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Increasing Intention to Continue Participating in Digital Transformation among SMEs: Partial Least Squares Structural Equation Modeling (PLS-SEM) Analysis Using R

Nguyen Thi Phuong Giang, Le Thi Hong Nhung, Nguyen Binh Phuong Duy*

Faculty of Commerce and Tourism, Industrial University of Ho Chi Minh City, Viet Nam

**Corresponding author:* nguyenbinhphuongduy@iuh.edu.vn

ABSTRACT. This study investigates the determinants of Vietnamese enterprises' intention to persist with digital transformation amid increasingly interconnected supply chains and the rapid expansion of e-commerce. It explores this intention from the customer satisfaction perspective, considering the transformation of enterprises and technology providers facilitating this process. Employing structural equation modeling (SEM), this study analyzes data collected from 752 managers of small- and medium-sized enterprises (SMEs) within the logistics and import-export sectors. These findings indicate that compatibility, confirmation, perceived usefulness, and perceived ease of use significantly affect customer satisfaction and influence the intention to continue digital transformation. This study offers managerial implications for enhancing satisfaction and promoting digital transformation by integrating compatibility with confirmation.

1. Introduction

Digital transformation is essential for Small and Medium Enterprises (SMEs) to thrive in today's technology-driven business world, particularly with the rise of Industry 4.0 and challenges like the COVID-19 pandemic. The increasing amount of research on this topic across various fields reflects this. Several studies have explored different aspects of digital transformation in SMEs. Nair, Chellasamy and Singh [1] highlighted the importance of Information Technology (IT) readiness and organizational factors in the Indian context, while Gamache, Abdul-Nour and Baril [2] focused on the role of specific technologies in enhancing SME performance. Teng, Wu and Yang [3] investigated the link between digital transformation and SME performance, and Leso, Cortimiglia and Ghezzi [4] provided further insights into the factors influencing digital transformation in SMEs.

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In the Vietnamese context, research has focused on various aspects of digital transformation in SMEs. Nguyen, Le and Vu [5] extended the Technology-Organization-Environment (TOE) framework to understand the application of online retail and its impact on business dynamics and performance. Lang, et al. [6] emphasized the human element in digital transformation within supply chains. Mai, et al. [7] examined the influence of government policy, IT capacity, and innovation on digital transformation in Vietnamese SMEs post-COVID-19. The implementation of robust digital transformation strategies is vital for sustaining the adoption of digital technologies in Vietnam [8]. In line with the increasing relevance of digital innovations across various industries, including retail, the Vietnamese government is actively fostering digital growth and enabling digital transformation in SMEs [5]. The Ministry of Planning and Investment has emphasized the critical nature of digital transformation for Vietnamese enterprises, particularly SMEs. Businesses with limited investment capital must consider synchronous compatibility prior to embarking on a comprehensive digital transformation. Digital cross-border e-commerce is one area from which SMEs stand to gain significantly, as revealed by Cuong, Nguyen and Tran [9], who make use of digital platforms to facilitate their digital transformation journey. Hoang and Le [8] examined technology use in Vietnam's food delivery services to improve customer experience, which is a clear indicator of ongoing digital transformation. Digital transformation is of utmost importance to businesses and is even more important for SMEs in Vietnam. Therefore, the strategies for digital transformation were thought to be adopted but not fully pursued. However, with the influx of technology, there is an inclination to boost the continued use of digital solutions in Vietnam.

Analyzing factors that influence the continued adoption of digital transformation is essential for SME management, especially considering their significant contribution to global employment [10]. Various factors can predict the intention to continue using digital technologies, such as mobile banking applications [11-13]. As SMEs navigate the evolving business environment, digital transformation remains vital for sustainable growth and development [14].

Internal factors, external pressures, and government support drive the intention to continue digital transformation among Vietnamese SMEs. Recent research further emphasizes the importance of SMEs continued use of digital technology [15]. Studies such as Bruce, et al. [16] explore the influence of CEO innovation and perceived behavioral control on SMEs' intention to continue digital transformation. This study collected research data from various business actors, including import-export and logistics companies, to contribute to this understanding. The findings suggest that the integration of intrinsic factors from the compatibility of the technology platform with the organization and post-use validation have not been considered simultaneously in their driving role on perceived usefulness, perceived ease of use, satisfaction, and intention to continue engaging in digital transformation. Therefore, to examine the simultaneous driving of

compatibility and validation, the internal and external factors that can influence the perception of the enterprise about digital transformation through perceived usefulness and ease of use are considered. Therefore, the objective of this study is to examine the role of perceived usefulness and ease of use of technology through compatibility and confirmation when using technology on satisfaction in the process of participating in digital transformation and at the same time affecting the behavior of continuing to participate in partial or full digital transformation in the future for small and medium enterprises in Vietnam in the field of logistics and import-export. From considering the multidimensional impact of factors, the study proposes managerial implications to improve satisfaction as well as the intention to continue to participate in the process of participating in digital transformation of enterprises.

2. Literature Review

2.1 Digital Transformation and Organizational Behavior Theory

Organizational behavior theory is evolving to reflect the significant impact of digital transformation on businesses. This transformation, fueled by rapid advancements in information and communication technology, necessitates organizations adapt and evolve to remain competitive. Technological capabilities provide an organization with a tremendous ability to change itself and exploit market opportunities [17]. This includes enhancing product lines, improving production processes, and ultimately redesigning the organization's operations to survive and thrive and generate significant value for stakeholders.

