

KEY POLICY RECOMMENDATIONS FOR ENHANCING THE DIGITAL ECONOMY IN VIETNAM

Lu Phi Nga¹, Phan Thanh Tam^{1*}

Received 08.10.2025.

| Sent to review 10.11.2025. | Accepted 26.02.2026.

Original article



¹ Faculty of Postgraduate Studies, Lac Hong University (LHU), Dong Nai Province, 84, Vietnam

***Corresponding Author:**
Phan Thanh Tam

Email:
tampt@lhu.edu.vn

JEL Classification:
C01, C50, D01, E00, O47

Doi: 10.2478/eoik-2026-0021

UDK: 338.124.4:004.738.5(597)

ABSTRACT

The digital economy has become an integral part of global GDP, and Asia is well known as an active and growing region that exhibits rapid digital economic development, and that will become the centre of the global digital economy and digital technology. This article seeks to investigate the significant factors influencing digital economy and to propose policy measures to tackle this issue. The study's method applies quantitative research and focuses primarily on interviewing economic experts based on real data, to gauge the factors that affect the digital economy. The authors analysed the impact of various factors on the digital economy in 5 large Vietnamese cities. The authors still develop and implement the framework of the structural equation model. Based on the survey of 800 economic experts, the data sources included interviews were through directly interviewed survey tools on the basis of standardised questions. Analysis is done using software packages including SPSS version 20.0 and Amos. The results and value addition of the study suggest that there are eight relevant factors which contribute to the digital economy on a Level of 0.01 and a range of eight accepted hypotheses (2). The report covers eight major drivers of the digital economy. The innovation underscores the critical significance of the telecommunications and information technology infrastructure to Vietnam's digital economy. The model is also applicable to the analysis and assessment of the effect of some of the factors on the digital economy using a useful reference for the agencies, researchers, experts, and economic managers. They also recommended policy proposals to stimulate the digital economy.

Keywords: Digital transformation, digital economy, innovative technology, digital human resources

1. INTRODUCTION

Digital economy is becoming a decisive leverage towards socio-economic development that is the result of digital technologies and internet-based transactions that revolutionized established business models and contributed significantly to national progress by integrating enterprises into global technology networks (Tiana & Xiang, 2024; Ma & Zhang, 2023). With digital technologies becoming increasingly integrated into daily life, ranging from transportation services, through online shopping to banking services, the existing conditions and barriers for achieving the digital economy must be examined.

However, there are so many hurdles blocking the full implementation of the digital economy, particularly in developing countries. Recent research focuses on advanced economies as a key contributor to their development, yet it overlooks challenges faced by developing economies. These challenges include insufficient legal frameworks, insufficient infrastructure and a lack of trained human resources (Ma & Zhang, 2023). Research focuses mainly on production value and technologically innovative developments that underplay critical aspects like labour, capital investment, and firm growth. As a result, fragmented infrastructure limits connectivity, creating challenges for digital transformation at various sites and sectors (Liu et al., 2024). The General Statistics Office (2024) states that the Digital economy is becoming more and more the strategic pillar for Vietnam's economic growth, the innovation of development models and the enhancement of the national competitiveness. It manifests the function of the digital economy in a few aspects, it fosters economic expansion, increases labor productivity, establishes new industries, markets and business models, promotes international integration and the creation of new business markets, supports rural development and narrows regional gaps, enhances the effectiveness of state management and public service provision, ensures sustainable development and enhances the greening of the economy. They represent the digital economy and the pillars are digital government, digital infrastructure, digital transformation of enterprises, and e-commerce. According to 2024 statistics, digital economy GDP contribution on additional value added has expected a positive recovery reflecting more orders for electronic products, computers and optical products manufacturing. Digital economic activities have a value increase worth over 1.5 million billion VND this year, which is equal to approximately 62.7 billion USD (based on the average exchange rate of USD/VND in 2024) which comprises 13.17% of GDP. Digital Economies scale of the entire economy will increase 14.1% in 2024 in comparison to 2023 price at the prevailing rate. Core digital economic sectors are more than 62%, according to the General Statistics Office (2024), of which. Such research focuses on the key factors influencing digital economic growth and sustainability in the developing world. The research examines the challenges faced by legal, institutional, infrastructural, and human resource issues and proposes policy responses to tackle them. Focusing on neglected locations, this research aims to provide innovative knowledge and evidence-based tactics for promoting a more inclusive and productive digital economy. Qualitative and quantitative methods of research design are included in the research design. The qualitative part refers to the current literature and policy instruments to identify key factors hindering digitalising the economy. The quantitative focus uses an econometric model to analyse data from a range of sources (eg reports, sector research) to examine the impact of these factors on the dynamism of the digital economy.

By adopting such a mixed-method (MOM) approach, comprehensive understanding is assured on the challenges and opportunities in emerging countries. So as such, the paper is organized in this way: Section 1 outlines the literature and theoretical background on digital economy and challenges in it. Section 2 describes the method of study, detailing the qualitative and quantitative approach employed. The results of the empirical research are presented in Section 3, stressing the important influencers of the growth of the digital economy. Findings are reviewed in Section 4, in collaboration with the existing literature with policy implications from these results. Section Five is the section that concludes the work, summarising the key findings and developing additional lines of focus for future research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Digital Economy (DE). The digital economy describes the interwoven networks of digital and non-digital financial exchanges facilitated by the Internet and digital technology (Zhao et al., 2023). It includes all economic activity that utilizes digital tools in production, distribution,

circulation, and consumption – including services, banking, manufacturing, transportation, logistics and agriculture (Yang, 2023). Both established and emerging industries that implement digital technologies in both their business models and operational processes are covered herein. Digital technologies, advanced information and communication systems enhance productivity and enable innovation. Digital economy is driven by the development of effective information and communication technology (ICT) infrastructure, which includes broadband, 4G/5G networks, data centers, cloud computing, and smart connected devices (Fahlevi et al., 2024; Kurniawati, 2022). Such systems provide high-speed connectivity, secure data storage, and data handling, as well as the evolution of online services and e-commerce (Rodriguez-Crespo et al., 2021; Adeleye et al., 2021; Awad and Albaity, 2024). New technologies such as blockchain and AI improve data security, transparency, and transaction efficiency as can be observed in H1 (Figure 1). Digital Transformation Capacity (DT).

