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Vietnam Opportunities from Indo-Pacific Economic Framework for Prosperity as Regional Economic Integration: A Moderating Role of International Relations

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Abstract

Key words:
Infrastructural development, energy security, Indo-Pacific Economic Framework for Prosperity, digital economy, international relations, regional economic integration

Recently, the Indo-Pacific Economic Framework for Prosperity created opportunities for economic integration that enhanced the country's economic stability. This aspect requires the attention of recent studies and policymakers. Hence, the present article examines the impact of opportunities from the Indo-Pacific Economic Framework for Prosperity, such as infrastructural development, energy security, and digital economy, on regional economic integration in Vietnam. The current study also checks the moderating role of international relations among infrastructural development, energy security, digital economy, and regional economic integration in Vietnam. The researchers collected the primary data from the selected respondents using survey questionnaires. The researchers also check the data reliability and association among variables using Smart-PLS. The outcomes indicated that infrastructural development and energy security positively associate with regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. The results also revealed that international relations significantly moderate among infrastructural development, energy security, digital economy, and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. The study guides the policymakers in making the policies related to attaining economic integration by properly utilizing Indo-Pacific Economic Framework for Prosperity created opportunities such as infrastructural development, energy security, and digital economy.

1. Introduction

Over the past few decades, globalization has been one of the significant changes faced by the world. Globalization has changed world dynamics. It brought closer the countries into the context of culture and business. The relations between countries are getting intense in business and trade. Globalization has also impacted the economy. Different countries prefer to trade with their friend countries to support each other. Economic integration is one of the core outcomes of globalization (Chien et al., 2022; Ehsanullah et al., 2021). Economic integration is the collaboration between two countries to limit or eradicate restrictions in their trade and encourage political and economic cooperation. It allows the global market to function more steadily with fewer government interventions, giving countries a chance to use all sorts of resources (Comerford & Rodríguez Mora, 2019). Economic integration usually occurs between neighboring countries, so it is narrated as regional integration.

Regional integration increases employment opportunities in both countries through increased industry volume. Moreover, the integration benefits from increased movement of capital, labor, goods, and services, more coordinated fiscal and monetary policies, cheaper production and selling costs, and lower transaction costs (Chien et al., 2023). The ultimate question is how the economic integration world is. Economic integration aims to harmonize economic practices across member states to advance commerce and shared political, economic, and economic goals. Along with less government involvement, it expands commercial opportunities globally (Martén, Hainmueller, & Hangartner, 2019). As a result, it plays a crucial role in regional and worldwide economic trends. International

trade gives trading partners access to new markets while enabling nations to make the most significant use of their resources. Multiple factors play a vital role in strengthening regional integration like trade, the level of relations between countries ([Al-Muttar et al., 2022](#)), infrastructure development in both countries ([Shoukat, Ahmad, & Abdullah, 2016](#)), the energy sector ([Javed & Ismail, 2021](#)), the form of an economy like digital ([Chakpitak et al., 2018](#)), government policies. The current study aimed to work on the role of the digital economy, infrastructure development, and energy security.

The recently deployed Indo-Pacific Economic Framework (IPEF) for Prosperity is a must-talk when discussing economic integration. In 2021, the administration of Biden announced the development of “The Indo-Pacific Economic Framework. The framework, known as IPEF developed to partner nations in order to work on shared objectives and interests, including “trade facilitation, standards for the digital economy and technology, supply chain resiliency, decarbonization and clean energy, infrastructure, worker standards” ([Forough, 2022](#)). However, a thorough discussion of the framework is still on the table. However, until now, the six areas mentioned above have been distilled into 4 negotiating key pillars: Connected Economy, Resilient Economy, Clean Economy, and Fair Economy. The connected economy, the first pillar of IPEF, consists of seven modules: “the digital economy and emerging technology (cross-border data flows and data localization, online privacy and the discriminatory and unethical use of artificial intelligence), labor, environment, etc. However, the other pillars consist of 10 modules, including “supply-chain diversification, renewable energy, decarbonization, anti-corruption, and taxation” ([Jiang, 2022](#)).

IPEF is a region-wide platform and leads by the US for economic negotiation. According to the United Nations projection, the Indo-Pacific region will be the most significant contributor to the global economy in the next 30 years. With the help of IPEF, the US is aiming to define new rules in order to advocate high-standard trade, enhance the resilience of the supply chain, infuse transparent in investments, regulate the digital economy, and provide high-quality infrastructure while simultaneously creating opportunities for all related partners ([Natalegawa & Poling, 2022](#)). The intended aim of the US shapes the distinctive characteristics of IPEF, which have the potential to influence the credibility and feasibility of the framework as a “multilateral economic arrangement.” It should be noted that 13 Indo-pacific nations joined the league: Malaysia, Australia, Japan, Indonesia, Philippines, Thailand, India, Brunei, South Korea, New Zealand, Singapore, Fiji, and Vietnam. These 13 countries and the US account for 40% of the world’s GDP ([Kang, 2022](#)).

Vietnam in the mid of 1980s was considered a backward economy under a socialist economic system. Then, the major workforce of the country was associated with agriculture, as the country's industry was relatively weak ([Kamarudin et al., 2021](#); [Tien & Minh, 2019](#)). Vietnam’s economic reforms approach was characterized by two main features 1) a top-down and step-to-step approach, 2) a consensus was developed between the country's business communities not to mix market-oriented reforms with political liberalization ([Le, 2022](#); [Sadiq et al., 2023](#)). Vietnam has benefited most

from globalization and served as a model of successful integration throughout its ten years in the WTO. In fields where human resources are crucial, it already uses its human resources and profits from its competitive advantages. Vietnam's WTO membership has been a success and has contributed to its rapid growth compared to other nations with high growth rates (Nguyen et al., 2020). According to the global economy, economic growth in wealthy nations is not as strong as in emerging nations. For instance, the US and Japan both have growth rates of about 2% to 3%, while Europe has even lower growth rates (Huong et al., 2021). Vietnam should endeavor to continue this progress, in my opinion.