Digital transformation is an ongoing process encompassing various facets, including integrating the Internet into all activities, the rise of social media, and using artificial intelligence [18]. It is not just about radical restructuring but also about continuous incremental changes, like building a workforce that emphasizes change management and approaches new technologies in training activities [19]. Research in this area explores the link between digital transformation and sustainability [20, 21], the impact on business models and competitive advantage [22], and the evolving nature of organizational processes and leadership competencies [23, 24].

2.2 Technology Acceptance Model (TAM) and Absorptive Capacity (ACAP)

The Technology Acceptance Model (TAM) is a widely adopted framework for understanding and forecasting how people embrace new technologies. Based on the Theory of Reasoned Action (TRA) in social psychology, the TAM suggests that an individual's acceptance of technology is influenced by their perceptions of its utility and simplicity of use [25]. TAM, developed by Davis [26], is one of the most popular theories used to explain the acceptance and use of information technology.

Recent research has extended the TAM by incorporating factors such as perceived educational compatibility and digital self-efficacy [27]. This study used the TAM model

foundation with perceived usefulness and perceived ease of use as the foundation for this study. Although TAM is a reliable model, previous studies also recommend extending this model by adding other technical variables or personal characteristics as drivers of behavior [28]. Perceived usefulness and perceived ease of use are the two primary factors that determine a user's intention to adopt a new technology, as supported by the TAM approach. These two elements shape a user's perception of the technology and therefore determine their readiness to accept and the extent to which they would use the system [29]. By assessing employees' intention to use technology, businesses can predict the success of their digital transformation. Behavioral intention, satisfaction, and habits were the best predictors of digital transformation adoption. Usefulness and ease of use are important for digital transformation intention and adoption, moderated by individualism as a cultural factor, and human capital and knowledge technology as indicators of innovation [30].

Absorptive capacity (ACAP) highlights a firm's ability to absorb, internalize, and exploit foreign data for business needs [31]. Loosely speaking, it sheds light on a firm's balance, which relates to the extent to which a firm can learn, internalize, and use information from other firms to gain competitive advantage. This ability is pertinent to a firm's innovation and development. ACAP not only pertains to the gathering of data but also to the reception, evaluation, and integration of that data into the firm's operations [32]. The most widely accepted theoretical model of ACAP is that of Cohen and Levinthal [33]. It centers on an understanding of how the firm can appreciate the value of new external information, modify its raw stock of information to include this new information, and use the refined stock in business operations. Accelerating growth because of successful transformation makes ACAP a desirable capability. This theory explains the role of compatibility between existing enterprise technology platforms and confirmation of the use of external digital transformation platforms. This includes infrastructure, software, and employee technological skills [34].

3. Developing the Research Hypothesis

3.1 Compatibility

Compatibility between technology and an organization's values, working methods, and business interactions is critical to successful digital transformation (Alam et al., 2016). Research has shown that compatibility positively influences an organization's intention to continue using the technology [35]. This is true across various industries, from public sector Business Intelligence [36] to financial services undergoing digital workplace transformation [37]. While leadership is essential to creating this compatibility [38], a phased approach to digital transformation is needed to ensure employee understanding and acceptance. Factors such as perceived usefulness, ease of

use, and security significantly influence user satisfaction, highlighting the importance of user-centered design and technology compatibility [39].

Focusing on the end-user perspective, Raman and Aashish [40] highlight the vital role of compatibility in promoting continued use of mobile payment systems in India. This emphasis on compatibility extends to various domains, including the adoption of e-wallets [41], the use of technology in higher education [42], and the broader impact of digital transformation on organizations and employees [43]. Therefore, the following hypotheses are proposed:

- H1a: Compatibility positively influences the perceived ease of use of digital technology platforms in digital transformation.
- H1b: Compatibility positively influences the perceived usefulness of digital technology platforms in digital transformation.
- H1c: Compatibility positively influences satisfaction with digital transformation.
- H1d: Compatibility positively influences intention to continue digital transformation.

3.2 Confirmation

Confirmation theory suggests that user satisfaction is driven by whether a product or service meets pre-use expectations [44]. Positive confirmation occurs when the experience exceeds these expectations [45]. This is particularly relevant to technology adoption in small and medium enterprises (SMEs), where employee support is critical to continued use and achieving digital transformation goals.

Several studies have highlighted factors that influence continuance intentions in SMEs. Trust in technology, often built through positive support from other employees, plays an important role [46]. Perceived ease of use and usefulness drive satisfaction and continued use [47]. If employees perceive technology as beneficial and user-friendly, they are more likely to adopt it. System quality further validates the technology's effectiveness, contributing to satisfaction and continued use [48]. When technology delivers promises and meets or exceeds expectations, it reinforces trust and encourages continued use [49, 50]. This is consistent with the expectancy-confirmation model (ECM), in which positive confirmation leads to satisfaction and continued intention to use the technology [51].

While the current study extensively explores factors such as trust, ease of use, and system quality, there is a need to directly investigate the impact of confirmation itself on technology adoption and digital transformation in SMEs. This includes understanding how validation influences perceptions of usefulness and satisfaction, ultimately driving continued use of technology and successful digital transformation [52]. From this, the following hypotheses are proposed:

- H2a: Confirmation positively influences the perceived ease of use of digital technology platforms in digital transformation.