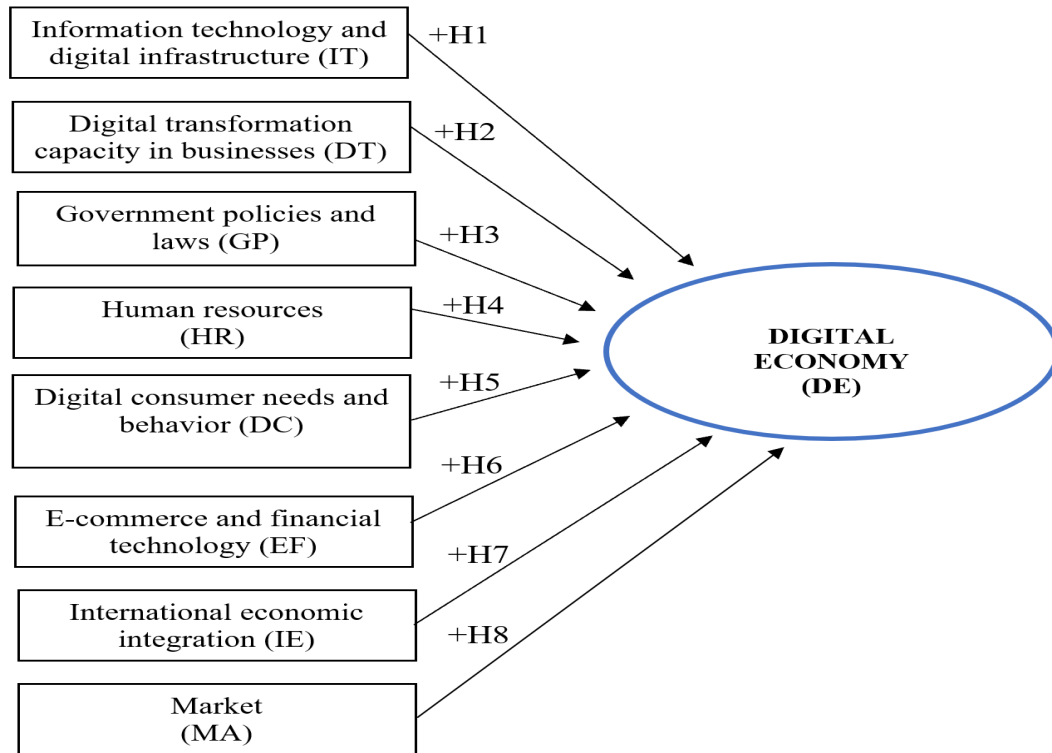
The transformation capabilities in digital technologies are the capability of firms to adopt and apply the technologies (such as AI, Big Data, cloud computing, Internet of Things) into business and production processes, improving efficiency, competitiveness and value creation (Endres et al., 2022; Chavez et al., 2022). Robust digital capabilities facilitate innovation, market expansion, employment and international market participation (Abudaqa et al., 2022; Egala et al., 2024). Thus, this relationship is indicated by H2 (Figure 1). Digital transformation and economic growth are central to government investment in telecommunications, digital infrastructure and regulatory frameworks (Yu & Zhu, 2023; Choi & Porananond, 2023). Financial incentives, tax benefits, and innovation funding are examples of policy measures to move firms to adopt new technologies (Chen et al., 2024). Ongoing legal and institutional updates serve to preserve consumer rights, sustainability, and cooperation with global interest groups as suggested in H3 (Figure 1). Digital Human Resources (HR). The digital economy relies heavily on the expertise needed for human resources to capitalize on new technologies to stimulate innovation, improve performance, and improve competitiveness (McDonnell et al., 2021; Pratama et al., 2024). The focus of these competencies is information technology, data analytics, cybersecurity and digital thinking, complemented with ongoing training and lifelong learning. Good leadership brings strategy, culture, resources development, and resource creation to harmonize with overarching digital priorities as well as long-term digital goals illustrated by H4 (Figure 1). Digital Consumer Needs and Behavior (DC).

Consumer demand plays a powerful role in shaping product development, marketing strategies, and technology in the digital economy (Aydin, 2022; Martin-Shields & Bodanac, 2017). The expansion of e-commerce and digital payment systems and increased online purchasing led to business agility and innovation in services, which reinforces H5 (Figure 1). Banna & Alam (2021) and Antwi & Kong (2023) state that secure and convenient online transactions are the products of digital banking services, e-wallets, blockchain, mobile payments, and peer-to-peer lending platforms. The fintech-e-commerce synergy powered by AI, IoT and blockchain adds personalization and creates more opportunities for businesses as suggested by H6 (Figure 1). International Economic Integration (IE). International economic integration is defined as web-based digital systems that facilitate the cross-border sharing of goods, services and information (Mishra & Valencia, 2023; Saha & Dutta, 2020). The low trade barriers and aligned policies lead to competitiveness, good investment and the global market participation (Cui et al., 2021; Thiébaud, 2024). Although international trade and digital treaties are likely to promote greater integration, global instability and environmental challenges are likely to restrict them as shown in H7 (Figure 1).

Data, Platforms and Digital Growth. In the digital economy, data is a critical intangible asset that helps companies analyze markets, understand consumers, and make informed strategic decisions (Chong et al., 2023). Blockchain, data-driven solutions and digital platforms offer

safe transactions, collaboration, and the development of consumer-oriented products and services (Botelho, 2021; Al-Badrany & Al-Din Al-Khatib, 2023). As such, ongoing technological evolution and increased demand are anticipated to support sustainable digital economic development, corresponding to H8 (Figure 1).