There is a lot of literature exists on the sponge communities but still, there are a number of gaps that exist in the literature and the present investigation are addressing are 1) the model consists of the factors like regional economic integration, infrastructure development, energy security, digital economy and international relations particularly in Vietnam is not tested before in recent time, especially, in the context of Indo-Pacific Economic Framework for Prosperity, 2) Shoukat, Ahmad, and Abdullah (2016) and Perry and Berry (2016), investigated the nexus between infrastructure development and regional economic integration in different countries at different times, however, the current study will also work on infrastructure development and regional economic integration along with other variables like energy security, digital economy by employing the moderation effect of international relations particularly in Vietnam with fresh sample set, 3) Liu, Sheng, and Azhgaliyeva (2019) and Javed and Ismail (2021), investigated the nexus between energy security and regional economic integration in different countries at different times, however, the current study will also work on it along with other variables like infrastructure development, digital economy by employing the moderation effect of international relations particularly in Vietnam with fresh sample set in the context of Indo-Pacific Economic Framework for Prosperity, 4) Zhang et al. (2021) and Chakpitak et al. (2018), investigated the nexus between digital economy and regional economic integration in different countries at different times, however, the current study will also work on it along with other variables like infrastructure development, energy security by employing the moderation effect of international relations particularly in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity with fresh sample set, 5) Luo, Ngai, and Cheng (2023) and Al-Muttar et al. (2022) investigated the moderating role of international relations in different relationships, however, the present investigation will also explore its moderating effect in the relationship between regional economic integration, infrastructure development, energy security and digital economy particularly in Vietnam. The current study pertaining a noticeable significance, 1) being one of the most important topics of the modern era i.e., regional economic integration the present investigation will highlight the need to explore it, particularly in the context of infrastructure development, energy security, digital economy and international relations, 2) although there is a lot of regional economic integration is available but the present study will result in add the literature on the topic in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity, 3) provide a guideline as well as help to the regional

economy in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity related professionals to highlight the importance of regional economic integration for the world, 4) although there are numerous aspects of regional economic integration have been explored till now, despite that there still numerous remained hidden, therefore, the present investigation will also provide the help to scholars to explore new aspects.

2. Review of Literature

The world become global. This globalization results in bringing countries closer. The business context of the world has changed as a result of globalization. Now, countries prefer road transportation for any business transaction. In that case, infrastructure development is the key (Nguyen, Likhitrungsilp, & Onishi, 2020). Literature proposed a significant nexus between infrastructure development and regional economic integration. In this context, Shoukat, Ahmad, and Abdullah (2016) checked whether there is any nexus between infrastructure development and regional economic integration. The study was conducted on the population of Pakistan. The study has empirical nature. The study used data from 42 years as a sample. The selected sample data covers the tenure from 1972 to 2014. For the sake of analysis, the study employed the regression analysis approach. The results received from the analysis proposed that there is significant nexus between infrastructure development and regional economic integration.

Similarly, Yu (2017) checked for any nexus between infrastructure development and regional economic integration. The study was conducted on the population of East Asia. The study has empirical nature. The results from the analysis proposed a significant nexus between infrastructure development and regional economic integration, particularly in East Asia. Further, the East Asia infrastructure results in bringing closer the countries. On the other side, it also faces numerous challenges, like 1) a lack of effective mechanisms and 2) a severe trust deficit. There is an urgent need to work on these challenges to promote regional integration in East Asia.

Additionally, Perry and Berry (2016) checked whether there is any nexus between infrastructure development and regional economic integration. The study was conducted on the population of Pakistan. The study has empirical nature. The study used data from 42 years as a sample. The selected sample data covers the tenure from 1972 to 2014. For analysis, the study employed the multiple regression analysis approach. The results received from the analysis proposed that there is significant nexus between infrastructure development and regional economic integration. Thus, the hypothesis derived from the above debate is as under:

H1: There is a significant nexus between infrastructure development and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

The technological revolution has increased the energy demand all across the globe. Every invention of this era is somehow context based on energy.

Life without energy cannot be imagined in this era. One of the significant effects of energy is the business community (Nguyen et al., 2021). Literature proposed a significant nexus between energy security and regional economic integration. In this context, Liu, Sheng, and Azhgaliyeva (2019) checked whether there is any nexus between energy security and regional economic integration. The study was conducted on the population of the Association of Southeast Asian Nations (ASEAN) countries. The study has empirical nature. The study used data from 21 years as a sample. The selected sample data covers the tenure from 1995 to 2016. For the sake of analysis, the study employed the bilateral analysis approach. The results received from the analysis proposed that there is significant nexus between energy security and regional economic integration.

Additionally, Javed and Ismail (2021) checked whether there is any nexus between energy security and regional economic integration. The study was conducted on the population of Pakistan. The study has empirical nature. The study used the data of 384 respondents as a sample. The sample data was collected with the help of questionnaires. For analysis, the study employed the correlation and regression analysis approach. The results received from the analysis proposed that there is significant nexus between energy security and regional economic integration.

Similarly, Tongsopit et al. (2016) checked whether there is any nexus between energy security and regional integration. The study was conducted on the population of ASEAN. The study has empirical nature. The study used data from 5 years as a sample. The selected sample data covers the tenure from 2005 to 2010. For the sake of analysis, the study employed the analytical analysis approach. The results received from the analysis proposed that energy security significantly affects regional integration. Thus, the hypothesis derived from the above debate is as under:

H2: There is a significant nexus between energy security and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

The digital economy is the outcome of globalization. Whether the trade is inside or outside the country, the digital economy is a critical factor in the entire process. Literature proposed a significant nexus between the digital economy and regional economic integration. In this context, Zhang et al. (2021) checked whether there is any nexus between the digital economy and economic integration. The study was conducted on the population of China. The study has empirical nature. The study used data from 4 years as a sample. The selected sample data covers the tenure from 2015 to 2019. For the sake of analysis, the study employed the regression analysis approach. The results received from the analysis proposed that the digital economy significantly affects economic integration.

Similarly, Chakpitak et al. (2018) checked whether there is any nexus between the digital economy and regional economic growth. The study was conducted on the population of Thailand. The study has empirical nature. The study used

data from 45 years as a sample. The selected sample data covers the tenure from 1975 to 2015. For the sake of analysis, the study employed the SFM analysis approach. The results from the analysis proposed a significant nexus between the digital economy and regional economic growth.