- H2b: Confirmation positively influences the perceived usefulness of digital technology platforms in digital transformation.
- H2c: Confirmation positively influences satisfaction with digital transformation.
- H2d: Confirmation positively influences intention to continue digital transformation.

3.3 Perceived Ease of Use

Perceived ease of use is vital in business technology adoption, especially in digital transformation. As defined by Davis [26], perceived ease of use refers to the ease with which a user believes a system or service can be used. This includes learning, adapting, and becoming proficient [53]. Perceived ease of use significantly influences the intention to adopt new technologies, especially in small businesses considering cloud-based accounting systems [54]. It can drive perceptions of usefulness and influence behavioral intentions toward new systems, as seen in studies on decision-support systems [55]. In addition to intention, perceived ease of use plays a vital role in the success of digital transformation strategies. For example, in the banking sector, ease of use influences perceived utility and contributes to employee satisfaction [56]. Managers' perceptions of ease of use also shape digital transformation strategies [57], and employees' positive perceptions of digital tools are critical for successful implementation [58].

Furthermore, perceived ease of use positively influences perceived usefulness in digital technology adoption [59] and is essential for understanding digital engagement [60]. Many studies highlight the link between ease of use, switching intention, and continued pursuit of digital transformation [61]. Therefore, the following hypotheses are proposed:

- H3a: The perceived ease of use of digital technology platforms positively influences their perceived usefulness of digital technology platforms.
- H3b: Perceived ease of use of digital technology platforms positively influences satisfaction with digital transformation.
- H3c: Perceived ease of use positively influences intention to continue digital transformation.

3.4 Perceived Usefulness

Perceived usefulness, defined by Davis [26] as the belief that a system will enhance job performance, is vital in initial and continued technology acceptance [62]. This is because it captures the "instrumentalism" of using a system—the idea that it helps users achieve their goals. The link between perceived usefulness and continued use has been confirmed in various contexts. For example, Huang, Wu and Chou [63] found a strong effect of perceived usefulness on satisfaction and continued use intentions for a data mining tool. Similarly, perceived usefulness is a frequent factor in studies examining user satisfaction and behavioral intentions across B2B and end-user technology services [64, 65].

Furthermore, the perceived usefulness of digital transformation initiatives is influenced by factors such as understanding its potential benefits and impacts [57, 60]. Employee perceptions of usefulness are critical to successful digital transformation [66]. Beyond initial adoption, perceived usefulness sustains technology use by assuring users of long-term benefits [67]. Trust and satisfaction also enhance perceived usefulness [68], which is a key factor to consider when deciding to adopt technologies such as mobile apps [69].

Finally, perceived usefulness drives the intention to adopt digital transformation, as seen in a study of Italian farmers [70]. The usefulness of digital tools influences satisfaction and the decision to continue digital transformation, which is influenced by factors such as reduced workload and the ability to support remote working [71]. From this, the following hypotheses are proposed:

- H4a: Perceived usefulness of digital technology platforms positively influences satisfaction with digital transformation.
- H4b: Perceived usefulness of digital technology platforms positively influences the intention to continue digital transformation.

3.5 Satisfaction

Satisfaction is not just a byproduct but a vital catalyst in promoting the continued adoption of digital technology in small and medium-sized enterprises (SMEs). It reflects their level of awareness and influences their interest in using sustainable technology [49]. Satisfied SMEs are more likely to continue using technology, recognizing its value and positive impact on their operations [72, 73]. The technology acceptance model (TAM) emphasizes the importance of perceived ease of use, perceived usefulness in shaping the intention to continue using digital systems [26]. Higher satisfaction levels are associated with stronger intentions to continue using digital systems, highlighting the importance of post-implementation satisfaction [8]. This is particularly evident in the context of digital accounting systems [48, 74].

Security is a critical component of digital transformation, with perceived usefulness and ease of use influencing the impact of cybersecurity adoption on organizations [75]. Furthermore, satisfaction significantly influences the intention to continue using digital technologies [73]. Compatibility between technologies is not just a technical aspect but a crucial determinant of user satisfaction and intention to continue digital transformation. Many studies have shown that ease of use influences intention to adopt digital transformation [61]. When technology is perceived as valuable and compatible, users are more likely to continue using that technology [76]. Therefore, the following hypotheses are proposed:

- H5: Satisfaction with digital transformation positively influences the intention to continue the digital transformation.

4. Research Method

This study meticulously developed the research framework and measurement scales. Initially, the research model was built based on the core hypothesis, and related studies were explored through a comprehensive literature review. Key variables were identified, and measurement scales were established to measure them based on prominent works in the field. The detailed scales are provided in Appendix 1. These scales, widely recognized in the field, provide a solid foundation for our study.

To refine these scales, the study used a qualitative approach. Seven experts, including digital transformation experts, technology platform operators, academics, and training experts, participated in in-depth interviews. This process followed the princi e of saturation, with interviews ending when no new insights emerged. Based on expert feedback, the scales were adjusted. For example, the "confirmation" scale was expanded to include an additional observation variable, "Engaging in digital transformation improves the overall work experience of the organization." Similar adjustments were made to the other scales.

