

Factors influencing the Digital Transformation of Vietnam SMEs**Nhat Nguyen Cong*, Le Nguyen Thi Mai***Vinh University, VietNam***Corresponding author: nhatncvu@gmail.com*

ABSTRACT. This study investigates the key factors influencing the Digital Transformation (DT) of small and medium-sized enterprises (SMEs) in Vietnam, a sector crucial for national economic development and competitiveness. Drawing from both organizational and technological perspectives, the research identifies drivers, challenges, and success factors related to the adoption of digital tools and processes. Using a quantitative methodology, data were collected via an online survey targeting 321 SMEs owners, managers, and administrators across multiple regions in Vietnam. The analysis, conducted through Structural Equation Modeling (SEM), reveals that leadership competencies, firm size, access to digital infrastructure, and external market pressures are significant determinants of DT success. Additionally, the study highlights the role of DT in enhancing business sustainability through improved operational efficiency, customer engagement, and market reach. These findings contribute to a deeper understanding of the DT journey within developing economies and offer actionable insights for policymakers and stakeholders aiming to accelerate digital adoption among SMEs in Vietnam.

1. Introduction

The growing application of digital technologies is reshaping business models across industries, with SMEs increasingly recognizing DT as a critical lever for competitiveness and sustainability. In Vietnam, SMEs represent a significant portion of the national economy and are now under pressure to adapt to global digitalization trends in order to remain agile, innovative, and responsive to evolving market demands. This digital shift involves not only the adoption of advanced technologies such as cloud computing, data analytics, blockchain, machine learning, and the Internet of Things (IoT) but also the transformation of organizational processes, cultures, and customer engagement strategies. As observed in sectors like logistics and supply chain

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management, DT introduces new modes of value creation by enabling real-time visibility, seamless communication across networks, and data-driven decision-making [19]. For Vietnamese SMEs, particularly those operating in logistics or connected supply chains, these digital innovations present a dual opportunity: improving operational efficiency while aligning with broader sustainability goals. However, the implementation of digital technologies often entails significant challenges [11], including high costs, limited infrastructure [37], slow diffusion rates, and a shortage of digital skills [38].

The integration of technologies such as IoT-enabled sensors and cloud-based platforms is essential to achieving vertical and horizontal alignment across business functions and stakeholders ([22], [30], [31]). Yet, to be effective and sustainable, such transformation requires Vietnamese SMEs to reconsider their digital strategies, business models, and leadership approaches. Moreover, the shift toward sustainable digital operations must balance economic performance with environmental and social considerations [6], reflecting the complex interdependencies within modern business ecosystems [39].

Despite increasing attention to digitalization globally, there remains a limited understanding of the specific factors driving or hindering DT among SMEs in developing economies like Vietnam. Factors such as technological readiness, organizational culture, leadership, access to external support, and market dynamics can significantly shape the success of digital initiatives. This study seeks to address this gap by identifying the key factors influencing the DT of SMEs in Vietnam. By focusing on both internal and external enablers and barriers, the research aims to provide practical insights for policymakers, business leaders, and scholars to support more effective digital adoption strategies. Ultimately, fostering DT in Vietnamese SMEs is not only vital for their survival and growth but also for the broader goal of building a resilient, innovative, and sustainable economy in the digital age.

2. Literature review

2.1. *Digital Transformation*

DT has emerged as a critical strategic process for organizations seeking to remain viable in an increasingly digital and interconnected world. It is broadly characterized by the adoption and integration of emerging technologies aimed at enhancing operational efficiency, service delivery, and customer engagement across both online and offline channels [14]. The move towards digital platforms has enabled greater flexibility and automation, primarily through the standardization of service processes [23].

Technological advancements, particularly in mobile and internet technologies, have accelerated the pace of DT globally. These technologies are not only widely accessible and portable but also facilitate rapid information transmission, content distribution, and product

delivery [3]. As a result, organizations are compelled to update their traditional business models to remain competitive and responsive to evolving consumer expectations [29].