Figure 1. A Research Model for the Digital Economy Based on Critical Factors



Source: The authors

Figure 1 presents the research model, which includes eight independent factors. Hypotheses H1–H8 show the positive impact of each factor on DE. The model is comprehensive, combining both internal (enterprise, human resources, market) and external (government, integration) factors, reflecting the multidimensional structure of the digital economy.

3. RESEARCH METHODS

The study consisted of two phases: (1) a qualitative study utilizing expert-informed consultation, and (2) a quantitative survey for testing hypotheses (Figure 1). The research follows a sequential explanatory mixed-method design, which includes qualitative insights that provide an explicative context that adds depth in analysing the quantitative conclusions, while at the same time enhances the theories' relevance to the policies being adopted.

3.1. QUALITATIVE PHASE

The qualitative phase involved 30 expert interviews for the purpose of identifying, refining and validating the conceptual dimensions and measurement scales of various central factors that could influence the digital economy in Vietnam. This comprised three steps: (1) formulation of a theory based on a systematic review of digital economy constructs; (2) evaluation of interdependent dimensions of a model; and (3) creation of preliminary measurement scales. Besides, group discussions were held amongst nine managers of Ho Chi Minh City, Can Tho, Hai Phong, Da Nang, and Hanoi to hone the metrics and increase the validation of the scales. The concep-

tual model was thus settled according to the opinions and experiences of experts and policy implications have been influenced (Hair et al., 2019).

3. 2. QUANTITATIVE PHASE

The quantitative part of this study was organised by a four-step protocol based on qualitative results. First, we proposed a research model which would be used to examine factors affecting digital economic development in Vietnam and support policy recommendations. By the use of non-probability random sampling, data were collected from 800 economists in five metropolitan areas. Out of 757 valid responses, this number will be used as input to analysis. Items with overall correlation coefficients below 0.30 were rejected. Scale validity was measured with Exploratory Factor Analysis (EFA), with subsequent measures of construct relationship and model fit performed using Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) (Hair et al., 2019).

3. 3. SAMPLING AND DATA COLLECTION

For our qualitative analysis, 39 experts (9 business managers and 30 economic experts) were chosen for their broad involvement and experience in digital economy development. These five cities were selected for their geographical coverage and economic centrality within Vietnam's digital landscape. Economic policy and strategy related to digital development are where we turned towards economists for the quantitative phase.

Model Fit Criteria. The SEM model was acceptable when we were able to reach the following: $CMIN/DF < 3$, $RMSEA < 0.08$, $GFI > 0.90$, $CFI > 0.90$, and $TLI > 0.90$.

4. RESULTS

It can be affirmed that Vietnam has certain foundations for digital transformation in general and economic digital transformation in particular, which have initially developed at different scales and levels. To promote the development of the digital economy to achieve increasingly high efficiency and sustainable development, the group of authors analyzes the survey contents as follows, as shown in Table 1.

Table 1. Testing of Std. Deviation for Factors Influencing the Digital Economy in Vietnam

Code	Items	Cronbach's alpha	Mean	Std. Deviation
Information technology and digital infrastructure (IT)		0.959	-	-
IT1	0.940		3.075	0.987
IT2	0.957		3.058	1.015
IT3	0.949		3.108	0.969
IT4	0.935		3.106	0.985
Digital transformation capacity in businesses (DT)		0.868	-	-
DT1	0.846		2.340	0.670
DT2	0.810		2.423	0.687
DT3	0.851		2.379	0.653
DT4	0.817		2.436	0.713
DT5	0.846		2.440	0.715
Government policies and laws (GP)		0.944	-	-
GP1	0.931		3.412	0.942
GP2	0.886		3.345	0.957
GP3	0.939		3.277	1.001

Code	Items	Cronbach's alpha	Mean	Std. Deviation
Human resources (HR)		0.962	-	-
HR1	0.937		3.073	0.979
HR2	0.961		3.052	1.001
HR3	0.956		3.086	0.966
HR4	0.944		3.063	0.999
Digital consumer needs and behavior (DC)		0.954	-	-
DC1	0.802		3.382	0.867
DC2	0.812		3.506	0.958
DC3	0.844		3.322	0.970
DC4	0.799		3.366	0.889
E-commerce and financial technology (EF)		0.950	-	-
EF1	0.929		3.032	0.981
EF2	0.942		3.046	0.993
EF3	0.939		3.083	0.948
EF4	0.930		3.067	0.986
International economic integration (IE)		0.951	-	-
IE1	0.928		3.036	0.987
IE2	0.942		3.041	0.999
IE3	0.943		3.083	0.958
IE4	0.930		3.057	1.003
Market (MA)		0.874	-	-
MA1	0.850		2.329	0.660
MA2	0.811		2.435	0.678
MA3	0.866		2.380	0.655
MA4	0.826		2.431	0.710
Digital economy (DE)		0.946	-	-
DE1	0.936		3.415	0.950
DE2	0.889		3.350	0.961
DE3	0.938		3.299	0.984

Source: Authors

Table 1 tests the reliability of the scale, including eight independent factors relevant to the digital economy are included in Table 1, together with their descriptive statistics and Cronbach's alpha values. Along with the mean and standard deviation for each item, we also provide Cronbach's alpha values for each category and item.

