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# The Relationship among Information and Communication Technology, International Innovation, Entrepreneurial Promotion, And International Trade to Promote the International Relations

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## Abstract

**Key words:**  
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relations, Iraq.

*As the trade dynamics shifted, it became vital to strengthen international contacts. In addition, developing technology has enabled firms to conduct business beyond international borders. Therefore, this study aims to investigate the impact of information and communication technologies on international relations. In addition, the role of international innovation and entrepreneurial promotion as mediators between the relationship of information and communication technology and international relations was investigated. PLS-SEM was utilized to analyze data gathered from 300 employees of Iraqi international organizations. According to the study's findings, organizations' information and communication technologies support the development of worldwide innovation and the promotion of entrepreneurship. In addition, the results demonstrated that international innovation, entrepreneurial encouragement, and international trade sequentially moderate the interaction between information and communication technologies and international relations.*

## Introduction

International relations (IR) play a crucial role in boosting the economic activities of nations in the current era of global competitiveness (Jaleel et al., 2021). In international commercial activities, IR is crucial for developing corporate collaboration and facilitating company activity. In a competitive period, business relations are crucial to achieving greater commercial performance and survival, as they facilitate a business's survival in the international market. Countries require business support from other nations. According to (Restivo et al., 2020), excellent international relations are crucial for international trade.

For corporate activity, relationships between growing nations are of vital importance (Muhammad et al., 2021). Since promoting the economic activities of emerging nations necessitates better relations that may benefit the people's welfare, better relations are always necessary for promoting the economic activities of developing nations. The association between nations is crucial for establishing a magnificent position in the global business marketplace. Malaysia and Jordan are included in emerging nations that demand crucial relationships with many other nations to promote business events (Odat, 2012). Economic development can be enhanced through promoting business operations, which pave the road for economic development. In tandem with Malaysia's and Jordan's economic growth, the significance of international interactions has an energizing effect on the progression of corporate activities.

In this manner, international commerce supports international relations. International commerce (Ryazantsev et al., 2019) is vital to the economies of all nations. International trade cooperation significantly impacts the economic development of the countries involved. Most of the time, border trade is vital to commercial activity. The commercial relationship with Thailand is vital to the economic operations of Malaysia. The relationship between Malaysia and Singapore is highly significant (Cheah et al., 2018). Malaysia is fostering relationships with other nations to enhance international trade and commercial activity. The promotion of trade between nations is strengthening the IR.

In addition, Jordan must work to improve its relations with its neighbors. Accordingly, entrepreneurial activities are essential for IR (Glinkowska-Krauze et al., 2020). IR is the primary reason for the expansion of international entrepreneurial activity in the modern period. Numerous cross-border business associations support healthy economic relations between countries. Aided by international trade, nations can create contacts with other nations, contributing significantly to economic growth. Promoting international relations and trade is required for every country's economic development. Utilizing information technology can promote international commerce, international relations, and entrepreneurship. For better information access, communication, and advertising on many international platforms, information technology is required for cross-border commerce. Internet-related actions and capabilities are typically utilized in information technology, contributing to IR development. This study's primary objective was to examine the role and benefits of international employment in information technology (IT) for international relations. The relationship between information technology skills, internet skills, international innovativeness, international proactiveness, free enterprise promotion, international relations, and international trade has been studied for this determination. In several previous studies (Al-Fawwaz et al., 2019), international relations have been examined; however, the role of information technology competencies in international relations has not been examined in these studies. By instruction, international trade and international relations were observed (Doornich et al., 2020), but the relationship between these two variables in information and communication technologies is not investigated. The studies have not specifically examined the relationship between free enterprise promotion and international trade and international relations in the context of Iraq. As a result, this study significantly impacts the body of knowledge, as it significantly contributes to filling the previous literature gap.