Finally, a questionnaire was designed using a 5-point Likert scale, incorporating the completed scales and additional demographic questions (Table 1). The sample size for the next phase of quantitative research was determined following the guidelines suggested by Saunders, Lewis and Thornhill [77]:

$$n \geq \frac{N * Z^2 * p * (1-p)}{d^2 * (N-1) + Z^2 * p * (1-p)}$$

Where "N" is the total number of SMEs in Vietnam, defined as 921372*98% of enterprises according to the statistics of the General Statistics Office in 2023 (98% of enterprises in Vietnam are SMEs). "Z" is the confidence level statistic; based on the 95% confidence level, Z is defined as "1.96". The "p" value is the expected proportion (the probability of occurrence is 50%). The "d" value is the margin of error (the statistical significance level in economic research is 5%). Then, the sample size "n" can be at least 384. Therefore, we determined the sample size in this study to be n = 903 (0.1%*N) > 384. The research team deployed 2,000 questionnaires, which were sent out and maintained the validity and research ethics of the collected results. However, the total number of valid questionnaires collected was only 752 observations, which is suitable for the research field of logistics and import-export companies. The survey data were then analyzed using partial least squares structural equation modeling (PLS-SEM) in R4.4.1. This choice is justified by three reasons: (1) to reduce the risk of non-normal distribution of data, (2) to suit exploratory research, and (3) to facilitate comparison of results with previous studies because most of these studies used PLS-SEM. Data was analyzed using the seminar package and the R statistical programming language [78].

5. Results

5.1 Preliminary Assessment of the Research Sample

As mentioned, the study collected 752 questionnaires to meet the minimum sample size 384. The survey subjects focused on SMEs operating in Vietnam's logistics and import-export sector. With a convenient sampling approach, nearly 70% of the collected samples came from logistics companies. In addition, other information collected, including enterprise size, time of participation in transformation, and age of senior leaders, was also statistically reported in terms of frequency and percentage in Table 1.

Table 1. Respondents' demographic characteristics

Criteria	Categories	Frequency	Percentage
Enterprise scale Business model	Under 50 people	338	44.95%
	50 to 100 people	287	38.16%
	100 to under 300 people	127	16.89%
Business model	Logistics	517	68.75%
	Import-export	235	31.25%
Digital transformation time	3 months	59	7.85%
	3 months - 1 year	227	30.19%
	1 year - 3 years	195	25.93%
	Over 3 years	271	36.04%
Age of leader	Under 30 years old	139	19.88%
	30 - 45 years old	381	57.71%
	Over 45 years old	232	22.42%

5.2 Measurement Scale Assessment

The subject scale is assessed for reliability, including indicators and internal consistency, and validity, such as convergent and discriminant [79]. Nevertheless, the first step in the assessment process is to measure reliability; the criteria must measure the theoretical concept, demonstrating the scale's internal consistency [80]. Table 2 shows the values of factor loadings, Cronbach's Alpha, composite reliability (expressed through rhoA), and average variance extracted (AVE). The loading values of the indicators must be above 0.708 [79]. Specifically, these indicators are all greater than 0.835. This shows that the indicators all achieve significant reliability. In addition, Cronbach's alpha coefficients ranged from 0.890 to 0.947, more significant than 0.70 and less than 0.95, indicating good internal consistency [81].

The actual reliability of the constructs lies between Cronbach's alpha and composite reliability (rhoA), where the former is relatively conservative, and the latter represents liberal exaggeration. Therefore, the exact reliability value rhoA was used to measure composite

reliability (CR), which ranged from 0.891 to 0.947, between Cronbach's alpha and composite reliability [82], as shown in Figure 1.

Table 2. Reliability

Constructs	Items	Loadings	Cronbach's Alpha	rhoA	AVE
Perceived Usefulness (PU)	PU1	0.870	0.921	0.922	0.761
	PU2	0.844			
	PU3	0.881			
	PU4	0.865			
	PU5	0.901			
Perceived Ease of Use (PEOU)	PEOU1	0.935	0.916	0.916	0.856
	PEOU2	0.923			
	PEOU3	0.917			
Compatibility (COMP)	COMP1	0.904	0.928	0.930	0.778
	COMP2	0.835			
	COMP3	0.871			
	COMP4	0.910			
	COMP5	0.887			
Confirmation (CONF)	CONF1	0.859	0.937	0.938	0.800
	CONF2	0.895			
	CONF3	0.887			
	CONF4	0.909			
	CONF5	0.921			
Satisfaction (SAT)	SAT1	0.885	0.947	0.947	0.825
	SAT2	0.906			
	SAT3	0.923			
	SAT4	0.882			
	SAT5	0.943			
Intention to Continue the Digital Transformation (ICDT)	ICDT1	0.909	0.890	0.891	0.819
	ICDT2	0.904			
	ICDT3	0.902			

The convergent reliability of the scale constructs was assessed using the average variance extracted (AVE) value. The threshold AVE value must exceed 0.500 [83]. Specifically, the AVE values in Table 2 of all scale constructs are greater than 0.761. Thus, the scale constructs meet the threshold criterion, indicating that they explained more than 76% of the variance of their indicators.