DT also fundamentally reshapes the nature of market interaction. It fosters direct engagement with customers and enables businesses to adapt their goods and services to changing consumer demands often using digital tools like social media platforms [1]. Furthermore, DT contributes to the formation of network economies, where digital platforms serve as intermediaries that facilitate dynamic interactions between external suppliers and end-users, thereby enhancing value co-creation and operational scalability ([17], [25]).

Collectively, these studies underscore the multifaceted impact of DT, from operational improvements and strategic alignment to the creation of entirely new digital ecosystems. As such, understanding the drivers and consequences of DT remains essential for businesses aiming to navigate the complexities of the modern digital landscape.

2.2. Company size

In Vietnam, micro, small, and medium-sized enterprises (MSMEs) are categorized based on criteria established by the Government under Decree No. 80/2021/NĐ-CP. According to this decree, the classification of enterprises depends on both the number of employees participating in social insurance and annual revenue. Specifically, micro-enterprises in the trade and services sector have fewer than 10 employees and annual revenue not exceeding VND 3 billion; small enterprises have between 10 and 50 employees with annual revenue ranging from VND 3 billion to 100 billion; and medium-sized enterprises have up to 100 employees with revenue between VND 100 billion and 300 billion. For manufacturing and agriculture sectors, the employee thresholds and revenue limits differ slightly, but the structural categorization remains consistent.

Company size, as discussed by Alwi et al. [4], is often reflected not only in annual revenue and workforce but also in other operational aspects such as procurement capacity and the ability to establish trade credit. Larger firms tend to have more stable supply chains, access to better financial resources, and higher reputation capital—all of which significantly influence their ability to adopt new technologies.

Recent studies highlight the critical role of company size in DT readiness. Fachridian et al. [15] found that SMEs with a larger workforce were 4.3% more likely to adopt digital technologies. Similarly, in the Vietnamese context, larger SMEs tend to have greater access to technical expertise, capital, and strategic partnerships, all of which facilitate the integration of digital tools. On the contrary, smaller firms, especially micro and small enterprises, often face resource constraints that hinder their ability to pursue digital initiatives [20]. These firms typically lack the necessary financial and human capital to develop digital capabilities, making the transformation process both slower and more challenging [30]. According to Brodeur et al. [9], smaller companies suffer from limited access to both monetary and human resources, which restricts their potential

to embrace DT. This observation is highly relevant in Vietnam, where many MSMEs operate with minimal infrastructure and budgets. As a result, they encounter numerous obstacles when initiating digital adoption processes, such as insufficient access to ICT tools, limited knowledge of digital platforms, and a lack of strategic digital planning [34]. Moreover, Melo et al. [32] point out that SMEs, compared to larger companies, invest significantly less in innovation due to budget constraints and risk aversion.

Vietnamese SMEs also face specific financial challenges that differentiate them from larger domestic or foreign-invested firms. Limited access to formal credit channels, high dependence on informal financing, and underdeveloped digital ecosystems further exacerbate the difficulties in adopting digital solutions [40]. Larger enterprises can leverage economies of scale and internal resources to engage in innovation and DT, often establishing partnerships or digital ecosystems without intermediaries. In contrast, smaller firms rely heavily on government support programs and donor-funded projects to experiment with digital tools. Despite growing interest in DT, the literature addressing how Vietnamese MSME size influences their digital readiness and transformation trajectory remains scarce. While evidence from other countries (such as Peru or EU members) suggests that firm size plays a significant role in digital adoption, empirical insights specific to the Vietnamese business environment are limited. Most studies generalize SMEs behavior without segmenting the unique challenges faced by micro, small, and medium firms individually.

Given Vietnam's economic structure-where over 97% of enterprises are SMEs the digital readiness and innovation potential of these firms is critical to national development. However, DT remains a long-term and resource-intensive process, especially for small and micro businesses. This necessitates a deeper understanding of how enterprise size impacts the feasibility and pace of DT within the Vietnamese context.

