



Factors Determining Digital Transformation in Small and Medium Enterprises in Mekong Delta, Vietnam

*Thong-Luong Nguyen Duy**, *Tung-Diep Thanh*
Tra Vinh University, Vietnam.

Keywords

Digital Transformation,
Small and Medium
Enterprises, Mekong Delta.

Abstract

The National Digital Transformation Program in Vietnam was initiated by the Government in 2020. But most businesses have not yet had positive changes due to both subjective and objective factors. The gap from the overview is that there is still no research on factors affecting the adoption of digital transformation by small and medium enterprises, especially in the Mekong Delta region. Based on the Technology-Organization-Environment (TOE) Theoretical Framework and integrating the Technology Acceptance Model 2 (TAM2) with eight hypotheses, we employed the Covariance-Based Structural Equation Modeling (CB-SEM) method to analyze 492 survey questionnaires. The findings point to six crucial elements that all have a direct or indirect impact on "digital transformation adoption": government support, logistics services, customer support, financial technology, human resources, information technology experience, and infrastructure and data. Through this study, we discovered that financial technology factors influence the adoption of digital transformation by small and medium-sized enterprises in the Mekong Delta, a content that many previous studies have not mentioned.

1. Introduction

The digital economy is understood as all economic activities based on digital platforms; at the same time, developing the digital economy uses digital technology and data to create new business models. Digital financial data in 2019 revealed that China's digital economy would account for 37% of GDP; the Asia-Pacific region would account for 25% of GDP; and in Vietnam in 2021, the digital economy was expected to make up 8.2% of GDP. The 'National Digital Transformation Programme to 2025, Orientation to 2030' has established challenging goals for Vietnam, with the goal of ranking the nation in the top 50 in terms of e-government. The digital economy is expected to contribute 20% of GDP by 2025, and by 2030, it is predicted to account

*corresponding author. Email: Indthong@tvu.edu.vn

for roughly 30% of GDP. Businesses and individuals alike are essential to achieving these goals and promoting the expansion of the digital economy.

2. Contents

2.1. Literature review

2.1.1. Theoretical framework TOE (Technology - Organization - Environment)

The TOE framework described in Tornatzky & Fleischer's *Technology Innovation Processes* (1990) includes the technology factors group, the group of organizational factors, and the environmental factors group. This theoretical framework describes the entire innovation process, from developing innovations by engineers and entrepreneurs to adopting and manipulating enterprise innovations by users of such process.

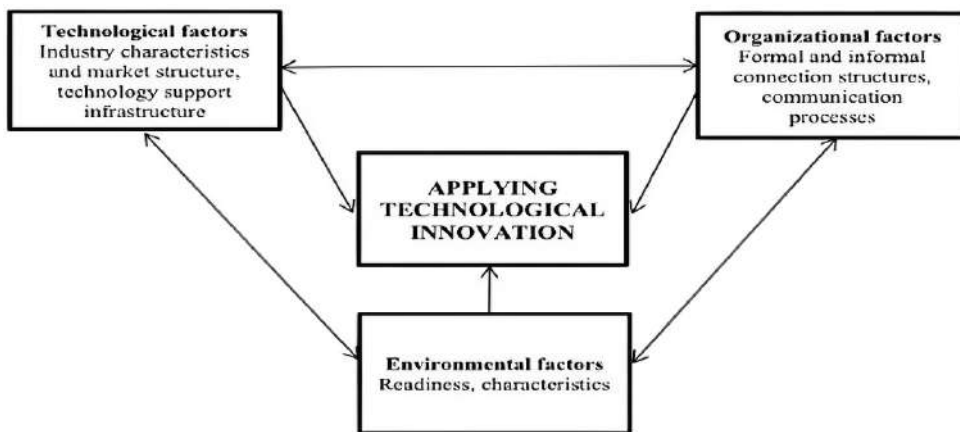


Figure 1 *TOE theoretical framework.*

Source: Tornatzky & Fleischer (1990).

2.1.2. Technology Acceptance Theory (TAM)

The TAM model is the most influential extension of Ajzen & Fishbein's Theory of Rational Action (TRA). The model includes the following components: (1) User perception of ease of use; (2) User perception of usefulness; (3) Finally, attitudes towards the adoption of technology. Venkatesh and Davis (2000) developed TAM2 by adding elements outside the model that have not been specified in the previous study, including social processes (subjective standards, voluntariness, image) and cognitive tool processes (relevance to work, quality of output).

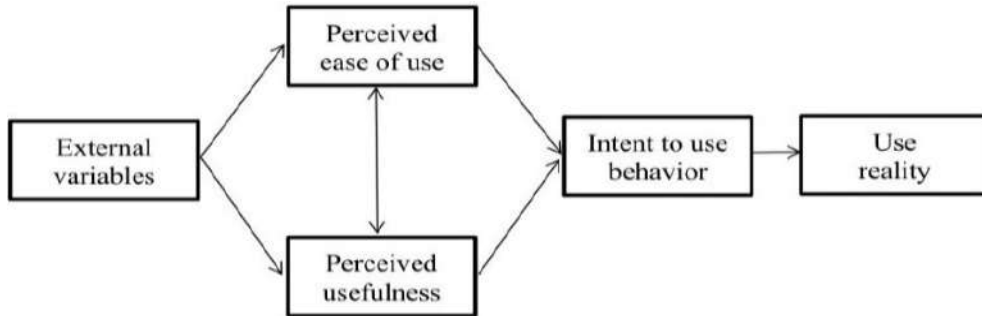


Figure 2 *Acceptance model using TAM2 technology*

Source: Venkatesh & Davis (2000).