The results show a considerable internal reliability among all constructs. The Cronbach's alpha for IT and digital infrastructure is 0.959, indicating high reliability. Relating to network quality, broadband availability, telecommunications coverage, and internet speed, the items exhibit standard deviations of roughly 1 and mean values around 3.1 in response; indicating moderate agreement and some degree of response variability (David & Grobler, 2020; Awad & Albaity, 2024). Digital transformation capacity (DT) has good reliability ($\alpha = 0.868$). Lower mean (2.3–2.4) values on financial capability, human resources, managerial capacity and technology adoption suggest neutral (to slightly unfavorable) perceptions. The reliability of government policies and legislation (GP) is extremely high ($\alpha = 0.944$), with mean values in the region of 3.2 showing positive evaluations of government support such as startup programmes and regulatory frameworks (Abudaqa et al., 2022; El-Haddadeh, 2020). HR (Human Resources) show excellent reliability ($\alpha = 0.962$) with mean values of ~3.05–3.08 demonstrating a moderate agreement on the importance of workforce quality in the digital economy (Pratama et al., 2024; Wang, 2021). Digital consumer needs and behavior (DC) are also found to be reliable ($\alpha = 0.954$) and with mean values of approximately 3.3–3.5, indicating a positive perception of consumer confidence and the ability of firms to satisfy

digital consumers (Lindh et al., 2020; Vahdat et al., 2021). E-commerce and financial technology (EF) display greater reliability ($\alpha = 0.950$) with average values of 3.0 or better, signifying moderate to slightly positive agreement (Antwi & Kong, 2023; Appiah et al., 2021). IE (International economic integration) shows high reliability ($\alpha = 0.951$) and average values range (Mishra & Valencia, 2023; Saha & Dutta, 2020) from 3.0-3.1, meaning moderately positive role for digital economy promotion. Market construct (MA) has acceptable reliability ($\alpha = 0.874$), but lower mean values (≈ 2.3) reflect skepticism on financial and technological market effects (Wang et al., 2024). The digital economy (DE) construct shows high reliability ($\alpha = 0.946$), with items on economic growth and digital investment having mean value exceeding 3.3, indicating agreement on its contribution for overall development (Zhao et al., 2023). Table 1 summarizes these findings with the high internal consistency and mostly moderate to positive beliefs across constructs.

Table 2. Testing Standardized Estimate for Factors Influencing Digital Economy

Relationships			Standardized estimate	S. E	C.R	P value	Result
IT	→	DE	0.529	0.030	16.382	***	Accepted H1
DT	→	DE	0.085	0.048	2.741	0.006	Accepted H2
GP	→	DE	0.090	0.034	3.174	0.002	Accepted H3
HR	→	DE	0.081	0.025	2.782	0.005	Accepted H4
DC	→	DE	0.175	0.033	5.306	***	Accepted H5
EF	→	DE	0.092	0.026	3.047	0.002	Accepted H6
IE	→	DE	0.085	0.031	2.625	0.009	Accepted H7
MA	→	DE	0.079	0.053	3.651	***	Accepted H8

Source: Authors

Table 2 displays the challenges in institutional capacity and cybersecurity. Developing a digital economy is not only a matter of technology or infrastructure, but also poses urgent requirements for institutional capacity and ensuring cybersecurity. These are two important pillars, creating a legal foundation and a trustworthy environment to promote sustainable and comprehensive digitalization. However, our country's legal system is not yet complete and is slow to update according to the rapidly changing digital reality. Emerging domains such as Fintech, Artificial Intelligence (AI), Big Data, and Blockchain are experiencing rapid development; however, they currently lack a standardized regulatory and testing framework to ensure consistent implementation and oversight (Chong et al., 2023; Botelho, 2021). Deficiency of superior human capital. The deficit of skilled human resources in the digital economy persists; cultivating and recruiting individuals with advanced expertise and creativity remains a significant concern. The Ministry of Information and Communications reports that, on average, each year over the period from 2025 to 2030, Vietnam needs many IT workers, but so far, it has met about 60-70% of the demand. The "brain drain" in the technology field is a prominent issue.

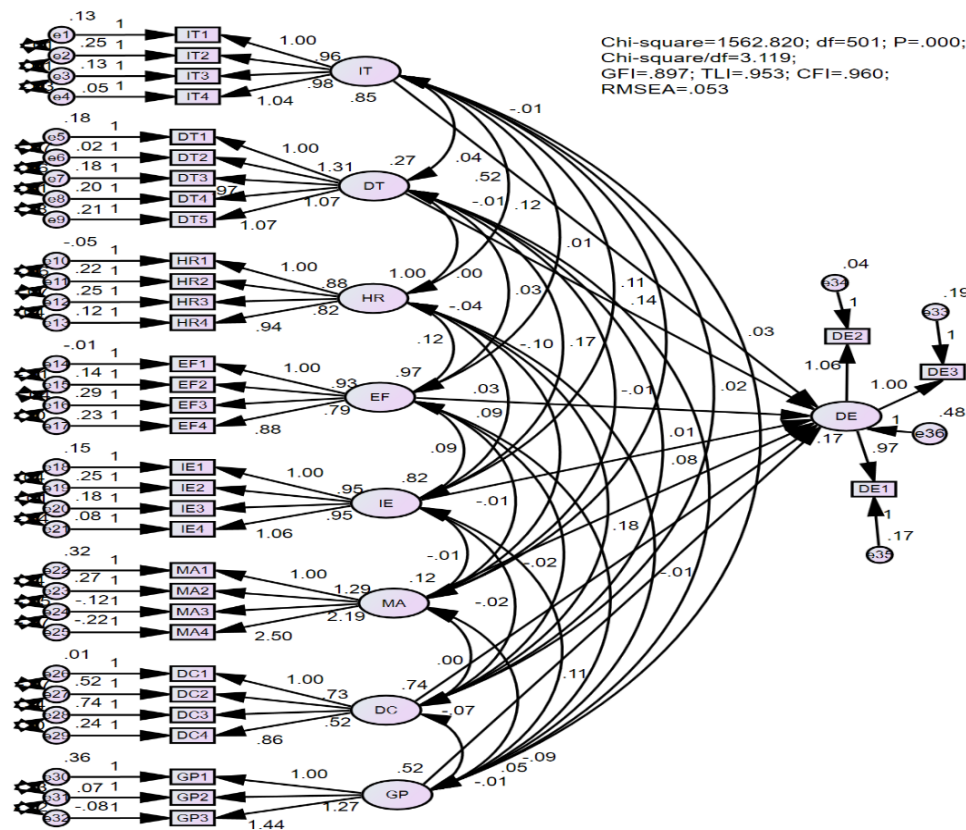
Table 3. Key Factors Impacting the Digital Economy by Bootstrap Test Using 5.000 Samples

Code	CR	AVE	MSV	Bias	SE-Bias	Results
GP	0.946	0.854	0.015	0.001	0.001	Good
IT	0.959	0.855	0.323	0.001	0.001	Good
DT	0.901	0.654	0.086	0.009	0.005	Good
HR	0.960	0.858	0.021	0.001	0.003	Good
EF	0.951	0.828	0.016	0.007	0.004	Good
IE	0.951	0.830	0.086	0.008	0.005	Good
MA	0.876	0.640	0.021	0.001	0.003	Good
DC	0.850	0.596	0.026	0.007	0.004	Good

Source: Authors

Table 3 exhibits that the digital economy in Vietnam is being propelled by IT and digital infrastructure, with consumer demands and habits coming in a close second. To a lesser extent, other critical aspects include government laws, human resources, and e-commerce.