2.3. Sustainability in SMEs

DT enables SMEs to streamline operations, enhance process efficiency, and improve decision-making through the automation of workflows and the integration of advanced data management systems [32]. A sustainable digital ecosystem for SMEs demonstrates how digitalization can support business performance from economic, environmental, and social sustainability perspectives [34]. The dimensions of sustainability in SMEs can be characterized as follows:

Economic: The implementation of cost-effective digital tools that enhance competitiveness, foster innovation, and create value for stakeholders while contributing to local and regional economic development.

Environmental: Reduction in energy consumption and waste generation through optimized resource utilization; adoption of eco-friendly technologies; and integration of processes that promote reuse, recycling, and sustainable sourcing.

Social: Improvement in employee well-being through safer working conditions, flexible working arrangements, and skills development; fostering equitable opportunities across diverse groups; and contributing positively to community resilience and intergenerational equity [12].

Sustainability thus serves as a strategic pillar for SMEs, enabling them to adapt more effectively to market fluctuations, regulatory changes, and societal expectations, while ensuring long-term competitiveness in an increasingly dynamic global business environment [29].

2.4. *Factors Involved in DT*

The factors involved in DT are multifaceted, encompassing a range of barriers, drivers, and contextual influences. Martínez et al. [31] provide a foundational framework that categorizes these factors into barriers and drivers within industrial supply chains, emphasizing the need for a structured approach to aid managers in strategizing digitalization efforts. This categorization underscores the importance of understanding both internal and external influences that can facilitate or hinder DT. In the context of small and medium-sized enterprises (SMEs), Šimberová et al. [34] highlight the significance of managing threats and opportunities associated with DT, particularly from a sustainability perspective. They developed a complex assessment tool to evaluate digital maturity, which aids in identifying specific opportunities and threats, thus emphasizing the role of strategic management in navigating digitalization. Organizational and individual factors also play a crucial role. Yang et al. [40] explore socio-demographic influences on digital competencies among teachers, indicating that personal and social factors can impact digital readiness and perception, which are essential for successful transformation. Brodeur et al. [9] operationalize critical success factors (CSFs) for Industry 4.0 transformation in manufacturing SMEs, providing a model that clarifies the actions necessary for effective digitalization, highlighting organizational capabilities and actor involvement as key factors. External shocks, such as the COVID-19 pandemic, have also been identified as catalysts for DT. Červinka and Novák [10] demonstrate that the pandemic influenced strategic management and accelerated digital initiatives in SMEs, suggesting that crisis-driven factors can significantly impact the pace and scope of DT efforts.

Motivational aspects are examined by Đalić and Erceg [12], who focus on the motivation behind decision-making in social entrepreneurship. Their findings suggest that personal and professional motivations, along with digital skills and data protection concerns, influence the DT process, indicating that individual drivers are integral to organizational change.

Furthermore, the development of specific indicators and criteria for measuring DT is crucial. Laorach and Tuamsuk [27] identify nine key indicators and criteria tailored to the Thai

university context, illustrating that organizational assessment tools are vital for tracking progress and ensuring effective transformation. Sustainability and process extension are addressed by Su and Yu [35], who investigate how DT can be sustained over time. Their qualitative case study emphasizes the importance of understanding the mechanisms and processes that underpin ongoing digital initiatives, extending existing frameworks to include sustainability considerations.

In the public sector, organizational agility emerges as a critical factor. Fachridian et al. [15] examine how agility strategies, along with collaborative knowledge creation, innovation, and transformational leadership, influence DT in government organizations. Their quantitative analysis underscores the importance of adaptive organizational capabilities in overcoming sector-specific challenges.

Finally, Bhuiyan et al. [8] explore technological tools and strategies that enhance SME outcomes, emphasizing that technological integration reduces costs and fosters innovation. They also identify difficulties faced during implementation, highlighting that technological readiness and strategic alignment are vital factors for successful DT.