2.2. Study Overview

An overview of previous studies includes 37 elements across various contexts, countries, and fields of study. The previously mentioned factors are all related to digital transformation (Table 1).

Table 1 *Summary of influencing factors according to the TOE Theoretical Framework*

Source	Technology Group	Organization Group	Environment Group
International Study	Business intelligence systems, supplier and competitive capabilities, information processing requirements, and financial technology.	Enterprise size, business scope, venture capital, governance, and operations.	
Domestic study	Enhance value creation process and supply chain traceability application.	Attitudes towards use, functional and business improvement, effort expectations, behavioral intentions, observability.	Logistics services and customer support.
Domestic research Research at home and abroad	Infrastructure and data, technology availability, technology, technology cost, data security, technology complexity, trialability, relative advantage, perceived usefulness, and perceived ease of use.	Technology compatibility, human resources, IT experience, organizational readiness, strategy, corporate leadership commitment, corporate culture, and performance expectations.	Government support, customer behavior, pressure from competitors, and willing partners.

2.3. Research gap

Previous studies mainly focused on digitizing each department's content, such as applying cloud computing and e-commerce, influencing the decision to adopt the cloud, and accepting the use of accounting software and ERP system. At the same time, there are no studies on “Factors affecting accept the digital transformation of small and medium enterprises in the Mekong Delta.”

2.4. Scientific significance of the study

Scientific significance is expressed through the following contents: (1) Research on the 'Factors affecting acceptance' of digital transformation by small and medium-sized enterprises; and (2) an exploration of how 'Financial Technology' impacts the acceptance of digital transformation by businesses will be added to the theoretical background.

2.5. Preliminary research

2.5.1. Qualitative research

The authors consulted ten experts in the digital economy and businesses that provide digital transformation solutions. Accordingly, the representative elements from three groups were proposed: a group of technological factors, a group of organizational factors, and a group of environmental factors. Combined with TAM2, the model consisted of 2 intermediate elements - perception for easy use and perception for usefulness (summarized in Table 2).

Table 2 *Summary of factors after qualitative research*

Element Group	Element	Source
Technology	Infrastructure and Data.	Hart et al. (2016); Chu (2021).
	Financial Technology	Wenqi & Wenbin (2022).
Organization	Human Resources	Mirjana et al. (2016); Hepu et al. (2019); Dang et al. (2020); Chu (2021); Rajbhandari et al. (2022).
	Experience in Information Technology	Rahayu & Day (2015); Mahendra (2015); Hart et al. (2016); Alibekova et al. (2020); Wessels & Jokonya (2021); Ali et al. (2022).
Environment	Government Support	Mahendra (2015); Chu (2021); Rajbhandari et al. (2022); Nguyen et al. (2022).
	Logistics service and support client	Chu (2021).

Based on inheriting the original scales, a second round of consultation with experts was conducted to adjust the rankings in detail, tailoring them to align with the regional cultural characteristics of the Mekong Delta (see Table 3).

Table 3 *Summary of original and calibrated scales*

Variable	Corrected Observed Variable	Reference Source
Infrastructure and Data	<p>The enterprise's database has been synchronized with the process. Enterprise data can be synchronously digitized. Enterprises use software to support business data tracking. Your business data is always secure. Enterprise technology infrastructure and solutions ensure digital transformation.</p>	Chu (2021).
Financial Technology	<p>By deploying online payments, businesses apply conveniently. Integrate online payment with effective sales software. Integrate internal financial management on a convenient digital platform. I am using a digital financial platform with effective state management units.</p>	Nugraha et al. (2022).
Human Resources	<p>Your Human Resources departments are trained in digital transformation. Enterprise personnel are skilled in working with digital platforms. Human resources can adapt to the digital business environment.</p>	Chu (2021).
Experience in Information Technology	<p>Business leaders with experience in information technology. The technology department of the enterprise has information technology experience. The business digital transformation direct division has experience in information technology. The digital technology solution implementation unit has experience in information technology. Business leaders with experience in information technology.</p>	Van (2021).
Government Support	<p>Regulations on state management of enterprises have been applied to digital platforms. Businesses access the Government's digital transformation training support program. Businesses access the Government's digital transformation financial support program. Enterprises have approached to improve the Government's digital transformation governance capacity. Government digital transformation ecosystem support programs have reached out.</p>	Chu (2021).
Logistics service and support client	<p>Logistics services of enterprises are proactive. The business is affiliated with external logistics. Logistics management integrated with the digital business model. Customers track the route and time on a digital platform. Improve customer experience through e-Logistics (default quote, departure time, arrival time, delivery time, shipping method)</p>	Chu (2021).