Additionally, [Abendin and Duan \(2021\)](#) checked whether there is any nexus between the digital economy and regional economic growth. The study was conducted on the population of Africa. The study has empirical nature. The study used data from 18 years as a sample. The selected sample data covers the tenure from 2000 to 2018. For the sake of analysis, the study employed the GMM analysis approach. The results from the analysis proposed a significant nexus between the digital economy and regional economic growth. Thus, the hypothesis derived from the above debate is as under:

H3: There is a significant nexus between the digital economy and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

Infrastructure development plays a vital role in economic integration at a regional level. The integration between countries is based on their relationship with each other's ([Sørensen, Møller, & Jackson, 2022](#)). Many times one country promotes another based on its relationship with it. International relations moderate the nexus between infrastructure development and regional economic integration. In this context, [Luo, Ngai, and Cheng \(2023\)](#) checked whether international relations can act as moderators in the relationship between infrastructure development regarding supply chain networks and regional economic integration in business financial performance. The study was conducted on the population of the China. The study has empirical nature. The study used the data of 4300 respondents as a sample. The selected sample data was collected with the help of questionnaires. For the sake of analysis, the study employed the FEM analysis approach. The results received from the analysis proposed that international relations can act as moderators in the relationship between supply chain networks and regional economic integration in the context of business financial performance. Thus, the hypothesis derived from the above debate is as under:

H4: International relations significantly moderate the nexus between infrastructure development and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

One of the vital factors which bring closer the nations is their relationship. The countries bring closer due to their culture and religion. These international relations between the countries also result in their economic integration. Literature proposed that International relations can act as moderates in different contexts between countries. In this context, [Abdeljaber et al. \(2021\)](#) checked whether international relations in terms of IT infrastructure can act as moderators in the relationship between entrepreneurship and regional economic integration in the context of trade integration. The study was conducted on the population of Malaysia and Jordan. The study has empirical nature. The study used the data of 500 respondents as a sample. The selected sample data was collected with the help of questionnaires. For analysis, the

study employed the multiple regression analysis approach. The results from the analysis proposed that international relations in terms of IT infrastructure can act as a moderator in the relationship between entrepreneurship and regional economic integration in the context of trade integration. Thus, the hypothesis derived from the above debate is as under:

H5: International relations significantly moderate the nexus between energy security and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

One of the critical factors in the business relationship between countries is the digital economy. Although there is a significant nexus between the digital economy and economic integration, one of the core bases is the international relations of the countries. The business between nations is based on their relationships (Witt, 2019). As relationships play a vital role in promoting business between two countries, international relations can moderate the nexus between the digital economy and regional economic integration. In this context, Al-Muttar et al. (2022) checked whether international relations can act as moderators in the relationship between the digital economy in the context of information capital and regional economic integration in the context of trade integration. The study was conducted on the population of Iraq. The study has empirical nature. The study used the data of 450 senior managers of international trade as a sample. The selected sample data was collected with the help of questionnaires. For the sake of analysis, the study employed the PLS SEM analysis approach. The results received from the analysis proposed that international relations can act as moderator in the relationship between digital economy in the context of information capital and regional economic integration in the context of trade integration. Thus, the hypothesis derived from the above debate is as under:

H6: International relations significantly moderate the nexus between the digital economy and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

3. Research Methods

The article examines the impact of opportunities such as infrastructural development, energy security, and digital economy on regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. Also, it checks the moderating role of international relations among infrastructural development, energy security, digital economy, and regional economic integration in Vietnam. The researchers collected the primary data from the selected respondents using survey questionnaires. The questions were used to measure the variables. These questions are adapted from past literature such as infrastructure development is measured with five questions taken from Nazneen, Xu, and Din (2019), energy security is measured with six questions taken from Corner et al. (2011), the digital economy is measured with four questions taken from Jun et al. (2021), international relations are measured with six questions extracted from Karami and Tang (2019). Regional economic integration is measured with four items taken from Açikalin et al. (2021). These measurements are mentioned in Table 1.

Table 1: Measurements of the variables

Items	Statements	Sources
Infrastructure Development		
IFD1	Increased quality of road networks.	(Nazneen, Xu, & Din, 2019)
IFD2	Transport facilities.	
IFD3	Increase the quality of public facilities.	
IFD4	Increased number of lodging facilities.	
IFD5	Increased trade for local businesses.	
Energy Security		
ES1	How concerned if electricity will become unaffordable?	(Corner et al., 2011)
ES2	How concerned if electricity will be rationed?	
ES3	How concerned if Vietnam will become too dependent on energy from other countries?	
ES4	How concerned if terrorist attacks will cause interruptions to electricity supplies?	
ES5	How concerned if supplies of fossil fuels (e.g., coal and gas) will run out?	
ES6	How concerned if there will be power cuts?	
Digital Economy		
DE1	Our platform easily accesses data from our partners' IT systems.	(Jun et al., 2021)
DE2	Our platform provides a seamless connection between our partners' IT systems and our IT systems.	
DE3	Our platform can exchange real-time information with our partners.	
DE4	Our platform easily aggregates relevant information from our partners' databases.	
International Relation		
IR1	International sales volume.	(Karami & Tang, 2019)
IR2	International sales growth.	
IR3	International profitability.	
IR4	Overall international performance.	
IR5	Return on investment (ROI) from international business.	
IR6	Market share in international markets.	
Regional Economic Integration in the Context of Vietnam's Joining the Indo-Pacific Economic Framework for Prosperity		
REI1	In my country, infrastructure development led to economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.	(Açikalin et al., 2021)
REI2	In my country, energy security lead toward economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.	
REI3	Adopting the digital economy leads to economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.	
REI4	International solid relations led towards economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.	

The government officials working in the economic survey team are the respondents. The surveys were sent to the officials during personal visits and emails. They are selected based on purposive sampling. Five hundred twenty-seven surveys were distributed and sent, but only 290 valid responses were received. These valid responses have a 55.03 percent response rate.

Moreover, the researchers also check the data reliability and association among variables using Smart-PLS. It is an effective tool that deals with primary data, large data sets, and complex models (Hair Jr, Howard, & Nitzl, 2020). The study used three independent variables such as infrastructural development (IFD), energy security (ES), and digital economy (DE), while the study also used one moderating variable named international relations (IR) and one dependent variable named regional economic integration (REI) in the context of Vietnam's joining into Indo-Pacific Economic Framework for Prosperity. These variables are given in Figure 1.