Overall, these studies collectively illustrate that DT is driven by a combination of organizational, technological, individual, and contextual factors. Managing threats and leveraging drivers, fostering organizational agility, developing appropriate assessment indicators, and understanding individual motivations are all essential components for effective digitalization across various sectors.

3. Methodology

3.1. Hypothesis Development

The effect of DT factors on the competitiveness of small and medium-sized enterprises (SMEs) in Vietnam is examined in this report. The study adopts a sequential exploratory design, characterized by the systematic collection and analysis of quantitative data. The experimental research reviewed all relevant existing models and compiled data from previous studies on business operations and market performance among Vietnamese SMEs, with a particular focus on factors such as DT and business sustainability. Findings from the literature review provided the foundation for developing the conceptual model. This research will be useful in explaining issues related to sustainability. The hypotheses proposed, based on the conceptual model, are described below:

H1: The drivers of DT have a positive impact on DT success factors among Vietnamese SMEs.

H2: The objectives of DT have a positive impact on DT success factors among Vietnamese SMEs.

H3: DT success factors have a positive impact on the sustainability of Vietnamese SMEs.

H4: SMEs sustainability has a positive impact on the economic performance of Vietnamese SMEs.

H5: SMEs sustainability has a positive impact on the environmental performance of Vietnamese SMEs.

H6: SMEs sustainability has a positive impact on the social performance of Vietnamese SMEs.

H7: DT success factors positively impact the implications (operational and strategic changes) of DT in Vietnamese SMEs.

3.2. *Research Design and Data Collection*

This study adopted a quantitative research design to evaluate the impact of DT factors on the competitiveness of SMEs in Vietnam. Data were gathered through a structured online questionnaire targeting SME owners, managers, and key decision-makers across diverse industries. The questionnaire was developed following an extensive review of relevant literature and theoretical models, and refined through consultations with academic scholars and industry experts in DT and enterprise competitiveness. The survey instrument comprised items measuring the influence of DT drivers, objectives, implications, and success factors on SMEs' competitive capabilities. Responses were recorded using a five-point Likert scale, enabling participants to indicate their degree of agreement with each statement. A pilot test involving 30 SME representatives was conducted to assess the clarity, validity and reliability of the questionnaire, with adjustments made accordingly. The final questionnaire was disseminated over a four-week period through professional associations, industry networks, and online business forums to ensure broad sectoral and geographical representation. Collected data were processed using SPSS version 26, and structural equation modeling (SEM) was employed to test the research hypotheses and assess the validity of the proposed model. The survey phase encompassed the formulation of research hypotheses grounded in established literature and theoretical frameworks, the development of the research design and measurement instruments, the construction of the sampling strategy, the execution of data collection, the application of appropriate data analysis techniques, and the derivation of research inferences ([18], [33]).

3.3. *Questionnaire Development*

The research questionnaire was constructed in accordance with the instrument development methodologies proposed by Jia & Li [20], Verma [38], involving three stages: Stage 1 involved a thorough examination of prior studies in the literature to define the research constructs and generate an initial set of factors for operationalizing each construct. Stage 2 focused on the development of the measurement instrument and the implementation of data collection. The questionnaire items were designed using a Likert scale, a widely adopted

approach in similar research that enables respondents to express favorable or unfavorable attitudes toward the subject of interest ([5], [26], [36]). Stage 3 consisted of pre-testing the instrument to evaluate content validity and ensure that standardized procedures were applied consistently throughout the data collection process.

The pilot study involved evaluating and refining the instrument, as well as testing the internal consistency of the factors. Following a pre-test with eleven industry and academia experts, an additional driver for DT was identified: Technology transfer from foreign markets. Regarding the DT objectives, there were two new factors: reducing operational costs through automation and process optimization and competitive advantage. There were also two new DT success factors: strong leadership commitment to DT and information technology acceptance. The sustainability of SMEs in terms of the economy and the environment remained the same. In contrast, the sustainability of SMEs in society saw two new factors: public visibility and social enterprise involvement. Finally, the study identified three key factors for DT. A questionnaire was validated using an Index of Objective Congruence (IOC) score of over 0.5 and its reliability was confirmed with a Cronbach's alpha greater than 0.7. The only exception was the "Competitive pressure" factor, which had a Cronbach's alpha of 0.521. The results revealed a total of 45 factors which, along with constructs and measurement scales, are presented in Table 1.