Variable	Corrected Observed Variable	Reference Source
Feels easy to use	Enterprises quickly deploy digital transformation solutions. Business marketing easily on digital platforms. Businesses can easily reach customers on digital platforms. Digital transformation makes creating new business models easy. Digital transformation creates a new governance model that is lean and easy to manage.	Nguyen (2020).
Feel the usefulness	Digital transformation helps improve the image and brand identity of the business. Digital transformation enhances customer reach for businesses. Digital transformation helps businesses to be more competitive. Digital transformation helps increase the overall operational efficiency of the business.	Nguyen et al. (2022).
Enterprise digital transformation	Enterprises are digitizing data (narrow scope). Enterprises have digitized data and are transforming business models (widespread). The enterprise has transformed its business and governance models (complete digital transformation).	Ministry of Planning & Investment, USAID (2021)

2.5.2. Preliminary survey

Several samples, amounting to 0.1% of the total of 62,130 active businesses operating in the Mekong Delta, were selected based on probability and distributed across localities in proportion to the distribution of enterprises. A total of 62 responses were collected, and data cleaning was performed, resulting in the removal of 2 invalid responses. The remaining 60 responses were included in the quantitative analysis.

2.5.3. Preliminary quantitative research

Exploratory factor analysis (EFA), including 09 independent variables (FIT, AID, HUM, EIT, LSC, GSU); 02 intermediate variables FUE, FEU and 01 dependent variable DTR with a total of 38 observed variables. The results are presented below.

Analysis of Cronbach's Alpha preliminary scale: All scales reached values of > 0.7 . The scale information was consistent with the survey data (Table 4).

Table 4 *Summary and Analysis of the reliability of each scale for preliminary research*

No.	Content	Cronbach's Alpha Coefficient
1	Financial Technology (FIT)	0.904
2	Data Infrastructure (IAD)	0.908
3	Human Resources (HUM)	0.917
4	Experience in Information Technology (EIT)	0.932
5	Logistics Services and Customer Support (LSC)	0.935
6	Government Support (GSU)	0.965
7	Feel Ease of Use (FEU)	0.974
8	Perceived usefulness (FUE)	0.908
9	Enterprise Digital Transformation (DTR)	0.815

KMO analysis = $(0.5 \leq 0.825 \leq 1)$: The factors were consistent with the actual data; Bartlett's Test of Sphericity analysis had a Sig coefficient = $0.000 < 0.05$: The observed variables were correlated in the factor.

Numerical Analysis of independent values and synthesis of variance values is shown in 09 factors and = $85.269 > 50\%$, confirming the above 09 factors that affected 85.26% of the variation of the surveyed data. The independent value of 08 factors reached the value > 1 , while the value for factor number 09 = 0.888 is close to = 1. Given the small sample size (n=60), the authors kept the factor 09 in the following steps of analysis.

Exploratory factor analysis. Through 11 times of analyzing factors, the relative convergence at a suiTable level of 09 elements: "data infrastructure," "financial technology," "human resources," "information technology experience," "Government support," "Logistics services, and customer support."

At the same time, the convergence of 02 factors, "perception for easy use" and "perception for usefulness," is the last dependent variable, "Acceptance of digital transformation." Type 03 factors are "business readiness," "relative advantage," and "competitor pressure."

Based on the results of the preliminary EFA discovery factor analysis, an overview of previous research models was conducted to synthesize impact forms (direct and indirect) of the above 06 factors as the basis for building a formal research model (Table 5).

Table 5 *Summary of forms of impact on digital transformation*

Independent variables	Dependent variable	Impact	Source
Infrastructure and Data	Apply ERP.	Direct	Hart et al. (2016).
	Successful digital transformation of business.	Direct	Chu (2021).
	Industry readiness for Industry 4.0 adoption.	Indirect	Rajbhandari et al. (2022).
Financial technology	Impact on the innovation capacity of small and medium enterprises.	Direct	Wenqi & Wenbin (2022).
Human Resources	Apply ERP.	Direct	Hart et al. (2016).
	Successful digital transformation of business.	Direct	Chu (2021).
Experience in Information Technology	We are applying digital technology of innovative production to small and medium-sized enterprises.	Indirect	Ghobakhloo & Ching (2019).
	They are influencing the decision to accept social networks in the retail business.	Indirect	Dang et al. (2020).
Government Support	Apply ERP.	Direct	Hart et al. (2016).
	The readiness of small and medium enterprises to apply information technology.	Indirect	Mahendra (2015).
	We are applying digital technology of innovative production to small and medium-sized enterprises.	Indirect	Ghobakhloo & Ching (2019).
	Successful digital transformation of business.	Direct	Chu (2021).
	Industry readiness for Industry 4.0 adoption.	Direct	Rajbhandari et al. (2022).
Logistics service and support client	Successful digital transformation of business.	Direct	Chu (2021).
Feels easy to use	Influencing the decision to accept social networks in the retail business.	Direct, Indirect	Dang et al. (2020).
Feel the usefulness	Influencing the decision to accept social networks in the retail business.	Direct, Indirect	Dang et al. (2020).
	Intent to accept ICT use.	Direct	Nguyen et al. (2022).

