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Driving Factors of the Digital economy Under the Moderating Impact of Social Factors: Empirical Evidence from Vietnam

Nam Danh Nguyen[1]

Abstract

In the context of the intense global wave of digitalization, with data and technology playing a leading role, the digital economy has become a key factor in the development of countries. The digital transformation process is accelerating to build a robust digital economy with global competitiveness in emerging markets like Vietnam. This research aims to identify the factors driving the digital economy in Vietnam. Using 355 survey samples and quantitative analysis methods such as reliability testing, exploratory factor analysis, correlation analysis, and MMR hierarchical regression analysis, combined with regulatory variable testing on the Macro Process. The results reveal that digital infrastructure, R&D and innovation, enterprise capacity, international economic integration, government policies, the market, and human capital have a direct impact on driving the digital economy in Vietnam. Furthermore, the findings demonstrate that social factors not only positively moderates the relationships between these factors and the digital economy but also directly impacts it. Based on these results, several implications are suggested to optimize existing potentials and further promote the development of the digital economy in Vietnam.

Keywords: *Digital Economy, Moderate Role, Vietnam.*

Introduction

Natural resources serve as a crucial foundation for human survival and progress, playing an essential role in economic and social development as well as in sustaining livelihoods. As economies and societies advance rapidly, human activities have largely depleted and wasted these resources (Zhu et al., 2022). Inefficient and ill-considered approaches to resource development have resulted in both shortages and environmental issues. Consequently, the responsible management and effective utilization of natural resources are vital for meeting the Sustainable Development Goals (SDGs). The robust growth of the digital economy presents new opportunities for realizing these objectives.

The digital economy has emerged as a significant catalyst for worldwide economic recovery and growth, fundamentally transforming individuals' productivity and lifestyles by providing access to new products and services, while also aiding in the creation of more sustainable cities (Pouri & Hilty, 2018; Karintseva et al., 2019). The rapid advancement of digital technology has highlighted the distinct benefits of this economic model. A digital economy is characterized by high technology, widespread adoption, fast growth, and profound integration. It is increasingly crucial to a country's economic development in this new era (Zhu and Chen, 2022), and governments worldwide have offered varying levels of support for it.

[1] Thanh Dong University, Hai Phong City, Vietnam, Email: namnd@thanhdong.edu.vn, ORCID: https://orcid.org/0000-0002-0744-4793.

Vietnam is an emerging economy located in Southeast Asia and ranks as the 35th largest economy in the world. According to a report from the Ministry of Industry and Trade (2024), Vietnam's digital economy is projected to reach about 30 billion USD and is expected to grow to 45-50 billion USD by 2025, placing it 3rd in Southeast Asia, with an average growth rate of 20-25%. The explosive growth of e-commerce has created a market size of nearly 20 billion USD. Moreover, the financial technology sector is thriving, featuring a variety of e-wallets and digital banking services. At the same time, the fields of education, health, and digital agriculture are also being promoted. With the support of developing information technology infrastructure and the government's strategic vision to advance the industrial revolution 4.0. Vietnam is becoming one of the countries with significant potential for digital economy development.

However, a significant gap remains in the development of Vietnam's digital economy compared to developed economies in general and other emerging economies in Southeast Asia in particular. From a scale perspective, Indonesia and Thailand have a larger digital economy than Vietnam, with Indonesia leading the region at over 80 billion USD. In terms of efficiency, countries such as Malaysia and Singapore, despite having smaller populations than Vietnam, exhibit 3.5 times higher digitalization, labor productivity, and efficiency in technology utilization than Vietnam (Ministry of Industry and Trade, 2024). In the context of reducing carbon emissions, Vietnam’s digital economy urgently needs to develop further. Therefore, Vietnam was selected as a case study to explore the theme of this article.

In recent years, domestic scholars have also focused more on the development of the digital economy. For example, Tran and Tran (2018) examined the impact of consumer behavior on Vietnam’s digital economy. Recently, Nguyen and Hoang (2022) researched the role of human resources in Vietnam’s digital economy. Additionally, Nguyen and Dang (2022) demonstrated that the legal environment plays a crucial role in promoting or inhibiting the development of the digital economy. Although relevant studies exist, previous research has predominantly analyzed the impact of single factors on the development of the digital economy. Interestingly, no comprehensive analysis framework has yet been established to address the cumulative effects of multiple factors on the development of Vietnam’s digital economy. More importantly, this article is the first study to investigate the development of Vietnam's digital economy under the moderate influence of social factors.

The article is structured into six sections. Following the introduction, Section 2 covers the latest literature on the digital economy, along with the analytical framework and hypothesis development. Section 3 describes the methodology, followed by the findings in Section 4. Section 5 presents the discussions and implications. Finally, Section 6 concludes with the limitations and suggestions for further research.