Table 1: Summary of Questionnaire Constructs, Variables, and Results from the Pilot Validity

Construct	No	Item	Factor Criteria	IOC	Cronbach's Alpha
DT drivers	1	VD1	Changes in customer behavior and expectations	0.92	0.521
	2	VD2	Industry-wide digital shifts	0.83	
	3	VD3	Competitive pressure	0.92	
	4	VD4	Regulatory and policy changes	0.66	
	5	VD5	Technology transfer from foreign markets*	0.55	
DT objectives	6	VO1	Expanding market reach and customer base via digital channels	0.55	0.852
	7	VO2	Supporting innovation in products and services	0.63	
	8	VO3	Increasing business agility and adaptability to market changes	0.73	
	9	VO4	Enhancing customer experience and satisfaction	0.83	
	10	VO5	Reducing operational costs through automation and process optimization*	0.82	
	11	VO6	Competitive advantage*	0.83	
DT success factors	12	VF1	Collaboration between internal departments during the transformation process	0.81	0.809
	13	VF2	Availability of skilled and digitally competent workforce	0.63	
	14	VF3	Robust IT infrastructure to support digital operations	0.94	
	15	VF4	Adequate financial resources allocated for digital initiatives	0.83	
	16	VF5	Clear and well-defined DT strategy	0.91	

Implications for DT	17	VF6	Continuous performance monitoring and improvement of digital projects.	0.73	0.83
	18	VF7	Strong leadership commitment to DT*	0.56	
	19	VF8	Information technology acceptance*	0.67	
	20	VI1	Changes in operational processes resulting from DT	0.62	
	21	VI2	Adjustments in business strategy to align with digital capabilities	0.92	
	22	VI3	Development of new products, services, or business models enabled by digital technologies	0.92	
SMEs – Economic Sustainability	23	VES1	Operating cost control	0.97	0.921
	24	VES2	Resource utilization efficiency	0.73	
	25	VES3	Revenue and profitability growth	0.55	
	26	VES4	Labor productivity	0.63	
	27	VES5	Business forecast accuracy	0.54	
	28	VES6	Revenue stream diversification	0.64	
	29	VES7	Operational flexibility	0.92	
	30	VES8	Stable cash flow management	0.63	
	31	VES9	Technology adoption in financial and operational management	0.63	
SMEs – Environmental Sustainability	32	VSE1	Resource efficiency	0.63	0.864
	33	VSE2	Resource efficiency	0.54	
	34	VSE3	Emission control	0.62	
	35	VSE4	Waste management	0.56	
	36	VSE5	Pollution prevention	0.62	
	37	VSE6	Biodiversity and land-use impact reduction	0.62	
SMEs – Social Sustainability	38	VSS1	Development benefits	0.54	0.922
	39	VSS2	Social impacts	0.55	
	40	VSS3	Employee health and safety	0.62	
	41	VSS4	Customer safety and satisfaction	0.73	
	42	VSS5	Labor patterns	0.63	
	43	VSS6	Social acceptance	0.63	
	44	VSS7	Public visibility*	0.63	
	45	VSS8	Social enterprise involvement*	0.63	

Exploratory Factor Analysis (EFA) is a statistical technique used to simplify data into a smaller set of summary variables and uncover the underlying theoretical structure of a phenomenon. This method is used to determine the relational structure between variables and survey subjects. In this study, the inter-relationships among the four dimensions of DT and the three dimensions of SMEs sustainability were examined using EFA to establish the underlying dimensionality of DT and SMEs sustainability construct. The result of KMO value near 1.0 and Bartlett's Test significance near 0.00 indicates that the data is adequate and suitable to continue the reduction process ([21], [32]). As shown in Table 2, the EFA yielded seven dimensions. The

procedure removed items with a factor loading value below 0.6 ([4],[13]). Overall, the EFA process dropped seven items from the DT and SME sustainability scales, with the remaining 39 items being used for Confirmatory Factor Analysis (CFA).