2.6. Official research

2.6.1. Building a research model

Through (Table 6), the authors propose a formal research model (Figure 3).

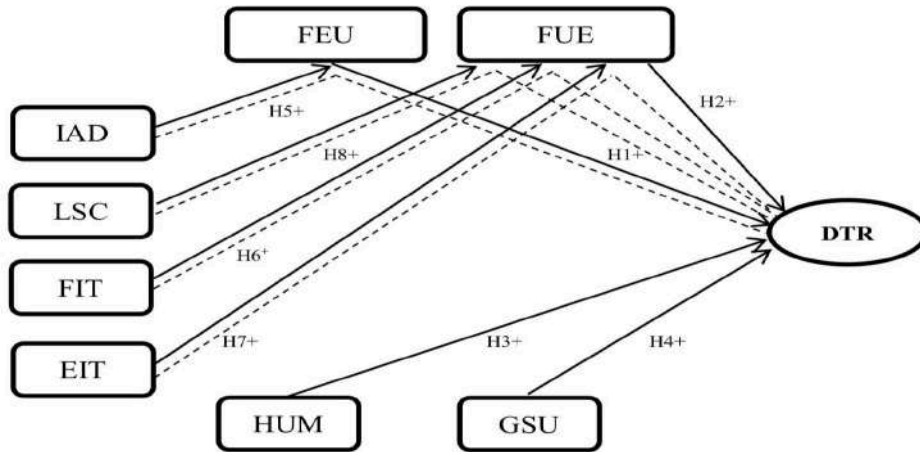


Figure 3 Research model of factors affecting digital transformation acceptance.

Note: Direct impact (-); indirect impact (---)

2.6.2. Research hypothesis

In (Figure 3), the authors developed the officially synthesized research hypothesis.

Table 6 Summary of formal research hypotheses.

Hypothesis	Explanations
H1+	Perceived ease of use has a direct impact on “digital transformation adoption”.
H2+	Perceived usefulness has a direct impact on “digital transformation adoption”.
H3+	Human resources have a direct impact on “digital transformation adoption”.
H4+	Government support has a direct impact on “digital transformation adoption”.
H5+	Infrastructure and data have an indirect impact on “digital transformation adoption” through perceived ease of use.
H6+	Fintech has an indirect impact on “digital transformation adoption” through perceived usefulness.
H7+	Information technology experience has an indirect impact on “digital transformation acceptance” through perceived usefulness.
H8+	Logistics and customer support have an indirect impact on “digital transformation adoption” through perceived usefulness.

2.6.3. Research sample

The sample includes SME leaders and managers evenly distributed across industries related to digital transformation. According to the probability of 1% of the total number of enterprises operating in the Mekong Delta as of December 31, 2021, the survey sample distributed in the

provinces within the scope of the study includes (Table 7).

Table 7 *Total description of the number of survey samples by group distributed in/province*

No.	Province/ City	Total Number of Businesses	Total Number of Samples	Business Association	Young Entrepreneurs Association	Business Support Center	Start-up business Network
1	Bac Lieu	2194	21	7	6	5	3
2	Hau Giang	2349	23	8	7	5	3
3	Tra Vinh	2436	24	9	7	5	3
4	Vinh Long	2792	28	10	9	6	3
5	Soc Trang	2813	28	10	9	6	3
6	Ben Tre	3473	35	12	11	8	4
7	Ca Mau	3659	36	12	11	8	5
8	Dong Thap	3717	37	12	12	8	5
9	An Giang	4856	48	17	16	9	6
10	Tien Giang	5060	50	18	16	10	6
11	Kien Giang	8071	81	30	27	15	9
12	Can Tho	9622	96	40	32	15	9
13	Long An	11088	111	48	38	15	10
Total		62130	618	233	201	115	69

The official investigation period spanned from March 1, 2023, to April 20, 2023, during which 618 survey responses were distributed, while about 580 of them were collected, accounting for 93.85% of the total. After data cleaning, 88 responses were removed; the remaining responses were 492, reaching 79.61% compared to the official investigation questionnaires and 84.82% compared to the total collected responses.

2.6.4. EFA exploratory factor analysis

Reliability analysis of the preliminary scale yielded values > 0.7 for all scales, indicating strong reliability. The scale's reliability was consistent with the survey data (Table 8).

Table 8 *Summary and Analysis of the reliability of each scale for formal research.*

No.	Content	Cronbach's Alpha Coefficient
1	Financial Technology (FIT)	0.899
2	Data Infrastructure (IAD)	0.899
3	Human Resources (HUM)	0.898
4	Experience in Information Technology (EIT)	0.896
5	Logistics Services and Customer Support (LSC)	0.899
6	Government Support (GSU)	0.898
7	Feel Ease of Use (FEU)	0.897
8	Perceived usefulness (FUE)	0.897
9	Enterprise Digital Transformation (DTR)	0.897

KMO and Bartlett Analysis: ($0.5 \leq \text{KMO} = 0.973 \leq 1$). The factors were consistent with

2.6.5. Multicollinearity analysis

The corresponding regression implementation had the role of 03 dependent variables DTR, FEU, and FUE.

