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The role of Trade Integration and Cross-Border Entrepreneurship in International Relations: A moderating role of IT Infrastructure

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Abstract

Key words:

Trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure, international relations.

Now a day, trade integration is playing an important role in international relations. To foster the cross-border economic activities, the role of trade integration is substantial. Therefore, objective of this study is to examine the role of trade integration and cross-border entrepreneurship in international relations. Thus, the relationship between trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure and international relations was examined. This relationship is examined in comparison between Malaysia and Jordan. To achieve the objective, this study used quantitative research approach along with the cross-sectional research design. Primary data were collected by using a questionnaire from Malaysia and Jordan. Respondents of the study was the employees working among business organizations dealing through cross-border business activities. Results of the study shows no difference between Malaysia and Jordan. It is found that; trade integration has important role to promote international relations. Along with the trade integration, cross-border entrepreneurship activities and IT infrastructure also play an important role to enhance international relations. Therefore, the current study has valuable contribution to the literature and practice by examining the relationship between trade integration, cross-border entrepreneurship, IT infrastructure and international relations.

Introduction

In the recent decade, cross-border economic activities are increasing among various countries (Degbey et al., 2021; Nshimbi, 2021). Because the cross-border economic activities have several benefits to the nations. These activities show positive role to promote business activities which contribute significantly to the development of strong economy. It leads to the increase in the well-being of the people and shows positive effect to increase gross-domestic product (GDP). Business dealing across the border shows significant role to strengthen the economic linkage between the nations. The strengthening of economic associations between the nations can play positive role to promote economic indicators. In this direction, various countries such as Malaysia and Jordan also attempting to foster the economic activities among the countries which has positive outcomes in the shape of economic growth and international relations with different other nations.

Cross-border business activities have interrelated with the entrepreneurship activities. Cross-border entrepreneurship activities has key importance to promote business relations among the business organizations. According to the literature (Loures et al., 2019) cross-border entrepreneurship activities can promote business relations among several nations and can lead the economic activity internationally. In this way, to promote international relations, the role of cross-border entrepreneurship activities has vital role to play. Several businesses

organizations are dealing with the attempting to promote business activities across the border which has central importance for economic development for all nations engaged in these activities. As given in the previous studies, international relations are important to achieve ([Bagang, 2019](#)) in which the economic activities has vital importance. Various nations such as Malaysia and Jordan are also trying to promote international relations through economic activities.

However, the cross-border entrepreneurship activities among the Malaysia and Jordan are not comparatively high as compared to the other developed nations. These cross-border business activities in other developed countries including United States (US), Singapore, Australia etc. is higher than the Malaysia and Jordan. That is the reason, these developed nations have better international relations with other nations in respect to the economic activities. Particularly, international entrepreneurship ([Jafari Sadeghi et al., 2019](#)) activities have key importance to promote international relations. Therefore, it is important for Malaysia and Jordan to promote cross-border entrepreneurship activities to enhance international relations.

In the way to promote international relations of Malaysia and Jordan with other countries, the role of trade integration cannot be neglected. This study is an attempt to enhance the international relations with the help of trade integration. As the trade integration has important role to promote cross-border entrepreneurship activities. It is also highlighted in previous studies that international trade can play important role in international relations ([Goncalves et al., 2017](#); [Swastiningtyas, 2017](#)). Trade integration has key influence on the cross-border entrepreneurship activities which can lead to the international relations. Therefore, it is important for the Malaysia and Jordan to foster the entrepreneurship activity with the help of trade integration. This relationship is not attempted by the previous studies on international relations. Trade integration has the potential to enhance the bilateral trade and financial integration among the nations which has role to build relations.

Additionally, several previous studies have not examined the role of information technology while examining the international relations along with the cross-border entrepreneurship activities. It is important that information technology (IT) has valuable part of online business activities across the border. To carry out a cross-border business activities, IT infrastructure is quite important. As the business and IT has valuable relationship to foster business activity ([Lou et al., 2017](#); [Sari et al., 2021](#)) because IT can provide several business activities which can promote business performance through an online mode. In this direction, the current study attempted to examine the moderating role of IT infrastructure. This is the very first study examining the moderating role of IT infrastructure while examining international relations along with cross-border entrepreneurship activities.

This study examined the relationship between trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure and international relations. The objective of this study is to examine the role of trade integration and cross-border entrepreneurship in international relations. This study has important contribution to the literature because this study carried out the effect of trade integration and cross-border entrepreneurship on international relations. Several previous studies have examined the international relations (Kozłowski et al., 2019; Markelov et al., 2019), however, previous studies have not examined the effect of trade integration and cross-border entrepreneurship in relation to the international relations. Hence, this study contributed to the literature of cross-border entrepreneurship activities and international relations along with the relationship with IT infrastructure.

Literature Review

Emergence of cross-border activities are now increasing among the nations. The cross-border activities may be based on the various parties such as bureaucracies, political parties, and interest groups. These activities are more important to develop relationship between countries based on various interest. These relations may be based on the political willingness. In the current environment, the politics among the nations is increasing and influencing the whole world (Darwich et al., 2020) in several activities. The relationship between countries in relation to the business activities has vital role. To develop economic relations between countries, the role of trade is vital importance. More the activities of trade between countries, stronger will be the relations. Trade related activities such as import, and export (Hameiri et al., 2019; Hashmi et al., 2021) has major importance to build relations. In this direction, the role of trade integration has key importance for strong association between countries through economic activities. This study proposed that; trade integration can further relations between countries through various economic activities such as cross-border entrepreneurship activities.

Business organizations can play a central role to develop international relations. The collaboration between business firm can strengthen the relationship. The long-term relationship between countries is based on the healthy business activities. Healthy business activities have several benefits to the countries in terms of revenue generation which has important contribution to the well-being of the people. As the cross-border entrepreneurship activities (Hutasuhut et al., 2018; Loures et al., 2019) can promote income generating activities for the people which lead to the well-being of the people. According to the current study, trade integration can play the role to promote bilateral trade, financial integration, cross-border entrepreneurship which may lead to the international relations. In addition to this, the current study proposed that; IT can play important role in economic activities across the border. Therefore, this study considered IT infrastructure as moderating variable between trade integration and cross-

border entrepreneurship. Figure 1 shows the theoretical framework of the study showing the relationship between trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure and international relations.

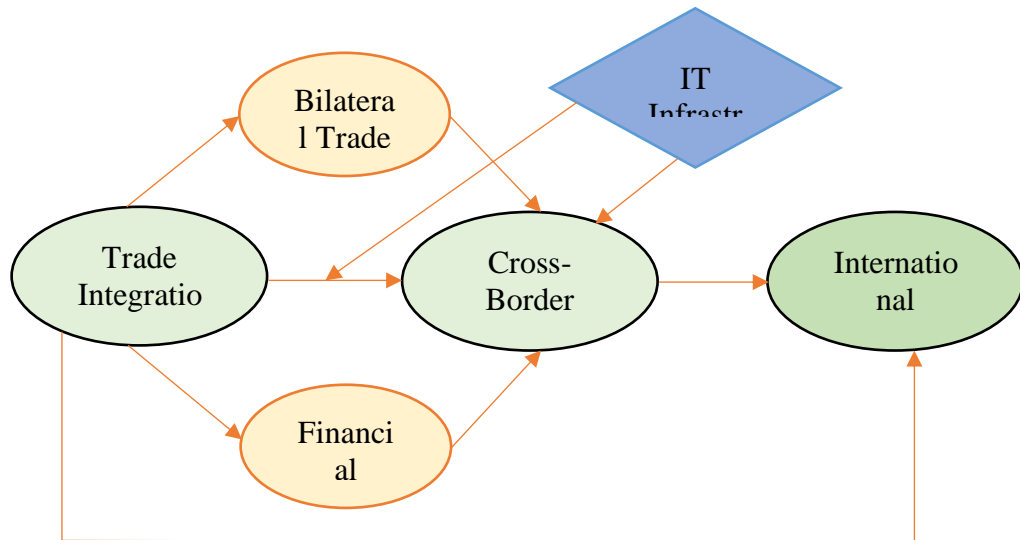


Figure 1. Theoretical framework of the study shows the relationship between trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure and international relations

Trade Integration and International Relations

Trade is a very basic economic idea connecting the buying as well as selling of goods and services, with remuneration paid by a buyer to a seller, or the exchange of various goods and services between different parties. These trade activities can take place within an economy among producers and consumers. The trade activities could be performed across the nation. The producers and consumers might have different countries. The country of origin for producers and consumers can be different from each other. The trade from various countries is denoted as international trade (Ryazantsev et al., 2019; Sifneou et al., 2012). International trade is now increasing among the countries to perform business activities for the welfare of nations. International trade activities lead to the trade integration.