Figure 2. Testing SEM for Factors Influencing the Digital Economy



Source: Authors

Figure 2 shows that digital transformation capacity in enterprises plays the strongest role, showing that enterprises are the center of digital economic development. Financial technology and e-commerce along with digital consumer behavior needs also have a positive impact, reflecting the driving force from the market and service innovation. In contrast, IT infrastructure, human resources and policies and laws have not shown a clear impact, even a negative impact, suggesting limitations in implementation efficiency or quality of digital human resources. International economic integration and market have almost no direct impact. Thus, the study affirms that the focus of digital economic development lies in the ability to digitally transform businesses, while at the same time it is necessary to improve policy effectiveness, human resources and infrastructure to increase spillover effects.

5. DISCUSSION OF FINDINGS

All hypotheses (H1–H8) are accepted at the significance level of 0.001, indicating strong effects of H1–H8 on the digital economy. The integration of qualitative interviewing insights deepens and underlines the quantitative findings. As a result, IT infrastructure has the largest impact on digital economic development ($\beta = 0.529$, $p < 0.001$), which is in alignment with the views of experts that stable broadband and nationwide cloud systems were essential for the successful digital transformation. Also, business digital transformation capacity appears to moderate but significant ($\beta = 0.085$, $p = 0.006$), suggesting issues with skills and system integration, especially in small firms. Policies and legislation by the government shows the other effect in a positive manner with

$\beta = 0.090$ and $p = 0.002$; however, people highlight the more dynamic regulatory conditions, especially in new fields like fintech and artificial intelligence. Also significant on importance is HR ($\beta = 0.081$, $p = 0.005$), emphasizing the need for modernized education and a cross-trained workforce in IT, blockchain, and AI to cope with Fourth Industrial Revolution requirements.

Consumer needs and behavior in digital ($\beta = 0.175$, $p < 0.001$) show that the increasing expectations towards digital convenience are driving the business adaptation and supply chain transformation. The role of international economic integration is positive ($\beta = 0.085$, $p = 0.009$) and shows considerable dependence on the effects of the trade facilitation, market information systems and competitiveness-oriented business support programs. Market construct has also significant effect ($\beta = 0.079$, $p < 0.001$), also indicating that, incentives like tax exemption and pre-tax investment incentives should promote technology development and innovation. While the statistical significance for e-commerce and financial technology is significant ($\beta = 0.092$, $p = 0.002$), their marginal contributions are indicative of the early phase of development in these sectors for Vietnam, where the barriers of policy regulation and infrastructure are challenging.

In general, the analysis is an honest evaluation of the model's strengths, particularly the positive influence of digital infrastructure, that are still needed to develop – e.g., business capabilities, human resources, and market instruments. These results are in line with previous research (Fahlevi et al., 2024; Egala et al., 2024; Choi & Porananond, 2023) and are compatible with technology, organization and environment (TOE) and Innovation Diffusion Theory (IDT). Strong technical and organizational effects would endorse the “technology” and “organization” aspect of TOE, whereas government policy and market forces correspond to the “environment” element.

Consistent with IDT, digital adoption is influenced by perceived usefulness and institutional backing. The findings affirm that the digital economy phenomenon in Vietnam is a result of technology, organizational readiness, and policy environment, which extends TOE and IDT to an emerging market setting. The accept of all hypotheses (H1–H8) is carried at the 0.001 significance level, suggesting strong impacts on the digital economy. By incorporating qualitative interview analysis findings, these results strengthen and put into context the quantitative results. Indeed, infrastructure for Information Technology is significantly more impactful on digital economic development ($\beta = 0.529$, $p < 0.001$), consistent with experts' assertion that stable broadband and national cloud-based solutions are necessary prerequisites for digital transformation. Business digital transformation capability demonstrates a strong albeit low influence ($\beta = 0.085$, $p = 0.006$), indicating difficult issues concerning professional resources and system interface integration especially in the small firms.

Government policy and legislation appears to positively affect this, with specialists arguing for more adaptive regulatory constructs ($\beta = 0.090$, $p = 0.002$), particularly in newer industries, such as fintech and AI. Similarly, human resources is also significant ($\beta = 0.081$, $p = 0.005$), underlining the need for modernized education and diverse training regarding IT, blockchain and AI to nurture the Fourth Industrial Revolution demands. Digital consumer needs and behavior are highly influential ($\beta = 0.175$, $p < 0.001$), confirming that emerging digital convenience expectations lead to business adaptation and supply chain transformation. International economic integration has a positive effect ($\beta = 0.085$, $p = 0.009$), highlighting the influence of trade facilitation, market information systems and business support programs that focus on competitiveness.