Table 10 *Summary of regression tests for multicollinearity analysis.*

No.	Dependent Variable	Independent Variables	Content	Result
1	DTR	HUM, GSU, FUE, FEU, IAD, LSC, FIT, EIT	TOF > 0.1	There is no multicollinearity phenomenon
			VIF < 2	There is no multicollinearity phenomenon
			R2 adjustment = 0.725	72,5% chance of DTR by HUM, GSU, FUE, FEU, IAD, LSC, FIT, EIT.
			Sig. = 0.000	The independent variable is significantly correlated with the dependent variable.
			d = 0.272 < 3	No autocorrelation

2.6.6. Confirmatory factor analysis CFA

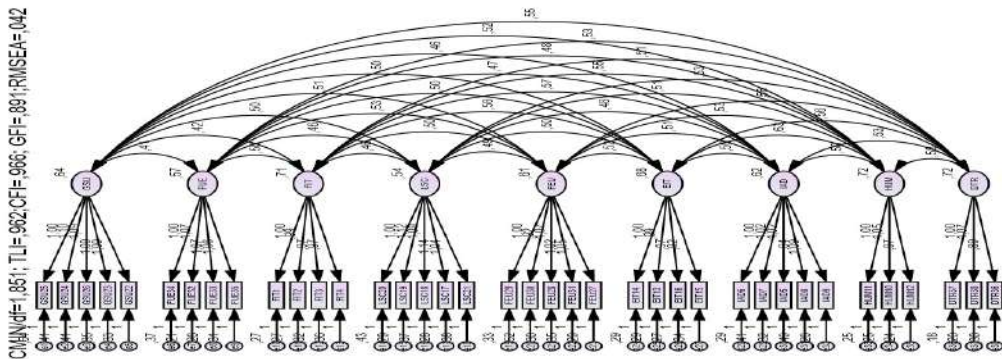


Figure 4 *CFA analysis results.*

Analyze the overall relevance of the data: CMIN/df = 1.851 (fits); TLI = 0.962 (Good fit); CFI = 0.966 (Good fit); GFI = 0.891 (Consistent); RMSEA = 0.042 (Consistent).

Quality analysis of observed variables: Sig. = 000 < 0.05, confirmed all observed variables have quality, no latent variables, and observed variables with significant data in the model.

Normalized regression weighted Analysis: The lowest value was 0.705, and the highest value was 0.896, both > 0.7. All observed variables had a high degree of agreement.

Convergence analysis of variable structures: Try only “CR”: GSU = 0.898; FUE = 0.898; FIT = 0.900; LSC = 0.900; FEU = 0.898; EIT = 0.898; IAD = 0.900; HUM = 0.898; DTR = 0.900, all values > 0.7: Tried only AVE: GSU = 0.838; FUE = 0.888; FIT = 0.891; LSC = 0.743;

FEU = 0.839; EIT = 0.882; IAD = 0.845; HUM = 0.847 and DTR = 0.751, all with AVE values > 0.5. Convergence is guaranteed.

Discriminant Analysis of variable structures: All MSV values were smaller than the AVE of all structural variables; Additionally, the square root of the AVE for each variable exceeded the correlation between that variable and other variables in the model. As a result, discrimination was guaranteed.

Table 11 Summary of discriminant test results of structural variables.

	GSU	FUE	FIT	IAD	LSC	EIT	FEU	DTR	HUM
GSU	0.859								
FUE	0.681	0.898							
FIT	0.623	0.790	0.889						
LSC	0.850	0.823	0.746	0.881					
FEU	0.821	0.895	0.756	0.861	0.865				
EIT	0.761	0.810	0.830	0.832	0.811	0.925			
IAD	0.732	0.795	0.865	0.829	0.830	0.867	0.883		
HUM	0.767	0.754	0.768	0.819	0.804	0.910	0.867	0.864	
DTR	0.809	0.826	0.718	0.858	0.851	0.806	0.800	0.811	0.867