The Trade Integration Mechanism (TIM) was first presented in April 2004 to support member countries to meet balance of payments deficits that might consequence from trade liberalization measures applied by other countries. More importantly, international economic integration is related with the discriminatory elimination of all trade barriers between the contributing nations as well as with the formation of certain basics of cooperation and coordination between countries. Now a days, trade integration among the nations is increasing (Moore et al., 2021; Murshed et al., 2020) because it has major importance in economic activities. Trade integration led to the international relations. International relations can

be promoted with the help of stronger trade integration among various nations, as most of the nation's relate to other nations due to the business dealings. The international relations are majorly based on the economic activities which make the whole world a global village. More the trade integration, more will be the effect on the economic growth of the countries which lead to the better relations with other countries. Hence, trade integration has major effect to promote international relations.

Hypothesis 1. Trade integration has relationship with international relations.

Trade Integration, Bilateral Trade and Financial Integration

Trade integration has relationship with the bilateral trade. Bilateral trade is the exchange of goods between two countries promoting trade as well as investment. The two nations will decrease or remove tariffs, import quotas, export limits, as well as other trade barriers to boost trade and investment. Bilateral trade has important influence on the business activities. As highlighted in previous investigations that bilateral trade has important role among the trade activities of companies ([Garcia-Duran et al., 2018](#); [Wang et al., 2020](#)). Trade integration has relationship with the bilateral trade. Both the trade integration and bilateral trade has strong relationship with each other's which has key importance to promote business activities among the nations. Therefore, it is important for nations to promote trade integration for bilateral trade.

Along with the bilateral trade, the role of financial integration also playing important role in international relations through trade integration. Trade integration has significant influence on the financial integration. Financial integration is a process in which different financial markets in adjacent, regional or worldwide economies are closely connected together ([Gong et al., 2018](#)). Because of various financial market inadequacies, financial integration in adjacent, regional, or global economies is therefore imperfect. As financial markets are a major part of business activities, therefore, the connection between financial markets can boost business activities. The connection of financial markets is based on the volume of trade. Increase in the trade volume of trade require more need of financial markets. Financial markets are used in money related transactions. However, decrease in the trade among countries lead to the weak connection between the financial markets of countries. In this direction, trade integration has most important role in financial integration ([Ezeaku et al., 2018](#)). Increase in trade integration increases the financial integration. However, decrease in trade integration decreases the financial integration. Hence, any change in trade integration has effect on the financial integration among various nations. Therefore, the importance of trade integration for financial integration cannot be neglected. To describe the relationship between trade integration, bilateral trade and financial integration, following hypotheses are proposed.

Hypothesis 2. Trade integration has relationship with bilateral trade.

Hypothesis 3. Trade integration has relationship with financial integration.

Trade Integration and Cross-border Entrepreneurship

While examining the relationship in the current study, the relationship between trade integration and cross-border entrepreneurship cannot be neglected. Entrepreneurship is one of the major area of economic activities ([Ivanović-Djukić et al., 2018](#)) which is influenced by trade polices by the nations. This relationship playing a vital role in the connection between different nations. Trade integration and cross-border entrepreneurship has strong relationship with each other's. Trade integration is one of the most important sources to promote entrepreneurship activities among the countries. The removal of trade barriers between countries provides the opportunity to the investors to invest in other countries to start entrepreneurship activities across the border. These entrepreneurship activities have several advantages to enhance the economic growth as well as the relationship between nations. Therefore, trade integration can promote across the border entrepreneurship activities. Several previous studies also highlighted the connection between trade integration and cross-border entrepreneurship activities ([Moore et al., 2021](#)).

Hypothesis 4. Trade integration has relationship with cross-border entrepreneurship.

Bilateral Trade, Financial Integration and Cross-border Entrepreneurship

Entrepreneurship is one of the important creation or extraction of value in terms of financial benefits. It can be described as, entrepreneurship is observed as change, generally involving risk beyond what is usually encountered in starting a business venture, which may comprise other values as compared to simply economic ones. When these activities of value creation or starting of a business venture is based on the activities in various other countries or simplify across the border, called cross-border entrepreneurship. Now the cross-border entrepreneurship activities are increasing among the nations to enhance economic activities. Trade has important relationship with the cross-border entrepreneurship ([Gerlitz et al., 2021](#); [Lau et al., 2004](#)). Therefore, bilateral trade has influence on cross-border entrepreneurship activities. Increase in bilateral trade among the countries, increase the opportunities for cross-border entrepreneurship. Therefore, in Malaysia and Jordan, to promote cross-border entrepreneurship, bilateral trade promotion is most important. Along with the bilateral trade, financial integration also has important role. Financial integration has effect on cross-border entrepreneurship globally. Better connection between the financial markets of the companies can promote

cross-border entrepreneurship. Literature also highlighted the relationship between financial integration and cross-border integration.

Hypothesis 5. Bilateral trade has relationship with cross-border entrepreneurship.

Hypothesis 6. Financial integration has relationship with cross-border entrepreneurship.

Cross-border Entrepreneurship and International Relations

There are several aspects of international relations, however, international relations related to the economic activities has key importance which led to the further various other relations. It is important to promote business activities to enhance international relations. The entrepreneurship activities among the companies have potential to collaborate internationally which lead to the better international relations. Therefore, cross-border entrepreneurship activities have key role to connect various nations. According to [Wach et al. \(2014\)](#), entrepreneurship activities has important role in international business activities. Furthermore, international entrepreneurship ([Zahra et al., 2005](#)) also has key importance to promote international relations.

Hypothesis 7. Cross-border entrepreneurship has relationship with international relations.

IT Infrastructure

IT infrastructure denotes to various elements compulsory to run IT as well as IT-enabled operations. These comprise software, composite hardware, different network services along with the resources. The infrastructure allows companies to deliver services as well as solutions to customers, various partners, and employees. To operate business activities internationally, the availability of IT is most important. For the international dealing online, the role of IT cannot be neglected. Various studies also show the importance of IT in business activities ([Van Der Zee et al., 1999](#)). Furthermore, according to [Rehman et al. \(2018\)](#), IT is an important facilitator of entrepreneurship activities. In the current study, IT infrastructure is used as moderating variable between international trade and cross-border entrepreneurship.

Hypothesis 8. IT infrastructure has relationship with cross-border entrepreneurship.

Hypothesis 9. IT infrastructure moderates the relationship between trade integration and cross-border entrepreneurship.

Moreover, above discussion shows that; trade integration has significant relationship with international relations, bilateral relations, and financial integration. Furthermore, bilateral relations and financial integration has

significant relationship with cross-border entrepreneurship. Similarly, cross-border entrepreneurship has significant relationship with international relations. According to [Baron et al. \(1986\)](#), this situation is supportive to use bilateral relations, financial integration and cross-border entrepreneurship as mediating variables.

