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THE IMPACT OF DIGITAL FINANCE ON THE DEVELOPMENT OF SMALL ENTERPRISES IN VIETNAM

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ABSTRACT

Digital finance encompasses digital banking platforms, electronic payments, Fintech credit, and technology-based financial solutions. The development of digital finance enables businesses to access capital more flexibly and optimize financial operations, creating significant opportunities for small enterprises to overcome traditional financial barriers. Effectively utilizing digital financial tools will be a key factor in helping small businesses not only survive but also thrive in the digital economy era. This study analyzes the content of digital finance and its impact on small business development in two aspects: the level of access to and use of digital finance, and the ability to innovate technology and apply digital finance to business operations. Based on the established theoretical framework, the author surveyed 360 small business managers from three provinces representing the three regions of Vietnam: Bac Ninh province (Northern Vietnam), Ha Tinh province (Central Vietnam), and Hau Giang province (Southern Vietnam). The survey results serve as the basis for the author's research conclusions and discussion of solutions to promote the development of small businesses through digital finance development policies, which are meaningful and appropriate to the socio-economic characteristics of Vietnam.

KEYWORDS: Digital Finance; Small Enterprises; Vietnam.

1. INTRODUCTION

Over the past decades, the development of small enterprises has played a crucial role in Vietnam's economic growth. According to the General Statistics Office (GSO, 2022), small businesses account for over 97% of all businesses, contributing approximately 45% of GDP and creating over 60% of jobs nationwide. Small businesses are not only a major driving force for the economy but also help promote innovation, develop the private sector, and improve workers' incomes (Hung & Quan, 2023). However, despite their significant contributions, small businesses in Vietnam still face many obstacles in their development, particularly difficulties in accessing formal financing due to limitations in collateral, credit history, and the ability to develop long-term financial plans (WB, 2023).

The development of digital finance is creating significant opportunities for small enterprises to overcome traditional financial barriers. Digital finance includes digital banking platforms, electronic payments, Fintech credit, and technology-based financial solutions, enabling businesses to access capital more flexibly and optimize financial operations (Ozili, 2022). Furthermore, digital finance not only provides financial services but also supports businesses in managing cash flow, reducing transaction costs, and expanding markets through e-commerce (Arner, et al., 2020). According to the State Bank of Vietnam (SBV, 2023) report, over 70% of small businesses in Vietnam have accessed or used at least one digital finance service, contributing to increased operational efficiency and competitiveness.

Although numerous studies worldwide and domestically address the impact of digital finance on businesses, there remains a research gap regarding the extent of its influence on the development of small enterprises in Vietnam, particularly in the context of the strong digitalization of the economy. Therefore, this study aims to assess the impact of digital finance on the development of Vietnamese small enterprises, thereby providing policy recommendations to enhance their access to and effective use of digital finance.

2. LITERATURE REVIEW

The Fourth Industrial Revolution is creating profound changes in all areas of socio-economic life. The development of disruptive technologies such as artificial intelligence (AI), big data, blockchain, and cloud computing is not only driving innovation in production and trade but also fundamentally changing the way service industries operate, especially financial and banking services. In this context, the financial sector is undergoing a strong transformation from a traditional model to a digital platform, enabling faster, more flexible, and cost-optimized service delivery.

The concept of Digital Finance refers to the application of digital technology in the provision, management, and use of financial services. According to Gomber et al. (2018) and Philippon (2019), digital finance includes digital banking, electronic payments, digital lending platforms, and modern financial management tools, helping businesses access finance faster, more efficiently, and at lower costs. The development of digital finance not only changes how enterprises access capital but also impacts their financial management strategies and business optimization.

To assess the role of digital finance for small enterprises, an analysis can be based on two main aspects: (i) the level of access to and use of digital finance by businesses and (ii) the ability to innovate technologically and apply digital finance to business operations.

2.1. The Extent to Which Enterprises Access and Utilize Digital Finance

In the context of the growing digital finance landscape, access to and utilization of digital financial services play a crucial role in improving the financial efficiency and competitiveness of small enterprises. The application of digital technology not only helps businesses optimize financial transactions but also contributes to expanding access to capital, reducing operating costs, and enhancing financial management performance.

According to Gomber et al. (2018) and Wang et al. (2022), digital banking services such as mobile banking and internet banking help small enterprises conduct transactions quickly and conveniently, while minimizing operating costs. In addition, the development of electronic payment platforms also plays a crucial role in enhancing financial transparency and reducing payment risks (Arner et al., 2016; Ozili, 2018). In particular, Fintech lending platforms are gradually changing how small businesses access capital, giving them more opportunities to raise funds more flexibly without being overly dependent on the traditional banking system (Bollaert et al., 2021; Ghosh et al., 2020).