Literature Review and Hypothesis Development

Digital Economy

The concept of a digital economy is a modern economic form in which digitized information and data play a central role in value creation, contrasting with traditional models based on physical resources or manual labor (Tapscott, 1995). It relies on knowledge, technology, and data utilization to foster growth and innovation, seamlessly connecting production, business, and consumption through digital platforms, fundamentally altering the organization and distribution of economic resources. The OECD (2020) asserts that the digital economy operates through technology platforms, focusing on improving processes, innovating products, restructuring

service delivery, and enhancing economic efficiency in a global context. The World Bank (2016) highlights three key pillars of the digital economy: digital connectivity, platforms, and skills.

According to Decision No. 411/QD-TTg, the digital economy is primarily based on digital technology, with digital data and electronic transactions at its core, central to the creation of value. This economy is gradually replacing traditional methods that rely on physical resources and manual labor. The digital economy encompasses:

- A pure digital economy, where business activities occur entirely online (e.g., e-commerce, digital banking);
- A digitalized economy, where traditional activities are enhanced through digital technology (such as smart agriculture, Industry 4.0);
- And infrastructure and support systems, including telecommunications, data management, electronic payments, and legal frameworks.

Nguyen and Uong (2022) describe the digital economy as a modern model where digital technology is pivotal in organizing economic activities, transforming the traditional economy towards greater efficiency, flexibility, and modernity. Electronic transactions are conducted extensively across product sectors, including finance, banking, transportation, and logistics.

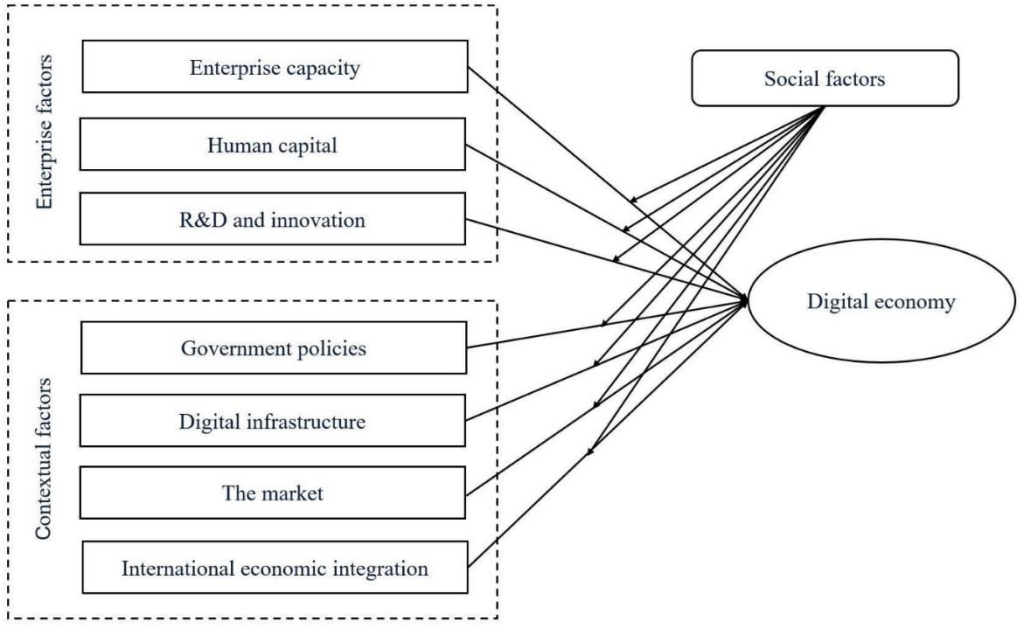
Thus, the digital economy is an economic form in which digital technology serves as the foundation for all value-creating activities, ranging from production and operation to consumption. It includes business and management models that develop digital products and services, or facilitate the provision of digital services to governments, enterprises, and individuals, having a far-reaching impact on all economic and social sectors.

Analytical Framework

The study uses the economic growth theories of Douglas (1947) and Solow and Swan (1956) to identify the factors driving the digital economy in Vietnam. They are consistent with the context of modernity, technological progress, and aggregate productivity play essential roles in long-term economic growth. Simultaneously, it serves as a measure of the degree of modernization and digitalization of the economy. Additionally, the author conducted a brief review of various domestic and foreign studies related to the theme of the digital economy, including Murphy and Atkinson (2021), Nguyen and Uong (2022), Dang (2023), and Phan (2024). The author also used a combination of group discussions with several managers at enterprises and consulted expert opinions to select and propose factors suitable for the practical context in Vietnam. The study is divided into two groups of factors that affect the promotion of the digital economy in Vietnam, including:

- The group of enterprise factors consists of the micro factors that originate from within the business, the central entity responsible for implementing digital transformation and digital business models. These factors are endogenous, under the direct control of businesses, and serve as prerequisites for successful digital transformation, which can include R&D and innovation, enterprise capacity, and human capital.
- The group of contextual factors consists of macro factors that are exogenous and determined by the legal environment, the level of economic development, and the level of openness. These factors play a role in guiding and supporting the development of the digital economy from a macro perspective, including digital infrastructure, international economic

integration, and the market.