Hypothesis 10. Bilateral trade mediates the relationship between trade integration and cross-border entrepreneurship.

Hypothesis 11. Financial integration mediates the relationship between trade integration and cross-border entrepreneurship.

Hypothesis 12. Cross-border entrepreneurship mediates the relationship between international trade and international relations.

Research Methodology

Primary data were collected to examine the relationship between trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure and international relations. As the nature of this relationship is based on the firsthand data, therefore, the primary data were collected with the help of survey questionnaire ([Bowling et al., 1999](#)). Survey questionnaires is an appropriate tool for primary data collection which is widely used instrument for data collection. The survey questionnaire was designed with the help of previous studies. Data were collected on 5-point Likert scale. 5-point Likert scale is most suitable for data collection because it decreases the frustration level of respondents and increases the originality of the data. Furthermore, a Likert scale is best option to collect the opinion and views of respondents related to a specific phenomenon. Furthermore, questionnaire was divided in to four major sections. The first section was based on the profile of respondents such as age, income, gender, nationality etc. The second section was based on the scale items of dependent variable; international relations. The third section was based on the scale items of moderation variables, namely, IT infrastructure. Finally, the last and fourth section of questionnaire was based on the scale items related to the bilateral trade, financial integration, and cross-border entrepreneurship.

Data were collected with the help of online survey. For online survey, the emails addresses of various employees working in business organizations were gathered. Population of the study is based on the business organizations both in Malaysia and Jordan. Therefore, data were collected both from Malaysia and Jordan. After collecting the email addresses of employees, emails were generated, and questionnaires were distributed. Seven hundred (500) questionnaires were used for data collection. The purpose of the study was examined in the email, and it was insured that the responses will remain confidential and only used for academic purpose. Only those employees of business organizations were allowed to fill the

questionnaire which was dealing with the cross-border business activities. 500 questionnaires were distributed in Malaysia and 157 valid responses were received. In case of Jordan, from total 500 distributed questionnaires, 186 responses were received. Furthermore, data statistics is given in appendix ([Table 1](#)).

Findings

The current study is based on the relationship between variables to promote international relations. The nature of the relationship is based on the primary data. Therefore, to analyze primary data, Partial Least Square (PLS) is most suitable data analysis tool to examine the relationship between variables. Thus, this study used PLS which is recommended in several previous investigations on data analysis tool ([F. Hair Jr et al., 2014](#); [Joseph F Hair, 2010](#); [Joseph F Hair et al., 2013](#); [Joseph F. Hair et al., 2012](#)).

Measurement Model

By applying PLS, the factor loading was examined. The current study considered 0.5, a minimum threshold level to retain the scale items. [Figure 2](#) shows the factor loadings for Malaysia and [Figure 3](#) shows the factor loadings for Jordan. Additionally, factor loadings are also highlighted in [Table 1](#). Furthermore, [Figure 2](#) and [Figure 3](#) shows the measurement model. It shows that; trade integration is measured by using seven scale items and all the items are above 0.5. Factor loadings is also above 0.5 for bilateral trade which is measured through three scale items. Similarly, factor loadings are also above the minimum threshold level for financial integration which is measured by using four scale items. Six items were used to measure cross-border entrepreneurship having factor loadings above minimum level. IT infrastructure is measured by using five scale items and international relations is measured through five scale items having factor loadings above 0.5.

After the assessment of factor loadings, it is important to examine the reliability by using composite reliability (CR) and average variance extracted (AVE). Results given in [Table 2](#) shows that CR is above 0.7 for all the variables: trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure and international relations. Furthermore, along with the reliability, convergent validity was examined by using AVE. The AVE value is above 0.5 in [Table 2](#) which confirmed convergent validity ([J. Hair et al., 2017](#); [Hameed et al., 2021](#)). In addition to this, discriminant validity is also important to confirm before hypotheses testing through structural model ([Henseler et al., 2015](#)). In this study, discriminant validity is achieved by using the AVE square root which is given in [Table 3](#).

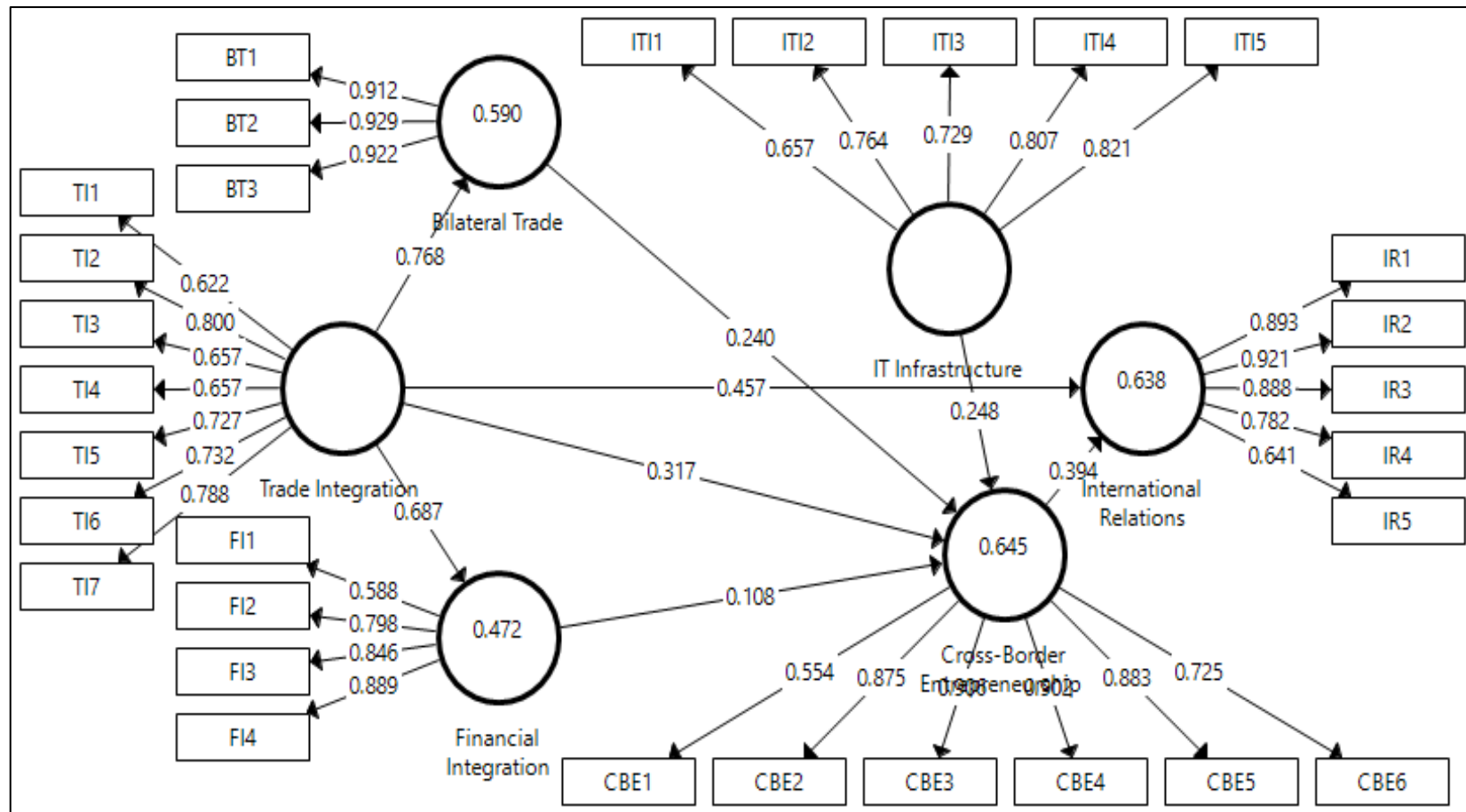


Figure 2. Measurement Model (Malaysia)