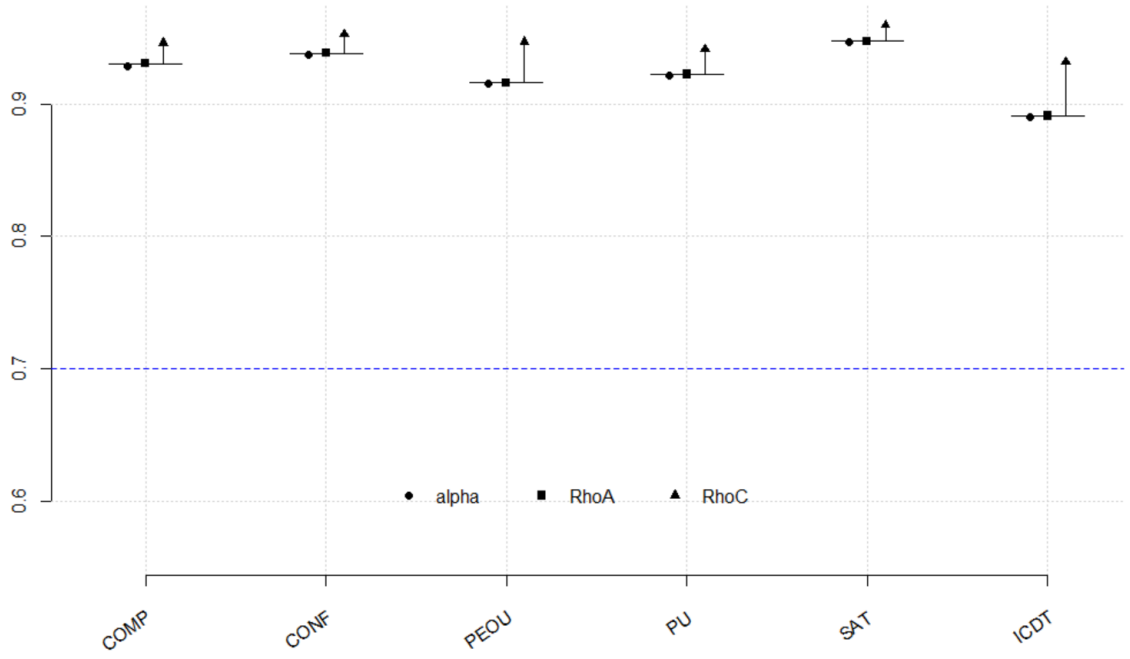

Figure 1. Reliability calculation and graphing using SeminR Package in R

The data analysis results in Table 3 also demonstrate that all the indices related to the discriminant validity tests meet the requirements. In this section, we also conducted discriminant validity tests using the Fornell-Larcker criterion to test the distinctiveness of a construct from other constructs in the model. The traditional approach to assessing discriminant validity uses the square root of the Average Variance Extracted (AVE) proposed by [83]. They also recommend that a scale has adequate discriminant validity when the square root of the AVE for each latent variable is higher than all the correlations between the latent variables. The matrix of these coefficients is shown in Table 3, indicating that the diagonal indices are more significant than those on the same row or column. Therefore, we conclude that the scales used in the model have significant discriminant validity.

Table 3. Discriminant validity

Constructs	COMP	CONF	PEOU	PU	SAT	ICDT
COMP (Compatibility)	0.882	NA	NA	NA	NA	NA
CONF (Confirmation)	0.536	0.894	NA	NA	NA	NA
PEOU (Perceived Ease of Use)	0.527	0.594	0.925	NA	NA	NA
PU (Perceived Usefulness)	0.542	0.602	0.537	0.872	NA	NA
SAT (Satisfaction)	0.572	0.691	0.603	0.640	0.908	NA
ICDT (Intention to Continue the DT)	0.577	0.628	0.603	0.595	0.660	0.905

5.3 Structural Models Assessment

The results of the collinearity test of the model with VIF values all <5. This result comes from the steps of Hair, et al. [79] to evaluate the structural model with VIF, R^2, and f^2 values. The impact level of each relationship of the research hypothesis can be considered through the path effect coefficient and f-square value shown in Table 4. CONF shows the most significant impact on PU with the f-square value set at 0.232. However, this impact is only at an average level. Specifically, the size of the f-square effect is considered at three primary levels (> = 0.02 is small; > = 0.15 is medium; > = 0.35 is large) [84]. CONF also shows a superior impact compared to COMP, PEOU, and PU concerning SAT. Meanwhile, the impact level of factors on ICDT is relatively similar, all reaching the average level.

Table 4. Index result of f Square

Constructs	COMP	CONF	PEOU	PU	SAT	ICDT
COMP (Compatibility)	0.000	0.000	0.105	0.074	0.036	0.039
CONF (Confirmation)	0.000	0.000	0.232	0.013	0.158	0.031
PEOU (Perceived Ease of Use)	0.000	0.000	0.000	0.041	0.045	0.044
PU (Perceived Usefulness)	0.000	0.000	0.000	0.000	0.083	0.025
SAT (Satisfaction)	0.000	0.000	0.000	0.000	0.000	0.050

R-square explains the variance in ICDT, SAT, PU, and PEOU by the exogenous variables mentioned in Table 5. The R-square values for the endogenous latent variables are based on 0.67 (significant), 0.33 (moderate), and 0.19 (weak) [85]. Meanwhile, Hair, et al. [79] suggested in academic research focusing on marketing issues that R-square values of 0.75, 0.50, or 0.25 for endogenous latent variables can be described as significant, moderate, or weak, respectively, as a rule.