The analytical framework is illustrated in Figure 1.

Figure 1. Research Model

Source: Proposed by the authors

Hypothesis Development

Enterprise capacity refers to the ability to integrate digital technology into production and business activities. According to resource-based view (RBV), the core competencies of enterprises, such as technological and management capabilities, skilled human resources, and innovation, play a crucial role in achieving sustainable competitive advantage (Barney, 1991). By enhancing their digital capabilities, enterprises can effectively utilize new technologies to improve products and services, attract customers, and compete more effectively in the digital market. Additionally, enterprise capacity helps optimize processes, reduce costs, and increase efficiency and profits. Enterprises with strong capabilities can provide added value through innovative products and services, strengthen networks, expand operations, create new job opportunities, and contribute to economic growth (Phan, 2024). Based on the theoretical framework and the above discussion, the following hypothesis could be started:

H1: Enterprise capacity will positively influence the promotion of the digital economy in Vietnam.

Human capital encompasses the knowledge, skills, tech proficiency, and adaptability of the workforce amid rapid digital changes. Voronin et al. (2020) note that it is crucial for economic growth efficiency, as it influences the absorption of technology and innovation. The digital economy thrives if a highly qualified workforce can adapt to new business models (Nguyen and Uong, 2022). Additionally, human resources drive innovation and develop new business models

through data analysis and strategic approaches informed by digital tools. Through digital human capital, businesses optimize operations, enhance customer service, broaden markets, and boost economic growth and global competitiveness (Phan, 2024). Based on this framework, the following hypothesis could be proposed:

H2: Human capital will positively influence the promotion of the digital economy in Vietnam.

R&D and innovation create new knowledge, technologies, and business models. Romer's endogenous growth theory (1990) states they are key to technological progress and sustainable economic growth. Chen and Sun (2021) highlight their role in fostering the digital economy, advancing technology, and innovating production and distribution methods. Investment in R&D enhances mastery of digital technologies like AI, big data, and blockchain, yielding high value and adaptable business models. Research by Murphy and Atkinson (2021) and Nguyen and Uong (2022) shows a positive link between R&D investment and the digital economy development index. Thus, the following hypothesis could be proposed:

H3: R&D and innovation will positively influence the promotion of the digital economy in Vietnam.

The government's policies foster a favorable environment for the digital economy. Policies on digital transformation, investment in tech infrastructure, institutional reform, digitizing businesses, and developing tech human resources are vital for transitioning to the digital economy. The study of Vu et al. (2020) indicates that the government's active involvement through strategies, legal frameworks, and financial incentives has a significant impact on the growth of the national digital economy. The OECD (2020) also highlights the government's crucial role in establishing a flexible legal framework, protecting data, and promoting digital interaction among economic stakeholders. According to Phan (2024), the government can foster a favorable investment climate for enterprises and individuals in the digital economy while defining user data management and protection guidelines. Additionally, it can invest in innovative programs and R&D in digital technology to advance the information and communication technology sector and maintain the technical infrastructure needed for the digital economy. Based on the theoretical framework and discussion, the following hypothesis can be proposed:

H4: The government's policies will positively influence the promotion of the digital economy in Vietnam.

Digital infrastructure, including telecommunications systems, broadband internet, data centers, cloud computing, and connectivity tools, is essential for the digital economy. A stable, modern infrastructure facilitates digitalization in the public and private sectors, promoting economic efficiency, innovation, and productivity. According to the World Bank (2021), investing in digital infrastructure is vital for online public services, e-commerce, digital finance, and new business models. Graumann et al. (2017) state that improving digital infrastructure drives economic and social potential through technology application, helping to connect and integrate technology across economic fields, optimize production, enhance service quality, and create new job opportunities in the knowledge economy. Based on this framework, the following hypothesis can be proposed:

H5: Digital infrastructure will positively influence the promotion of the digital economy in Vietnam.