## Literature Review

### Theoretical Review

International relations study communication between states and non-governmental groups, such as economics, security, and politics. In

international relations, the interaction between non-governmental organizations affiliated with economic operations in various nations is examined. International trade is crucial in promoting international relations in the contemporary global economy. International trade plays a crucial part in commercial activity. Regardless of their political system or ideology, Malaysian foreign policy is based on neutrality and maintaining good and peaceful relations across the border and in the region (Nathaniel et al., 2021). This is being done to strengthen and expand economic activities (Nathaniel et al., 2021). Malaysia and Thailand are linked to conducting numerous business transactions. According to Montes et al. (2020), Malaysia engages in substantial import and export trade with Thailand. Malaysia is also involved in commerce with Indonesia, resulting in excellent trading connections between the two countries. Malaysia is boosting its trade with Indonesia, which is advantageous for both nations. Malaysian-Singaporean economic ties are also essential for the development of its commercial sector. Malaysia places a high value on entrepreneurial endeavors to boost its economic activities. Entrepreneurial activities have an essential role in the company and economic growth. In addition, Malaysia is promoting economic activity among other nations to foster business relationships with other nations. Malaysia also has trade links with Saudi Arabia, the United States, the United Arab Emirates, and other nations.

Jordan's commercial relations with other nations have a significant role in the growth of its economy (Alabed et al., 2021). Jordan has commercial ties with the United States, the United Arab Emirates, Saudi Arabia, Kuwait, Iraq, and several other nations. Its voluminous imports and exports are supported by the corporations mentioned above. Trade interactions have a positive effect on economic growth. By US standards, Jordan trades on a massive scale. These international contacts play a vital role in the economies of Jordan and Malaysia. In promoting commercial and business operations between Malaysia and Jordan, global and international interactions between Malaysia and Jordan are crucial.

### **Information and communication technologies and internet capabilities**

According to Ikram et al. (2020), the development of international relations depends heavily on international trade. International trade is encouraged through various commercial exchanges and entrepreneurial endeavors conducted by diverse business entities. According to Bagheri et al. (2017), businesses in several nations could stimulate entrepreneurial activity among business operations, promoting international trade. Entrepreneurial endeavors and international trade play a crucial part in fostering a stronger international relationship between Japan and Malaysia. According to Yeh et al. (2015), information technology cannot be ignored in fostering entrepreneurship and commercial operations. Promoting the use of information technology in international trade.

In worldwide transactions, the use of IT to promote corporate activity leads to international innovation and global initiative (IP). Consequently, IR can enhance Information and communication technologies and internet capabilities (IC), proactiveness, entrepreneurship, international innovations, international trade, and international relations. Internet capabilities and information technology are used to utilize computer-based systems, infrastructure, data storage, physical devices, and networking to handle and secure all electronic data forms and for networking. Several operations are performed electronically. To be competent in managing commercial operations in modern organizations (Craighead et al., 2011). It is in the performance of a notable role. IT capability refers to the organization's capacity to meet certain IT requirements. Information and communication technologies assist in creating a more effective platform for fostering alliances between businesses. Information and communication technology are essential for company success, especially when conducting international business with other businesses or marketplaces. It provides a superior infrastructure to improve business activities (Queiroz et al., 2020).

Utilizing information and communication technology and quality systems reduces company risk and expenses, which positively affects business activities. IT management, learning, and knowledge promote international trade, international relations, and entrepreneurship activities to manage business events. In addition, the internet facilitates the dissemination of information about a company's products directly to business clients through various channels, thereby promoting the firm. Past research (Glavas et al., 2014) demonstrated that internet capabilities significantly influence business promotion. Internet capabilities enable diverse modes of business promotion infrastructure (Queiroz et al., 2020). Social media and the internet are primarily used for advertising in the present day. Today, corporate marketing primarily relies on the internet, and the vast majority of organizations use this medium for international advertisement and promotion. With reduced marketing expenses, a firm is promoted. Customers have ready access to the internet, making the dissemination of business-related information simple and rapid. Strong networking of business organizations through the internet is a business strength, according to the literature; it improves business activities and promotes the firm (Al-Abdallah et al., 2021). Most of the population uses the internet, and businesses use the internet for both national and international promotional operations. According to prior research, there is a connection between information and communication technology and Internet Capabilities. Better information and communication technologies can enhance the capabilities of the internet. According to Chen et al. (2021), Internet capabilities correlate favorably with information and communication technology. All information and communication technologies are internet-based in the fourth phase of the industrial revolution. As a result of the preceding debate, we developed the following hypothesis:

## Information and communication technologies with International Innovativeness

Internet capabilities and international responsiveness are interdependent. IP entails hostile behavior toward competitors. The duties must be aggressively implemented and monitored to meet the firm's international objectives. Previous research analyzed organizations in international business that practice proactivity in the online arena and obtain a competitive advantage in the form of greater earnings than their rivals. The role of IC is related to IP. To achieve success in a highly competitive climate, businesses employ this method. Opportunities Identification is essential for encouraging IP behavior. It is possible to find commercial prospects with IC, which aids in launching a product or service sooner on the market. Better availability of ICT services aids in the identification of various business prospects on the market. The earlier identification of opportunities facilitates market entry. According to prior research ([Al-Omouh et al., 2020](#)), proactiveness is the most important characteristic of the business. Therefore, proactiveness contributes to greater company success. Thus, market information can be transmitted via ICT. Using ICT, it is possible to obtain market and competition information quickly. Both sorts of information are useful for entering the market sooner. Access to a high-quality Internet infrastructure enables a business to learn about its competitors and market. A high ICT level is essential for effective market and competition information decision-making. Finally, it is demonstrated that ICT and IP have a favorable relationship.

To generate new products in less time with more productivity and quality, innovation also refers to developing fresh ideas for new products or improving existing ones. Innovation is the generation of new ideas and their implementation to adopt new processes, products, or services with quality enhancement at the lowest possible cost. International innovation involves acquiring new online markets and introducing new products in online contexts. Internet is hence a prerequisite for it. Innovations have a crucial function in the competitive international economy. It is useful for capturing the market with new and improved items.

In the contemporary era of competitiveness, innovations play the leading role. Innovations are the driving force behind international corporate success. Innovations are required in both the manufacturing and service industries. Successfully launching new products worldwide depends on a company's ability to meet customer demands for product evolution and improvement. The internet's contribution to international innovation cannot be overlooked. Companies must have reliable Internet access as a prerequisite for fostering global innovation. The internet plays a crucial role in identifying business prospects. Previous research ([Alalwan et al., 2018](#)) has indicated that the Internet and technological advancements play a favorable influence.

Entrepreneurial endeavors promote across-the-border international business operations. Therefore, these actions are crucial to the success of businesses in the worldwide market. Steadiness is a prerequisite in the initial phase of a business's formation. It is the early phase of company concept generation, during which an entrepreneur investigates the idea and its resources. Entrepreneurship initiatives enhance the business's overall performance. Entrepreneurship can identify the business potential in this direction. According to (Loures et al., 2019), there is a favorable correlation between proactiveness and entrepreneurship. Entrepreneurial endeavors boost international commerce's proactivity. To increase entrepreneurial operations in the global market, it is necessary to improve business performance and be proactive. The importance of international innovation is comparable to proactiveness and other characteristics. Innovation has a significant influence in fostering entrepreneurial endeavors in the worldwide market. Enhancing entrepreneurial endeavors and innovations aids in a company's international competitiveness. According to numerous previous research (Daniels et al., 2021), innovation provides crucial performance on the international market to compete with opponents.