2.2. Utilize Digital Banking Services

Digital banking services, including mobile banking and internet banking, are crucial tools for small enterprises to improve their financial

management efficiency. The development of digital banking has created a significant turning point in providing financial services to small businesses. With advantages such as saving time and costs, and enhancing security, digital banking is becoming an essential tool for small businesses to improve their financial capacity and competitiveness.

According to Gomber et al. (2018) and Philippon (2019), mobile banking and internet banking help enterprises conduct transactions quickly, reducing reliance on traditional bank branches, thereby optimizing time and resources. Previously, financial transactions of small enterprises often faced many obstacles such as complex procedures, lengthy processing times, and high costs. However, with the development of digital banking, businesses can make payments, transfers, manage accounts, and track cash flow in real time with just a few taps on mobile devices or computers. This not only optimizes financial transactions, but digital banking also brings significant benefits in cash flow management. Wang et al. (2022) emphasized that small businesses are increasingly applying digital banking to monitor finances more effectively, from controlling income and expenses, budget planning to optimizing working capital. Features such as balance alerts, bill payment reminders, and automated financial reporting help businesses proactively manage their finances and avoid risks such as cash flow deficits or late payments.

Furthermore, transaction security and safety are crucial factors that make digital banking the top choice for small enterprises. With advanced technologies such as biometric authentication, data encryption, and multi-layered security, digital banking helps businesses reduce the risk of financial fraud and protect critical information. Compared to traditional transaction methods, digital banking offers greater transparency and security, helping businesses build a trustworthy financial system.

It is clear that the application of digital banking services not only helps small enterprises access financial services more conveniently but also contributes to improving financial management efficiency, optimizing cash flow, and minimizing risks. In the context of the increasingly developing digital finance, using digital banking is no longer an option but has become a necessity for small businesses to maintain and expand their operations.

2.3. Electronic Payment

The rapid development of electronic payment platforms has created a breakthrough in the financial operations of small enterprises, helping them improve payment efficiency, reduce transaction costs, and enhance market access. According to Arner et al. (2016) and Ozili (2018), electronic payments help businesses reduce their reliance on cash, thereby minimizing financial risks such as revenue loss, fraud, and operating costs related to cash flow management. In addition, transaction transparency is significantly improved, helping businesses build financial credibility and more easily access formal funding sources.

Zavolokina et al. (2016) emphasized that digital payment methods such as e-wallets, credit cards, QR code payments, and online transfers are gradually replacing traditional payment methods. This not only helps enterprises process transactions quickly but also optimizes the sales process, especially in e-commerce and online business models. The popularity of electronic payment platforms such as PayPal, Stripe, MoMo, ZaloPay, and VNPay has given small businesses more options in receiving payments from customers, expanding their business reach without being limited by geographical distance.

Furthermore, the use of electronic payments helps enterprises optimize financial management. Current digital payment systems integrate tools for revenue tracking, automated financial reporting, and real-time cash flow control, making it easier for businesses to manage transactions more effectively. This is especially important for small businesses, where financial and human resources are often limited.

In the context of a rapidly developing digital economy, the application of electronic payments is no longer a trend but has become an essential requirement for small enterprises to improve productivity, optimize costs, and increase their competitive advantage.

2.4. Borrowing Money Through Fintech Platforms.

Besides electronic payments, Fintech platforms are increasingly proving their importance in providing flexible financial solutions for small businesses, especially in accessing capital. According to Zalan & Toufaily (2017) and Bollaert et al. (2021), Fintech opens up opportunities for faster access to loans compared to traditional banks, giving small enterprises more financing options without the pressure of complex approval processes. This is particularly significant for startups or businesses that do not yet have sufficient credit history to meet the loan requirements of banks.

Ghosh et al. (2020) emphasize that Fintech

platforms not only provide capital but also apply Big Data, AI, and Blockchain analytics technologies to assess credit risk more accurately. Instead of relying solely on financial statements or collateral like traditional banks, Fintech uses various data sources such as transaction history, business cash flow, social media data, and payment behavior to make funding decisions. As a result, small enterprises have easier access to credit with flexible loan terms and faster processing times.

Furthermore, the development of peer-to-peer (P2P) lending models is also playing a crucial role in connecting small enterprises with individual investors and financial institutions. Platforms such as Funding Societies, LendingClub, and Tima in Vietnam help businesses raise capital without going through intermediaries like banks, thereby reducing borrowing costs and increasing autonomy in financial planning.

Overall, borrowing through Fintech platforms not only helps small enterprises overcome barriers to accessing capital but also opens up many growth opportunities thanks to more flexible and efficient financial solutions. In the future, with the development of digital technology, Fintech is expected to continue playing a crucial role in promoting financial inclusion and supporting small businesses to enhance their competitiveness in the market.