The market influences the spread of the digital economy through competition, diverse needs, and adaptability to technology. A flexible, high-consumption market favors businesses deploying digital models, innovating, and expanding services via digital platforms. Tapscott and Tapscott (2016) states that digital economy growth links closely to creating and expanding digital markets, where data and technology are key assets. Dynamic markets attract investments in technology, e-commerce, and digital platforms. Phan (2024) notes that the market offers tools and platforms to improve access to information and data, aiding businesses in understanding customer needs and trends. Market competition fosters innovation and technological advancement, pushing businesses to enhance products and services to meet customer demands. Additionally, the market opens investment opportunities for digital ventures. Market development may prompt regulations to protect consumers and promote sustainable digital economy growth, establishing data protection and intellectual property standards that encourage healthy competition. Based on this, the following hypothesis can be proposed:

H6: The market will positively influence the promotion of the digital economy in Vietnam.

International economic integration expands import and export markets, promotes technology transfer, standardizes institutions, and enhances national competitiveness. In Vietnam, economic integration is progressing strongly across trade, investment, services, and labor. This vital process boosts socio-economic development, enables domestic businesses to access new technologies and international resources, and attracts substantial foreign investment for product and digital service development, creating new markets and fostering the digital economy. According to Bukht and Heeks (2017), global integration serves as a “transmission channel” for developing countries to access digital technology, leveraging data and innovation to improve productivity and promote sustainable growth. Based on this framework, the following hypothesis can be proposed:

H7: International economic integration will positively influence the promotion of the digital economy in Vietnam.

Social factors encompass people's intellectual levels, access to technology, digital consumer culture, privacy awareness, and educational and legal backgrounds in the digital realm. A digitally ready society that embraces innovation and participates in online activities boosts the effectiveness of policies and technologies in advancing the digital economy. Conversely, the digital economy has a positive impact on society by creating jobs, increasing income, enhancing living standards, and expanding access to education, healthcare, and cultural services. Social factors also involve information management, business culture, and intellectual property rights regulations. A society with a strong digital culture promotes the use of technology in economic and social activities. An established digital education system cultivates high-quality human resources for the digital economy. Effective policies will support the growth of the digital economy. Thus, if social factors are positive (high intelligence, good digital skills, a technology acceptance culture, transparent legal systems, etc.), the effectiveness of driving factors is strengthened. Based on the above arguments, the research hypothesis is proposed as follows:

H8: Social factors plays a moderating role in the relationship between (1) enterprise capacity, (2) human capital, (3) R&D and innovation, (4) government policies, (5) digital infrastructure, (6) the market, (7) international economic integration with the promotion of the digital economy in Vietnam.

Methodology

Research Design

The study's preliminary scale synthesizes domestic and foreign research by Murphy and Atkinson (2021), Nguyen and Uong (2022), Dang (2023), and Phan (2024). The author consulted managers at the Vietnam E-commerce and Digital Economy Agency and interviewed board representatives of enterprises to gather practical feedback on the research model's content, structure, and relevance to the Vietnamese context. This process involved comparing theory and practice to evaluate and adjust the observed variables according to the survey subjects' actual understanding and behavior. Experts and managers reached a high consensus on the comments, leading to language corrections, content streamlining, and the removal of duplicate or confusing observation variables. Consequently, participants agreed that the proposed factors fit the current Vietnamese context and provide a foundation for future quantitative research. After calibration, the preliminary scale evolved into a formal, overview, and easy-to-understand scale. The author employs a Likert scale, ranging from level 1 (Strongly Disagree) to level 5 (Strongly Agree). The descriptions of the questionnaire items are presented in Table 1.

Quantitative Study

The sample size was determined based on the suggestion of Hair et al. (2010), who state that a minimum ratio of 10:1 between the number of observed variables is necessary to ensure the reliability of exploratory factor analysis (EFA) results. The author used convenience sampling method. The questionnaires are sent online via email and Google Forms to enterprise owners, middle managers, and senior managers in Hanoi and Ho Chi Minh City, which are the two most significant economic and technological centers in the country, and have experienced a high level of digital transformation in recent times. The data collection was carried out from January 2025 to March 2025. The study obtained 355 usable responses.

Data Analysis

To conduct quantitative analysis, the author follows basic steps, including testing reliability and validity, exploratory factor analysis, and calculating correlation among variables. To test the proposed framework and hypothesis, the author applied the hierarchical method used in the MMR regression analysis. The research model is represented by three regression equations as follows:

(1) The regression equations illustrate the impact of independent variables on the dependent variable:

$$DE = \beta_0 + \beta_1*cEC + \beta_2*cHC + \beta_3*cR\&D + \beta_4*cGP + \beta_5*cDI + \beta_6*cMar + \beta_7*cIEI$$

(2) The regression equation expresses the impact of the independent variable and the moderating variable (independent variable) on the dependent variable:

$$DE = \beta_0 + \beta_1*cEC + \beta_2*cHC + \beta_3*cR\&D + \beta_4*cGP + \beta_5*cDI + \beta_6*cMar + \beta_7*cIEI + \beta_8*cSF$$