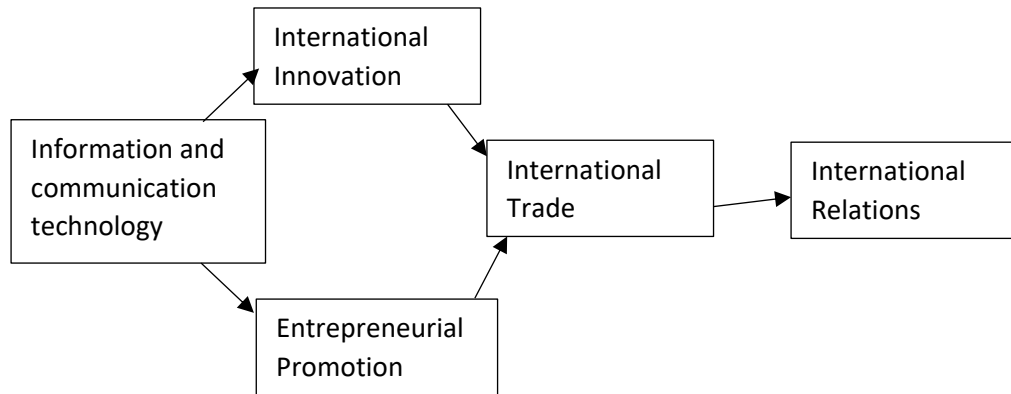
### **International Innovativeness and International Trade**

International innovations have an impact on international trade. Multiple nations are intertwined with international trade for commerce. When different countries begin trading with one another, international trade increases. Innovations are favorably associated with business operations. These two variables can expand the worldwide business. Numerous earlier studies have demonstrated that international trade and innovation are directly related (Khan et al., 2020).

International trade, international relations, and entrepreneurial promotion are as essential as a company's cash. Capital is the exchange of products or services and capital across international borders in different countries. Profit orientation refers to the fulfillment of a country's needs. To stimulate international trade, entrepreneurial endeavors are crucial. According to previous research (Pierson et al., 2019), international trade and entrepreneurship are related. According to the research cited above, entrepreneurial activities have contributed to improving long-term partnerships with other nations in domains besides business. Better trade links between nations contribute to the development of higher-level government-to-government relationships. Elo et al. (2018) found that entrepreneurial activities can improve relationship formation.

Moreover, international trade contributes directly to the strengthening of international relations. International business and international ties are enhanced mostly through international trade. According to Basso et al. (2017), international trade between countries positively impacts business, and increasing collaboration between these nations is advantageous for all nations. Without good cooperation with other nations, it is extremely

difficult to survive in the international market's aggressive competition. International innovation and the promotion of entrepreneurship have indirect effects on international trade. This study concludes by examining the indirect relationships between international relations, international trade, and the promotion of entrepreneurship.



**Figure 1.** Research Framework

**H1:** There is a significant relationship between ICT and international innovativeness.

**H2:** There is a significant relationship between ICT and entrepreneurial promotion.

**H3:** International innovation is significantly associated with international trade.

**H4:** Entrepreneurial promotion is significantly associated with international trade

**H5:** International trade is significantly associated with international relations.

**H6a:** International innovation is a significant mediator between ICT and international trade.

**H6b:** Entrepreneurial promotion is a significant mediator between ICT and international trade.

**H7a:** ICT and international relations relationship is serially mediated by international innovation and trade.

**7b:** ICT and international relations relationship is serially mediated by entrepreneurial promotion and international trade.

## Research Methodology

The study utilized the quantitative research methodology and cross-sectional design. This method is effective when the data is obtained through a self-administered questionnaire (Allwood, 2012; Apuke, 2017; Porte, 2010). The data was acquired from foreign businesses. The entrepreneurial promotion was measured by 3 items, information and communication technology was measured by 10 items, five items measured international innovativeness, five items measured international relations, and lastly, international trade was measured by 3 items. These

questions were measured on a five-point Likert scale ranging from 1 strongly disagree to 5 strongly agree. The study instrument was disseminated utilizing a strategy of easy sampling. The device was given to 500 employees of a worldwide firm, and among those 300 were returned.

## Data Analysis and Results

The measurement model was evaluated using confirmatory factor analysis (CFA). The factor loading values are presented in [Table 1](#) below. All factor loadings are greater than 0.5, indicating they are consistent with the parameter. Consequently, there is no problem with the factor loadings. In addition, [table 1](#) displays the CR and AVE values. According to the parameter, the CR and AVE values must be greater than 0.80 and 0.50, respectively. All AVE and CR values provided in [table 1](#) are greater than 0.5 and 0.8, indicating no problem ([Ahmad et al., 2019](#); [Shiau et al., 2019](#)). All the results presented in [table 1](#) indicate that convergent validity is uncontested.