Another crucial market factor is also found to have a significant impact ($\beta = 0.079$, $p < 0.001$), indicating the relevance of tax exemption provisions and incentives for promoting tax-free growth and the invention and expansion of technological innovation. Although e-commerce and financial technology are statistically significant ($\beta = 0.092$, $p = 0.002$), they have only a minor impact, it corresponds with the initial progress of these sectors in Vietnam and its regulatory and infrastructure restrictions. In summary, the analysis gives a good balanced and assessment

of strengths and drawbacks of the model with emphasis on the predominance significance of digital infrastructures and how it can be developed in areas as business capabilities, human resources and market mechanisms. The data support various previous research work (Fahlevi et al., 2024; Egala et al., 2024; Choi & Porananond, 2023) and support the Technology, Organization and Environment (TOE) framework and the Innovation Diffusion Theory (IDT). Strong technological and organizational effects favor the “technology” and “organization” dimensions of TOE; and government policy and market forces support the “environment” part. Following IDT, digital adoption is determined by perceived usefulness and institutional support. These findings establish that Vietnam’s digital economy development is shaped by the interplay of technology capability, organizational preparedness, and policy context to build on TOE and IDT to be considered in emerging market settings.

6. CONCLUSIONS AND POLICY RECOMMENDATIONS

6. 1. CONCLUSIONS

The digital economy is forecasted to continue to be the main growth driver, gradually replacing the growth model based on investment capital and resources. In particular, the areas with great potential for the digital economy still focus on: E-commerce and smart logistics; digital finance (fintech, digital banking); digital agriculture and industry 4.0; AI, Big Data, Blockchain. The research results findings show eight independent factors influencing digital economy. Moreover, the findings emphasize that information technology and digital infrastructure are the most influential factors. The study makes specific recommendations for improving the digital economy, such as expanding infrastructure, boosting domestic consumption, improving e-commerce and fintech, developing government policies, strengthening international integration, and improving human resources and market mechanisms. These practical ideas aim to develop a comprehensive, multidimensional policy approach to improving the digital economy in Vietnam. To achieve those goals, perfecting institutions; synchronously developing digital infrastructure; promoting training and human resource development; promoting digital transformation of small and medium enterprises; actively innovating and developing digital ecosystems are truly necessary policy recommendations.

6. 2. POLICY RECOMMENDATIONS

Therefore, based on the empirical findings and the context of Vietnam’s digital economy, the following priorities are proposed:

Build IT and Digital Infrastructure

- Implement national broadband deployment and expand capacity of telecommunications networks to increase the capacity of both the public and private sectors. Invest in bandwidth, backup storage, continuous threat monitoring, etc., to protect cybersecurity and the resilience of national information systems. Focus on 5G deployment to key hotspots (public administration, health services, cultural and tourist attractions). Design and protect underwater fibre-optic cable systems to support redundancy and continuity. Carry out routine national cyber-incident response exercises with governments, large businesses, and service providers regularly.

Increase the Needs and Behaviour of Consumers on Digital.

- Use smart connectivity applications, cashless payment, and e-government services to enhance service efficiency & access. Encourage domestic cloud infrastructure for data sovereignty protection and less reliance on foreign providers. Roll out the establishment

of integrated digital skills training for staff in formal education and workforce retraining for education. Promote green technologies, trust, and transparency to foster consumer confidence and support sustainability of consumption.

Promote E-commerce and Financial Technology.

- Back customer-led digital innovations: AI-based personalization and immersive technologies (VR and 3D applications). Create coordination among the most important ministries to have consistent policy execution that is institutionalized. Help provincial governments create and institute localized national digital transformation strategies that serve regional socio-economic realities.

Strengthen Government Policies and Legal Frameworks

- Incorporate Fourth Industrial Revolution opportunities and risks in medium- and long-term development strategies. Encourage investment in IoT platforms, local technology companies, and local SMEs' digital capability enhancement. To respond to growing data storage and processing needs, increase country-wide connectivity, modernize data centres and develop domestic cloud computing.

Enhance international economic integration.

- Improve research and forecast on global trade flows, such as free trade agreements, protectionism, and regional cooperation. Build Tier III or more data centres in strategic economic markets (i.e., Hanoi, Ho Chi Minh City, Da Nang, Can Tho) for high-tech data services like AI, big data, and IoT. Foster local cloud services to safeguard national data sovereignty.

Develop Business Digital Transformation Capacities.

- Upgrade education and vocational education to emphasize STEM and IT, foreign languages, and lifelong learning. Facilitate closer partnerships with local and transnational scientific institutions, including the Vietnamese community. Data Protection/Threats, Cyberspace, and Public Awareness; Focus towards Data Protection and Cybersecurity to ensure Sustainable Digital Development.

Prepare Strong Human Resources.

- Strengthen the professional and managerial skills in a consistent manner with international expectations based on ethical governance within the framework of institutional efficiency. Encourage strong cross-sectoral coordination including government, industry, and schools to make sure that the workforce development meets the needs of a digitally transformed economy.

Enhance Market Institutions and Innovation Ecosystems.

- Develop a digital economy and digital transformation plan for the country that should be based on common rules for exchanging information and building infrastructure. Enable companies to invest in R&D, adopt international standards, and be a club of new-generation trade agreements. Encourage sustainable and socially responsible businesses.

Limitations and directions for research.

- Results could be constrained by the reliability and the measurement of the data, and a single statistical model may not fully describe the complex digital economy interactions. Future studies are recommended to extend to different countries or geographical regions also, including rural regions and deprived regions, to boost generalizability.

Qualitative methods like expert interviews and case examples can additionally shed light on contextuality. More variables, such as cybersecurity readiness and confidence in digital, and digital transformation sustainability should also be included to give the model greater strength in assessing digital economy resilience.

Acknowledgements

The authors would like to thank all managers of Lac Hong University (LHU). Besides, the authors would like to acknowledge the assistance of the Editor and reviewers in preparing the article for publication.

Funding

This work was supported by the Lac Hong University (LHU) under Grant number 1237/QĐ ĐHLH.

Author contributions

The authors made contributions to the development and planning of the study. The authors divided the tasks equally; L.P.N wrote the conception, method, and design, and conducted the data analysis. P.T.T. wrote the critical revisions of the intellectual content and approved the final version.

Disclosure statement

The authors declare that they have no conflicts of interest.