2.5. The Potential for Technological Innovation and the Application of Digital Finance to Business Operations

In the context of a rapidly developing digital economy, the ability to innovate technology and apply digital finance has become a key factor in helping small enterprises optimize financial management and improve access to capital. According to Beck et al. (2008) and Demirgüç-Kunt et al. (2018), applying technology platforms to financial operations not only helps businesses reduce operating costs but also improves capital efficiency. Furthermore, Stiglitz & Weiss (1981) and Gomber et al. (2018) indicate that businesses can better control cash flow, optimize accounting processes, and make more accurate financial decisions thanks to digital technology.

Furthermore, the development of digital banking, crowdfunding platforms, and peer-to-peer (P2P) lending has opened up more financial opportunities for small enterprises. According to Allen et al. (2014) and Levine (1997), businesses that proactively innovate technologically will have a significant advantage in accessing more diverse sources of capital, reducing dependence on the traditional banking system, and enhancing their financial capacity for sustainable development.

2.6. Reduce Financial Costs

The application of digital finance offers significant benefits in reducing operating costs and optimizing financial efficiency for small enterprises. According to Beck et al. (2008) and Demirgüç-Kunt et al. (2018), digital finance platforms enable businesses to make automated payments, manage cash flow in real time, and minimize transaction processing costs. This is especially important for small businesses, which often face financial pressures and need to optimize every expense.

McKenzie (2017) emphasizes that thanks to digital financial solutions, small enterprises can significantly reduce interest costs through more flexible credit models such as peer-to-peer lending (P2P lending) and digital credit. In addition, modern financial technologies such as blockchain-based smart contracts also help businesses save transaction costs, reduce payment errors, and enhance financial transparency.

The combination of digital technology and finance not only helps small enterprises reduce cost burdens but also creates a competitive advantage in business operations. Businesses that effectively apply digital finance will have the opportunity to increase profit margins, reinvest in production, and sustainably expand their markets.

2.7. Improve Financial Management

Digital finance not only helps small enterprises save costs but also improves the quality of financial management through modern digital tools. According to Stiglitz & Weiss (1981) and Gomber et al. (2018), small businesses can use digital accounting software and automated financial management systems to monitor cash flow, optimize revenue and expenditure processes, and reduce errors in financial reporting.

Rajan & Zingales (1998) emphasized that transparency in financial management is a crucial factor in helping small enterprises enhance their credibility with partners and financial institutions. Modern digital financial platforms allow businesses to easily aggregate and analyze financial data in real time, thereby making more accurate strategic decisions.

Furthermore, the application of AI in financial management helps small enterprises forecast cash flow trends, control credit risk, and optimize investment plans. Businesses that proactively innovate in financial management technology not only

improve operational efficiency but also enhance competitiveness in the increasingly developing digital economy.

2.8. Improving Access to Capital

Access to capital is a vital factor for small enterprises, and digital finance is playing a crucial role in expanding financial opportunities for this group of businesses. According to Allen et al. (2014) and Levine (1997), small businesses increasingly have more options to raise capital through digital finance platforms such as peer-to-peer lending (P2P lending), crowdfunding, digital banking, and online investment funds. Demirgüç-Kunt et al. (2018) pointed out that thanks to Big Data and AI, digital finance platforms can assess credit risk more accurately, thereby helping small businesses access capital without collateral or having to meet the stringent requirements of traditional banks.

Furthermore, blockchain technology and smart contracts are opening up decentralized finance (DeFi) models, enabling small enterprises to raise capital quickly, securely, and at lower costs. With the continuous development of digital financial platforms, small businesses not only have the opportunity to access capital more flexibly but also to build optimal financial strategies to expand their business operations.

2.9. Developing Small Enterprises

Small enterprises play a crucial role in economic growth and job creation, contributing to innovation, creativity, and market development. According to Beck et al. (2005), small businesses not only contribute significantly to GDP but also drive sustainable development through flexible business models and the ability to adapt quickly to new technological trends.

In the context of digital transformation, digital finance has become a crucial tool for small enterprises to optimize financial processes, improve access to capital, and scale their businesses. According to research by Beck et al. (2008) and Demirgüç-Kunt et al. (2018), the application of digital financial platforms helps small businesses grow, not only saving costs but also increasing revenue, expanding markets, and creating more job opportunities.

