about the respondents, while the second section was designed to collect specific data pertinent to the research objectives (Appendix 1).

A rigorous, two-step validation process was employed to ensure the reliability and appropriateness of the questionnaire. Initially, a pilot survey was conducted with 40 individuals, leading to minor adjustments to better tailor the questionnaire to the characteristics of the research subjects. Further refinements were made following consultations with subject matter experts, culminating in finalization of the questionnaire for the main survey (Willimack, Lyberg, Martin, Japec, & Whitridge, 2004).

3.2. Participants

The research focused on the owners of small and medium-sized agricultural enterprises situated in the northern regions of Vietnam, particularly within the provinces of Hai Duong, Hung Yen, Bac Giang, and Ha Nam. These provinces were chosen for their significant agricultural output and potential. Participant selection was carefully aligned with the research objectives to ensure the sample's representativeness within the population of interest.

200 participants were selected using a random sampling method to fulfill the requirements for conducting robust Structural Equation Modeling (SEM) analysis (Willimack et al., 2004). The research team distributed the questionnaires in person to ensure accurate data collection and achieve a 100% response rate. The research team provided clear instructions for participants to complete the questionnaires using a pencil, enabling immediate data collection (Table 1).

Ethical considerations were paramount throughout the study. All participants were informed about the study's objectives and provided their informed consent before participating. All responses were treated with the highest level of confidentiality to protect their privacy and sensitive information. Measures were implemented to guarantee anonymity and data security, adhering to ethical standards in research (Shrader-Frechette, 1994).

Table 1. Demographic characteristics of survey participants.

Demographic information		Gender			
		Female		Male	
		Count	Row N %	Count	Row N %
Age	Over 45 years old	7	24.1%	22	75.9%
	31 35 years old	17	30.4%	39	69.6%
	36 40 years old	31	33.7%	61	66.3%
	40 45 years old	10	43.5%	13	56.5%
Education	Bachelor	18	33.3%	36	66.7%
	Master	28	30.8%	63	69.2%
	PhD	11	29.7%	26	70.3%
	Vocational	8	44.4%	10	55.6%
Business type	Agroforestry and horticulture business	13	30.2%	30	69.8%
	Aquaculture business	15	37.5%	25	62.5%
	Crop production business	26	29.5%	62	70.5%
	Livestock farming business	11	37.9%	18	62.1%
Years in operation	1 5 years	19	39.6%	29	60.4%
	10 15 years	21	29.2%	51	70.8%
	6 10 years	14	35.0%	26	65.0%
	More than 15 years	11	27.5%	29	72.5%

4. RESULTS

4.1. Reliability Analysis

Cronbach's alpha assesses the internal consistency of survey questionnaires, reflecting the degree to which items cohesively measure the same concept. A high Cronbach's alpha score signals the questionnaire's reliability, whereas a lower score suggests a need for adjustment or improvement. The research's aims, the nature of the data, and the survey's target demographic influence the interpretation of Cronbach's alpha results (Fornell & Larcker, 1981). Typically, researchers deem a score of 0.7 or above acceptable, as it demonstrates solid internal consistency (Nunnally & Bernstein, 1994). Scores ranging from 0.6 to 0.7 might be permissible in certain contexts but could highlight issues with some items not aligning well with the measured construct, necessitating possible revisions (Hair, Black, Babin, Anderson, & Tatham, 2006). Scores below 0.6 often suggest a lack of cohesion among the items, indicating that the questionnaire may require significant refinement (Cortina, 1993).

Table 2. Summary of reliability.

Scales	Number of variables observed	Reliability coefficients (Cronbach alpha)	Composite reliability (CR)	Average variance extracted (AVE)
GP_support	4	0.724	0.726	0.400
Mlv_chains	4	0.793	0.795	0.492
RP_mitugation	4	0.737	0.738	0.414
infrastructure	4	0.714	0.744	0.424
Fl_education	4	0.726	0.726	0.400
Af_SMEs2	4	0.682	0.681	0.350

CR assesses the coherence and reliability of items in a scale or questionnaire, determining if a set of items accurately measures a single construct or latent variable (Bagozzi & Yi, 1988; Hair et al., 2006). It is calculated by comparing the variance captured by the construct with the total variance, aiming to quantify how much of the observed variance reflects the intended construct versus measurement error or other variabilities (Raykov, 1997; Sijtsma, 2009). Generally, researchers regard a CR value of 0.70 or above as satisfactory, indicating adequate internal consistency for the measured construct, although this benchmark may vary depending on the specific context of the research (Nunnally & Bernstein, 1994; Reise, Bonifay, & Haviland, 2013).

AVE evaluates the variance a construct explains in its items, acting as a gauge for construct reliability. Distinct from CR, AVE focuses on the shared variance among items and is pivotal in confirmatory factor analysis (CFA) and SEM. It calculates the mean of the squared loadings of items on their construct relative to the total item variances and measurement error, aiming to capture the extent of variance explained by the construct (Fornell & Larcker, 1981; Hair et al., 2006). AVE values span from 0 to 1, with higher scores suggesting that the construct accounts for a more significant proportion of item variance. The research framework typically views values of 0.5 or above as acceptable, indicating that the construct reliably measures what it intends to (Hair, Risher, Sarstedt, & Ringle, 2019; Kline, 2015).