2.6.7. Confirmatory factor analysis SEM

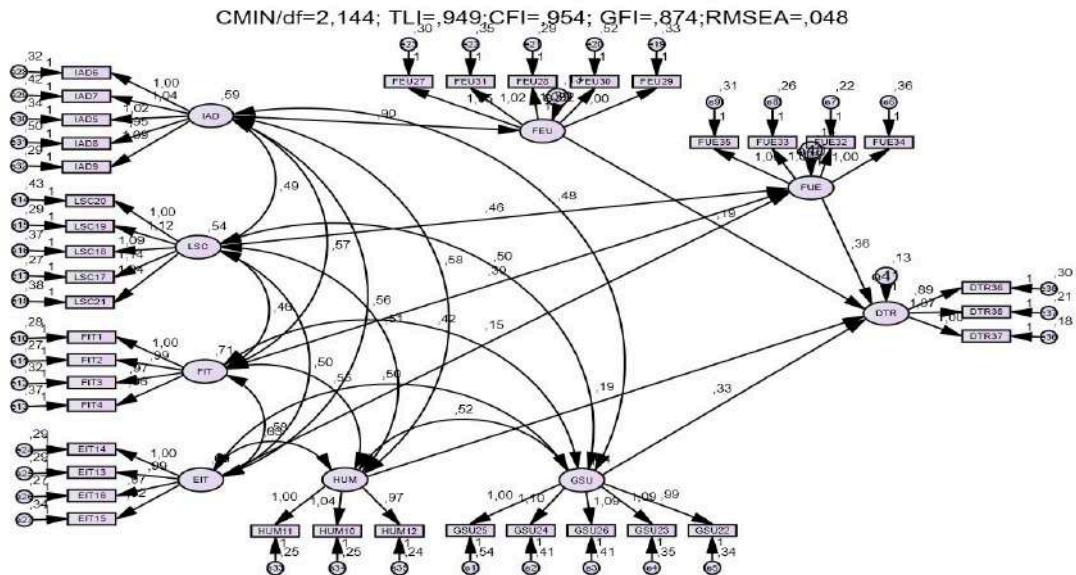


Figure 5 SEM analysis results.

Analysis of model Fit revealed favourable results: CMIN/df = 2.144 (Fit); TLI = 0.949 (Fit); CFI = 0.954 (Good fit); GFI = 0.874 (Fit); RMSEA = 0.048 (Consistent).

Analysis of the results of the hypotheses: There are 06 Sig hypotheses. = 0.000 including: IAD→FEU = 0.000; IT→FUE = 0.000; LSC→FUE = 0.000; FEU→ DTR = 0.000; FUE -> DTR = 0.000; GSU→DTR = 0.000; and 02 hypothesis “EIT→FUE = 0.045; HUM→ DTR = 0.002. Thus, all 08 Sig hypotheses. < 0.05. All hypotheses are statistically significant.

Table 12 Summary of research hypotheses.

Hypothesis	Encode	Explain	Analysis Results
H1+	FEU→DTR	Perceived ease of use has a direct impact on “digital transformation adoption”.	Statistical significance
H2+	FUE→DTR	Perceived usefulness has a direct impact on “digital transformation adoption”.	Statistical significance
H3+	HUM→DTR	Human resources have a direct impact on “digital transformation adoption”.	Statistical significance
H4+	GSU→DTR	Government support has a direct impact on “digital transformation adoption”.	Statistical significance
H5+	IAD→FEU→DTR	Infrastructure and data have an indirect impact on “digital transformation adoption” through perceived ease of use.	Statistical significance
H6+	FIT→FUE→DTR	Fintech has an indirect impact on “digital transformation adoption” through perceived usefulness.	Statistical significance
H7+	EIT→FUE→DTR	Information technology experience has an indirect impact on “digital transformation acceptance” through perceived usefulness.	Statistical significance
H8+	LSC→FUE→DTR	Logistics and customer support have an indirect impact on “digital transformation adoption” through perceived usefulness.	Statistical significance

The Analysis of regression coefficients through direct effects is described in (Table 13).

Table 13 Summary and Analysis of regression coefficients through AMOS software.

			Estimate				Estimate
FEU	←	IAD	0.886	DTR	←	FEU	0.173
FUE	←	EIT	0.160	DTR	←	FUE	0.328
FUE	←	FIT	0.336	DTR	←	GSU	0.314
FUE	←	LSC	0.442	DTR	←	HUM	0.190

The statistical description in Table 15 reveals a gradual decrease in the level of direct impact of independent variables on the dependent variable DTR: DTR ← FUE = 0.328, DTR ← GSU = 0.319, DTR ← HUM = 0.190, DTR ← FEU = 0.173. Among the independent variables that directly impact DTR, FUE shows a gradual decrease: FUE ← LSC = 0.442, FUE ← FIT = 0.336, FUE ← EIT = 0.160.

Notably, for the independent variable directly impacting the dependent variable FEU, the impact is attributed to only one variable (IAD), resulting in a high estimated coefficient of 0.886”

Analyzing indirect relationship effects: Sig. respectively “IAD = 0.046”; “EIT = 0.033”; “LSC = 0.001”; “FIT = 0.001”, all Sig. < 0.05. Confirmed that the four independent variables IAD, EIT, LSC, FIT have a statistically significant indirect impact on the dependent variable DTR.

Table 14 *Summary of unnormalized indirect effects regression coefficients.*

	IAD	EIT	LSC	FIT
DTR	0.046	0.033	0.001	0.001

Table 15 *Summary of the order of effects on the dependent variable DTR.*

Hypothesis	Encode	Explain	Estimate	Order of impact
H5+	IAD→FEU→DTR	Infrastructure and data have an indirect impact on “digital transformation adoption” through perceived ease of use.	0.153	1
H8+	LSC→FUE→DTR	Logistics and customer support have an indirect impact on “digital transformation adoption” through perceived usefulness	0.145	2
H6+	FIT→FUE→DTR	Fintech has an indirect impact on “digital transformation adoption” through perceived usefulness.	0.110	3
H7+	EIT→FUE→DTR	Information technology experience has an indirect impact on “digital transformation acceptance” through perceived usefulness.	0.053	4

Analysis of direct impact R2 value: DTR = 0.815. Thus, 02 independent variables (HUM, GSU) and 02 intermediate variables (FEU, FUE) affect 81.5% of the variation of the DTR variable; FEU = 0.785. Thus, the independent variable (IAD) affects 78.5% of the interpretation of the FEU variable, and FUE = 0.763. Thus, 03 independent variables (FIT, EIT, LSC) affect 76.3% of the variation of the FUE variable.