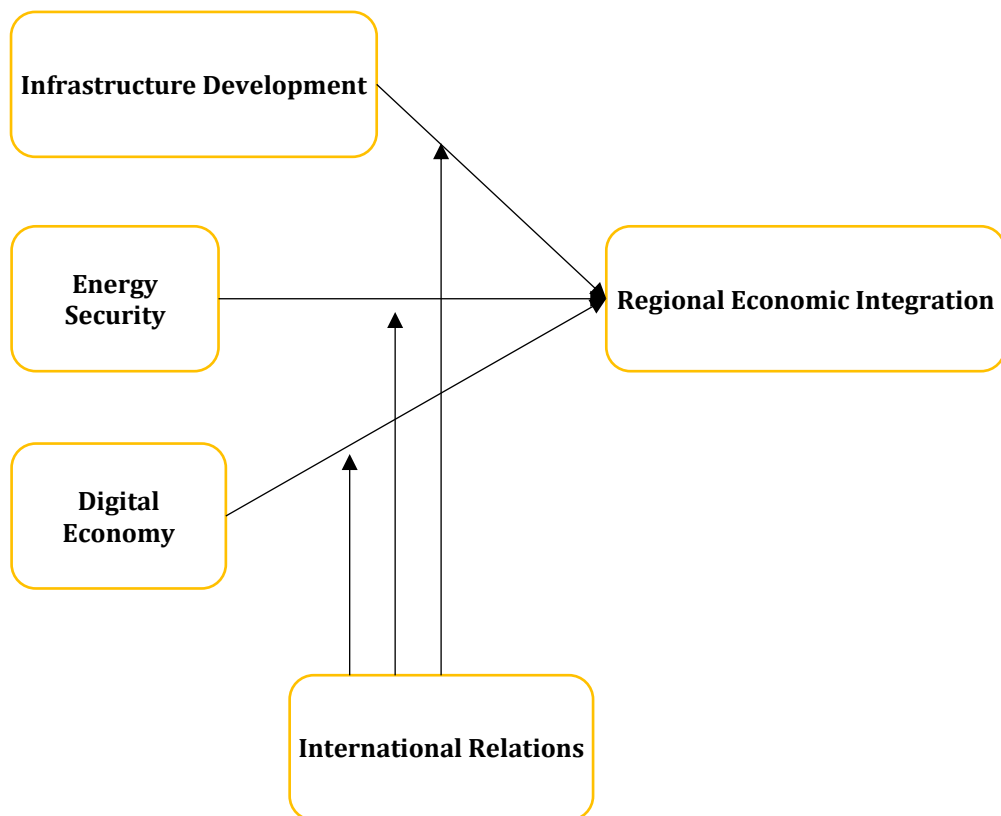


Figure 1: Research model

4. Research Findings

The study checks the items' correlation, called convergent validity, with the help of Alpha and composite reliability (CR), and the values of both measures are more extensive than 0.70. In addition, item correlation was also checked with the help of average variance extracted (AVE) and factor loadings, and the values of both measures are larger than 0.50. These values exposed that the items are highly correlated. These values are given in Table 2.

Table 2: Convergent validity

Constructs	Items	Loadings	Alpha	CR	AVE
Digital Economy	DE1	0.902	0.955	0.968	0.882
	DE2	0.963			
	DE3	0.966			
	DE4	0.924			
Energy Security	ES1	0.902	0.933	0.948	0.752
	ES2	0.908			
	ES3	0.898			
	ES4	0.885			
	ES5	0.855			
	ES6	0.743			
Infrastructure Development	IFD1	0.865	0.905	0.929	0.725
	IFD2	0.861			
	IFD3	0.852			
	IFD4	0.856			
	IFD5	0.823			
International Relations	IR1	0.956	0.959	0.968	0.835
	IR2	0.824			
	IR3	0.954			
	IR4	0.957			
	IR5	0.823			
	IR6	0.956			
Regional Economic Integration	REI1	0.790	0.818	0.880	0.648
	REI2	0.833			
	REI3	0.891			
	REI4	0.694			

The study checks the correlation of the discriminant validity variable with the help of the Fornell Larcker criteria and cross-loadings. The outcomes indicated that the figures that show the association among the construct itself are higher than the figures that show the association among other variables. These values exposed that the variables are not highly correlated. These values are given in [Table 3](#) and [Table 4](#).

Table 3: Fornell Larcker

	DE	ES	IFD	IR	REI
DE	0.939				
ES	0.471	0.867			
IFD	0.418	0.407	0.851		
IR	0.495	0.450	0.383	0.914	
REI	0.429	0.497	0.402	0.485	0.805

Table 4: Cross-loadings

	DE	ES	IFD	IR	REI
DE1	0.902	0.456	0.398	0.473	0.393
DE2	0.963	0.439	0.407	0.462	0.399
DE3	0.966	0.438	0.411	0.457	0.393
DE4	0.924	0.438	0.357	0.467	0.423
ES1	0.400	0.902	0.357	0.735	0.457
ES2	0.387	0.908	0.357	0.734	0.447
ES3	0.416	0.898	0.355	0.794	0.433
ES4	0.407	0.885	0.342	0.766	0.428
ES5	0.455	0.855	0.368	0.723	0.448
ES6	0.389	0.743	0.341	0.669	0.368
IFD1	0.344	0.296	0.865	0.291	0.333
IFD2	0.353	0.372	0.861	0.341	0.304
IFD3	0.342	0.347	0.852	0.305	0.302
IFD4	0.391	0.386	0.856	0.372	0.409
IFD5	0.340	0.324	0.823	0.308	0.339
IR1	0.456	0.780	0.330	0.956	0.446
IR2	0.440	0.765	0.383	0.824	0.443
IR3	0.460	0.774	0.332	0.954	0.448
IR4	0.458	0.785	0.334	0.957	0.440
IR5	0.441	0.768	0.386	0.823	0.435
IR6	0.454	0.777	0.328	0.956	0.439
REI1	0.300	0.393	0.326	0.380	0.790
REI2	0.393	0.475	0.337	0.493	0.833
REI3	0.345	0.442	0.369	0.403	0.891
REI4	0.345	0.252	0.248	0.244	0.694

The study checks the correlation of the variables called discriminant validity with the help of the Heterotrait Monotrait (HTMT) ratio. The outcomes indicated that the figures are lower than 0.90. These values exposed that the variables are not highly correlated. These values are given in [Table 5](#) and [Figure 6](#).