Table 2 delineates the outcomes of the reliability and validity assessments conducted on the research questionnaire, as referenced by Hair et al. (2019) and Henseler, Ringle, and Sarstedt (2015). The Cronbach's alpha coefficients, surpassing the 0.7 benchmark for all items, affirm the questionnaire's internal consistency and reliability, in line with Nunnally and Bernstein (1994). Moreover, the composite reliability scores, applicable to constructs with five to eight items, exceeded the requisite 0.70 threshold, as posited by Fornell and Larcker (1981) underscoring the reliability of the structured constructs. Additionally, the analysis revealed that each item's factor loading exceeded 0.7, showcasing strong convergent validity, as supported by Hair et al. (2019) and Henseler et al. (2015). With an average variance extracted (AVE) of approximately 0.45 for all items, meeting the acceptable

standard for further examination set by Fornell and Larcker (1981) these findings corroborate the reliability and validity of the questionnaire items for the intended analysis of the research model.

4.2. Factor Analysis

Factor analysis serves as a key statistical method in social science research for uncovering latent dimensions or factors among a group of variables. This technique simplifies data analysis by detecting interrelated patterns among variables, thereby condensing them into fewer underlying factors (Gorsuch, 1983). Scree plots and eigenvalue criteria typically guide decisions on the number of factors to extract (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Outcomes from factor analysis can refine research inquiries, hypotheses, and theoretical models (Hair, Anderson, Tatham, & Black, 2010) and shed light on principal factors that elucidate the connections within a dataset (Chen, 2007).

Table 3. Result of factor analysis.

Rotated component matrix						
Variable name	**Component**					
	1	**2**	**3**	**4**	**5**	**6**
Mlv_chains2	0.805					
Mlv_chains1	0.742					
Mlv_chains4	0.717					
Mlv_chains3	0.656					
Rp_mitigation4		0.721				
Rp_mitigation3		0.715				
Rp_mitigation2		0.704				
Rp_mitigation1		0.653				
Infrastructure4			0.767			
Infrastructure2			0.759			
Infrastructure1			0.690			
Infrastructure3			0.611			
Fl_education4				0.758		
Fl_education2				0.709		
Fl_education1				0.616		
Fl_education3				0.525		
Gp_support1					0.729	
Gp_support2					0.715	
Gp_support4					0.705	
Gp_support3					0.603	
Af_SMEs2						0.797
Af_SMEs1						0.624
Af_SMEs4						0.569
Af_SMEs3						0.538
Extraction method: Principal component analysis.						
Rotation method: Varimax with Kaiser normalization.						
a. Rotation converged in 6 iterations.						
b. Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) = 0.870						
c. Bartlett's test of sphericity (Chi-square = 1445.412; df= 276; sig.= 0.000)						
d. Extraction sums of squared loadings = 57.490; Initial eigenvalues = 1.15						

Table 3 displays the outcomes of the factor analysis performed to authenticate the research questionnaire. The Bartlett's test of sphericity yielded a statistically significant result (Sig. = 0.000), with a KMO measure of 0.870, surpassing the 0.5 threshold. This suggests a suitable correlation among the observed variables for factor analysis. The analysis indicated that all variables possess factor loading coefficients of 0.5 or higher, validating the factor analysis's effectiveness. This is in alignment with the established criteria for factor loading significance, which sets 0.3 as the minimum, 0.4 as essential, and 0.5 as a practical level for significance. Moreover, the six extracted factors

explain 57.490% of the total variance, surpassing the 50% threshold, indicating their significant contribution to the data's variance. Additionally, the initial eigenvalues of these factors stand at 1.154, exceeding the critical value of 1.00, confirming the validity of the extracted factors. Altogether, these results affirm the appropriateness and validity of using exploratory factor analysis for analyzing the proposed research model, as supported by Hair et al. (2019) and Tabachnick and Fidell (2013).

4.3. Structural Equation Modeling

Social science research uses SEM, a sophisticated statistical technique, to examine the interrelations among variables within intricate systems (Byrne, 2016). SEM is a type of multivariate analysis that combines regression analysis, factor analysis, and causal modelling. It gives you a way to explain how different factors are related (Arbuckle, 2013; Kline, 2015). Through SEM, researchers can specify equations that quantify latent factors' strength, direction, and influence on variable relationships (Hair et al., 2006). This method stands out for its ability to predict variable outcomes based on alterations in other variables, presenting a significant benefit for theoretical and empirical research (Fornell & Larcker, 1981). SEM is adept at validating theoretical propositions about variable interactions (Bartholomew, 2011) and testing intricate hypotheses within a system's framework. According to Jöreskog and Sörbom (1993) SEM's outputs offer valuable insights into the dynamics of complex systems, aiding in theory and model development. Additionally, SEM facilitates the identification of indirect and mediating effects among variables, enriching the understanding of their direct impacts (Kenny, 2015).

Table 4. Regression weights.

Relationship between variables	Estimate	S.E.	C.R.	P	Accepted/Rejected
Fl_education. <--- Mlv_chains.	0.223	0.075	2.974	0.003	Accepted
Fl_education. <--- RP_mitugation.	0.220	0.090	2.455	0.014	Accepted
Fl_education. <--- Infrastructure.	0.170	0.073	2.344	0.019	Accepted
Fl_education. <--- GP_support.	0.298	0.110	2.716	0.007	Accepted
Af_SMEs2. <--- Fl_education.	0.673	0.127	5.281	***	Accepted

Note: ***p<0.01.