Standardized regression analysis of combined indirect effects: IAD = 0.153; LSC = 0.145; FIT = 0.110; EIT = 0.053. The order of indirect effects on the dependent variable DTR of the independent variables is (1) IAD; (2) LSC; (3) FIT; (4) EIT.

Table 16 *Summary of results and order of effects on the dependent variable DTR.*

Content	Estimate	Order of Impact
Government support has a direct impact on “digital transformation adoption”.	0.328	1
Human resources have a direct impact on “digital transformation adoption”.	0.314	2
Infrastructure and data have an indirect impact on “digital transformation adoption” through perceived ease of use.	0.153	3
Logistics and customer support have an indirect impact on “digital transformation adoption” through perceived usefulness	0.145	4
Fintech has an indirect impact on “digital transformation adoption” through perceived usefulness.	0.110	5
Information technology experience has an indirect impact on “digital transformation acceptance” through perceived usefulness.	0.053	6

2.6.8. Analysis of model estimates using Bootstrap

In this study, the author used the number of samples repeated 1800 times. All have CR value < 1.96 , infer p-value $> 5\%$, other deviation “0”. reliable estimation model.

Table 17 *Summary of Bootstrap analysis results.*

Parameters	SE	SE-SE	Mean	Bias	SE-Bias	CR
FEU ← IAD	0.024	0	0.885	-0.001	0.001	-1
FUE ← EIT	0.12	0.002	0.156	-0.004	0.003	-1.3
FUE ← FIT	0.097	0.002	0.338	0.002	0.002	1
FUE ← LSC	0.093	0.002	0.442	0	0.002	0
DTR ← FEU	0.097	0.002	0.17	-0.003	0.002	-1.5
DTR ← FUE	0.086	0.001	0.333	0.003	0.002	1.5
DTR ← GSU	0.065	0.001	0.311	-0.003	0.002	-1.5
DTR ← HUM	0.067	0.001	0.19	0	0.002	0

Through statistical analysis of Excel software CR indices derived from thesis data (see Table 17), we observe the following values: IAD - FEU = -1; EIT - FUE = -1.3; FIT - FUE = 1; LSC - FUE = 0; FEU - DTR = -1.5; FUE - DTR = 1.5; GSU - DTR = -1.5; HUM - DTR = 0. For all C.R values < 1.96 , the p-value is inferred to be $> 5\%$, leading to the conclusion that deviations other than zero are not statistically significant at the 95% confidence level. Therefore, we can trust the estimated model (before checking the Bootstrap option)

3. Conclusion

The article provides a concise overview of research on the adoption of digital transformation by small and medium-sized enterprises in the Mekong Delta, focusing on six factors ranked in descending order of impact. In the group of direct impact factors, government support and human resources stand out. In the group of indirect impact factors, we consider data infrastructure, logistics services and customer support, financial technology, and information technology experience.

Table 18 Summary of order of impact on "Acceptance of Digital Transformation"

Content	Factors Affecting "Acceptance of Digital Transformation"					
	Direct Impact Group			Indirect Impact Group		
Factor	GSU	HUM	IAD	LSC	FIT	EIT
Order of Impact	1	2	1	2	3	4

To promote the development of the digital economy in Vietnam, specifically promoting small and medium-sized enterprises in the Mekong Delta to adopt digital transformation for their businesses. Through the results of this study and consultation with experts, the author proposes some specific policy implications: (1) Government support needs to strengthen policies to promote mechanisms to help businesses access effective digital solutions and platforms; (2) human resources need to be trained in digital skills in accordance with each business's development strategy; (3) enterprise data infrastructure needs to be synchronized and secure, easily accessible to customers and maximized on digital platforms; (4) the enterprise's logistics and customer support services must be integrated with the digital business model and enhance customer experience; (5) financial technology is integrated into the business model and uniform management model of the enterprise but must be consistent with consumer and customer trends; (6) the information technology experience of business leaders and managers must be enhanced to match the new governance model on the digital platform that businesses will transform.

The study makes a meaningful theoretical contribution: Financial technology factors have an indirect influence on "digital transformation acceptance". In addition, it contributes practical significance to help businesses identify the role of factors that impact "accepting digital transformation of their businesses".

Limitations of the study: (1) The number of survey sample, reaching 258.94% of the minimum requirement though, only represents 0.791% of the total number of enterprises; (2) within the limited conditions, the authors only study the hypothesis with 02 main representative factors in the TOE theoretical framework for each group of factors, there are still many other influencing factors that need further research and discovery. It proposes further studies that can expand the scope or number of survey samples to represent the business community highly. Potential studies that can develop from this research include the Digital Transformation of Agricultural Enterprises, Tourism enterprises, Cooperatives, and Logistics enterprises.