2.10. Revenue Growth

Digital finance helps small enterprises optimize business operations, improve financial performance, and drive revenue growth. According to Beck et al. (2008) and Demirgüç-Kunt et al. (2018), electronic payment platforms, digital banking, and modern financial management tools help businesses improve cash flow, make more accurate financial forecasts, and optimize business strategies. Claessens et al. (2018) and Philippon (2019) emphasize that thanks to the development of digital payment methods such as e-wallets, digital credit cards, and QR codes, small businesses can expand their customer base, increase transaction speed, and improve revenue conversion rates.

Specifically, according to Wang et al. (2022), the digitalization of the sales process helps small enterprises reach new customers, improve the shopping experience, and boost revenue through online sales and digital marketing strategies. Furthermore, integrating advanced financial technologies such as AI and Big Data helps businesses analyze consumer trends, personalize services, and optimize business operations, thereby significantly increasing revenue.

2.11. Expanding The Business Scale

Digital finance support helps small enterprises expand their markets, diversify their products, and increase productivity. According to Allen et al. (2014) and Levine (1997), small businesses can leverage flexible capital sources from digital banks, investment funds, and crowdfunding platforms to invest in scaling up production, optimizing supply chains, and improving product quality. Zavolokina et al. (2016) and Zalan & Toufaily (2017) argue that digital financial technology also helps businesses optimize inventory management, logistics operations, and improve customer service through automation platforms. Furthermore, Gomber et al. (2018) points out that small businesses can utilize Blockchain and AI to automate financial processes, improve the accuracy of accounting data, and minimize financial fraud, thereby supporting more effective business expansion. With the support of fintech, small businesses can not only expand their operations but also increase their competitive advantage in the market, quickly meeting the growing needs of customers.

2.12. Create Jobs and Increase Income

The application of digital finance not only helps small enterprises expand their business but also creates new job opportunities and increases income for workers. According to Stiglitz & Weiss (1981), businesses can easily raise capital through digital finance platforms, helping them expand production, thereby increasing recruitment needs. Arner et al. (2016) and Ozili (2018) emphasize that digital finance

also helps businesses optimize recruitment processes, human resource management, and labor training through digital platforms. This not only helps improve work efficiency but also creates a more flexible work environment, helping to retain employees and enhance employee benefits.

Furthermore, according to research by Gomber et al. (2018), small enterprises can leverage digital financial tools to build flexible payroll policies, provide digital financial benefits packages, and support employees in accessing more convenient financial services, thereby improving the quality of life for workers. The development of digital finance not only helps small businesses grow but also contributes to solving unemployment problems, boosting income and improving the living standards of workers, making a positive contribution to the sustainable development of the economy.

2.13. Improving Competitiveness

In a volatile business environment, digital finance offers a strong competitive advantage for small enterprises. According to Gomber et al. (2018) and Bollaert et al. (2021), businesses can leverage digital financial analytics tools to optimize cash flow management, improve payment processes, and enhance operational efficiency. Philippon (2019) and Ghosh et al. (2020) also point out that artificial intelligence (AI), big data analytics, and blockchain help small businesses strengthen financial security, mitigate fraud risks, and optimize business models, thereby enhancing their competitiveness in the market. In particular, according to Wang et al. (2022), the application of digital finance helps small businesses improve labor productivity, optimize operating costs, and enhance their adaptability to market fluctuations. Businesses that effectively implement fintech not only have the ability to compete with larger rivals but also open up opportunities for sustainable growth in the future.

Thus, digital finance not only helps small enterprises increase revenue, expand business scale, create more jobs, and enhance competitiveness, but also makes a positive contribution to the national economy. Effectively utilizing digital financial tools will be a key factor in helping small businesses not only survive but also thrive in the digital economy era.

Synthesizing the content of previous studies has shown that digital finance, through the provision of digital banking services, electronic payments, and Fintech lending platforms, has a significant impact on the development of small enterprises. These services not only help businesses access capital more easily but also optimize financial costs, improve management efficiency, and enhance competitiveness. In the context of Vietnam, based on the above theoretical foundations, the author continues to research the impact of digital finance on the development of small enterprises and based on the hypotheses: *The level of access to and use of digital finance (H1) and the potential for technological innovation and the application of digital finance to business operations (H2) have a positive impact on the development of small enterprises.*

Table 1: Summary Of Theoretical Research on the Impact of Digital Finance on the Development of Small Enterprises.