To assess the structural equation model's (SEM) fit, various indices were employed, such as the Chi-Square ($\chi 2$) test, Root-Mean-Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI). For a model to be considered well-fitted, it should exhibit CFI and TLI values of 0.900 or higher and an RMSEA of 0.08 or lower. The results depicted in Figure 2 reveal that the SEM model meets these established criteria. Specifically, the model achieved a Chi-square value of 260.812 with 241 degrees of freedom (p-value < 0.05), a Chi-square/df ratio of 1.082, a CFI of 0.903, a TLI of 0.982, and an RMSEA of 0.020. Table 4 further details the SEM analysis outcomes, elucidating the relationships among the variables. In summary, these findings demonstrate a satisfactory fit of the SEM model to the data, indicating that it accurately reflects the underlying research model.
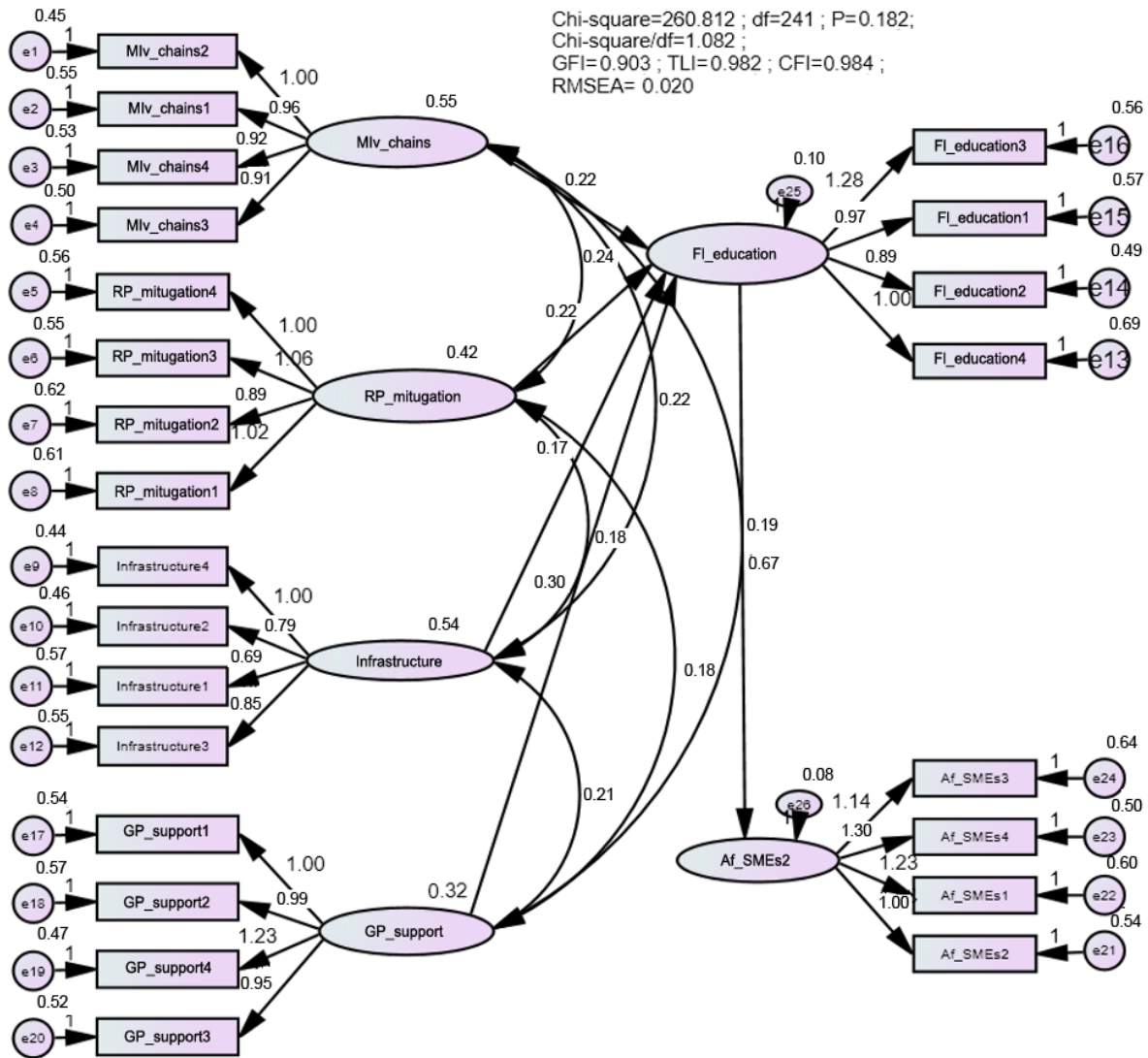
Chi-square=260.812 ; df=241 ; P=0.182;
Chi-square/df=1.082 ;
GFI=0.903 ; TLI=0.982 ; CFI=0.984 ;
RMSEA= 0.020

Figure 2. SEM analysis results.

4.4. Hypothesis test

The results of the SEM analysis, presented in Table 4, provide valuable insights into the factors affecting SMEs' access to finance in Vietnam. Each factor of financial literacy and education and their ultimate impact on access to finance was analyzed individually.

The SEM analysis reveals a positive and statistically significant impact of financial infrastructure on financial literacy and education (β = 0.170, p-value = 0.019). This result confirms the acceptance of H1, suggesting that a robust financial infrastructure positively influences the financial literacy and education levels of SMEs operating in the agricultural sector in Vietnam.