(3) The regression equations illustrate the impact of independent variables, moderating variable, and interacting variables on the dependent variable:

$$DE = \beta_0 + \beta_1*cEC + \beta_2*cHC + \beta_3*cR\&D + \beta_4*cGP + \beta_5*cDI + \beta_6*cMar + \beta_7*cIEI + \beta_8*cSF + \beta_9*cSF.EC + \beta_{10}*cSF.HC + \beta_{11}*cSF.R\&D + \beta_{12}*cSF.GP + \beta_{13}*cSF.DI + \beta_{14}*cSF.Mar + \beta_{15}*cSF.IEI$$

In which:

DE (Dependent variable): Digital economy

SF (Moderating variable): Social factors

Independent factors (X_i): enterprise capacity (EC), human capital (HC), R&D and Innovation (R&D), government policies (GP), digital infrastructure (DI), the market (Mar), international economic integration (IEI).

Interacting variables: social factors and enterprise capacity (SF.EC), social factors and human capital (SF.HC), social factors and R&D and innovation (SF.R&D), social factors and government policies (SF.GP), social factors and digital infrastructure (SF.DI), social factors and the market (SF.Mar), social factors and international economic integration (SF.IEI).

β_k: Regression coefficient.

Research Results

First, all constructs have been examined for reliability and validity as presented in Table 2. Construct reliability and validity were calculated using the Cronbach's Alpha value in SPSS 26. According to the literature, the Cronbach's Alpha values should be greater than 0.7 (Hair et al., 2010). It is noted that all measurement scales have high Cronbach's Alpha values ranging from 0.793 to 0.845, ensuring reliability and validity. For discriminant validity, exploratory factor analysis must confirm that factor loadings and the KMO coefficient are above 0.5, with eigenvalues greater than 1.0 (Hair et al., 2010). Table 1 shows that the factor loadings, KMO, and eigenvalues of all constructs meet the requirements to ensure discriminant validity.

Sign	Items	Cronbach's Alpha	Corrected Item-Total Correlation	Factor loading
Enterprise capacity: Mean = 3.88, Min = 1.00. Max = 5.00. S.D = 0.70				
EC1	The governance and executive capacity of enterprises positively impacts the development of the digital economy in the locality.	0.821	0.609	0.805
EC2	The financial capacity of enterprises is robust enough to invest in and implement digital economy solutions.		0.587	0.792
EC3	Enterprises can apply digital technology to production and business activities.		0.592	0.767
EC4	Enterprises contribute to promoting digital economy activities.		0.511	0.758
Human capital: Mean = 3.92, Min = 1.00. Max = 5.00. S.D = 0.79				
HC1	The quality of human resources is a crucial factor in the policy-making process for developing the digital economy in enterprises.	0.808	0.456	0.815

Sign	Items	Cronbach's Alpha	Corrected Item-Total Correlation	Factor loading
HC2	Enterprises prioritize the quality of human resources in formulating strategies and plans that align with the trends of the digital economy.		0.508	0.803
HC3	Human resources in enterprises meet the requirements of digital transformation and the development of the digital economy.		0.491	0.787
HC4	Enterprises invest properly in training and developing human resources to achieve the goal of advancing the digital economy.		0.473	0.770
R&D and Innovation: Mean = 3.76, Min = 1.00. Max = 5.00. S.D = 0.68				
R&D1	Enterprises concentrate on R&D activities to adjust to the transition to the digital economy.	0.839	0.561	0.826
R&D2	The innovation of technology and processes in businesses contributes to advancing digital transformation.		0.547	0.814
R&D3	Enterprises have an innovation strategy that involves utilizing digital technology in production and business.		0.528	0.809
R&D4	R&D and innovation activities at enterprises enhance competitiveness in the digital economy.		0.505	0.795
Government policies: Mean = 3.85, Min = 1.00. Max = 5.00. S.D = 0.67				
GP1	Government policies significantly contribute to promoting and supporting the development of the digital economy in enterprises.	0.815	0.601	0.811
GP2	The government has implemented various quality policies to promote the digital economy.		0.584	0.795
GP3	The government has implemented specific policies tailored to local conditions, supporting enterprise development in the direction of the digital economy.		0.562	0.778
GP4	The government is removing policy barriers to the use of digital technology.		0.539	0.756
Digital infrastructure: Mean = 4.01, Min = 1.00. Max = 5.00. S.D = 0.75				