Table 5: Heterotrait Monotrait ratio

	DE	ES	IFD	IR	REI
DE					
ES	0.501				
IFD	0.448	0.442			
IR	0.517	0.456	0.408		
REI	0.486	0.556	0.456	0.533	

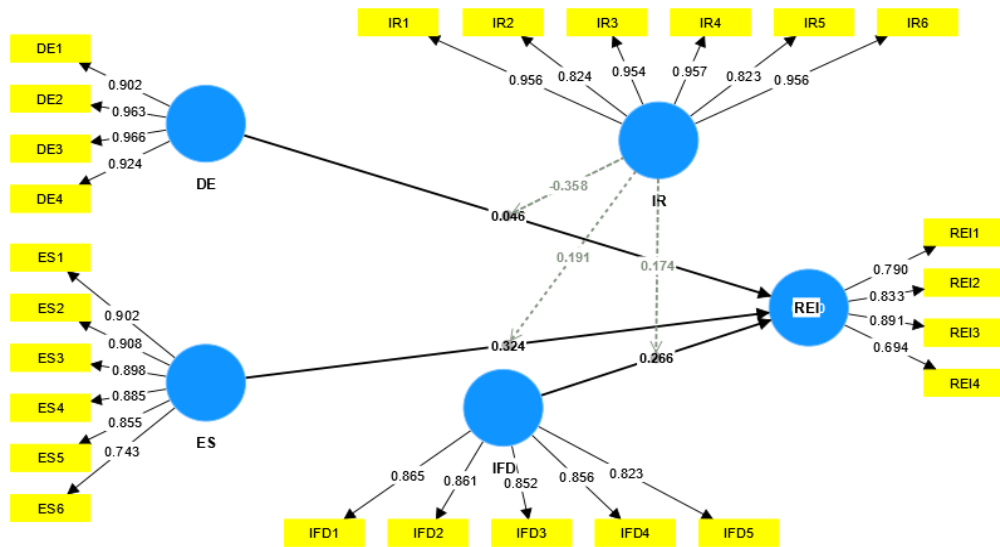


Figure 2: Measurement model assessment

Finally, the study checks the association among constructs, and the outcomes indicated that infrastructural development and energy security positively correlate with regional economic integration in Vietnam and accept H1 and H2. In addition, the results also revealed that international relations significantly moderate among infrastructural development, energy security, digital economy, and regional economic integration in Vietnam and accept H4, H5, and H6. These associations are given in [Table 6](#).

Table 6: A path analysis

Relationships	Beta	S.D.	T statistics	P values
DE -> REI	0.046	0.073	0.630	0.530
ES -> REI	0.324	0.099	3.282	0.001
IFD -> REI	0.266	0.055	4.881	0.000
IR x DE -> REI	-0.358	0.062	5.757	0.000
IR x ES -> REI	0.191	0.068	2.809	0.006
IR x IFD -> REI	0.174	0.059	2.936	0.004

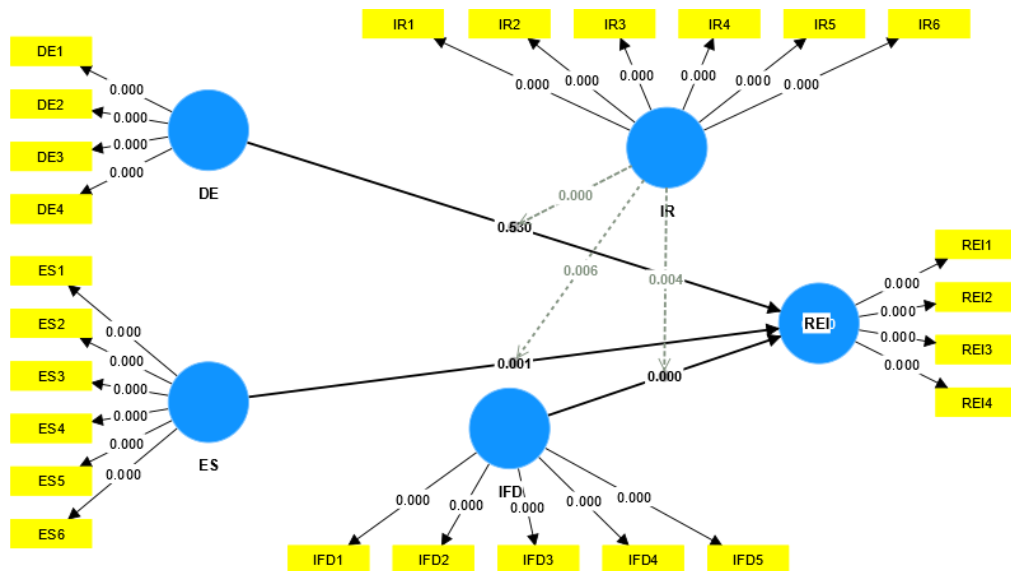


Figure 3: Structural model assessment

5. Discussions

The results indicated that infrastructure development positively correlates with regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. These results, in general, are supported by [Schindler and Kanai \(2021\)](#), which check the role of infrastructure development in regional economic integration. The study implies that if buildings and roads are being constructed on innovative standards considering the new economic requirements, the producers and traders can implement their commercial plans effectively. So, the economy integrates into a region speedily. These results also agree with [Gao, Zhang, and Sun \(2020\)](#), which highlight that if there is development in the country's infrastructure, even at the regional level, there is encouragement for economic practices, including production and trading activities. Hence, infrastructure development leads to regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

The results showed that energy security is positively associated with regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. These results are supported by [He et al. \(2020\)](#), which posit that energy supply at reasonable prices and through easy ways is assured under energy security. The sustainable energy supply does not allow any interruption in the cycle of economic practices and boosts regional economic integration. These results also agree with [Le and Nguyen \(2019\)](#). This previous study explains that if there is energy security, less need is felt for energy import, but the saved safe energy promotes energy export and sustainable economic practices. Hence, energy security leads to regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