The study finds that government policies and support have a positive and statistically significant impact on financial literacy and education (β = 0.298, p-value = 0.007). This result supports the acceptance of H2, indicating that favorable government policies and support mechanisms contribute significantly to enhancing the financial literacy and education of SMEs in the agricultural sector.

The SEM analysis demonstrates that risk perception and mitigation positively and meaningfully affect financial literacy and education (β = 0.220, p-value = 0.014). This outcome validates the acceptance of H3, highlighting that effective risk management strategies and reduced risk perception contribute to improved financial literacy and education among SMEs in the agricultural domain.

The results reveal a positive and significant impact of market linkages and value chains on financial literacy and education (β = 0.223, p-value = 0.003). This finding affirms the acceptance of H4, suggesting that SMEs' integration into market linkages and value chains positively influences their financial literacy and education levels.

Lastly, the SEM analysis indicates that financial literacy and education have a substantial and statistically significant impact on access to finance for SMEs (β = 0.673, p-value = 0.000). This result corroborates the acceptance of H5, emphasizing that well-developed financial literacy and education programs directly facilitate SMEs' access to finance in Vietnam's agricultural sector.

These research findings collectively underscore the interrelated nature of these factors and their cumulative impact on SMEs' ability to secure financial resources. The study's findings provide empirical support for the significance of these factors in shaping the financial landscape for SMEs in Vietnam's agricultural sector, offering valuable insights for policymakers, financial institutions, and SME owners seeking to enhance financial inclusivity and promote sustainable growth within this vital economic segment.

5. DISCUSSION

This investigation delves into the intricate dynamics that influence access to finance for SMEs in Vietnam's agricultural sector, yielding profound revelations. It demonstrates that robust financial infrastructure plays a crucial role in elevating SMEs' financial literacy and education, underscoring the importance of sustained investment and the adaptation of banking services to meet the needs of rural businesses. This perspective is supported by Weaven et al. (2021) who stress the necessity for infrastructural advancements to aid rural enterprises, despite potential hurdles in extending these efforts to isolated regions.

The study further highlights the beneficial effects of government policies, such as subsidies and credit guarantees, on SMEs' financial acumen. This finding is in harmony with Chuong et al. (2020) who accentuate the essential nature of governmental support for SME growth. However, the enduring impact and viability of such policies remain a topic of ongoing debate.

Additionally, Aassouli and Ahmed (2023) and their advocacy for bespoke risk mitigation strategies align with the importance of risk management in fostering financial literacy among SMEs. This area, however, is not without contention, as the debate on striking an optimal balance between minimizing risk and encouraging entrepreneurial initiatives continues.

The research also indicates that SMEs' participation in market linkages and value chains has a positive impact on their financial literacy and education, suggesting that access to wider markets can enhance financial understanding among SMEs. This aligns with findings from Carissimi et al. (2023) although strategies for facilitating such integration without heightening competitive stress are still being debated.

Importantly, the findings affirm that targeted financial literacy and education programs are instrumental in improving SMEs' access to finance, resonating with Eniola and Entebang (2016) who call for ongoing educational initiatives. This aspect underscores the need for further research into the efficacy of specific educational programs.

This study provides a nuanced understanding of the factors contributing to financial access for SMEs, highlighting areas for continued support and investigation. The insights garnered here not only contribute to academic discourse but also offer practical guidance for policymakers and educators aiming to bolster the financial capabilities of SMEs in the agricultural sector.

6. CONCLUSION

This study has provided critical insights into the factors influencing Vietnam's SMEs' access to finance. Through rigorous SEM analysis, we have examined the impact of each factor on financial literacy and education, as well as their collective influence on finance access within this essential economic segment.

Our findings confirm that a robust financial infrastructure in rural and agricultural areas of Vietnam significantly enhances SMEs' financial literacy and education (Aassouli & Ahmed, 2023). This underscores the importance of ongoing investments in tailored banking services and financial infrastructure (Quartey et al., 2017). Policymakers and financial institutions should prioritize these efforts to strengthen the financial resilience of agricultural SMEs.

The research unequivocally demonstrates that favorable government policies, including subsidies, grants, and credit guarantee schemes, positively impact SMEs' financial literacy and education (Chuong et al., 2020). This highlights the crucial role of government interventions in alleviating financial constraints and empowering SMEs with essential financial knowledge (Chuong et al., 2020).

Effective risk management practices and reduced risk perception among SMEs significantly contribute to improved financial literacy and education (Hillary, 2017). This emphasizes the need for tailored risk mitigation strategies, particularly in agriculture, to enhance SMEs' financial capabilities and decision-making (Palazuelos, Herrero Crespo, & Montoya del Corte, 2018).

The research underscores the importance of market linkages and integration into value chains in enhancing SMEs' financial literacy and education (Baker et al., 2022). As SMEs gain access to broader markets and diverse financial practices, their financial knowledge expands. Initiatives to reinforce market linkages and promote value chain integration are thus beneficial for agricultural SMEs (Wu, Kono, & Nghiem, 2023).

Our study firmly establishes that well-developed financial literacy and education programs directly facilitate SMEs' access to finance (Aassouli & Ahmed, 2023). Informed entrepreneurs with financial acumen engage more effectively with financial institutions and manage their financial affairs (Baker et al., 2022). Continual efforts to provide SMEs access to quality financial education programs are essential (Hussain et al., 2018).