Table 2: Items Dropped After Exploratory Factor Analysis (EFA)

Construct	No. of Items before EFA	Items Dropped	Reason for Dropping	No. of Items after EFA
DT drivers	5	VD3	Factor loading <0.5	4
DT objectives	6	-	Factor loading <0.5	6
DT success factors	9	-	Factor loading <0.5	9
Implications for DT	3	-	Factor loading <0.5	3
Economic sustainability in SMEs	9	VES9	Factor loading <0.5	8
Environmental sustainability in SMEs	6	VSE1	Factor loading <0.5	4
		VSE2		
		VSS3		
Social sustainability in SMEs	8	VSS4	Factor loading <0.5	5
		VSS8		
Total	46	7		39

4. Methodology

4.1. Sample Characteristics

The data were collected through an online questionnaire distributed to employees of small and medium-sized enterprises (SMEs) in Vietnam. A total of 321 valid responses were obtained and used for data analysis. SPSS version 26 software was employed to generate descriptive statistics for analyzing the demographic characteristics of the respondents, as presented in Table 3.

Table 3: Demographic characteristics

Number of Employees	Numbers	Percents (%)
50-100	159	49.5
10-50	97	30.2
Less than 10	65	20.3
Total	321	100
Work Experience (years)	Numbers	Percents (%)
3-5	96	29.9
6-10	84	26.2
<3	78	24.3
>10	63	19.6
Total	321	100
Annual Income (billion VND)	Numbers	Percents (%)
100-300	142	44.3
3-100	125	38.9
<3	54	16.8
Total	321	100

4.2. Construct Measurement Model

CFA was employed to evaluate the relationships between the constructs and the retained observed variables. To estimate the hypothesized relationships among the variables, the study conducted both an overall goodness-of-fit test and separate significance tests. The model consists of 39 observed variables and seven latent variables. Table 4 presents a summary of the variables and the structure of the measurement model. The Cronbach's Alpha values, used to assess the reliability of the variables in the model, range from 0.752 to 0.931, as shown in Table 4. Each construct and its corresponding subscales recorded values above 0.7, confirming the internal consistency of the constructs.

Three indicators were employed to assess concurrent validity: factor loading values greater than 0.7, average variance extracted (AVE) values exceeding 0.5, and composite reliability (CR) values higher than 0.7 ([7], [16]).

The degree to which a concept can be distinguished from other concepts is referred to as discriminant validity. The criterion for confirming this validity is that the square root of the AVE for each concept must be greater than its correlation coefficient with any other concepts. This finding confirms the discriminant validity. Overall, considering both convergent and discriminant validity, the test results indicate that the construct validity is satisfactory. This suggests that the study's concepts are suitable for evaluation in the structural model.

Table 4: Summary of the Measurement Model and its Constructs

Dimension	No	Factor	Loading	t-value	SE	Cronbach's Alpha	CR	AVE
DT driver	1	VD1	0.728	-	-	0.752	0.784	0.496
	2	VD2	0.712	13.216	0.660			
	3	VD4	0.601	14.353	0.080			
	4	VD5	0.761	13.573	0.086			
DT objectives	5	VO1	0.696	16.611	0.062	0.899	0.932	0.556
	6	VO2	0.792	17.978	0.060			
	7	VO3	0.751	16.996	0.063			
	8	VO4	0.726	-	-			
	9	VO5	0.624	15.003	0.067			
DT success factors	10	VO6	0.789	16.894	0.060	0.809	0.931	0.541
	11	VF1	0.623	-	-			
	12	VF2	0.701	14.005	0.077			
	13	VF3	0.787	15.021	0.081			
	14	VF4	0.699	14.324	0.078			
	15	VF5	0.778	14.657	0.084			
	16	VF6	0.776	14.987	0.081			
	17	VF7	0.702	14.014	0.076			
Implications for DT	18	VF8	0.741	13.968	0.074	0.83	0.782	0.561
	19	VI1	0.753	15.894	0.061			
	20	VI2	0.789	16.011	0.060			
	21	VI3	0.708	-	-			