## Discriminant Validity

[Table 2](#) shows the values of HTMT (Heterotrait-Monotrait Correlation Ratio), a new criterion to assess the discriminant validity among the study's variables ([Black, 1999](#); [Henseler et al., 2015](#)). As per the criterion, the HTMT should be less than 0.85 ([Ahmad et al., 2020](#); [Henseler et al., 2015](#)). As per the findings reported in [table 2](#), all the values are less than 0.85, meaning that all the variables are distinctive and there is no discriminant validity issue.

## Path Analysis

The path analysis for this investigation is displayed in [Table 3](#) below. All hypotheses were evaluated using the PLS-SEM method with the suggested 5000 bootstrap subsamples ([Hair Jr et al., 2021](#)). According to the study's findings, entrepreneurship encouragement negatively impacts international trade. In addition, [table 3](#) reveals that information and communication technologies significantly and positively impact entrepreneurial promotion and international innovation. However, the influence on entrepreneurial inclinations was more significant. In addition to testing the direct relationships between variables, this study also examined indirect associations. For instance, international trade was discovered to mediate the relationship between entrepreneurial promotion and international relations significantly. Furthermore, it was discovered to mediate the connection between international innovation and international relations. It was discovered that the relationship between information and communication technologies and international trade is mediated by entrepreneurial promotion and international innovation. In addition, the study examined the role of entrepreneurial promotion and international innovation as mediators between information and communication technologies and international relations.

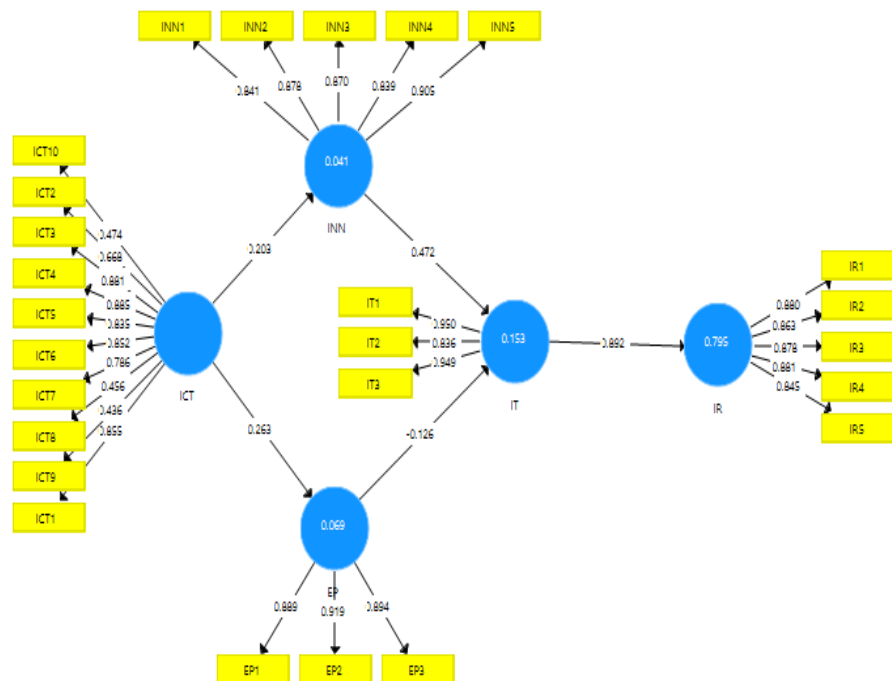
**Table 1.** Confirmatory Factory Analysis