Sign	Items	Cronbach's Alpha	Corrected Item-Total Correlation	Factor loading
DI1	The information and communication technology infrastructure system significantly impacts enterprises' ability to develop their digital economies.	0.793	0.574	0.788
DI2	The government and local authorities have demonstrated interest in developing information and communication technology infrastructure for the digital economy through their policies.		0.552	0.769
DI3	Local telecommunications enterprises are actively investing in and expanding digital infrastructure.		0.591	0.752
DI4	The local information and communication technology infrastructure is continuously improving, better meeting the needs of enterprises in the digital economy.		0.566	0.741
The market: Mean = 3.92, Min = 1.00. Max = 5.00. S.D = 0.72				
Mar1	The growing market size and demand for digital products and services create favorable conditions for enterprises.	0.817	0.625	0.802
Mar2	The level of competition in the market encourages enterprises to apply digital technology to enhance operational efficiency actively.		0.608	0.794
Mar3	The digital consumption behavior of customers is becoming increasingly popular, motivating enterprises to innovate and undergo digital transformation.		0.593	0.781
Mar4	The current market presents numerous opportunities for enterprises to implement business models leveraging digital technology.		0.572	0.776
International economic integration: Mean = 4.15, Min = 1.00. Max = 5.00. S.D = 0.69				
IEI1	The process of international economic integration creates advantageous conditions for enterprises to access technology and	0.830	0.586	0.826

Sign	Items	Cronbach's Alpha	Corrected Item-Total Correlation	Factor loading
	contemporary digital business models.			
IEI2	Free trade agreements and international cooperation present numerous opportunities for enterprises to develop the digital economy.		0.571	0.818
IEI3	International integration encourages enterprises to enhance their competitiveness through digital transformation.		0.559	0.804
IEI4	Enterprises have effectively leveraged opportunities from international economic integration to develop activities centered around digital platforms.		0.543	0.780
Social factors: Mean = 3.83, Min = 1.00. Max = 5.00. S.D = 0.73				
SF1	Social factors (people's knowledge, technological skills, and attitudes toward accepting technology) impact enterprises' ability to adopt digital technology.	0.822	0.641	0.814
SF2	The education level, income, and age of consumers influence their access to and use of digital products and services.		0.625	0.804
SF3	Enhancing technological skills, fostering innovative thinking, and cultivating a digital culture in society will significantly promote the growth of the digital economy.		0.608	0.796
Digital economy: Mean = 4.26, Min = 1.00. Max = 5.00. S.D = 0.77				
DE1	Enterprises actively utilize digital technology in production and operations.			
DE2	Utilizing digital technology enables enterprises to enhance productivity and the quality of their products or services.	0.845	0.667	0.821
DE3	The digital economy presents opportunities for market expansion and customer growth for enterprises.		0.648	0.807
DE4	The growth of the digital economy fosters favorable conditions for		0.623	0.799

Sign	Items	Cronbach's Alpha	Corrected Item-Total Correlation	Factor loading
	enterprises to enhance their competitiveness.			

Table 1: Descriptive Analysis

Source: Processing data from SPSS 26

All variables have been checked for correlation analysis. As shown in Table 2, a correlation exists between the independent variables and the selected dependent variable. Among independent constructs, social factors have the highest correlation with the digital economy (r = 0.782), while enterprise capacity has the lowest correlation with the digital economy (r = 0.628). Notably, the digital economy is significantly correlated with other variables, with correlation coefficients less than 0.5.

	DE	EC	HC	R&D	GP	DI	Mar	IEI	SF
DE	1								
EC	0.628**	1							
HC	0.717**	0.251**	1						
R&D	0.692**	0.263**	0.182**	1					
GP	0.701**	0.225**	0.196**	0.267**	1				
DI	0.753**	0.207**	0.214*	0.181*	0.179**	1			
Mar	0.658**	0.294**	0.273**	0.239**	0.205**	0.228*	1		
IEI	0.725**	0.230**	0.339*	0.190*	0.261*	0.195*	0.276**	1	
SF	0.782**	0.246**	0.210*	0.258*	0.184**	0.239**	0.242**	0.215*	1

Note: **Correlation is significant at the 0.01 level.
****Correlation is significant at the 0.05 level.***
DE = Digital economy, EC = Enterprise capacity, HC = Human capital, R&D = R&D and Innovation, GP = Government policies, DI = Digital infrastructure, Mar = The market, IEI = International economic integration

Table 2: Correlation Between Independent Variables And The Dependable Variable

Source: Processing Data From SPSS 26

Applying MMR regression analysis in SPSS 26, the results demonstrate direct effects of latent variables and moderating variables on dependent ones. As shown in Table 3, digital infrastructure shows a relatively strong effect on the digital economy at 0.245 compared to the

other latent variables. Furthermore, social factors have a moderate impact on the digital economy with a coefficient value of more than 0.1.