Table 5. Evaluation of predictive accuracy and predictive relevance

Factors	R-square	Predictive capability level	Q^2 predict	Predictive relevance level
PEOU	0.414	Moderate	0.411	Good
PU	0.453	Moderate	0.426	Good
SAT	0.599	Moderate	0.532	Good
ICDT	0.564	Moderate	0.472	Good

The Q-square value represents the predictive relevance of the model. The Q-squared value is an indicator of a model's predictive capability. A Q-square value greater than 0 indicates that the values of the model are well reproduced and that the model has a good level of predictive relevance [84]. Considering the R-square impact relationship shown in Figure 2, the impact level of the factors mentioned in the model is moderate. Among these factors, more than 50% of the variance of SAT and ICDT was explained.

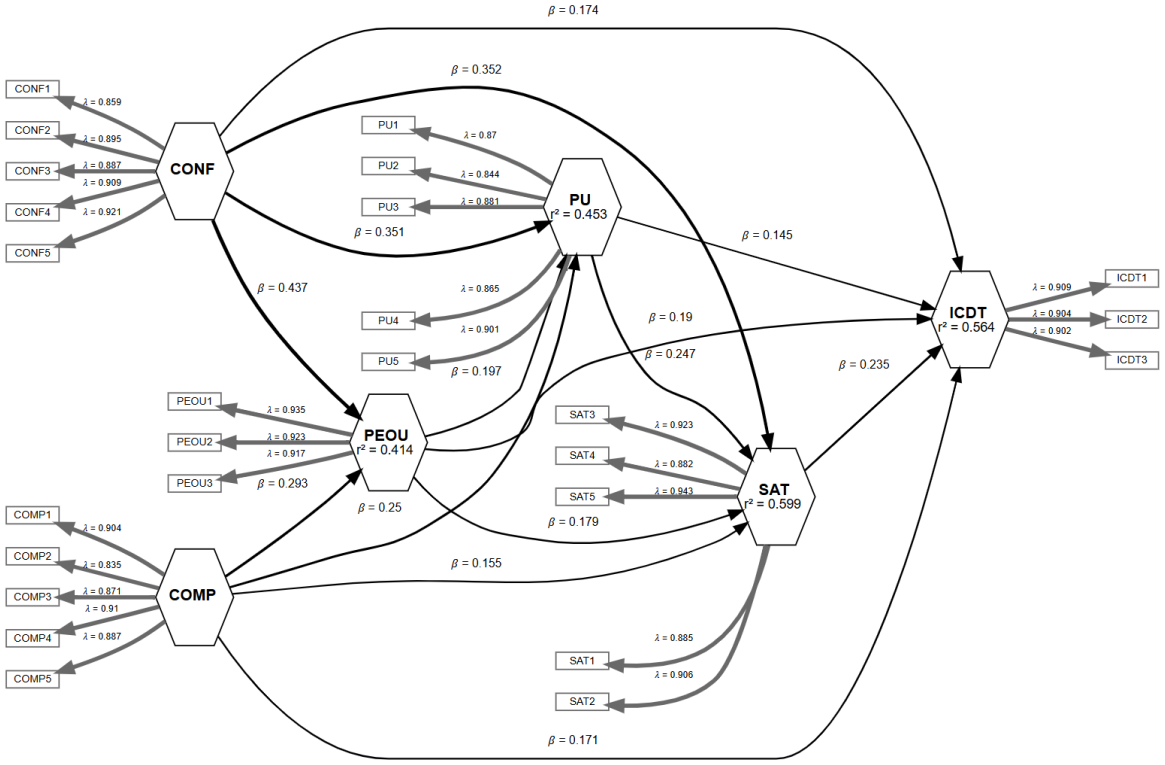

Figure 2. Structural model

5.4 Testing Research Hypotheses

To further emphasize the reliability of the study, the author continues to use Bootstrapping analysis techniques (n= 5000) to test the research hypotheses. The results are presented in detail in Table 6. From these results, we can decide which hypothesis is supported when concluding that there is a significant impact in the structural model through the T statistic or bootstrapping confidence interval. The results show that all hypotheses about the impact relationship in the linear structural model are accepted, shown through the T statistic results, all of which are greater than 1.96. In addition, the bootstrapping confidence intervals (CI) based on the %CI value do not change sign when going from 2.5%CI to 97.5%CI. In addition, the path coefficient is also shown in Figure 2 and Table 6, showing the positive correlation effect in the same direction as the relationships considered.