Despite these valuable insights, the study has limitations, primarily due to its focus on Vietnamese agricultural SMEs, which limits generalizability. Additionally, the study's cross-sectional nature prevents establishing causality (Spector, 2019).

For future research, longitudinal studies can assess the long-term impacts of financial infrastructure, policies, risk management, market linkages, and financial education on SMEs' financial resilience and growth (Kurniasari, Lestari, & Tannady, 2023). Comparative studies across sectors and countries can provide a broader perspective on SME finance factors. Exploring the effectiveness of specific policy interventions and financial education programs will offer practical insights for policymakers and SME support organizations as they work to strengthen and enhance the SME financial ecosystem.

REFERENCES

Aassouli, D., & Ahmed, H. (2023). Supporting SMEs financial resilience during crises: A framework to evaluate the effectiveness of financial literacy programs targeting SMEs. *Malaysian Journal of Economic Studies, 60*(1), 105-121. https://doi.org/10.22452/mjes.vol60no1.6

Aerts, J. C., Botzen, W. J., Clarke, K. C., Cutter, S. L., Hall, J. W., Merz, B., . . . Kunreuther, H. (2018). Integrating human behaviour dynamics into flood disaster risk assessment. *Nature Climate Change, 8*(3), 193-199. https://doi.org/10.1038/s41558-018-0085-1

Alharbi, A., Kanu, A. M., & Mamman, A. (2015). *Small and medium-sized enterprises (SMEs) and poverty reduction in Africa: Strategic management perspective.* Cambridge: Cambridge Scholars Publishing.

Arbuckle, J. L. (2013). *Amos version 22.0 computer program.* Chicago, IL: IBM SPSS.

Asgary, A., Ozdemir, A. I., & Özyürek, H. (2020). Small and medium enterprises and global risks: Evidence from manufacturing SMEs in Turkey. *International Journal of Disaster Risk Science, 11*(1), 59-73. https://doi.org/10.1007/s13753-020-00247-0

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74-94.

Baker, T. H., Judge, K., & Klein, A. (2022). Credit, crises, and infrastructure: The differing fates of large and small businesses. *Law Review, 102*, 1353. https://doi.org/10.2139/ssrn.4049321

Bartholomew, D. J. (2011). *Latent variable models and factor analysis: A unified approach* (3rd ed.). Chichester, UK: John Wiley & Sons.

Baumüller, H., Ikpi, U., Jumpah, E. T., Kamau, G., Kergna, A. O., Mose, L., . . . Salasya, B. (2023). Building digital bridges in African value chains: Exploring linkages between ICT use and social capital in agricultural marketing. *Journal of Rural Studies, 100*, 103002. https://doi.org/10.1016/j.jrurstud.2023.03.010

Borio, C., & Zhu, H. (2012). Capital regulation, risk-taking and monetary policy: A missing link in the transmission mechanism? *Journal of Financial Stability, 8*(4), 236-251. https://doi.org/10.1016/j.jfs.2011.12.003

Bruton, G., Khavul, S., Siegel, D., & Wright, M. (2015). New financial alternatives in seeding entrepreneurship: Microfinance, crowdfunding, and peer–to–peer innovations. *Entrepreneurship Theory and Practice, 39*(1), 9-26. https://doi.org/10.1111/etap.12143

Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming.* New York: Routledge.

Carissimi, M. C., Creazza, A., Pisa, M. F., & Urbinati, A. (2023). Circular economy practices enabling circular supply chains: An empirical analysis of 100 SMEs in Italy. *Resources, Conservation and Recycling, 198*, 107126. https://doi.org/10.1016/j.resconrec.2023.107126

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(3), 464-504. https://doi.org/10.1080/10705510701301834

Cheung, A. K. L. (2021). Structured questionnaires in encyclopedia of quality of life and well-being research In (pp. 1-3). Cham: Springer International Publishing.

Chowdhury, S., Dey, P. K., Rodríguez-Espíndola, O., Parkes, G., Tuyet, N. T. A., Long, D. D., & Ha, T. P. (2022). Impact of organisational factors on the circular economy practices and sustainable performance of small and medium-sized enterprises in Vietnam. *Journal of Business Research, 147*(C), 362-378. https://doi.org/10.4324/9781003018551-3

Chuong, P. H., Hung, N. V., Thanh, T. T., Hoa, H. Q., Dat, T. T., & Nam, P. X. (2020). Constraints of small and medium enterprises access to bank loans: Evidence from Vietnam manufacturing firms. *Academy of Accounting and Financial Studies Journal, 24*(1), 1-12.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78*(1), 98-104. https://doi.org/10.1037//0021-9010.78.1.98

De la Torre, A., Pería, M. S. M., & Schmukler, S. L. (2010). Bank involvement with SMEs: Beyond relationship lending. *Journal of Banking & Finance, 34*(9), 2280-2293. https://doi.org/10.1016/j.jbankfin.2010.02.014

Di Giovanni, J. (2005). What drives capital flows? The case of cross-border M&A activity and financial deepening. *Journal of International Economics, 65*(1), 127-149. https://doi.org/10.1016/j.jinteco.2003.11.007

Ehrhart, M. C., & Brigham, E. F. (2011). *Financial management: Theory and practice* (13th ed.). Mason, OH: South-Western Cengage Learning.

Eniola, A. A., & Entebang, H. (2016). Financial literacy and SME firm performance. *International Journal of Research Studies in Management, 5*(1), 31-43.