	Model 1		**Model 2**		**Model 3**	
	Beta	**VIP**	**Beta**	**VIP**	**Beta**	**VIP**
cEC	0.214**	1.573	0.233**	1.463	0.227**	1.453
cHC	0.209*	1.396	0.196*	1.398	0.201**	1.378
cR&D	0.235**	1.488	0.219**	1.307	0.237**	1.390
cGP	0.211*	1.357	0.208*	1.411	0.218**	1.316
cDI	0.226**	1.521	0.210**	1.459	0.245**	1.367
cMar	0.203*	1.415	0.189**	1.376	0.212**	1.285
cIEI	0.232**	1.387	0.217**	1.354	0.223**	1.391
cSF			0.263**	1.420	0.204**	1.242
cSF.EC					0.198**	1.274
cSF.HC					0.172**	1.338
cSF.R&D					0.181*	1.405
cSF.GP					0.169*	1.381
cSF.DI					0.157**	1.422
cSF.Mar					0.140**	1.376
cSF.IEI					0.185*	1.288
R^2	0.648		0.681		0.724	
Adjusted R^2	0.615		0.649		0.687	
F	0.000		0.000		0.000	
Durbin – Watson	1.785		1.813		1.864	
*****Correlation is significant at the 0.01 level (1-tailed).*** ****Correlation is significant at the 0.05 level (1-tailed).*** **a. Dependent Variable: DE**						

Table 3: Regression weights

Source: Processing data from SPSS 26

Additionally, Table 3 presents the values of R-squared and adjusted R-squared. It can also be observed from the R-squared value that the independent variables explain or predict their relationship with the dependent variable, specifically 61.5% with model 1, 64.9% with model 2, and 68.7% with model 3. Furthermore, the VIF coefficient is less than 2, indicating that there is no multicollinearity among the independent variables.

To firmly establish the moderating role of social factors, the Macro Process tool has been applied by running it in SPSS 26. The results indicated that all interactions between social factors and independent variables have a p-value of less than 0.01. Furthermore, the interaction coefficients of the variables are positive, ranging from 0.1167 to 0.1926, indicating that social factors enhance the impact of the independent variables on the dependent ones. Among interaction relationships, the interactions between social factors and international economic integration ($\beta = 0.1926$), human capital ($\beta = 0.1831$), and digital infrastructure ($\beta = 0.1709$) are relatively stronger compared to the others (see Table 4). It suggests that in a society characterized by a high level of knowledge, technological skills, and a positive attitude toward digital innovation, dimensions such as integration, infrastructure investment, and the enhancement of human

resource quality will be more effective in promoting the digital economy. Therefore, social factors not only have a direct impact on the digital economy but also serve to enhance the relationship between the driving forces and the development of the digital economy, thus affirming the crucial role of social factors as an intermediary and support system in Vietnam's digital transformation process.

Int_1		**Coefficient**	**S.E**	**t**	**p**
Model	cSF.EC	0.1642	0.0815	3.4573	0.0001
	cSF.HC	0.1831	0.0692	4.5219	0.0000
	cSF.R&D	0.1533	0.0744	3.8762	0.0004
	cSF.GP	0.1295	0.0881	3.1338	0.0002
	cSF.DI	0.1709	0.0659	4.6975	0.0000
	cSF.Mar	0.1167	0.0763	4.2199	0.0003
	cSF.IEI	0.1926	0.0828	3.7246	0.0000

Table 4: Moderate Impact Testing

Source: Processing data from SPSS 26

The regression equation based on the standardized Beta coefficient is as follows:

KTS = 0.245*cDI + 0.237*cR&D + 0.227*cEC + 0.223*cIEI + 0.218*cGP + 0.212*cMar + 0.204*cSF + 0.201*cHC + 0.198*cSF.EC + 0.185*cSF.IEI + 0.181*cSF.R&D + 0.172*cSF.HC+ 0.169*cSF.GP + 0.157*cSF.DI + 0.140*cSF.Mar

Discussion and Implications

Discussion

Enterprise capacity has been found to positively impact the promotion of the digital economy in Vietnam, leading to the acceptance of hypothesis 1. This finding supports the conclusions of Phan (2024). Vietnam is a developing economy with over 97 percent of its businesses classified as SMEs. In light of the government's push for national digital transformation, enterprises must possess the capacity to adapt, innovate, and apply technology to leverage opportunities arising from the digital economy. This finding indicates that the intrinsic capacity of enterprises serves as the foundation for the sustainable development of the digital economy in an emerging economy like Vietnam.

Human capital is shown to have a positive impact on promoting the digital economy in Vietnam, confirming hypothesis 2. This finding aligns with the study by Voronin et al. (2020). This result reflects the reality of Vietnam, which has a young, abundant workforce and is gaining better access to technology. In the process of digital transformation, the quality of human resources, especially digital skills and innovative thinking, plays a crucial role in helping enterprises and the economy adapt and develop sustainably.