Economic sustainability in SMEs	22	VES1	0.786	–	–	0.928	0.871	0.621
	23	VES2	0.773	17.979	0.056			
	24	VES3	0.732	15.021	0.062			
	25	VES4	0.701	15.512	0.064			
	26	VES5	0.699	15.765	0.063			
	27	VES6	0.767	15.998	0.064			
	28	VES7	0.701	16.005	0.060			
	29	VES8	0.714	16.014	0.058			
	30	VES9	0.708	16.009	0.062			
Environmental sustainability in SMEs	31	VSE3	0.785	–	–	0.864	0.862	0.768
	32	VSE4	0.791	18.753	0.055			
	33	VSE5	0.796	19.003	0.056			
	34	VSE6	0.786	15.324	0.058			
Social sustainability in SMEs	35	VSS1	0.796	–	–	0.922	0.865	0.570
	36	VSS2	0.711	18.129	0.052			
	37	VSS5	0.761	18.986	0.053			
	38	VSS6	0.702	17.120	0.056			
	39	VSS7	0.794	18.008	0.057			

4.3. Structural Equation Model and Hypothesis Testing

The underlying hypotheses for the proposed research model were tested to evaluate the structural model. SPSS version 26 software was used to perform a path analysis to investigate the causal model. The goodness-of-fit indices for this model were as follows: Root Mean Square Error of Approximation (RMSEA) = 0.053; Tucker-Lewis Index (TLI) = 0.951; Comparative Fit Index (CFI) = 0.962; Goodness of Fit Index (GFI) = 0.918; Normed Fit Index (NFI) = 0.950; Chi-square = 314.697; df = 126; Minimum discrepancy per degree of freedom CMIN/df = 2.610. All of these indices met the required threshold values, indicating a good model fit. Table 4 summarizes the hypothesis testing results, showing the statistically significant relationships between the variables. The results of the regression analysis support hypotheses H1 to H7.

5. Conclusion

This study explored and confirmed the influence of DT on the sustainability of SMEs in Vietnam. Digitalization and sustainability strategies should become cornerstones of SMEs business operations, and companies need to adopt digital policies to implement their sustainable responsibility initiatives. The DT drivers and DT objectives can be an effective way for businesses to achieve sustainability; initiatives such as DT drivers should focus on adapting technology transfers from abroad, while DT objectives concentrate on improving digital channels. The core relies on developing information system capabilities and building a digital business strategy to enhance sustainability in SMEs, with a particular focus on reducing operational costs. Environmental issues need to be addressed by initiating policies to reduce pollution. Regarding social factors, companies should pay attention to the developmental benefits of the company.

Previous studies have shown that the success of SMEs depends on how these businesses promote DT through sustainability. By adopting DT methods as part of their transition strategy, businesses can enhance their competitive advantage and achieve sustainability. This study provides a clearer insight into the impact of DT on SMEs in Vietnam. The results show that DT brings significant opportunities for the sustainability of stakeholders in SMEs. In this study, we made an effort to evaluate the impact of DT on sustainability, thereby making this study a foundation for future research. However, this study still has some limitations. The research results are based on a self-administered questionnaire and the perceptions of the respondents. The sample size is relatively small and includes only participants in Vietnam, which limits the generalizability of the results. Future studies should consider using a larger sample size to yield more meaningful results. Further studies could compare the functional differences of DT across various sustainable policy areas.

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