<b>Constructs</b>	<b>Items</b>	<b>Loadings</b>	<b>Alpha</b>	<b>rho_A</b>	<b>CR</b>	<b>AVE</b>
<b>Entrepreneurial promotion</b>	EP1	0.889	0.885	0.894	0.928	0.812
	EP2	0.919				
	EP3	0.894				
<b>Information and communication technologies</b>	ICT1	0.855	0.911	0.935	0.917	0.54
	ICT10	0.474				
	ICT2	0.668				
	ICT3	0.881				
	ICT4	0.885				
	ICT5	0.835				
	ICT6	0.852				
	ICT7	0.786				
	ICT8	0.456				
	ICT9	0.436				
<b>International innovativeness</b>	INN1	0.841	0.917	0.92	0.938	0.751
	INN2	0.878				
	INN3	0.87				
	INN4	0.839				
	INN5	0.905				
<b>International relations</b>	IR1	0.88	0.919	0.921	0.939	0.756
	IR2	0.863				
	IR3	0.878				
	IR4	0.881				
	IR5	0.845				
<b>International trade</b>	IT1	0.95	0.899	0.899	0.938	0.835
	IT2	0.836				
	IT3	0.949				

**Table 2.** HTMT

	EP	ICT	INN	IR	IT
EP					
ICT	0.241				
INN	0.797	0.185			
IR	0.29	0.161	0.441		
IT	0.238	0.152	0.415	0.973	

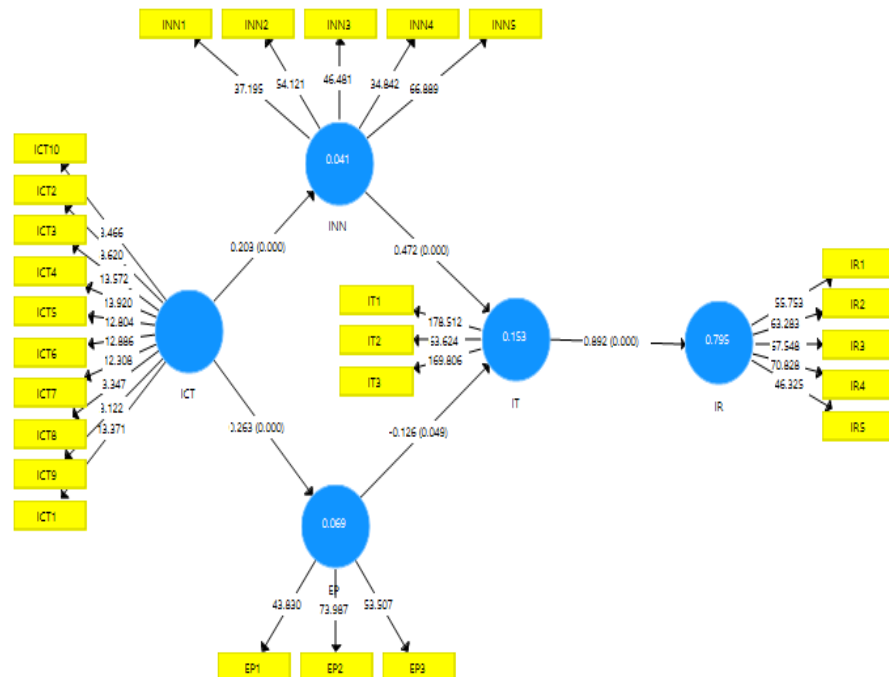
Note=EP-



**Figure 2.** Measurement Model

**Table 3.** Path Analysis

Relationships	Beta	SD	T Statistics ( O/STDEV )	P Values
EP -> IT	-0.126	0.076	1.655	0.049
ICT -> EP	0.263	0.057	4.587	0.000
ICT -> INN	0.203	0.06	3.37	0.000
INN -> IT	0.472	0.075	6.306	0.000
IT -> IR	0.892	0.01	88.545	0.000
EP -> IT -> IR	-0.113	0.068	1.657	0.049
ICT -> EP -> IT -> IR	-0.03	0.02	1.490	0.068
INN -> IT -> IR	0.421	0.067	6.259	0.000
ICT -> INN -> IT -> IR	0.085	0.03	2.889	0.002
ICT -> EP -> IT	-0.033	0.022	1.486	0.069
ICT -> INN -> IT	0.096	0.033	2.888	0.002