The study found a positive relationship between R&D and innovation in promoting the digital economy in Vietnam, confirming hypothesis 3. This result aligns with Nguyen and Uong (2022).

It reflects the current development trend, where innovation and investment in research act as driving forces that enable enterprises to leverage digital technology, create new value, and enhance competitiveness amid national digital integration and transformation.

Government policies have been found to have a positive relationship with the promotion of the digital economy in Vietnam, supporting the acceptance of Hypothesis 4. This finding aligns with Phan's conclusion (2024). It reflects the reality in Vietnam, where the government plays a central role in advancing digital transformation through initiatives like the "National Digital Transformation Program" and the e-government development strategy. Institutional support, digital infrastructure, and innovation incentives have fostered favorable conditions for enterprises and the overall economy to transition into the digital era.

Digital infrastructure has a positive impact on the promotion of the digital economy in Vietnam, with Hypothesis 5 accepted. This finding aligns with the results from previous studies (World Bank, 2021; Graumann et al., 2017). This outcome highlights the essential role of infrastructure in the digital transformation process. In Vietnam, the robust development of telecommunications networks, broadband internet, and national digital platforms has created opportunities for enterprises and individuals to access and engage in digitalization activities more effectively.

The market positively impacts the promotion of the digital economy in Vietnam, and hypothesis 6 is accepted. This finding aligns with the results of Phan (2024). It reflects the reality that the rising demand for digital consumption, alongside the growth of e-commerce, digital payments, and online consumer behavior, has provided strong motivation for enterprises to transform and expand their operations in the digital environment.

International economic integration has been found to positively impact the promotion of the digital economy in Vietnam, confirming hypothesis 7. This finding aligns with the results of a study by Bukht and Heeks (2017). Vietnam is engaged in trade agreements such as CPTPP and EVFTA. Consequently, the free trade agreements and global technology flows create opportunities for domestic enterprises to access advanced technology, digital standards, and international markets. This fosters a faster and more extensive digital transformation process across various fields.

Social factors moderate the relationship between latent variables and dependent variables. Thus, Hypothesis 8 is accepted. In fact, the development of the digital economy is a systematic and synchronous process that depends not only on technical factors but also requires adjustments to social factors to create a favorable environment.

Implications

Theoretically, this study contributes to existing literature aimed at promoting the digital economy in emerging economies like Vietnam. First, we reaffirm the relationship between the factors highlighted in economic growth theories. This approach enables a clearer explanation of how business elements and contextual factors integrate during the promotion of the digital economy in Vietnam. Additionally, this study clarifies the important moderating role of social factors in advancing the digital economy in Vietnam.

Practically, the findings of this study provide valuable insights for policymakers and business managers in emerging markets as they develop plans to promote the digital economy. These findings underscore the importance of a holistic approach to driving the digital economy. Therefore, some of the proposed implications are as follows:

To begin with, prioritize investing in digital infrastructure, focusing on telecommunications, high-speed internet, data centers, and cloud platforms. The government should enhance policies and incentives for tech businesses to expand coverage in rural and mountainous areas with untapped digital economy potential. Enterprises need to leverage this infrastructure to restructure production and operations with digital technology.

Next, promote investment in research and development, as well as innovation, within enterprises. Establish local and central R&D and support funds to encourage businesses to integrate AI, big data, blockchain, and IoT into their models. The State must also foster cooperation between the public and private sectors and, as well as partnerships among institutions and enterprises, to create an innovation ecosystem for the digital economy.

Finally, enhance the digital capacity of enterprises, particularly in management, finance, and technology. It is essential to implement digital skills consulting and training programs for SME leaders, guiding them to methodically approach digital technology while avoiding scattered investments. Financial mechanisms supporting businesses in digital transformation should be transparent, simplify procedures, and ensure effective access to resources.

Conclusion and Limitations

This study presents findings on the impact of factors driving the digital economy in Vietnam, specifically noting the moderate influence of social factors on its development. The analysis indicates that six key factors include enterprise capacity, human capital, R&D and innovation, government policies, digital infrastructure, and markets, alongside international economic integration. Furthermore, the research also reveals the moderate effect of social factors in promoting the digital economy in Vietnam.

The findings of this study may be limited due to the relatively small sample size of 355 SMEs. A larger sample would enhance the generalizability of the results, allowing for broader application of conclusions beyond the specific enterprises involved in the study. Additionally, the study focuses solely on research examining the regulatory impact of synthetic social factors, without exploring aspects of social factors (such as culture, social values, etc.) or other moderating factors like gender, age, income, and education level. Therefore, further studies should expand the exploration of the moderating role of various factors.

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