Scales	Related research	Content for inheriting and developing research scales
I. The extent to which enterprises access and utilize digital finance (AUF)		
1. Utilizing digital banking services: The extent to which small enterprises use mobile banking and internet banking for financial transactions impacts management and operational efficiency, helping them reduce time and costs and increase product offerings.	Gomber et al. (2018); Philippon (2019); Wang et al. (2022)	AUF1: Small enterprises are increasingly using digital banking services, helping them save time and costs on management and operations.
2. Electronic payments: Small enterprises use digital payment platforms to reduce transaction costs.	Arner et al. (2016); Ozili (2018); Zavolokina et al. (2016)	AUF2: Small enterprises are increasingly using digital payments, reducing cash transactions, which saves them time and improves financial security.
3. Borrowing through Fintech platforms: Accessing credit from digital platforms helps small enterprises raise capital quickly.	Bollaert et al. (2021); Zalan & Toufaily (2017); Ghosh et al. (2020)	AUF3: Small enterprises are increasingly borrowing capital through Fintech, reducing their dependence on traditional banks and giving them more opportunities to access capital for production and business.
II. The potential for technological innovation and the application of digital finance to business operations (TAF)		

4. Reduced financial costs: Technological innovation and the application of digital finance help small enterprises optimize transaction costs and financial management.	Beck et al. (2008); McKenzie (2017); Demirgüç-Kunt et al. (2018)	TAF1: Small enterprises are actively innovating technology and applying digital finance, helping them reduce financial costs in managing and operating their production and business activities.
5. Improved financial management: Technological innovation and the application of digital finance help small enterprises easily track cash flow and manage finances more transparently.	Stiglitz & Weiss (1981); Gomber et al. (2018); Rajan & Zingales (1998)	TAF2: Small enterprises are actively innovating technology and applying digital finance, helping them manage cash flow and finances better.
6. Improve access to capital: Technological innovation and the application of digital finance make it easier for small enterprises to access funding.	Allen et al. (2014); Levine (1997); Demirgüç-Kunt et al. (2018)	TAF3: Small enterprises are actively innovating technology and applying digital finance, giving them more options in accessing capital.
III. Developing small enterprises (DSE)		
7. Revenue Growth: Small enterprises tend to experience revenue growth when they adopt digital finance.	Beck et al. (2008); Demirgüç-Kunt et al. (2018); Claessens et al. (2018); Philippon (2019); Wang et al. (2022)	DSE1: Average revenue of small enterprises increases when they access and utilize digital finance.
8. Scaling up business: Small enterprises can expand their market and production scale by accessing digital finance.	Allen et al. (2014); Gomber et al. (2018); Levine (1997); Zavolokina et al. (2016); Zalan & Toufaily (2017)	DSE2: Small enterprises expand production scale and market reach by accessing and utilizing digital finance.
9. Job creation and income generation: Access to digital finance helps small enterprises hire more workers.	Arner et al. (2016); Gomber et al. (2018); Stiglitz & Weiss (1981); Ozili (2018)	DSE3: The number of jobs created by small enterprises is increasing thanks to their access to and use of digital finance.
10. Improved competitiveness: Digital finance helps small enterprises increase their competitiveness in the market.	Bollaert et al. (2021); Ghosh et al. (2020); Gomber et al. (2018); Philippon (2019); Wang et al. (2022)	DSE4: Small enterprises have a higher competitive advantage when they innovate technologically and apply digital finance in management, operations, and production and business.

Source: Compiled By the Author Through the Review

Based on the above overview, the author developed a research model on the development of small enterprises and the impact of digital finance on small enterprise development. The research model consists of three scales: the "The extent to which enterprises access and utilize digital finance" (AUF) scale, the "The potential for technological innovation and the application of digital finance to business operations" (TAF) scale [two scales/independent variables], and the "Developing small enterprises" (DSE) scale [one scale/dependent variable]. These scales consist of 10 observed variables, designed by the author as 10 questions in a survey questionnaire and measured using a 5-point Likert scale: 1 - Strongly disagree; 2 - Disagree; 3 - Neutral; 4 - Agree; 5 - Strongly agree [Table 1, Figure 1].

2.14. Research Model

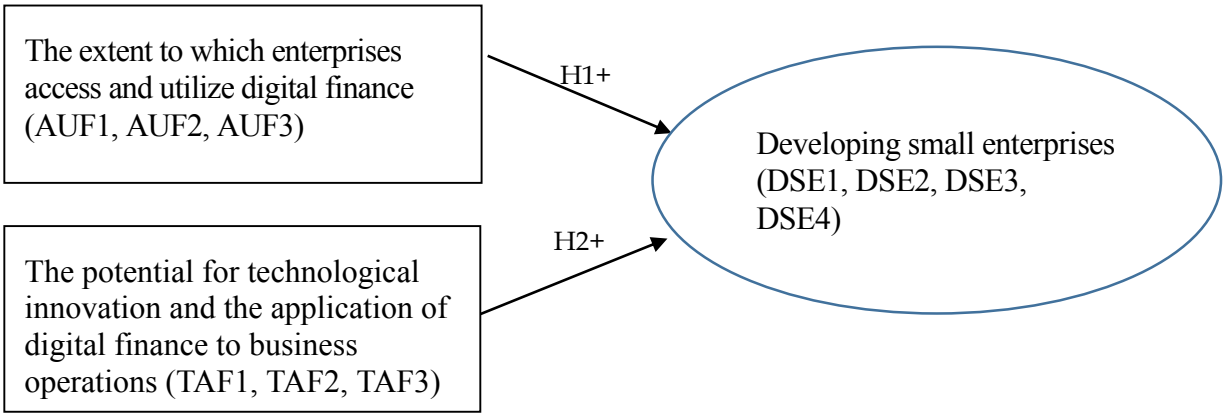

Figure 1: Research Model.