The results also revealed that the digital economy positively associates with regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. These results are supported by [Alemzero et al. \(2021\)](#). The study implies that in the digital economy, people can perform economic activities and interact with one another worldwide through information and communications technology. The easy commercial interactions and fulfillment of economic activities facilitate regional economic integration. These results also agree with [Li et al. \(2022\)](#). According to the author's views in this previous article, the digital economy allows economists to share their ideas and exchange resources and products. As a result, it boosts regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

The results indicated that international relations are a significant moderator between infrastructure development and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. These results are supported by [ThiHoa et al. \(2021\)](#), which state that when inhabitants of a country have strong international relations, the country's infrastructure is likely to be developed. The resultant infrastructure development increases the production of goods and services and also clears

the pavement to trade goods and services at a broad level with higher frequency. So, international relations moderate between infrastructure development and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. These results also agree with [Teo et al. \(2019\)](#), which indicates that international relations strengthen the relationship between infrastructure development and regional economic integration.

The results indicated that international relations are a significant moderator between energy security and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. These results are supported by [Dźwigoł et al. \(2019\)](#), which shows that if international relations are vital, energy resources with the country can be secured and the role of energy security in regional economic integration can be improved. These results also agree with [Shah et al. \(2019\)](#), which posit that strong international relations assure energy security and, thereby, improve energy security's role in regional economic integration.

The results showed that international relations are a significant moderator between the digital economy and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. These results are supported by [Litvinenko \(2020\)](#), which claims that with international relations, fellow citizens can adopt a digital economy, and the increasing use of digital technologies improves progress in regional economic integration. These results also agree with [Banalieva and Dhanaraj \(2019\)](#), which also state that if the country has high potential international relations, the digital economy can be more effective in implementing regional economic integration.

6. Implications

This study directs researchers and academics for future proceedings with its literary contribution. The study initiates to check the contribution of infrastructure development, energy security, and digital economy to regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity with a moderating role of international relations among these factors. This article has empirical significance to countries as it focuses on regional-level economic progress in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. The study highlights how to implement regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. The study guides that economists and government regulators must develop country infrastructure to implement regional economic integration. The study implies that energy security must be assured to execute regional economic integration effectively. This study also suggests that the digital economy must be promoted so that regional economic integration might be implemented. The study posits that policymakers should strengthen international relations and improve infrastructure development and its role in regional economic integration. There is a guideline that international relations should be developed and

refined for energy security and regional economic integration. The study guides the policymakers in making the policies related to attaining economic integration by properly utilizing Indo-Pacific strategy-created opportunities such as infrastructural development, energy security, and digital economy.

Moreover, the study conveys that international relations must be developed to implement a digital economy and, thus, improves the digital economic role in regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity.

7. Conclusion

The study examines the role of infrastructure development, energy security, and digital economy in regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. The authors were also to check the role of international relations between infrastructure development, energy security, digital economy, and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. The authors collected measurable quantitative data for international relations, infrastructure development, energy security, digital economy, and regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. According to research findings, infrastructure development, energy security, and the digital economy positively associate with regional economic integration. The results showed that significant infrastructure development within a country provides many facilities to a commercial unit and helps it erect. So, improvement in infrastructure development leads to regional economic integration. The results also indicated that an ample supply of eco-friendly energy is available at reasonable prices under energy security. It develops consistency in economic practices, and regional economic integration is possible. The research findings revealed that digital technologies are gaining popularity for economic purposes in a community. It improves the implementation of regional economic integration. The study also concluded that international relations significantly moderate infrastructure development, energy security, and digital economy in regional economic integration. If a country has strong international relations, infrastructure development, energy security, and a digital economy can be more beneficial to implement regional economic integration.

8. Limitations

The study also has some limitations. First, in the present study, are few factors like infrastructure development, energy security, and the digital economy are under consideration as predictors of regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity. Still, several other factors influence regional economic integration in the context of Vietnam's joining the Indo-Pacific Economic Framework for Prosperity, and future authors are recommended to analyze these factors as well. Moreover, a single country, Vietnam, has

been selected for data collection to empirically support the study findings, limiting the study's reliability. So, future authors must research more countries joining Indo-Pacific Economic Framework for Prosperity.

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References

- Abdeljaber, O., Al-masaeed, S., Azam, S. F., Ab Yajid, M. S., ALSoud, A. R., & Johar, M. (2021). The role of trade integration and cross-border entrepreneurship in international relations: A moderating role of it infrastructure. *Croatian International Relations Review*, 27(87), 63-94. doi: <https://doi.org/10.2478/CIRR-2021-0001>
- Abendin, S., & Duan, P. (2021). International trade and economic growth in Africa: The role of the digital economy. *Cogent economics & finance*, 9(1), 1911767. doi: <https://doi.org/10.1080/23322039.2021.1911767>
- Açikalin, Ş. N., Erçetin, Ş. Ş., Potas, N., Çevik, M. S., Neyişçi, N. B., & Görgülü, D. (2021). Measurement of social integration: Syrian women in Turkey. *Journal of Refugee Studies*, 34(3), 2960-2983. doi: <https://doi.org/10.1093/jrs/fez120>
- Al-Muttar, M. Y. O., Basheer, Z. M., Sahib, A. A., Wafqan, H. M., Ali, M. H., Abd Al Mahdi, R., et al. (2022). Moderating effect of international relations among information capital, supplier trade integration and performance: An evidence from international trade business in Iraq. *Croatian International Relations Review*, 28(90), 193-213. doi: <https://doi.org/10.2478/CIRR-2022-0085>
- Alemzero, D. A., Sun, H., Mohsin, M., Iqbal, N., Nadeem, M., & Vo, X. V. (2021). Assessing energy security in Africa based on multi-dimensional approach of principal composite analysis. *Environmental Science and Pollution Research*, 28, 2158-2171. doi: <https://doi.org/10.1007/s11356-020-10554-0>
- Banalieva, E. R., & Dhanaraj, C. (2019). Internalization theory for the digital economy. *Journal of International Business Studies*, 50, 1372-1387. doi: <https://doi.org/10.1057/s41267-019-00243-7>
- Chakpitak, N., Maneejuk, P., Chanaim, S., & Sriboonchitta, S. (2018). Thailand in the era of digital economy: How does digital technology promote economic growth? In *Predictive Econometrics and Big Data TES2018* (pp. 350-362). Springer. doi: https://doi.org/10.1007/978-3-319-70942-0_25
- Chien, F., Sadiq, M., Li, L., & Sharif, A. (2023). The role of sustainable energy utility, natural resource utilization and waste management in reducing energy poverty: Evidence from South Asian countries. *Utilities Policy*, 82, 101581. doi: <https://doi.org/10.1016/j.jup.2023.101581>
- Chien, F., Zhang, Y., Sadiq, M., & Hsu, C.-C. (2022). Financing for energy efficiency solutions to mitigate opportunity cost of coal consumption: An empirical analysis of Chinese industries. *Environmental Science and Pollution Research*, 29(2), 2448-2465. doi: <https://doi.org/10.1007/s11356-021-15701-9>