REFERENCES

- Abudaqa, A., Alzahmi, R. A., Almujaiani, H., & Ahmed, G. (2022). Does innovation moderate the relationship between digital facilitators, digital transformation strategies, and the overall performance of SMEs in the UAE? *International Journal of Entrepreneurial Venturing*, 14(3), 1–23. <https://doi.org/10.1504/IJEV.2022.124964>
- Adeleye, B. N., Adedoyin, F., & Nathaniel, S. (2021). The criticality of ICT-trade nexus on economic and inclusive growth. *Information Technology for Development*, 27(2), 1–28. <https://doi.org/10.1080/02681102.2020.1840323>
- Al-Badrany, A. S. S., & Al-Din Al-Khatib, R. J. S. (2023). Analyzing and Measuring the Impact of the Digital Economy on International Trade, the Case of Jordan for the Period (1990-2020). *Integrated Journal for Research in Arts and Humanities*, 3(3), 59–66. <https://doi.org/10.55544/ijrah.3.3.11>
- Ali, M. A., Hoque, M. R., & Alam, K. (2018). An empirical investigation of the relationship between e-government development and the digital economy: The case of Asian countries. *Journal of Knowledge Management*, 22(5), 1176–1200. <https://doi.org/10.1108/JKM-10-2017-0477>
- Antwi, F., & Kong, Y. (2023). Investigating the impacts of digital finance technology on financial stability of the banking sector: New insights from developing market economies. *Cogent Business & Management*, 10(3), 1–17. <https://doi.org/10.1080/23311975.2023.2284738>
- Appiah, M., Li, F., & Korankye, B. (2021). Modeling the linkages among CO2 emission, energy consumption, and industrialization in Sub-Saharan African (SSA) countries. *Environmental Science and Pollution Research*, 28(29), 38506–38521. <https://doi.org/10.1007/s11356-021-12412-z>
- Awad, A., & Albaity, M. (2024). Economic growth and the proliferation of ICT infrastructures: which causes the other?. *Economic Research-Ekonomska Istraživanja*, 37(1), 1–21. <https://doi.org/10.1080/1331677X.2024.2310100>
- Aydin, D. (2022). Consumption response to credit expansions: Evidence from experimental assignment of 45,307 credit lines. *American Economic Review*, 112(1), 1–40. <https://doi.org/10.1257/aer.20191178>
- Bankins, S., & Formosa, P. (2020). When AI meets PC: Exploring the implications of workplace social robots and a human-robot psychological contract. *European Journal of Work and Organizational Psychology*, 29(2), 215–229. <https://doi.org/10.1080/1359432X.2019.1620328>
- Banna, H., & Alam, M. R. (2021). Impact of digital financial inclusion on ASEAN banking stability: Implications for the post-COVID-19 era. *Studies in Economics and Finance*, 38(2), 504–523. <https://doi.org/10.1108/SEF-09-2020-0388>
- Botelho, F. H. F. (2021). Accessibility to digital technology: Virtual barriers, real opportunities. *Assistive Technology*, 33(1), 27–34. <https://doi.org/10.1080/10400435.2021.1945705>
- Capello, R., Lenzi, C., & Panzera, E. (2022). The rise of the digital service economy in European regions. *Industry and Innovation*, 30(6), 637–663. <https://doi.org/10.1080/13662716.2022.2082924>
- Chavez, R., Malik, M., Ghaderi, H., & Yu, W. (2022). Environmental collaboration with suppliers and cost performance: Exploring the contingency role of digital orientation from a circular economy perspective. *International Journal of Operations & Production Management*, 43(4), 651–675. <https://doi.org/10.1108/IJOPM-01-2022-0072>
- Chen, X., Zhang, L., & Cheng, X. (2024). Fiscal decentralization and the development of the digital economy: evidence from China. *Journal of Economic Policy Reform*, 27(3), 276–292. <https://doi.org/10.1080/17487870.2023.2293978>
- Choi, Y. S., & Porananond, P. (2023). Competition law and policy of the ASEAN member states for the digital economy: a proposal for greater harmonization. *Asia Pacific Law Review*, 31(2), 358–379. <https://doi.org/10.1080/10192557.2023.2216055>
- Chong, T. T. L., Wang, S., & Zhang, C. (2023). Understanding the digital economy in China: Characteristics, challenges, and prospects. *Economic and Political Studies*, 11(4), 419–440. <https://doi.org/10.1080/20954816.2023.2269327>