Eniola, A. A., & Entebang, H. (2017). SME managers and financial literacy. *Global Business Review, 18*(3), 559-576. https://doi.org/10.1177/0972150917692063

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*(3), 272. https://doi.org/10.1037//1082-989x.4.3.272

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50. https://doi.org/10.2307/3150979

Gao, S. S., Sung, M. C., & Zhang, J. (2013). Risk management capability building in SMEs: A social capital perspective. *International Small Business Journal, 31*(6), 677-700. https://doi.org/10.1177/0266242611431094

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.

Grant, K., Edgar, D., Sukumar, A., & Meyer, M. (2014). 'Risky business': Perceptions of e-business risk by UK small and medium sized enterprises (SMEs). *International Journal of Information Management, 34*(2), 99-122. https://doi.org/10.1016/j.ijinfomgt.2013.11.001

Gries, T., & Naudé, W. (2010). Entrepreneurship and structural economic transformation. *Small Business Economics, 34*, 13-29. https://doi.org/10.1007/s11187-009-9192-8

Grilli, L., Mazzucato, M., Meoli, M., & Scellato, G. (2018). Sowing the seeds of the future: Policies for financing tomorrow's innovations. *Technological Forecasting and Social Change, 127*, 1-7. https://doi.org/10.1016/j.techfore.2017.10.021

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2-24. https://doi.org/10.1108/ebr-11-2018-0203

Harvie, C. (2004). The contribution of SMEs in the economic transition of Vietnam. *Journal for International Business and Entrepreneurship Development, 2*(2), 1-16. https://doi.org/10.1504/jibed.2004.007848

Hayton, B. (2020). *Vietnam: Rising dragon.* New Haven and London: Yale University Press.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 1*(43), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Hillary, R. (2017). *Small and medium-sized enterprises and the environment: Business imperatives.* New York: Routledge.

Hussain, J., Salia, S., & Karim, A. (2018). Is knowledge that powerful? Financial literacy and access to finance: An analysis of enterprises in the UK. *Journal of Small Business and Enterprise Development, 25*(6), 985-1003. https://doi.org/10.1108/jsbed-01-2018-0021

Ibtissem, B., & Bouri, A. (2013). Credit risk management in microfinance: The conceptual framework. *ACRN Journal of Finance and Risk Perspectives, 2*(1), 9-24.

Jöreskog, K. G., & Sörbom, D. (1993). LISREL 8: Structural equation modeling with the SIMPLIS command language. *Scientific Software International*, 1-38.

Kenny, D. A. (2015). *Measuring model fit.* Retrieved from http://davidakenny.net/cm/fit.htm

Kline, R. B. (2015). *Principles and practice of structural equation modeling* (4th ed.). New York: Guilford Press.

Kumar, D., Phani, B. V., Chilamkurti, N., Saurabh, S., & Ratten, V. (2023). Filling the SME credit gap: A systematic review of blockchain-based SME finance literature. *Journal of Trade Science, 11*(2/3), 45-72. https://doi.org/10.1108/jts-06-2023-0003

Kumar, S., & Rao, P. (2015). A conceptual framework for identifying financing preferences of SMEs. *Small Enterprise Research, 22*(1), 99-112. https://doi.org/10.1080/13215906.2015.1036504

Kurniasari, F., Lestari, E. D., & Tannady, H. (2023). Pursuing long-term business performance: Investigating the effects of financial and technological factors on digital adoption to leverage SME performance and business sustainability—Evidence from Indonesian SMEs in the traditional market. *Sustainability*, *15*(16), 12668.

Lee, N., Sameen, H., & Cowling, M. (2015). Access to finance for innovative SMEs since the financial crisis. *Research Policy*, *44*(2), 370-380. https://doi.org/10.1016/j.respol.2014.09.008

Lewis, J. I., & Wiser, R. H. (2007). Fostering a renewable energy technology industry: An international comparison of wind industry policy support mechanisms. *Energy Policy*, *35*(3), 1844-1857. https://doi.org/10.1016/j.enpol.2006.06.005

Loan, N. T., Xuan, N. T. T., & Nam, N. K. (2023). Business linkage and performance of small and medium-sized enterprises: A case study of enterprises engaged in exporting agricultural products. *Nurture*, *17*(3), 194-207. https://doi.org/10.55951/nurture.v17i3.302

Manzoor, F., Wei, L., & Sahito, N. (2021). The role of SMEs in rural development: Access of SMEs to finance as a mediator. *Plos One*, *16*(3), e0247598. https://doi.org/10.1371/journal.pone.0247598

Mc Namara, A., Murro, P., & O'Donohoe, S. (2017). Countries lending infrastructure and capital structure determination: The case of European SMEs. *Journal of Corporate Finance*, *43*, 122-138. https://doi.org/10.2139/ssrn.2745148

Mujeri, M. K. (2015). *Improving access of the poor to financial services*. Retrieved from A Report Prepared for the General Economics Division of the Planning Commission to Serve As a Background Study for Preparing the 7th Five Year Plan (2016-2020) of Bangladesh:

Mullineux, A. W., & Murinde, V. (2003). *Handbook of international banking*. Cheltenham: Edward Elgar Publishing.

Nkansah-Sakyi, E. A. (2023). Review on the impact of financial institutions' systems on SMEs' access to finance. *Central European Management Journal*, *31*(2), 304-310.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Nunoo, J., & Andoh, F. K. (2011). *Sustaining small and medium enterprises through financial service utilization: Does financial literacy matter?* Paper presented at the 2012 Annual Meeting, August 12-14, 2012, Seattle, Washington (No. 123418). Agricultural and Applied Economics Association.