3. RESEARCH METHODS

The author uses a combination of qualitative and quantitative methods to achieve this research objective. Using qualitative methods, the author collects and analyzes secondary data to build a theoretical framework and research model. Using quantitative methods, the author conducts surveys to collect and analyze primary data to test the theoretical framework and research model. The survey is conducted in two steps: a preliminary survey and a formal survey.

- Preliminary Survey: The research model was constructed with 3 scales and 10 observed variables. According to Hair, J.F. et al. (2009), the minimum sample size required for exploratory factor analysis and regression analysis for a research model with 3 scales and 10 observed variables is: N = 10*5 = 50. First, the author conducted a preliminary survey in Bac Ninh province with a sample size of N = 120 (N > 50) managers of small enterprises. The results of the preliminary survey in Bac Ninh province showed that the scales and observed variables have sufficient reliability to be used in a larger-scale formal survey.

- Formal Survey: Based on the preliminary survey results that met reliability testing requirements, the author conducted a formal survey with a sample size of N = 360 (N > 50) of managers from 200 small enterprises operating in three provinces representing the three regions of Vietnam: Bac Ninh province (Northern Vietnam), Ha Tinh province (Central Vietnam), and Hau Giang province (Southern Vietnam). The survey was selective, targeting small business managers with at least two years of experience. With the consent of all 360 respondents, the author obtained 360/360 valid responses, achieving a 100% response rate.

4. RESEARCH RESULTS AND DISCUSSION

To perform exploratory factor analysis and regression analysis, the authors first tested the reliability of the scales and observed variables in the research model. According to Hair, J.F. et al. (2009), scales have reliability when they meet the Cronbach's alpha criterion > 0.6; observed variables have reliability when they meet the Corrected Item-Total Correlation criterion > 0.3. The results of testing the survey data of 360 small enterprise managers showed that all 3 scales and 10 observed variables in the initial research model had sufficient reliability to perform further analysis (Table 2).

Table 2: Statistical Results and Testing Results of the Scale.

Scales	Observed variables	N	Min	Max	Mean	Std. Deviation	Cronbach' Alpha	Corrected Item-Total Correlation
1. The extent to which enterprises access and utilize digital finance (AUF)	AUF1	360	1	5	4.25	.518	.710	AUF1 = .541
	AUF2	360	1	5	4.19	.534		AUF2 = .489
	AUF3	360	1	5	4.23	.515		AUF3 = .497
2. The potential for technological innovation and the application of digital finance to business operations (TAF)	TAF1	360	1	5	4.01	.614	.639	TAF1 = .365
	TAF2	360	1	5	4.03	.596		TAF2 = .335
	TAF3	360	1	5	3.99	.603		TAF3 = .377
3. Developing small enterprises (DSE)	DSE1	360	1	5	4.11	.543	.676	DSE1 = .456
	DSE2	360	1	5	4.13	.494		DSE2 = .492
	DSE3	360	1	5	4.06	.603		DSE3 = .389
	DSE4	360	1	5	4.08	.577		DSE4 = .411
Valid N (listwise)		360						

Source: Author's Survey Results

Table 2 data shows that observations on the scale "The extent to which enterprises access and utilize digital finance" (AUF), the scale "The potential for technological innovation and the application of digital finance to business operations" (TAF), and the scale "Developing small enterprises" (DSE) are all rated at a mean of Mean ≥ 3.99, which is statistically significant according to the Likert scale (1-5) as determined. However, there is a certain difference, namely that the observed variables of the scale "The potential for technological innovation and the application of digital finance to business operations" (TAF) are rated lower than the scale "The extent to which enterprises access and utilize digital finance" (AUF): Mean (TAF1) = 4.01, Mean (TAF2) = 4.03, Mean (TAF3) = 3.99, indicating that many small enterprises are still not actively innovating technology and applying digital finance in management and operation. This is a barrier factor, preventing many small enterprises from effectively managing cash flow, finances, and costs in their production and business operations, and limiting their options in accessing capital.