- Comerford, D., & Rodríguez Mora, J. V. (2019). The gains from economic integration. *Economic Policy*, 34(98), 201-266. doi: <https://doi.org/10.1093/epolic/eiz004>
- Corner, A., Venables, D., Spence, A., Poortinga, W., Demski, C., & Pidgeon, N. (2011). Nuclear power, climate change and energy security: Exploring British public attitudes. *Energy policy*, 39(9), 4823-4833. doi: <https://doi.org/10.1016/j.enpol.2011.06.037>
- Dźwigoł, H., Dźwigoł-Barosz, M., Zhyvko, Z., Miśkiewicz, R., & Pushak, H. (2019). Evaluation of the energy security as a component of national security of the country. *Journal of Security & Sustainability Issues*, 8(3), 307-317. doi: [http://doi.org/10.9770/jssi.2019.8.3\(2](http://doi.org/10.9770/jssi.2019.8.3(2)
- Ehsanullah, S., Tran, Q. H., Sadiq, M., Bashir, S., Mohsin, M., & Iram, R. (2021). How energy insecurity leads to energy poverty? Do environmental consideration and climate change concerns matters. *Environmental Science and Pollution Research*, 28(39), 55041-55052. doi: <https://doi.org/10.1007/s11356-021-14415-2>
- Forough, M. (2022). America's Pivot to Asia 2.0: The Indo-Pacific Economic Framework. *The Diplomat*, 26, 1-7. doi: <http://dx.doi.org/10.13140/RG.2.2.25927.98725>
- Gao, X., Zhang, A., & Sun, Z. (2020). How regional economic integration influence on urban land use efficiency? A case study of Wuhan metropolitan area, China. *Land Use Policy*, 90, 104329. doi: <https://doi.org/10.1016/j.landusepol.2019.104329>
- Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110. doi: <https://doi.org/10.1016/j.jbusres.2019.11.069>
- He, W., Abbas, Q., Alharthi, M., Mohsin, M., Hanif, I., Vo, X. V., et al. (2020). Integration of renewable hydrogen in light-duty vehicle: nexus between energy security and low carbon emission resources. *International Journal of Hydrogen Energy*, 45(51), 27958-27968. doi: <https://doi.org/10.1016/j.ijhydene.2020.06.177>
- Huong, N. T. T., Hoa, H. T., Hien, T. T., & Sang, N. Q. (2021). Developing Vietnamese Individual Economy in the Context of International Economic Integration: Research at Vinh Phuc Province. *Journal of Asian Development*, 7(1), 73-93. doi: <https://doi.org/10.5296/jad.v7i1.18352>
- Javed, H. M., & Ismail, M. (2021). CPEC and Pakistan: Its economic benefits, energy security and regional trade and economic integration. *Chinese Political Science Review*, 6(2), 207-227. doi: <https://doi.org/10.1007/s41111-020-00172-z>
- Jiang, F. (2022). An Analysis of the Indo-Pacific Economic Framework (IPEF): Essence, Impacts and Prospects. *East Asian Affairs*, 2(02), 2250010. doi: <https://doi.org/10.1142/S2737557922500103>
- Jun, W., Nasir, M. H., Yousaf, Z., Khattak, A., Yasir, M., Javed, A., et al. (2021). Innovation performance in digital economy: does digital platform capability, improvisation capability and organizational readiness really matter? *European Journal of Innovation Management*, 25(5), 1309-1327. doi: <https://doi.org/10.1108/EJIM-10-2020-0422>

- Kamarudin, F., Anwar, N. A. M., Chien, F., & Sadiq, M. (2021). Efficiency of Microfinance institutions and economic freedom nexus: Empirical evidence from four selected Asian countries. *Transformations in business & economics*, 20(2), 845-868. Retrieved from <https://oarep.usim.edu.my/jspui/handle/123456789/15696>
- Kang, S. (2022). Indo-Pacific Economic Framework for Prosperity: Assessing Its Economic and Strategic Prospects. *IFANS Perspectives*, 2022(8), 1-7. Retrieved from https://preview.kstudy.com/W_files/kiss9/5n002179_pv.pdf
- Karami, M., & Tang, J. (2019). Entrepreneurial orientation and SME international performance: The mediating role of networking capability and experiential learning. *International Small Business Journal*, 37(2), 105-124. doi: <https://doi.org/10.1177/0266242618807275>
- Le, D. N. (2022). Export, logistics performance, and regional economic integration: Sectoral and sub-sectoral evidence from Vietnam. *Journal of International Logistics and Trade*, 20(1), 37-56. doi: <https://doi.org/10.24006/jilt.2022.20.1.037>
- Le, T.-H., & Nguyen, C. P. (2019). Is energy security a driver for economic growth? Evidence from a global sample. *Energy policy*, 129, 436-451. doi: <https://doi.org/10.1016/j.enpol.2019.02.038>
- Li, J., Chen, L., Chen, Y., & He, J. (2022). Digital economy, technological innovation, and green economic efficiency—Empirical evidence from 277 cities in China. *Managerial and Decision Economics*, 43(3), 616-629. doi: <https://doi.org/10.1002/mde.3406>
- Litvinenko, V. S. (2020). Digital economy as a factor in the technological development of the mineral sector. *Natural Resources Research*, 29(3), 1521-1541. doi: <https://doi.org/10.1007/s11053-019-09568-4>
- Liu, Y., Sheng, Z., & Azhgaliyeva, D. (2019). Toward Energy Security In Asean: Impact Of Regional Integration, Renewables, And Energy Efficiency. In *Achieving Energy Security in Asia: Diversification, Integration and Policy Implications* (Vol. 2, pp. 291-318). World Scientific. doi: https://doi.org/10.1142/9789811204210_0010
- Luo, P., Ngai, E. W., & Cheng, T. E. (2023). Supply chain network structures and firm financial performance: the moderating role of international relations. *International Journal of Operations & Production Management*, 3, 1-11. doi: <https://doi.org/10.1108/IJOPM-07-2022-0434>
- Martén, L., Hainmueller, J., & Hangartner, D. (2019). Ethnic networks can foster the economic integration of refugees. *Proceedings of the National Academy of Sciences*, 116(33), 16280-16285. doi: <https://doi.org/10.1073/pnas.1820345116>
- Natalegawa, A., & Poling, G. B. (2022). *The Indo-Pacific Economic Framework and Digital Trade in Southeast Asia*. Center for Strategic and International Studies (CSIS). Retrieved from <http://www.jstor.org/stable/resrep41411>
- Nazneen, S., Xu, H., & Din, N. U. (2019). Cross-border infrastructural development and residents' perceived tourism impacts: A case of China–Pakistan Economic Corridor. *International Journal of Tourism Research*, 21(3), 334-343. doi: <https://doi.org/10.1002/jtr.2264>