Note: TI = Trade Integration; BT = Bilateral Trade; FI = Financial Integration; CBE = Cross-Border Entrepreneurship; ITI = IT Infrastructure; IR = International Relations

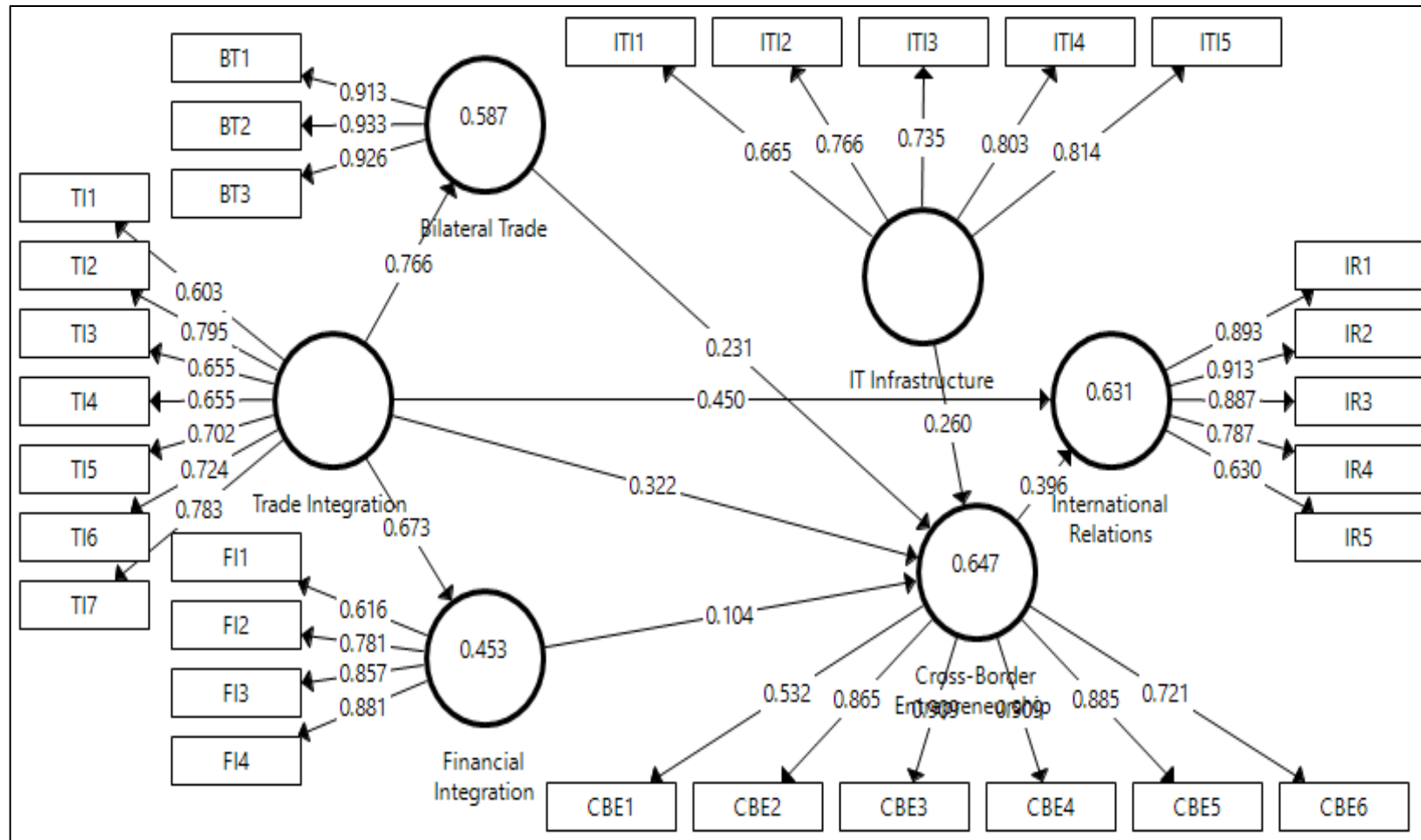


Figure 3. Measurement Model (Jordan)

Note: TI = Trade Integration; BT = Bilateral Trade; FI = Financial Integration; CBE = Cross-Border Entrepreneurship. ITI = IT, Infrastructure; IR = International Relations

Table 1. Factor Loadings**Malaysia**

	Bilateral Trade	Cross-Border Entrepreneurship	Financial Integration	IT Infrastructure	International Relations	Trade Integration
BT1	0.912					
BT2	0.929					
BT3	0.922					
CBE1		0.554				
CBE2		0.875				
CBE3		0.906				
CBE4		0.902				
CBE5		0.883				
CBE6		0.725				
FI1			0.588			
FI2			0.798			
FI3			0.846			
FI4			0.889			
IR1				0.893		
IR2				0.921		
IR3				0.888		
IR4				0.782		
IR5				0.641		
ITI1					0.657	
ITI2					0.764	
ITI3					0.729	
ITI4					0.807	
ITI5					0.821	
TI1						0.622
TI2						0.8
TI3						0.657

TI4						0.657
TI5						0.727
TI6						0.732
TI7						0.788

Jordan

	Bilateral Trade	Cross-Border Entrepreneurship	Financial Integration	IT Infrastructure	International Relations	Trade Integration
BT1	0.913					
BT2	0.933					
BT3	0.926					
CBE1		0.532				
CBE2		0.865				
CBE3		0.909				
CBE4		0.909				
CBE5		0.885				
CBE6		0.721				
FI1			0.616			
FI2			0.781			
FI3			0.857			
FI4			0.881			
IR1				0.893		
IR2				0.913		
IR3				0.887		
IR4				0.787		
IR5				0.63		
ITI1					0.665	
ITI2					0.766	
ITI3					0.735	
ITI4					0.803	

ITI5					0.814	
TI1						0.603
TI2						0.795
TI3						0.655
TI4						0.655
TI5						0.702
TI6						0.724
TI7						0.783

Note: TI = Trade Integration; BT = Bilateral Trade; FI = Financial Integration; CBE = Cross-Border Entrepreneurship; ITI = IT Infrastructure; IR = International Relations

Table 2. Reliability and Convergent Validity

Malaysia

	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Bilateral Trade	0.91	0.911	0.944	0.848
Cross-Border Entrepreneurship	0.894	0.898	0.922	0.669
Financial Integration	0.787	0.807	0.866	0.622
IT Infrastructure	0.821	0.842	0.87	0.574
International Relations	0.883	0.884	0.917	0.691
Trade Integration	0.84	0.854	0.879	0.511

Jordan

	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Bilateral Trade	0.915	0.915	0.946	0.854
Cross-Border Entrepreneurship	0.891	0.898	0.92	0.665
Financial Integration	0.792	0.807	0.868	0.625
IT Infrastructure	0.822	0.841	0.871	0.575
International Relations	0.88	0.881	0.915	0.687
Trade Integration	0.832	0.847	0.873	0.508

Table 3. AVE Square Roo***Malaysia***

	Bilateral Trade	Cross-Border Entrepreneurship	Financial Integration	IT Infrastructure	International Relations	Trade Integration
Bilateral Trade	0.921					
Cross-Border Entrepreneurship	0.688	0.818				
Financial Integration	0.522	0.606	0.789			
IT Infrastructure	0.599	0.697	0.627	0.758		
International Relations	0.656	0.742	0.563	0.603	0.831	
Trade Integration	0.768	0.761	0.687	0.749	0.757	0.815

Jordan

	Bilateral Trade	Cross-Border Entrepreneurship	Financial Integration	IT Infrastructure	International Relations	Trade Integration
Bilateral Trade	0.924					
Cross-Border Entrepreneurship	0.686	0.815				
Financial Integration	0.509	0.597	0.791			
IT Infrastructure	0.597	0.698	0.609	0.758		
International Relations	0.662	0.739	0.555	0.8	0.829	
Trade Integration	0.766	0.761	0.673	0.735	0.752	0.705

Structural Model

Measurement model results show that the reliability and validity is fine which allowed the current study to test the relationship between variables. For this purpose, this study used PLS structural model. PLS structural model is assessed with the help of PLS bootstrapping as recommended by several previous studies in the literature (J. Hair et al., 2017; J.F. Hair et al., 2021; Joseph F. Hair et al., 2012; Hameed et al., 2018). Figure 4 shows the structural model for Malaysia and Figure 5 shows the structural model for Jordan.