- Cui, L., Hou, Y., Liu, Y., & Zhang, L. (2021). Text mining to explore the influencing factors of sharing economy driven digital platforms to promote social and economic development. *Information Technology for Development*, 27(4), 779–801. <https://doi.org/10.1080/02681102.2020.1815636>
- David, O. O., & Grobler, W. (2020). Information and communication technology penetration level as an impetus for economic growth and development in Africa. *Economic Research-Ekonomska Istraživanja*, 33(1), 1394–1418. <https://doi.org/10.1080/1331677X.2020.1745661>
- Egala, S. B., Amoah, J., Bashiru Jibril, A., Opoku, R., & Bruce, E. (2024). Digital transformation in an emerging economy: exploring organizational drivers. *Cogent Social Sciences*, 10(1), 1–23. <https://doi.org/10.1080/23311886.2024.2302217>
- El-Haddadeh, R. (2020). Digital innovation dynamics influence on organizational adoption: The case of cloud computing services. *Information Systems Frontiers*, 22(4), 985–999. <https://doi.org/10.1007/s10796-019-09912-2>
- Endres, H., Huesig, S., & Pesch, R. (2022). Digital innovation management for entrepreneurial ecosystems: Services and functionalities as drivers of innovation management software adoption. *Review of Managerial Science*, 16(1), 135–156. <https://doi.org/10.1007/s11846-021-00441-4>
- Fahlevi, M., Asdullah, M. A., Raza, F. A., Watto, W. A., Aljuaid, M., & Aziz, A. L. (2024). The influence of information and communication technology on trade in developing countries and partners. *Cogent Business & Management*, 11(1), 1–31. <https://doi.org/10.1080/23311975.2024.2320814>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Kurniawati, M. A. (2022). Analysis of the impact of information communication technology on economic growth: Empirical evidence from Asian countries. *Journal of Asian Business and Economic Studies*, 29(1), 2–18. <https://doi.org/10.1108/JABES-07-2020-0082>
- Lindh, C., Rovira Nordman, E., Melén Hånell, S., Safari, A., & Hadjikhani, A. (2020). Digitalization and International Online Sales: Antecedents of Purchase Intent. *Journal of International Consumer Marketing*, 32(4), 324–335. <https://doi.org/10.1080/08961530.2019.1707143>
- Liu, Z., Liu, B., Luo, H., & Chen, S. (2024). Digital economy and fiscal decentralization: Drivers of green innovation in China. *Heliyon*, 10(13), 1–18. <https://doi.org/10.1016/j.heliyon.2024.e33870>
- Ma, K., & Zhang, H. (2023). Has the digital economy improved income inequality for ethnic minorities? The case of China. *Heliyon*, 9(12), 1–14. <https://doi.org/10.1016/j.heliyon.2023.e22831>
- Martin-Shields, C. P., & Bodanac, N. (2017). Peacekeeping’s Digital Economy: The Role of Communication Technologies in Post-conflict Economic Growth. *International Peacekeeping*, 25(3), 420–445. <https://doi.org/10.1080/13533312.2017.1408413>
- McDonnell, A., Carbery, R., Burgess, J., & Sherman, U. (2021). Technologically mediated human resource management in the gig economy. *The International Journal of Human Resource Management*, 32(19), 3995–4015. <https://doi.org/10.1080/09585192.2021.1986109>
- Meijerink, J., Boons, M., Keegan, A., & Marler, J. (2021). Algorithmic human resource management: Synthesizing developments and cross-disciplinary insights on digital HRM. *The International Journal of Human Resource Management*, 32(12), 2545–2562. <https://doi.org/10.1080/09585192.2021.1925326>
- Mishra, N., & Valencia, A. M. P. (2023). Digital services and digital trade in the Asia Pacific: an alternative model for digital integration?. *Asia Pacific Law Review*, 31(2), 489–513. <https://doi.org/10.1080/10192557.2023.2216058>
- Paul, J., Gupta, S., & Tyagi, S. (2021). Theory of dogmatism, personality traits and shopping behavior. *European Management Journal*, 41(2), 302–311. <https://doi.org/10.1016/j.emj.2021.10.009>
- Pratama, I. W. A., & Diwyarthi, N. D. M. S. (2024). Optimization of Human Resources and Utilization of Information Technology in Driving the Digital Economy. *West Science Information System and Technology*, 2(1), 49–57. <https://doi.org/10.58812/wsist.v2i01.829>
- General Statistics Office (2024). *Vietnam Digital Economy*. Official Website of the International Trade Administration. <https://www.trade.gov/country-commercial-guides/vietnam-digital-economy>

- Rodriguez-Crespo, E., Marco, R., & Billon, M. (2021). ICTs impacts on trade: A comparative dynamic analysis for internet, mobile phones and broadband. *Asia-Pacific Journal of Accounting & Economics*, 28(5), 577–591. <https://doi.org/10.1080/16081625.2018.1519636>
- Saha, M., & Dutta, K. D. (2020). Nexus of financial inclusion, competition, concentration and financial stability: Cross-country empirical evidence. *Competitiveness Review: An International Business Journal*, 31(4), 669–692. <https://doi.org/10.1108/CR-12-2019-0136>
- Sansa, N. A. (2019). Analysis of the influence of the China's industrial policies to the digital economy. *Electronic Research Journal of Social Sciences and Humanities*, 2(II), 71–83. <https://doi.org/10.2139/ssrn.3567910>
- Thiébaud, R. (2024). Advancing regional cooperation within AfCFTA through an integrated cross-border e-commerce system. *South African Journal of International Affairs*, 31(1), 45–68. <https://doi.org/10.1080/10220461.2024.2352037>
- Tiana, L., & Xiang, Y. (2024). Does the digital economy promote or inhibit income inequality?. *Heliyon*, 10(14), 1–14. <https://doi.org/10.1016/j.heliyon.2024.e33533>
- Vahdat, A., Alizadeh, A., Quach, S., & Hamelin, N. (2021). Would you like to shop via mobile app technology?. The technology acceptance model, social factors and purchase intention. *Australasian Marketing Journal*, 29(2), 187–197. <https://doi.org/10.1016/j.ausmj.2020.01.002>
- Wang, F., Wang, H., & Xiong, L. (2024). Does the digital economy exhibit multiplier effects? A case study on the optimization of agricultural production structure in rural digital economy. *International Journal of Agricultural Sustainability*, 22(1), 1–21. <https://doi.org/10.1080/14735903.2024.2386821>
- Wang, Z. (2021). Research on digital economy and human resources based on fuzzy clustering and edge computing. *Security and Communication Networks*, 2021(12), 1–8. <https://doi.org/10.1155/2021/5583967>
- Wu, H. X., & Yu, C. (2022). The impact of the digital economy on China's economic growth and productivity performance. *China Economic Journal*, 15(2), 153–170. <https://doi.org/10.1080/17538963.2022.2067689>
- Yang, Y. (2023). The impact of the digital economy on young people's consumption in the context of the new coronary pneumonia epidemic. *Economic Research-Ekonomska Istraživanja*, 36(3), 1–17. <https://doi.org/10.1080/1331677X.2023.2212743>
- Yu, H., & Zhu, Q. (2023). Impact and mechanism of digital economy on China's carbon emissions: from the perspective of spatial heterogeneity. *Environmental Science and Pollution Research*, 30(4), 9642–9657. <https://doi.org/10.1007/s11356-022-22552-5>
- Zhao, T., Jiao, F., & Wang, Z. (2023). Digital economy, entrepreneurial activity, and common prosperity: Evidence from China. *Journal of Information Economics*, 1(1), 59–71. <https://doi.org/10.58567/jie01010005>