References

- Alibekova, G., Medeni, T., Panzabekova, A., & Mussayeva, D. (2020). Digital transformation enablers and barriers in the economy of kazakhstan. *Journal of Asian Finance, Economics, and Business*, 7(7), 565-575. <https://doi.org/10.13106/jafeb.2020.vol7.no7.565>.
- Ali, O., Murray, P. A., Muhammed, S., Dwivedi, Y. K., & Rashiti, S. (2022). Evaluating organizational level IT innovation adoption factors among global firms. *Journal of Innovation & Knowledge*, 7(3), 100213.
- Awa, H. O., Ukoha, O., & Emecheta, B. C. (2016). Using TOE theoretical framework to study the adoption of ERP solution. *Cogent Business & Management*, 3(1), 1196571. <https://doi.org/10.1080/23311975.2016.1196571>.

- Bach, M. P., Čeljo, A., & Zoroja, J. (2016). Technology acceptance model for business intelligence systems: Preliminary research. *Procedia Computer Science*, 100, 995-1001.
- Chu, B. Q. (2021). Research to explore factors affecting the successful digital transformation of Vietnamese enterprises. *Journal of Banking Science & Training*, 223, 57-70.
- Dang, T. H., Luu, T. M. N., & Nguyen, P. M. (2020). Incorporating TAM and TOE models into research on social network acceptance in retail business in Vietnam. *VNU Journal of Science: Economics and Business*, 36(1), 86-95. <https://doi.org/10.25073/2588-1108/vnueab.4322>.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340. <https://doi.org/10.2307/249008>.
- Nugraha, D. P., Setiawan, B., Nathan, R. J., & Fekete-Farkas, M. (2022). FinTech adoption drivers for innovation for SMEs in Indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(4), 208.
- Hart O. A., Ojiabo, U., & Bartholomew, C. E. (2016). Using T-O-E theoretical framework to study the adoption of ERP solution. *Cogent Business & Management*, 3. <https://doi.org/10.1080/23311975.2016.1196571>.
- Hepu, D., Sophia, X. D., & Feng, L. (2020). Critical determinants for electronic market adoption Evidence from Australian small- and medium-sized enterprises, *Journal of Enterprise Information Management*, 33(2), 335-352. <https://doi.org/10.1108/JEIM-04-2019-0106>.
- Mahendra, A. N. (2015). Impact of government support and competitor pressure on the readiness of SMEs in Indonesia in adopting the information technology. *Procedia Computer Science*, 72, 102-111. <https://doi.org/10.1016/j.procs.2015.12.110>.
- Ghobakhloo, M. & Ching, N. T. (2019). Adoption of digital technologies of smart manufacturing in SMEs. *Journal of Industrial Information Integration*, 16, 100107.
- Ministry of Planning & Investment, USAID (2021). *Digital Transformation Guide for Businesses in Vietnam*.
- Mirjana, P. B., Amer, Č., & Jovana, Z. (2016). Technology acceptance model for business intelligence systems. *Procedia Computer Science*, 100, 995-1001. <https://doi.org/10.1016/j.procs.2016.09.270>.
- Nguyen, P. N., Nguyen, T. B. T., Nguyen, T. B. T., & Cao, T. D. (2022). Application of TOE model to analyze intention to accept and continue to use information and communication technology in tourism in Da Nang. *Journal of Science and Technology - University of Danang*, 20(4), 39-45.
- Rahayua, R. & Daya, J. (2015). Determinant factors of e-commerce adoption by SMEs in developing country: evidence from Indonesia. *Procedia - Social and Behavioral Sciences*, 195, 142-150. <https://doi.org/10.1016/j.sbspro.2015.06.423>.
- Rajbhandari, S., Devkota, N., Khanal, G., Mahato, S., & Paudel, U.R. (2022). Assessing the industrial readiness for adoption of industry 4.0 in Nepal: A structural equation model analysis. *Journal Heliyon*, 8, e08919. <https://doi.org/10.1016/j.heliyon.2022.e08919>.
- Tornatzky, L., & Fleischer, M. (1990). *The Process of Technology Innovation*. Lexington: Lexington Books.
- Van, H. Q. N. (2021). *The influence of the relationship between information technology and lean management on business performance of enterprises in Ho Chi Minh City*. [Unpublished doctoral dissertation]. Lac Hong University, Vietnam.

- Wessels, T. & Jokonya, O. (2021). Factors affecting the adoption of big data as a service in SMEs. *Procedia Computer Science*, 196, 332-339, Information Systems and Technologies. <https://doi.org/10.1016/j.procs.2021.12.021>.
- Wenqi, L. & Wenbin, P. (2022). Digital inclusive finance, financial mismatch and the innovation capacity of small and medium-sized enterprises: Evidence from Chinese listed companies, *Heliyon*, 9, e13792. <https://doi.org/10.1016/j.heliyon.2023.e13792>.

Thong Luong Nguyen Duy
Green University - Tra Vinh University One Member Company Limited
E-mail address: lnthong@tvu.edu.vn
Major area(s): Economic management, Digital economy, Innovative start-up

Tung Diep Thanh
Tra Vinh University
E-mail address: dttung@tvu.edu.vn
Major area(s): Agricultural economy, Economic management, Green economy

(Received July 2023; accepted December 2023)