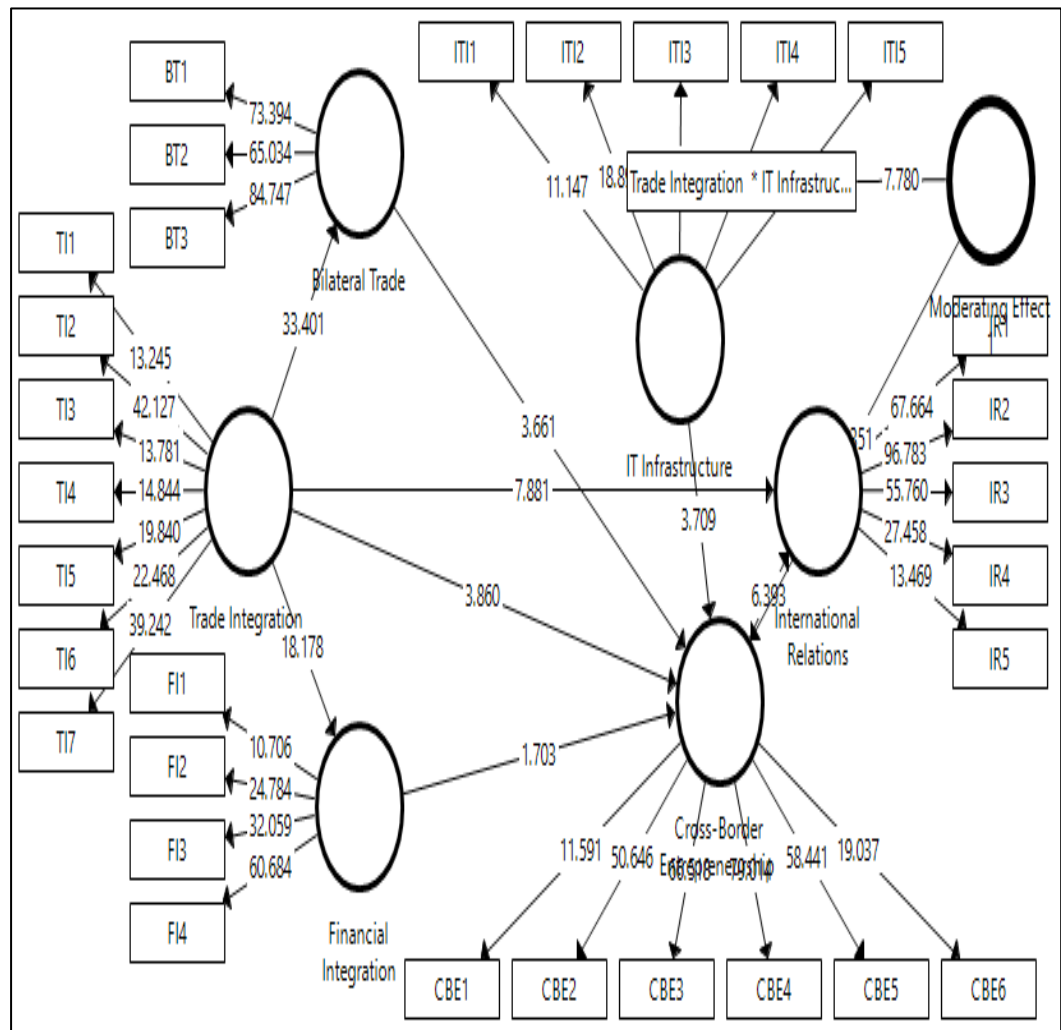


Figure 4. Structural Model (Malaysia)

Note: TI = Trade Integration; BT = Bilateral Trade; FI = Financial Integration; CBE = Cross-Border Entrepreneurship; ITI = IT Infrastructure; IR = International Relations

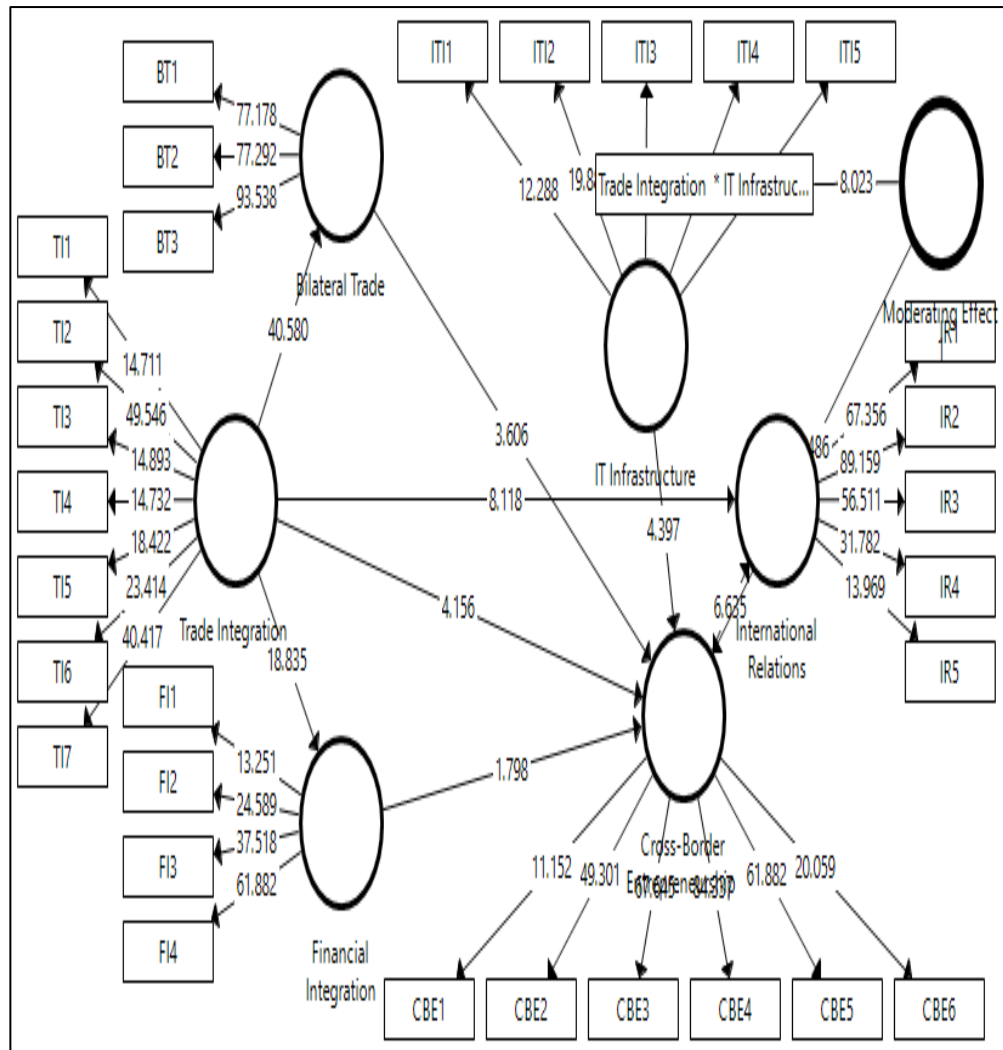


Figure 5. Structural Model (Jordan)