Table 6. Hypotheses testing results

Paths	Estimates	T Statistics	2.5% CI*	97.5% CI	Hypothesis Support
H1a: COMP -> PEOU	0.293	7.648	0.217	0.367	Supported
H1b: COMP -> PU	0.250	6.610	0.176	0.325	Supported
H1c: COMP -> SAT	0.155	4.583	0.087	0.220	Supported
H1d: COMP -> ICDT	0.171	4.971	0.106	0.237	Supported
H2a: CONF -> PEOU	0.437	12.373	0.368	0.505	Supported
H2b: CONF -> PU	0.351	9.501	0.279	0.424	Supported
H2c: CONF -> SAT	0.352	9.603	0.279	0.423	Supported
H2d: CONF -> ICDT	0.174	4.521	0.100	0.250	Supported
H3a: PEOU -> PU	0.197	5.182	0.121	0.270	Supported
H3b: PEOU -> SAT	0.179	5.381	0.117	0.246	Supported
H3c: PEOU -> ICDT	0.190	5.456	0.121	0.256	Supported
H4a: PU -> SAT	0.247	6.956	0.174	0.316	Supported
H4b: PU -> ICDT	0.145	4.019	0.075	0.214	Supported
H5: SAT -> ICDT	0.235	5.643	0.155	0.317	Supported

*CI: Confidence Intervals

5.5 Discussion

The results of this study show significant similarities with several related studies on the multidimensional impact of compatibility and confirmation of factors including perceived usefulness, perceived ease of use, satisfaction, and continuance intention to participate in the comprehensive digital transformation process. Confirmation (CONF) has a significant impact on perceived ease of use (PEOU), perceived usefulness (PU), satisfaction (SAT), and continuance intention (ICDT), based on the unchanging confidence interval (CI) from 2.5%CI to 97.5%CI expressed in the hypothesis from H2a to H2d (the impact beta coefficient ranges from 0.174 to 0.437). This result is consistent with the study of Liao, Palvia and Chen [49] when this author tested the hypotheses in the technology acceptance model (TAM), expectation confirmation model (ECM), and technology continuance theory (TCT). This is also reflected in Al-Hattami and Almaqtari [48]. However, the findings of this study showed that compatibility (CONF) and confirmation (COMP) had a significantly positive impact on PEOU rather than on PU. Further examination of the mediating relationship of PEOU is necessary in the future. Compatibility (COMP) also played a similar role in the technological context of the TOE model in the study by

Hasan, et al. [86]. The results showed that COMP had an impact, although not very strong, on the SAT and ICDT. In addition, Hussein, et al. [87], COMP had the most significant impact on ICDT. This also suggests that compatibility plays a more important role in promoting perceived usefulness and ease of use with digital transformation; the mediating role of the relationship between PU and PEOU needs to be considered in the future.

This study did not consider the mediating role of perceived usefulness (PU) and perceived ease of use (PEOU). However, the results also suggest that this flow relationship should be further considered when promoting SAT and ICDT. This is also found in the study by Liao, Palvia and Chen [49], who demonstrated the significant promotion of PU and PEOU on satisfaction and intention to continue digital transformation. PU was also found to have the most significant impact on SAT, as indicated by Al-Hattami and Almaqtari [48]. We also found a significant effect of PEOU on ICDT, instead of PU, like Al-Hattami and Almaqtari [48] but different from Jo and Bang [47]. However, the role of PU on SAT is higher than that of ICDT, which is also an interesting finding.

6. Conclusions

6.1 Managerial Implications

Based on the research results with the accepted factors in the research model, the author proposes appropriate technology business solutions for digital transformation to promote the intention to continue digital transformation in small and medium enterprises in Vietnam. Second, it provides management implications for small and medium enterprises in continuing sustainable digital transformation in business operations. Finally, it provides recommendations for society and the government regarding the intention to continue digital transformation. On that basis, it helps the above groups of subjects have business methods, marketing strategies, and other activities to meet consumer needs, support digital transformation throughout to promote the development of Vietnam, and integrate into the common development in the 4.0 revolution worldwide.

The results of the study show the important role of perceived usefulness, ease of use, compatibility, and confirmation in promoting satisfaction and intention to continue digital transformation in small and medium enterprises. Enterprises are satisfied with digital transformation products and services because of their easy-to-use interfaces and compatibility with the environment in terms of human resources and finance. Subsequent qualitative studies have confirmed the need for digital transformation products to accompany their development because of their compatibility, ease of use, user friendliness, and suitability for each enterprise and manufacturing enterprise. Compared to a few years ago, the impact of compatibility and validation of digital transformation products and services at small and medium-sized enterprises

has increased satisfaction and ease of doing business, significantly boosting revenue. Digital transformation products are indispensable in daily life and business activities of these enterprises. To continue digital transformation, compatibility and validation of product usefulness are crucial. Measures needed for ongoing digital transformation in SMEs include making products more convenient, compatible, and easy to use, and ensuring their indispensability and necessity for business survival. Technology enterprises should provide ongoing support services, including technical support and user guidance, after deployment. Ensuring real value for customers through market research and feedback is essential. Continuously improving products to adapt to new market requirements, building open APIs for customization, and creating knowledge databases for quick problem solving are important. Businesses should build user communities through online forums to encourage interaction and experience-sharing. Expert support is crucial for helping SMEs deploy suitable solutions. Maintaining good relationships with businesses that focus on digital transformation increases trust and creates a positive business environment for all stakeholders.