**Figure 3:** Structural Equation Model

## Discussion and Conclusion

This study aimed to investigate the impact of information and communication technologies on international relations. In addition, the study examined the relationship between information and communication technology and international relations and the promotion of international entrepreneurship and innovation. PLS-SEM was utilized to analyze data collected from Iraq-based employees. The study hypothesized that information and communication technologies affect innovation and entrepreneurial encouragement worldwide. Following the study's findings, integrating information and communication technologies within a company strengthens entrepreneurial promotion and boosts worldwide innovation. These results are consistent with earlier research. For instance, past research has demonstrated that information and communication technology is a source of entrepreneurial activity (Al-masaeed et al., 2021; Chatterjee et al., 2020). Recent research by Chatterjee et al. (2020) suggests that information and communication technologies are crucial enablers of female entrepreneurship. Consistent with prior research, the present study found that investments in information and communication technology positively impact the encouragement of entrepreneurship.

In addition, the study hypothesized the impact of international innovation and the promotion of entrepreneurship on international trade. According to the study's findings, international innovation and entrepreneurial promotion tend to affect international innovation. These results are consistent with earlier research. For instance, a previous study indicates

that an organization's trade policies enhance international trade (Kim et al., 2015). When an organization has the policy to encourage innovation and entrepreneurship, foreign trade will substantially increase, as demonstrated by the findings consistent with earlier research. In addition, the study examined the impact of international trade on international relations. The findings indicate that international trade and organizations affect international relations. When an organization places a significant emphasis on international trade, it ultimately aids in developing long-term international ties that are advantageous to the business. In addition, the indirect impact of information and communication technology on international relations was evaluated. According to the study's findings, international innovation and entrepreneurial promotion within a company tend to positively influence international trade, resulting in an expansion of international ties.

Based on the study results, it is concluded that the organizations in Iraq need to seriously consider the role of information and communication technologies in promoting international relations. The importance of innovation and entrepreneurship must be properly considered by organizations to boost trade, which will greatly contribute to the organization's better financial position and the country's economic growth. In conclusion, the attitude towards information and communication technology must be reexamined if greater benefits are to be realized.

### **Implications of the Study**

The study has various theoretical and practical ramifications. The study is valuable because it provides empirical evidence on how international relations can be strengthened and enhanced, particularly in the context of Iraq. It is a significant contribution to the existing literature because it demonstrates how firms in Iraq can improve their international relations while emphasizing their capacity development. As demonstrated by the research, firms can improve their international relations by investing in information and communication technology. Consequently, these are the most recent observations regarding information and communication technology's role in the growth of cross-border contacts. In addition, the study makes a significant contribution to the literature because it is one of the few attempts to investigate international relations from the perspective of information and communication technologies and to explain how these technological assets assist an organization in building international relations. Importantly, the study contributed to the body of knowledge by demonstrating how entrepreneurial promotion can also improve international relations.

The study is valuable since it employs the most up-to-date methodological strategy to evaluate the hypothesized associations. From a practical standpoint, the study is also beneficial for practitioners. It will equip practitioners with guidelines regarding the significance of information and communication technology. The study will enlighten managers on where

they can concentrate their efforts to achieve more success in developing international relations. This study's conclusions provide advice for Iraqi business managers regarding the importance of information and communication technologies. In addition, the study's findings provide managers with valuable insights regarding the significance of information and communication technologies and their role in facilitating the development of international relations. In addition, the study's findings are useful for practitioners because they explain and provide empirical evidence on how firms can increase their trade and relationships.

### **Limitations and Future Directions**

Although the research objectives have been accomplished and the research questions have been answered, there are still some limitations that can be addressed in future research studies. First, future studies may adopt a qualitative methodology to gain a deeper understanding of international relations than the present study, which utilized a quantitative methodology. The study's focus on Iraqi organizations may limit its generalizability; therefore, it is recommended that future research examine a broader geographical region to provide more insightful findings. In addition, additional research may be undertaken in various industries to compare the results. Moreover, neither the control variables nor the boundary conditions were examined in this study. Therefore, it is recommended that future research consider the moderators' more insightful perspectives on the matter.

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