Note: TI = Trade Integration; BT = Bilateral Trade; FI = Financial Integration; CBE = Cross-Border Entrepreneurship; ITI = IT Infrastructure; IR = International Relations

This study proposed eight direct hypotheses and results are given in [Table 4](#). All the hypotheses having t-value above 1.64 were supported, however, the hypotheses having t-value below 1.64 was considered as not supported. These hypotheses are tested for Malaysia and Jordan separately as given in [Table 4](#). The direct effect of trade integration was examined on bilateral trade and financial integration. It is found that t-value is above 1.64 which supported the relationship. Furthermore, the direct effect of trade integration was examined in relation to the cross-border entrepreneurship and international relations. Both the hypotheses are supported in case of Malaysia as well as Jordan. Similarly, the direct effect of bilateral trade and financial integration is also positive on cross-border entrepreneurship for both cases. Additionally, IT infrastructure has positive effect on cross-border integration. Finally, it is found that the

relationship between cross-border entrepreneurship and international relations is also significant.

In addition to the direct effect, the mediation effect is also examined for Malaysia and Jordan as given in [Table 5](#). The mediation effect is tested by following the instructions of [Preacher et al. \(2004\)](#); ([Preacher et al., 2008](#)). The mediation effect of bilateral trade, financial integration and cross-border entrepreneurship was considered. The first mediation effect of bilateral trade was considered between trade integration and cross-border entrepreneurship. The second mediation effect of financial integration was considered between trade integration and cross-border entrepreneurship. The third mediation effect of cross-border entrepreneurship is considered between trade integration and international relations. All the indirect effects are given in [Table 5](#). Results of the study shows that; mediation effect of bilateral trade between trade integration and cross-border entrepreneurship is significant. It shows that bilateral trade reflects the positive effect of trade integration on cross-border entrepreneurship. The mediation effect of financial integration between trade integration and cross-border entrepreneurship is also significant for both Malaysia and Jordan. Thus, financial integration reflects the positive effect of trade integration on cross-border entrepreneurship. Finally, mediation effect of cross-border entrepreneurship between trade integration and international relations is also significant showing that cross-border entrepreneurship reflect the positive effect of trade integration on international relations.

Finally, this study examined the moderating role of IT infrastructure. The moderating role of IT infrastructure was examined between trade integration and cross-border entrepreneurship. The results of moderation effect are given in [Table 5](#). The moderating role of IT infrastructure between trade integration and cross-border entrepreneurship for Malaysia as the t-value is 2.351. The moderating role of IT infrastructure between trade integration and cross-border entrepreneurship is significant for Jordan with t-value 2.486. Here, the moderation effect of IT infrastructure strengthens the positive relationship between trade integration and cross-border integration. [Figure 6](#) shows the moderation effect for Malaysia and [Figure 7](#) shows the moderation effect for Jordan. Finally, r-square value for international trade is 0.638 for Malaysia which indicates that; trade integration, bilateral trade, financial integration, cross-border entrepreneurship, and IT infrastructure are expected to bring 63.8% change in international relations. Furthermore, r-square value for Jordan is 0.631. It shows that; trade integration, bilateral trade, financial integration, cross-border entrepreneurship, and IT infrastructure are expected to bring 63.2% change in international trade. In both cases, the variance explained is strong ([Chin, 1998](#)).

Table 4. Direct Effect Results**Malaysia**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Bilateral Trade -> Cross-Border Entrepreneurship	0.237	0.236	0.065	3.661	0
Cross-Border Entrepreneurship -> International Relations	0.394	0.389	0.062	6.393	0
Financial Integration -> Cross-Border Entrepreneurship	0.102	0.102	0.06	1.703	0.045
IT Infrastructure -> Cross-Border Entrepreneurship	0.234	0.234	0.063	3.709	0
Moderating Effect 1 -> Cross-Border Entrepreneurship	0.055	0.058	0.023	2.351	0.01
Trade Integration -> Bilateral Trade	0.768	0.769	0.023	33.401	0
Trade Integration -> Cross-Border Entrepreneurship	0.316	0.318	0.082	3.86	0
Trade Integration -> Financial Integration	0.687	0.689	0.038	18.178	0
Trade Integration -> International Relations	0.457	0.462	0.058	7.881	0

Jordan

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Bilateral Trade -> Cross-Border Entrepreneurship	0.227	0.22	0.063	3.606	0
Cross-Border Entrepreneurship -> International Relations	0.396	0.397	0.06	6.635	0
Financial Integration -> Cross-Border Entrepreneurship	0.102	0.101	0.057	1.798	0.036
IT Infrastructure -> Cross-Border Entrepreneurship	0.244	0.249	0.055	4.397	0
Moderating Effect 1 -> Cross-Border Entrepreneurship	0.057	0.06	0.023	2.486	0.007
Trade Integration -> Bilateral Trade	0.766	0.767	0.019	40.58	0
Trade Integration -> Cross-Border Entrepreneurship	0.323	0.326	0.078	4.156	0
Trade Integration -> Financial Integration	0.673	0.673	0.036	18.835	0
Trade Integration -> International Relations	0.45	0.45	0.055	8.118	0

Table 5. Indirect Effect Results**Malaysia**

	β	M	SD	T Statistics	P Values
Trade Integration -> Bilateral Trade -> Cross-Border Entrepreneurship	0.184	0.184	0.057	3.254	0.001
Trade Integration -> Financial Integration -> Cross-Border Entrepreneurship	0.074	0.072	0.045	1.668	0.048
Bilateral Trade -> Cross-Border Entrepreneurship -> International Relations	0.094	0.093	0.032	2.907	0.002
Trade Integration -> Bilateral Trade -> Cross-Border Entrepreneurship -> International Relations	0.073	0.072	0.025	2.862	0.002
Financial Integration -> Cross-Border Entrepreneurship -> International Relations	0.043	0.041	0.025	1.685	0.046
Trade Integration -> Financial Integration -> Cross-Border Entrepreneurship -> International Relations	0.029	0.028	0.017	1.689	0.046
IT Infrastructure -> Cross-Border Entrepreneurship -> International Relations	0.098	0.099	0.035	2.819	0.003
Trade Integration -> Cross-Border Entrepreneurship -> International Relations	0.125	0.124	0.034	3.672	0

Jordan

	β	M	SD	T Statistics	P Values
Trade Integration -> Bilateral Trade -> Cross-Border Entrepreneurship	0.177	0.179	0.049	3.598	0
Trade Integration -> Financial Integration -> Cross-Border Entrepreneurship	0.07	0.066	0.037	1.901	0.029
Bilateral Trade -> Cross-Border Entrepreneurship -> International Relations	0.092	0.092	0.028	3.289	0.001
Trade Integration -> Bilateral Trade -> Cross-Border Entrepreneurship -> International Relations	0.07	0.071	0.022	3.245	0.001
Financial Integration -> Cross-Border Entrepreneurship -> International Relations	0.041	0.039	0.023	1.798	0.036
Trade Integration -> Financial Integration -> Cross-Border Entrepreneurship -> International Relations	0.028	0.026	0.015	1.814	0.035
IT Infrastructure -> Cross-Border Entrepreneurship -> International Relations	0.103	0.107	0.03	3.453	0
Trade Integration -> Cross-Border Entrepreneurship -> International Relations	0.128	0.126	0.032	3.964	0