Omri, E., Chtourou, N., & Bazin, D. (2022). Technological, economic, institutional, and psychosocial aspects of the transition to renewable energies: A critical literature review of a multidimensional process. *Renewable Energy Focus*, *43*, 37-49. https://doi.org/10.1016/j.ref.2022.08.004

Oosterveld, P. (1996). *Questionnaire design methods*. PhD Thesis, University of Amsterdam, Berkhout Nijmegen, NL,

Osano, H. M., & Languitone, H. (2016). Factors influencing access to finance by SMEs in Mozambique: Case of SMEs in Maputo central business district. *Journal of Innovation and Entrepreneurship*, *5*, 1-16. https://doi.org/10.1186/s13731-016-0041-0

Palacín-Sánchez, M.-J., & Di Pietro, F. (2016). The role of the regional financial sector in the capital structure of small and medium-sized enterprises (SMEs). *Regional Studies*, *50*(7), 1232-1247. https://doi.org/10.1080/00343404.2014.1000290

Palazuelos, E., Herrero Crespo, Á., & Montoya del Corte, J. (2018). Effect of perceived default risk and accounting information quality on the decision to grant credit to SMEs. *Risk Management*, *20*, 121-141. https://doi.org/10.1057/s41283-017-0030-z

Pascaris, A. S., Schelly, C., Burnham, L., & Pearce, J. M. (2021). Integrating solar energy with agriculture: Industry perspectives on the market, community, and socio-political dimensions of agrivoltaics. *Energy Research & Social Science*, *75*, 102023. https://doi.org/10.1016/j.erss.2021.102023

Poulton, C., Dorward, A., & Kydd, J. (2010). The future of small farms: New directions for services, institutions, and intermediation. *World Development*, *38*(10), 1413-1428. https://doi.org/10.1016/j.worlddev.2009.06.009

Pressey, A., Tzokas, N., & Winklhofer, H. (2007). Strategic purchasing and the evaluation of "problem" key supply relationships: What do key suppliers need to know? *Journal of Business & Industrial Marketing*, *22*(5), 282-294. https://doi.org/10.1108/08858620710773413

Quartey, P., Turkson, E., Abor, J. Y., & Iddrisu, A. M. (2017). Financing the growth of SMEs in Africa: What are the contraints to SME financing within ECOWAS? *Review of Development Finance*, *7*(1), 18-28. https://doi.org/10.1016/j.rdf.2017.03.001

Raykov, T. (1997). Estimation of composite reliability for congeneric measures. *Applied Psychological Measurement*, *21*(2), 173-184. https://doi.org/10.1177/01466216970212006

Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment*, *95*(2), 129-140. https://doi.org/10.1080/00223891.2012.725437

Ren, S., Eisingerich, A. B., & Tsai, H.-T. (2015). How do marketing, research and development capabilities, and degree of internationalization synergistically affect the innovation performance of small and medium-sized enterprises (SMEs)? A panel data study of Chinese SMEs. *International Business Review*, *24*(4), 642-651. https://doi.org/10.1016/j.ibusrev.2014.11.006

Revilla Diez, J. (2016). Vietnam 30 years after Doi Moi: Achievements and challenges. *Journal of Economic Geography*, *60*(3), 121-133. https://doi.org/10.1515/zfw-2016-0035

Saad, M. H., Hagelaar, G., Van Der Velde, G., & Omta, S. (2021). Conceptualization of SMEs' business resilience: A systematic literature review. *Cogent Business & Management*, *8*(1), 1938347. https://doi.org/10.1080/23311975.2021.1938347

Shrader-Frechette, K. (1994). *Ethics of scientific research*. Savage, MD: Rowman and Littlefield.

Sijtsma, K. (2009). On the use, the misuse, and the very limited usefulness of Cronbach's alpha. *Psychometrika*, *74*, 107-120. https://doi.org/10.1007/s11336-008-9101-0

Song, H., Yu, K., & Lu, Q. (2018). Financial service providers and banks' role in helping SMEs to access finance. *International Journal of Physical Distribution & Logistics Management*, *48*(1), 69-92. https://doi.org/10.1108/ijpdlm-11-2016-0315

Spector, P. E. (2019). Do not cross me: Optimizing the use of cross-sectional designs. *Journal of Business and Psychology*, *34*(2), 125-137. https://doi.org/10.1007/s10869-018-09613-8

St-Pierre, J., Foleu, L., Abdulnour, G., Nomo, S., & Fouda, M. (2015). SME development challenges in Cameroon: An entrepreneurial ecosystem perspective. *Transnational Corporations Review*, *7*(4), 441-462. https://doi.org/10.5148/tncr.2015.7405

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson.