What will be the intention to continue digital transformation in the future? This will determine the sustainability of digital transformation in enterprises in the future. The usefulness, compatibility, and confirmation factors strongly impact satisfaction with continuing digital transformation in SMEs. Businesses assert that undoubtedly there is digital transformation done on them, to them, or within their spaces, and they attribute a certain degree of usefulness to it. While acknowledging the current losses, they come to terms with the returns and, therefore, have some satisfaction with the digital transformation of services and products. They identify gaps in digital transformation within their enterprise context, such as small-scale, limited human resources in IT knowledge and financial constraints for upgrading and innovating. SMEs aiming for sustainable digital transformation should continuously update and upgrade the features of digital transformation products and services to meet the increasing business needs. They must ensure that there are performance enhancements and speeding-up to minimize delays and improve productivity. There are training courses and seminars for employees to enhance the knowledge base of the staff with regard to IT, security, and innovative skills. Customized training programs should be used, as needed. To enhance the user experience, SMEs should integrate innovative tools with optimized interfaces and easy-to-use features to provide a smooth experience through automated innovative technologies. User feedback should be collected and used to improve the products. Thus, loyalty programs should be developed to promote long-term customer engagement. Manufacturing enterprises should supplement more technology to upgrade their functions and improve the software for SMEs. SMEs themselves have to participate in digital transformation communities to obtain expert opinions, update innovations, exchange

experiences that will lead to the creation of effective business strategies, maintain a stable customer base, and sustain digital transformation.

Currently, with government support in management policies, promoting the cooperative community, continuous efforts of enterprises, and ongoing development, it is necessary to develop financial support policies such as preferential loans to help small and medium enterprises invest in new technology and upgrade digital transformation products and services. Encourage investment from investors and funding organizations for digital transformation projects of small and medium enterprises. Invest to build and improve digital infrastructure such as the Internet and cloud computing to facilitate digital transformation. Develop programs to expand digital transformation to rural and remote areas. Support from policies and experts helps small and medium enterprises deploy security solutions that suit their needs and scales. This protects critical business information and creates a safer and more trustworthy business environment for stakeholders. Organize IT and digital skills training programs for SMEs to help them master and effectively transform digitally. Create educational programs and sponsor scholarships to encourage learning in the technology sector. Create a positive business environment by providing resources to support technology startups. To promote collaboration among SMEs in sharing experiences and resources to create innovative solutions. Develop flexible policies to facilitate the implementation of new digital technologies by SMEs. Ensure that policies consider the diversity and specificity of SMEs and ensure fairness and transparency in competition.

6.2 Limitations and Future Research

Despite the above theoretical and practical contributions, this study has certain limitations. The biggest limitation may be the use of convenience sampling because of the difficulty in using resources to collect data. However, we are developing a stratified sampling method to expand the scale of the surveyed enterprises in many different fields. In addition, future research will build on these findings by integrating the current challenges of SMEs into their digital transformation journey to provide more practical solutions. The study also suggests that further studies can explore the mediating role of perceived usefulness, ease of use, and satisfaction, as well as explore the moderating roles of the relationship affecting the intention to continue participating in digital transformation of enterprises.

Appendix

Appendix 1. Summary of scales and factor loadings

Items	Scales (The scale was revised through qualitative research)
Compatibility. Based on the scale of Hussein, et al. [87].	
COMP1	Digital software/platforms (in digital transformation) are compatible with the company's existing values.
COMP2	Digital software/platforms (in digital transformation) are compatible with the company's way of doing business.
COMP3	Digital software/platforms (in digital transformation) are compatible with the company's preferred way of working.
COMP4	Digital software/platforms (in digital transformation) are always up to date, so they are compatible with most of the company's business operations.
COMP5	Digital software/platforms (in digital transformation) are compatible with the traditional processes that the company is operating.
Confirmation. Based on the scale of Bhattacherjee [62].	
CONF1	Our experience with software/digital platforms was better than expected.
CONF2	The software/digital platform exceeded my expectations in terms of how well it handled the organization's work.
CONF3	Overall, our experience with the software/digital platform confirmed most of our expectations.
CONF4	The software/digital platform was compatible with most aspects of the work that we applied.
CONF5	Overall, my expectations regarding the software/digital platform were confirmed.
Perceived usefulness. Based on the scale of Susanto and Aljoza [88].	
PU1	Using digital software/platforms helps to improve the quality of logistics/import-export-related work.
PU2	Using digital software/platforms helps better control logistics/import-export-related work.
PU3	Digital software/platforms help complete tasks faster than usual.
PU4	Using digital software/platforms helps to increase the efficiency of related work.
PU5	Using digital software/platforms helps perform more work than the company itself.
Perceived ease of use. Based on the scale of Bhardwaj, Garg and Gajpal [89]; Cheung, Chang and Lai [90].	
PEOU1	Learning how to operate a software/digital platform is easy for businesses.
PEOU2	The company finds it easy to use a software/digital platform for what it wants to do.
PEOU3	Interaction with the software/digital platform is clear and easy to understand.
Satisfaction. Based on the scale of Tseng [91]; Thong, Hong and Tam [92]	
SAT1	The overall experience with digital platforms/software is very satisfactory.
SAT2	Satisfied with the use of digital technology in a company's operations.
SAT3	Satisfied with the content provided by the digital platform/software.
SAT4	Satisfied with the functions provided by the digital platform/software.
SAT5	Overall, the quality of service provided by the digital platform/software provider is as expected.
Continuance Intention. Based on the scale of Hussein, et al. [87]; Bhattacherjee [62].	
ICDT1	The company intends to continue using digital platforms/software rather than revert to the conventional approach.
ICDT2	In general, the company uses digital platforms/software on a regular basis.
ICDT3	If the digital platform/software provided by the service provider is still available, the company will continue to use it.

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