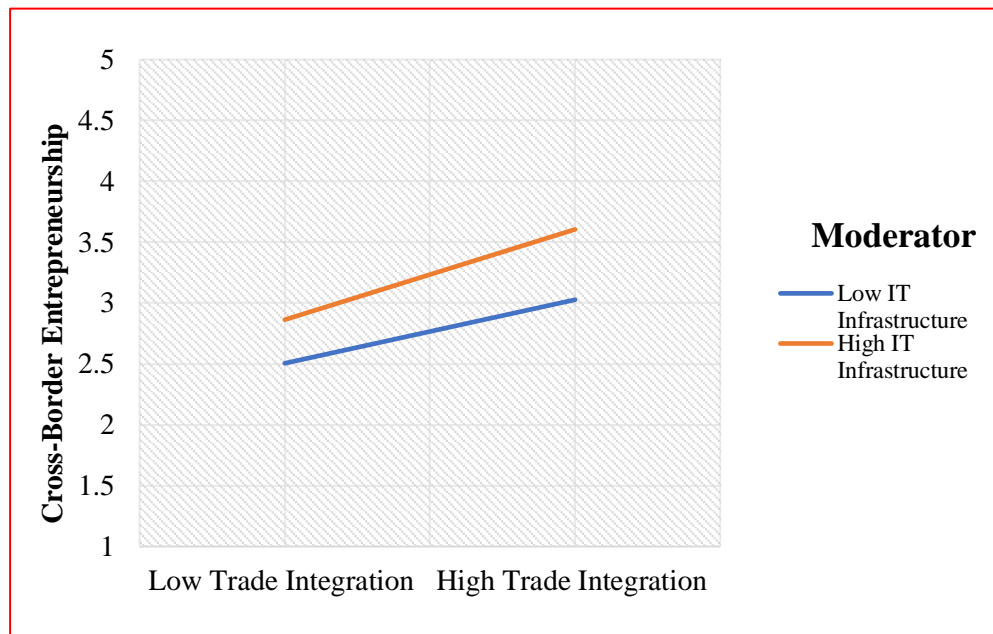


Figure 6. Moderating role of IT infrastructure strengthens the positive relationship between trade integration and cross-border entrepreneurship (Malaysia)

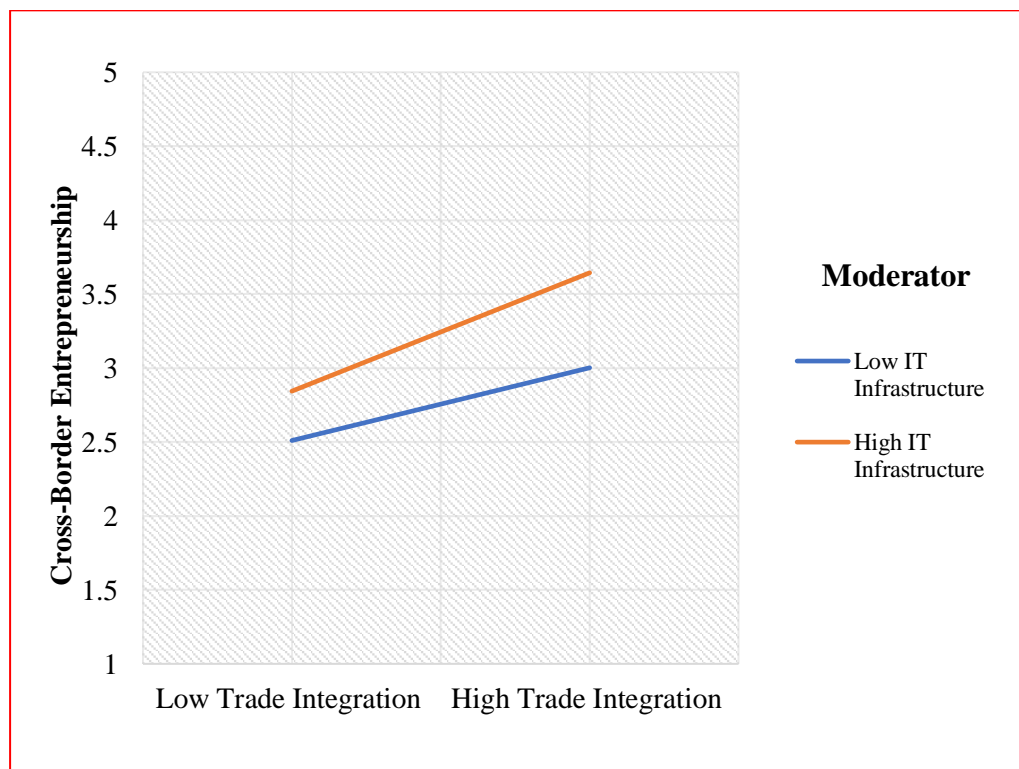


Figure 7. Moderating role of IT infrastructure strengthens the positive relationship between trade integration and cross-border entrepreneurship (Jordan)

Discussion and Conclusion

In this study, the relationship between trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure and international relations was examined. The objective of this study was to examine the role of trade integration and cross-border entrepreneurship in international relations. Data were gathered from business organizations in Malaysia, and Jordan and analyzed by using the statistical tool. This study tested the eight direct hypotheses and three indirect hypotheses along with the one moderation effect.

While examining the direct effect, it is revealed that; trade integration has positive role to promote bilateral trade between different countries. Promotion of trade integration can increase the volume of bilateral trade. As it is evident from the current study that trade integration has positive effect on bilateral trade. Increase in trade integration increases the bilateral trade. It is stated in the previous investigations that trade integration and bilateral trade has relationship (Shadlen, 2005). Therefore, the relationship between trade integration and bilateral trade is significant. Furthermore, the relationship between trade integration and financial integration is also significant and positive. It is a direct relationship which shows that trade integration has positive effect on financial integration which is also supported by the previous studies (Zouri, 2020). In addition to this, trade integration has positive influence to enhance cross-border entrepreneurship. Increase in trade integration activities among the countries can increase cross-border entrepreneurship. These results are also supported by the previous studies (Moore et al., 2021).

Moreover, bilateral trade has important role in cross-border entrepreneurship. Along with trade integration, the role of bilateral trade also has key importance in cross-border entrepreneurship. Various activities related to the bilateral trade increases the cross-border entrepreneurship. Similarly, financial integration has key contribution to the cross-border entrepreneurship. Cross-border entrepreneurship is influenced by the role of financial integration trade between countries. Therefore, both elements, bilateral trade and financial integration has important contribution to the cross-border entrepreneurship activities of Malaysia and Jordan. Previous studies also supported that cross-border entrepreneurship has important relationship with international trade (Akter et al., 2019; Pierson et al., 2019; Azam et al., 2021). Furthermore, the direct effect of cross-border entrepreneurship on international relations is also most important. Increase in cross-border entrepreneurship activities increases the international relations. Therefore, it is important for Malaysia and Jordan to enhance the cross-border entrepreneurship to promote international relations. Finally, while examining direct effect, the relationship between IT infrastructure and cross-border entrepreneurship was examined which shows that IT infrastructure can increase the cross-border entrepreneurship. Because

better IT infrastructure can promote cross-border entrepreneurship with the help of better collaboration between business organizations.

Additionally, three indirect hypotheses are tested in this study. First, the indirect effect of bilateral trade was considered between trade integration and cross-border entrepreneurship which is significant and shows that; bilateral trade reflects the positive effect of trade integration on cross-border entrepreneurship. Second indirect effect of financial integration was examined between trade integration and cross-border entrepreneurship. It shows that, financial integration reflects the positive effect of trade integration on cross-border entrepreneurship. Finally, the third indirect effect of cross-border entrepreneurship is examined between trade integration and international relations. This indirect effect highlighted that; cross-border entrepreneurship reflects the positive effect of trade integration on international relations. Additionally, IT infrastructure can strengthen the positive effect of trade integration on cross-border entrepreneurship.