Thornton, P. H., Ribeiro-Soriano, D., & Urbano, D. (2011). Socio-cultural factors and entrepreneurial activity: An overview. *International Small Business Journal*, *29*(2), 105-118. https://doi.org/10.1177/0266242610391930

Tsambou, A. D., & 1er Ndokang Esone, L. (2016). Cameroon: Characteristics of entrepreneurs and SMME performance. *Entrepreneurship and SME Management Across Africa: Context, Challenges, Cases*, 9-30. https://doi.org/10.1007/978-981-10-1727-8_2

Uzzi, B. (1999). Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing. *American Sociological Review*, *64*(4), 481-505. https://doi.org/10.1515/9780691229270-014

Vasi, I. B., & King, B. G. (2012). Social movements, risk perceptions, and economic outcomes: The effect of primary and secondary stakeholder activism on firms' perceived environmental risk and financial performance. *American Sociological Review*, *77*(4), 573-596. https://doi.org/10.1177/0003122412448796

Weaven, S., Quach, S., Thaichon, P., Frazer, L., Billot, K., & Grace, D. (2021). Surviving an economic downturn: Dynamic capabilities of SMEs. *Journal of Business Research*, *128*, 109-123. https://doi.org/10.1016/j.jbusres.2021.02.009

Willimack, D. K., Lyberg, L., Martin, J., Japec, L., & Whitridge, P. (2004). Evolution and adaptation of questionnaire development, evaluation, and testing methods for establishment surveys. *Methods for Testing and Evaluating Survey Questionnaires*, 385-407. https://doi.org/10.1002/0471654728.ch19

Wonglimpiyarat, J. (2011). The dynamics of financial innovation system. *The Journal of High Technology Management Research*, *22*(1), 36-46. https://doi.org/10.1016/j.hitech.2011.03.003

Wu, Y., Kono, Y., & Nghiem, T. (2023). Adaptive entrepreneurship of MSMEs in transnational agricultural investment: A case of the Taiwanese oolong tea industry in Vietnam. *Available at SSRN 4592164*. https://doi.org/10.2139/ssrn.4592164

Zarrouk, H., & Ayachi, S. (2009). Regulatory environment and banking crises: Case of developing countries. *European Journal of Economics, Finance and Administrative Sciences, 15*(1), 18-31.

Appendix 1. Questionnaire.

Your profile: Please select ONE answer from each statement that best describes you:

Age: ………………. *Education*: ☐ Vocational ☐Bachelor ☐ Master ☐PhD

Business Type: ☐Agroforestry and Horticulture Business ☐Aquaculture Business ☐Crop Production Business ☐Livestock Farming Business

Years in Operation: ☐15 years 10 -15 years ☐6-10 years ☐More than 15 years

This survey aims to identify the factors affecting access to finance for small and medium-sized agricultural enterprises. On this scale, there is no correct or incorrect response. Please read each statement carefully and indicate your level of agreement using a 5-point Likert scale, where 1 corresponds to "Strongly Disagree" and 5 corresponds to "Strongly Agree."

Infrastructure	Financial infrastructure:					
Infrastructure1	Our business has access to a variety of banking services that are tailored to our specific needs.	1	2	3	4	5
Infrastructure2	The financial institutions in our area provide adequate support for agricultural SMEs.	1	2	3	4	5
Infrastructure3	We find accessing financial information and services relevant to our business easy.	1	2	3	4	5
Infrastructure4	Our local financial infrastructure is well-developed and supports our business operations efficiently.	1	2	3	4	5
Gp_Support	**Government policies and support:**					
Gp_Support1	Government policies significantly facilitate our access to financial resources.	1	2	3	4	5
Gp_Support2	We benefit from government grants, subsidies, or credit guarantee schemes for agricultural SMEs.	1	2	3	4	5
Gp_Support3	The regulatory framework in Vietnam supports the growth and financing of SMEs like ours.	1	2	3	4	5
Gp_Support4	We are well-informed about government support programs available for our business.	1	2	3	4	5
Rp_Mitigation	**Risk perception and mitigation:**					
Rp_Mitigation1	We are aware of the financial risks associated with our business operations.	1	2	3	4	5
Rp_Mitigation2	Adequate risk mitigation tools (like insurance) are available and affordable for our business.	1	2	3	4	5
Rp_Mitigation3	Financial institutions understand and fairly evaluate the risks involved in agricultural businesses.	1	2	3	4	5
Rp_Mitigation4	We have strategies in place to manage financial risks effectively.	1	2	3	4	5
Fl_Education	**Financial literacy and education:**					
Fl_Education1	I have a good understanding of financial management principles relevant to our business.	1	2	3	4	5
Fl_Education2	Our management team regularly participates in financial education or training programs.	1	2	3	4	5
Fl_Education3	We are confident in making informed financial decisions for our business.	1	2	3	4	5
Fl_Education4	Our business stays updated with the latest financial management practices and tools.	1	2	3	4	5
Mlv_Chains	**Market linkages and value chains:**					
Mlv_Chains1	Our business is well-integrated into local and/or global agricultural value chains.	1	2	3	4	5
Mlv_Chains2	We have strong market linkages that aid in steady revenue generation.	1	2	3	4	5
Mlv_Chains3	Being part of a value chain has positively impacted our	1	2	3	4	5

access to finance.

Mlv_Chains4	Our market connections have helped us in securing better financial deals and terms.	1	2	3	4	5
Af_SMES	**Access to finance of SMEs**					
Af_SMEs1	We have easy access to loans and other forms of credit.	1	2	3	4	5
Af_SMEs2	The terms and conditions of available financial resources favor our business.	1	2	3	4	5
Af_SMEs3	We can secure financing promptly when needed.	1	2	3	4	5
Af_SMEs4	The financial products available meet the specific needs of our agricultural business.	1	2	3	4	5

Participant's Consent:

- I understand that my participation in this survey is voluntary and that my responses will be kept confidential.

- Name (optional): _____

- Signature: _____

- Date: _____

Thank you for participating in our survey. Your insights are invaluable to our research.