The survey results also reflect the current state of small enterprise development and digital finance development in Vietnam, consistent with the opinions and assessments of many experts and managers. According to Luong, N.T. (2023), Vietnam has 589,067 small and medium-sized enterprises (SMEs), accounting for 97.3% of the total number of enterprises nationwide, but only 25% of SMEs invest in modern technology; the majority of SMEs have not yet developed a strategy for applying digital technology and proactively implemented innovation. Ven, L.P. (2024) also estimates that about 35%-40% of Vietnamese enterprises have innovation activities; SMEs are currently still mainly small in scale, with low technological levels and slow innovation, low financial capacity, low labor productivity, low business efficiency, weak linkages,

and insufficient competitiveness to export to foreign markets or participate in global production networks. Huyen, V.T.T. et al. (2024) also emphasized that most small and medium-sized enterprises have not yet mastered core technologies, and still have a hesitant attitude, not daring to accept the risks of investing in upgrading standards and quality, so they have not taken breakthrough steps, therefore they need more support from the state.

Based on the reliability test results of the scales and observed variables (Table 2), the author conducted exploratory factor analysis to test the initial theoretical research model. Exploratory factor analysis with Varimax rotation was performed to preliminarily assess the unidimensionality, convergent validity, and discriminant validity of the scales, providing further basis for drawing research conclusions about the suitability of the proposed theoretical research model. The results of the exploratory factor analysis are shown in Table 3 and Table 4 below.

Table 3: Total Variance Explained.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.750
Bartlett's Test of Sphericity	Approx. Chi-Square	2439.944
	df	36
	Sig.	.000

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.419	37.987	37.987	3.419	37.987	37.987	2.962	32.907	32.907
2	3.092	34.350	72.337	3.092	34.350	72.337	2.762	30.691	63.598
3	1.032	11.464	83.801	1.032	11.464	83.801	1.818	20.203	83.801
4	.661	6.124	87.615						
5	.523	5.809	89.609						
6	.436	4.840	94.450						
7	.175	1.939	96.389						
8	.162	1.805	98.194						
9	.113	1.258	99.452						
10	.049	.548	100.000						
Extraction Method: Principal Component Analysis.									

Source: Author's Survey Results

Table 4: Rotated Component Matrix.

Rotated Component Matrix[a]				
Scales	Observed variables	Component		
		1	2	3
1. The extent to which enterprises access and utilize digital finance (AUF)	AUF1	.787		
	AUF2	.805		
	AUF3	.774		
2. The potential for technological innovation and the application of digital finance to business operations (TAF)	TAF1		.761	
	TAF2		.752	
	TAF3		.698	
3. Developing small enterprises (DSE)	DSE1			.775
	DSE2			.776
	DSE3			.699
	DSE4			.758
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 6 iterations.				

Source: Author's Survey Results

In quantitative research, according to Hair, J.F. et al. (2009), exploratory factor analysis was performed appropriately on the dataset through the following values: $0.5 \leq KMO \leq 1$; Bartlett's test had an observed significance level Sig. < 0.05; Eigenvalue ≥ 1; Total Variance Explained ≥ 50%; Factor Loading ≥ 0.5. Data in Tables 3 and 4 show that:

- The KMO = 0.750 > 0.5, confirming that exploratory factor analysis is appropriate for the

dataset; the Bartlett test has an observed significance level of Sig. = 0.000 < 0.05, indicating that the observed variables are linearly correlated with the representative factor. The Total Variance Explained with Cumulative % = 83.801% > 50% (Table 3) shows that 83.801% of the variation in the representative factors is explained by the observed variables; all observed variables have Factor Loading > 0.5 (Table 4), indicating that the observed variables are statistically significant. The initial theoretical research model is consistent with the survey research.

- The observed variables were extracted into 3 factors corresponding to the 3 original factors with Eigenvalues > 1 (Table 3), further confirming the suitability of the original research model. The original research model was retained, consisting of: 2 independent variables "The extent to which enterprises access and utilize digital finance" (AUF), "The potential for technological innovation and the application of digital finance to business operations" (TAF) and 1 dependent variable "Developing small enterprises" (DSE), with a total of 10 observed variables of good statistical significance. Multiple linear regression analysis could be performed to examine the relationships between the variables in the model. The regression analysis results are shown in Table 5, which forms the basis for the author's research conclusions.

Table 5: Multivariate Regression Results.