Hence, it is concluded that; trade integration has valuable role in international relations. To promote international relations, Malaysia and Jordan should increase the trade integration worldwide. Trade integration has direct and indirect effect on international relations. Indirectly, trade integration can play a positive role to enhance bilateral trade and financial integration which further lead to the cross-border entrepreneurship, finally, cross-border entrepreneurship led to the international relations. Thus, Malaysia and Jordan should promote trade integration, cross-border entrepreneurship, and IT infrastructure to enhance the international relations which has central importance for economic development.

Implications of the Study

Theoretical Implications

The contribution to the theory is major strengthen of any research study. Accordingly, this study has key contribution by examining the relationship between trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure and international relations. This relationship has vital importance because it is not examined in previous studies. The integration between trade, cross-border entrepreneurship and IT is not considered by the previous studies in relation to the international trade. This study contributed by proving that; the integration between trade, cross-border entrepreneurship and IT can help to enhance the international relations. Furthermore, this study also used bilateral trade as mediating variables between trade integration and cross-border entrepreneurship which is not examined in previous studies. Furthermore, the mediation effect of financial integration is not examined by previous studies between trade integration and cross-border entrepreneurship. Previous studies have not examined the effect of bilateral trade and financial integration on cross-border entrepreneurship.

Along with this, the current study is also unique in nature because this study considered and proved the mediation effect of cross-border entrepreneurship between trade integration and international relations. In this direction, the current study has valuable importance for the academicians to explore new ways to promote international relations by considering trade integration, cross-border entrepreneurship, and IT. Hence, the relationship examined in the current study has several theoretical implications due to the substantial contribution to the literature.

Practical Implications

The relationship examined in the current study (trade integration, bilateral trade, financial integration, cross-border entrepreneurship, IT infrastructure, international relations) has several practical implications to promote international relations for Malaysia and Jordan. According to the results of the current study, trade integration is a major part of international relations. Therefore, business organizations in Malaysia and Jordan should promote trade integration. Furthermore, with the help of trade integration, Malaysia and Jordan should enhance bilateral trade and financial integration to enhance the cross-border entrepreneurship. To promote international relations, cross-border entrepreneurship has key importance. In this direction, it is important for the government of Malaysia and Jordan to enhance cross-border entrepreneurship activities among the business organizations. Furthermore, this study also suggested that the positive role of IT cannot be neglected while carrying out international activities such as cross-border entrepreneurship practices. Business organizations should develop well managed IT infrastructure to promote cross-border entrepreneurship which can promote the international relations. The collaboration between international partners can be managed through better IT infrastructure. Therefore, the current study has different insights for the practitioners to manage international relations.

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Appendix

Table 1. Data Statistics

Malaysia

	No.	Missing	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
TI1	1	0	3.745	4	1	5	1.088	-0.389	-0.591
TI2	2	0	3.637	4	1	5	1.148	-0.569	-0.546
TI3	3	0	4.094	4	1	5	0.988	1.032	-1.155
TI4	4	0	4.18	4	1	5	0.85	1.768	-1.165
TI5	5	0	3.906	4	1	5	1.082	-0.177	-0.806
TI6	6	0	3.842	4	1	5	1.204	-0.488	-0.761
TI7	7	0	3.705	4	1	5	1.128	-0.588	-0.533
BT1	8	0	3.741	4	1	5	1.171	-0.413	-0.659
BT2	9	0	3.827	4	1	5	1.069	-0.411	-0.592
BT3	10	0	3.788	4	1	5	1.064	0.078	-0.704
FI1	11	0	3.964	4	1	5	0.909	1.497	-1.085
FI2	12	0	3.989	4	1	5	0.998	-0.315	-0.698
FI3	13	0	4.126	4	1	5	0.976	0.454	-0.98
FI4	14	0	3.986	4	1	5	0.974	0.04	-0.769
CBE1	15	0	4.018	4	1	5	1.005	0.585	-0.998
CBE2	16	0	3.64	4	1	5	1.056	-0.206	-0.548
CBE3	17	0	3.781	4	1	5	1.038	-0.002	-0.694
CBE4	18	0	3.802	4	1	5	1.083	-0.317	-0.675
CBE5	19	0	3.734	4	1	5	1.126	-0.358	-0.648
CBE6	20	0	3.888	4	1	5	1.028	0.723	-0.955
ITI1	21	0	3.838	4	1	5	0.992	0.099	-0.736
ITI2	22	0	3.871	4	1	5	0.932	0.127	-0.651
ITI3	23	0	3.871	4	1	5	0.868	0.153	-0.51
ITI4	24	0	3.709	4	1	5	1.257	-0.709	-0.593
ITI5	25	0	3.694	4	1	5	1.257	-0.924	-0.489
IR1	26	0	3.853	4	1	5	1.158	-0.285	-0.757
IR2	27	0	3.853	4	1	5	1.174	-0.734	-0.637
IR3	28	0	3.849	4	1	5	1.22	-0.687	-0.677
IR4	29	0	3.309	3	1	5	1.231	-0.955	-0.2
IR5	30	0	3.953	4	1	5	0.986	0.524	-0.901

Jordan

	No.	Missing	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
TI1	1	0	3.732	4	1	5	1.069	-0.262	-0.601
TI2	2	0	3.592	4	1	5	1.175	-0.636	-0.517
TI3	3	0	4.059	4	1	5	0.989	0.709	-1.051
TI4	4	0	4.153	4	1	5	0.849	1.314	-1.033
TI5	5	0	3.875	4	1	5	1.066	-0.266	-0.741
TI6	6	0	3.804	4	1	5	1.206	-0.522	-0.721
TI7	7	0	3.66	4	1	5	1.144	-0.644	-0.499
BT1	8	0	3.707	4	1	5	1.174	-0.554	-0.598
BT2	9	0	3.782	4	1	5	1.092	-0.442	-0.568
BT3	10	0	3.741	4	1	5	1.084	-0.059	-0.664
FI1	11	0	3.928	4	1	5	0.916	1.232	-1.006
FI2	12	0	3.95	4	1	5	1.025	-0.415	-0.667
FI3	13	0	4.093	4	1	5	1	0.269	-0.939
FI4	14	0	3.953	4	1	5	0.999	0.079	-0.792
CBE1	15	0	3.978	4	1	5	0.997	0.489	-0.924
CBE2	16	0	3.607	4	1	5	1.071	-0.339	-0.495
CBE3	17	0	3.745	4	1	5	1.063	-0.182	-0.646
CBE4	18	0	3.757	4	1	5	1.09	-0.533	-0.58
CBE5	19	0	3.698	4	1	5	1.141	-0.498	-0.589
CBE6	20	0	3.869	4	1	5	1.048	0.637	-0.96
ITI1	21	0	3.832	4	1	5	0.994	-0.022	-0.71
ITI2	22	0	3.85	4	1	5	0.929	0.022	-0.613
ITI3	23	0	3.86	4	1	5	0.866	0.234	-0.506
ITI4	24	0	3.679	4	1	5	1.253	-0.728	-0.568
ITI5	25	0	3.66	4	1	5	1.241	-0.954	-0.435
IR1	26	0	3.813	4	1	5	1.158	-0.362	-0.705
IR2	27	0	3.816	4	1	5	1.174	-0.73	-0.614
IR3	28	0	3.813	4	1	5	1.231	-0.733	-0.645
IR4	29	0	3.293	3	1	5	1.231	-0.925	-0.231
IR5	30	0	3.95	4	1	5	0.965	0.491	-0.86

Note: TI = Trade Integration; BT = Bilateral Trade; FI = Financial Integration; CBE = Cross-Border Entrepreneurship; ITI = IT Infrastructure; IR = International Relations