- Nguyen, P. T., Likhitruangsilp, V., & Onishi, M. (2020). Success factors for public-private partnership infrastructure projects in Vietnam. *International Journal on Advanced Science, Engineering and Information Technology*, 10(2), 858-865. Retrieved from https://mpr.ub.uni-muenchen.de/103508/1/MPRA_paper_103508.pdf
- Nguyen, T. T. H., Nguyen, T. T. H., Nguyen, T. L. H., & Nguyen, V. C. (2020). The impact of international integration on the inequality of income between rural and urban areas in Vietnam. *The Journal of Asian Finance, Economics and Business*, 7(3), 277-287. doi: <https://doi.org/10.13106/jafeb.2020.vol7.no3.277>
- Nguyen, X. P., Le, N. D., Pham, V. V., Huynh, T. T., Dong, V. H., & Hoang, A. T. (2021). Mission, challenges, and prospects of renewable energy development in Vietnam. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 3, 1-13. doi: <https://doi.org/10.1080/15567036.2021.1965264>
- Perry, D. M., & Berry, K. A. (2016). Central American integration through infrastructure development: A case study of Costa Rican hydropower. *Regions and Cohesion*, 6(1), 96-115. doi: <https://doi.org/10.3167/reco.2016.060105>
- Sadiq, M., Moslehpour, M., Qiu, R., Hieu, V. M., Duong, K. D., & Ngo, T. Q. (2023). Sharing economy benefits and sustainable development goals: Empirical evidence from the transportation industry of Vietnam. *Journal of Innovation & Knowledge*, 8(1), 100290. doi: <https://doi.org/10.1016/j.jik.2022.100290>
- Schindler, S., & Kanai, J. M. (2021). Getting the territory right: Infrastructure-led development and the re-emergence of spatial planning strategies. *Regional Studies*, 55(1), 40-51. doi: <https://doi.org/10.1080/00343404.2019.1661984>
- Shah, S., Zhou, P., Walasai, G., & Mohsin, M. (2019). Energy security and environmental sustainability index of South Asian countries: A composite index approach. *Ecological Indicators*, 106, 105507. doi: <https://doi.org/10.1016/j.ecolind.2019.105507>
- Shoukat, A., Ahmad, K., & Abdullah, M. (2016). Does infrastructure development promote regional economic integration? CPEC's implications for Pakistan. *The Pakistan Development Review*, 5, 455-467. Retrieved from <https://www.jstor.org/stable/44986499>
- Sørensen, G., Møller, J., & Jackson, R. H. (2022). *Introduction to international relations: theories and approaches*. Oxford University Press. doi: <https://doi.org/10.1093/hepl/9780198803577.001.0001>
- Teo, H. C., Lechner, A. M., Walton, G. W., Chan, F. K. S., Cheshmehzangi, A., Tan-Mullins, M., et al. (2019). Environmental impacts of infrastructure development under the belt and road initiative. *Environments*, 6(6), 72. doi: <https://doi.org/10.3390/environments6060072>
- ThiHoa, N., Hang, N. T., Giang, N. T., & Huy, D. T. N. (2021). Human resource for schools of politics and for international relation during globalization and EVFTA. *Elementary education online*, 20(4), 2448-2452. doi: <https://doi.org/10.17051/ilkonline.2021.04.281>
- Tien, N. H., & Minh, H. T. T. (2019). Challenges for Vietnamese Business Leaders in the Era of International Economic Integration and Industrial Revolution 4.0. *International Journal of Commerce and Management Research*, 5(5), 19-24. Retrieved from <https://www.managejournal.com/archives/2019/vol5/issue5/5-4-39>

- Tongsopit, S., Kittner, N., Chang, Y., Aksornkij, A., & Wangjiraniran, W. (2016). Energy security in ASEAN: A quantitative approach for sustainable energy policy. *Energy policy*, 90, 60-72. doi: <https://doi.org/10.1016/j.enpol.2015.11.019>
- Witt, M. A. (2019). De-globalization: Theories, predictions, and opportunities for international business research. *Journal of International Business Studies*, 50(7), 1053-1077. doi: <https://doi.org/10.1057/s41267-019-00219-7>
- Yu, H. (2017). Infrastructure connectivity and regional economic integration in East Asia: Progress and challenges. *Journal of Infrastructure, Policy and Development*, 1(1), 44-63. doi: <http://doi.org/10.24294/jipd.v1i1.21>
- Zhang, W., Zhao, S., Wan, X., & Yao, Y. (2021). Study on the effect of digital economy on high-quality economic development in China. *PloS one*, 16(9), e0257365. doi: <https://doi.org/10.1371/journal.pone.0257365>