Coefficients[a]							
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
		B	Std. Error	Beta			
1	(Constant)	1.103	.273		15.569	.000	
	1. The extent to which enterprises access and utilize digital finance (AUF)	.576	.386	.514	11.875	.000	1.765
	2. The potential for technological innovation and the application of digital finance to business operations (TAF)	.462	.337	.368	9.897	.000	1.814
a. Dependent Variable: Developing small enterprises (DSE) Adjusted R^2: 0.728; Durbin-Watson: 2.101							

Source: Author's Survey Results

Table 5 data shows:

+ R^2 = 0.728, confirming that the scales "The extent to which enterprises access and utilize digital finance" (AUF) and "The potential for technological innovation and the application of digital finance to business operations" (TAF) explain 72.8% of the variation in the scale "Developing small enterprises" (DSE); VIF = 1.765 and VIF = 1.814 (1 < VIF < 2), indicating that the regression model does not exhibit multicollinearity; Durbin-Watson = 2.101 (1 < d < 3), indicating that the regression model does not exhibit autocorrelation, confirming that the scales "The extent to which enterprises access and utilize digital finance" (AUF) and "The potential for technological innovation and the application of digital finance to business operations" (TAF) are independent and have a common impact on the scale "Developing small enterprises" (DSE), confirming the suitability of the theoretical research model with the survey dataset.

+ The regression coefficients of the two independent variables "The extent to which enterprises access and utilize digital finance" (AUF) and "The potential for technological innovation and the application of digital finance to business operations" (TAF) are both statistically significant (Sig. = 0.000, Sig. < 0.05) and positive: B(AUF) = 0.576 and B(TAF) = 0.462, confirming a positive relationship between the two independent variables "The extent to which enterprises access and utilize digital finance" (AUF), "The potential for technological innovation and the application of digital finance to business operations" (TAF) and the dependent variable "Developing small enterprises" (DSE); hypotheses H1 and H2 are accepted; and the initial research model's suitability is further confirmed.

Based on the generalized regression model of Hair, J.F. et al. (2009): Y = Bo + B1*X1 + B2*X2 + … + Bi*Xi, the author determined the multivariate regression model of this study as follows: DSE = 1.103 + 0.576*AUF + 0.462*TAF.

Based on the standardized regression coefficient (Beta), the correlation between the independent and dependent variables, in decreasing order, can be seen as: "The extent to which enterprises access and utilize digital finance" (AUF), and "The potential for technological innovation and the application of digital finance to business operations" (TAF). This further confirms the empirical research results in Vietnam: The development of digital finance helps small enterprises access capital more flexibly and optimize financial operations, creating important opportunities for small businesses to overcome

traditional financial barriers; effectively utilizing digital financial tools will be a key factor in helping small businesses not only survive but also thrive in the digital economy era. However, many small businesses have not yet actively innovated technology and applied digital finance in their management and operations. This is a barrier factor, preventing many businesses from effectively managing cash flow, finances, and costs in their production and business operations, and limiting their options in accessing capital.

Based on the research findings, the author discusses several solutions for developing digital technology and digital finance to promote the growth of small enterprises in Vietnam within the context of a digital society. Specifically:

- Firstly, the government and local authorities need to implement comprehensive support policies to enhance the management capacity of small enterprises, helping them access modern technology and capital more easily: The government can provide in-depth training programs on business management and finance, and support small businesses in accessing and applying advanced technologies to optimize production processes and innovate business models. Establishing financial support funds is also a measure to help small businesses access capital with preferential interest rates.

- Secondly, promoting technology transfer and establishing local innovation support centers is crucial: The government and intermediary organizations need to facilitate small enterprises' access to digital financial technologies, provide in-depth consulting services, and allow them to test business models within a controlled testing ecosystem (sandbox). Developing a network of expert advisors also helps businesses reduce risks when adopting new technologies.

- Third, building a transparent, secure, and suitable digital financial ecosystem for small enterprises: Regulatory bodies need not only to establish a clear legal framework for fintech, but also to create mechanisms for strict monitoring and protection of customer data. Encouraging cooperation between small businesses and fintech platforms will help them easily access capital through legitimate digital financial channels at reasonable costs and with a high level of security.

- Fourth, leaders of small enterprises need to proactively enhance their digital capabilities and adapt to technological trends: To lead their businesses in the digital age, leaders need to constantly learn about technology and market trends, participate in digital training courses, and actively seek management models that suit the specific characteristics of their businesses.

- Fifth, strengthen cooperation and business linkages to optimize the application of digital financial solutions: Small enterprises can establish cooperative alliances with businesses in the same field to share technology, reduce investment costs, and strengthen the supply chain for production and consumption of products. The government also needs to create support mechanisms to help small enterprises effectively link with digital financial institutions, helping them increase competitiveness and maximize the benefits from the digital ecosystem.

- Sixth, strongly promote the application of artificial intelligence (AI) in management and business operations: Small enterprises need to proactively research and apply AI to financial management, customer data analysis, and operational process optimization. Leveraging AI not only helps increase productivity but also opens up opportunities to access smart financial models and automate business management processes.

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