

The Impact of It Alignment and Supply Chain Resilience on the Companies Quality of Performance: The Moderating Role of Trust

By

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Abstract

This study aims to know the impact of IT Alignment and Supply Chain Resilience on Jordan's engineering electrical, and information technology enterprises. As this sector constitutes one of the essential pillars of the Jordanian economy, the technology acceptance model (TAM3) theory and the dynamic capabilities view (DCV) were adopted in this current study. The study sample consisted of 308 managers of these companies. The most important results of the study found that there is a statistically significant relationship between IT alignment and quality performance, and this indicates that IT alignment is of great importance in enhancing performance and improving its quality in those sectors; the current study recommended conducting more research related to Along with technology and highlighting the role of trust as a reinforcing variable.

Keywords: ITS Alignment, Supply Chain Resilience, Quality Performance, Trust, Jordan.

Introduction

In many sectors, technology disruptions are essential to boosting company performance, and the supply chain is no exception (Craighead et al., 2007). Two crucial aspects of a modern supply chain are efficiency and reactivity. Today's supply chain uses cutting-edge technologies to obtain a competitive edge over rivals (Gunasekhran et al., 2008). Due to growing consumer demand, a shorter product life cycle, and globalization, contemporary supply chains are more complicated than their predecessors. Additionally, retailers adopt lean and maintain little inventory. As a result, Demand forecasting, production planning, and scheduling have become challenging activities in the modern business environment (Pereira, 2009). The digitalization of supply networks might provide a remedy for these issues. Intelligent and sustainable production has replaced conventional manufacturing (Bi, 2011; Long et al., 2017). Traditional manufacturing businesses are searching for innovative information technology solutions to enhance corporate performance and supply chain collaboration and coordination.

Many CEOs of industrial companies have prioritized SCM during the last decade. As a result, research in SCM has also increased, with scholars focusing on topics like supplier selection (Wong, Leong, Hew, Tan, & Ooi, 2020; Kabra & Ramesh, 2016), supplier involvement (Ali, Udin, & Abualrejal, 2023; Kim & Shin, 2019), supplier alliances, research into the supply chain's upstream, links between manufacturers and retailers supply chain resilience sustainability and green supply chains (Benzidia, Makaoui, & Bentahar, 2021), and so on related topics. Despite this, much research has not been done on the function of the digital supply chain (Aranyosy, 2022). Any implementation to attain the requisite degree of digitization in the supply chain remains a complex challenge that requires an in-depth knowledge of its effect and the advantages it brings to operational performance (Wilden, Guderian, Nielsen, & Lings, 2013). In addition, even though the process of digitizing the supply chain is still in its formative infant stages, there is still a significant amount of untapped potential for future research (Pasonen, 2020).

Globally, information technology (IT) plays an essential role in companies. In 2011, IT practitioners and business leaders cited IT and business alignment as a top priority (Sun, Bocchini, & Davison, 2020). This interest is based on the potential for IT–business alignment to drive both technology and organizational success and assist a company's competitive and strategic advantages. Furthermore, IT is changing the way businesses do business. In particular, IT affects how businesses run, provide services to customers, and talk to customers, suppliers, and even people inside the company (Wong et al., 2020). But many businesses and consultants have realized that IT can't provide these benefits alone. Instead, corporate value can be created by using and managing IT to support business goals (Dubey et al., 2020). So, for a company to have long-term, sustainable success, it is essential that all parts, including IT, fully understand the business goals and work together in a well-managed and coordinated way to ensure these goals are met. The idea of IT alignment means that IT and business work together. For example, the everyday buying activity in old supply chains is governed by analogue contracts. The primary disadvantage of this method is the disparity in time between the delivery of items and the compilation of invoices, which causes payment delays (Kamble et al., 2018). Both traditional and contemporary purchases have this issue. With digital confidence among contractual parties, blockchain can lessen and eliminate this pay gap. The blockchain's intelligent contracts may include delivery and payment into a digital agreement with logistics and designated banks.

Trust is the ability to share one's feelings with another person (Mayer et al., 1995). The double-entry method has been utilized in accounting since the 1400s. Because of double-entry bookkeeping, supply chain partners constantly have trouble trusting one another (Ammous, 2016). Blockchain technology has the potential to simplify financial transactions by addressing issues of trust (Davidson et al., 2016b). Blockchain has the potential to centralize all supply chain processes and provide everyone involved in the supply chain access to the same reliable data (Korpela et al., 2017b). Opportunity-driven, dishonest, and false trading practices are reduced by blockchain technology (Bettis and Mahajan, 1985). Blockchain increases trust between business partners by making transactions transparent. Several studies have shown a link between vulnerability acceptance and performance (Dirks and Ferrin, 2002).

As a result, knowing IT Alignment and supply chain resilience is essential to improve and increase the quality of companies' performance.

The knowledge mentioned above gaps prompt the following research questions:

RQ1: Is the quality of performance affected by IT Alignment and supply chain resilience?

RQ2: What role does trust play in the connection between IT alignment and supply chain resilience related to quality performance?

The technology acceptance model (TAM3) theory and the dynamic capabilities view (DCV) approach addressed the current research questions. The study population comprises 453 engineering's, electrical, and information technology enterprises registered with the Jordanian Chamber of Industry, and the sample size is 308. They recognize that this industry is experiencing rapid expansion and is one of the most significant in the Jordanian economy. Where the current research will consist of two parts of the first part of literary studies that dealt with IT alignment, its definition, importance and the most prominent obstacles, then Supply Chain Resilience, where this research addresses the concept of Supply Chain Resilience and the role it plays during and after the turmoil and the examples that were mentioned what happened in Corona's bodies where it was played Resilience has a pivotal role in recovery, and since the research touched on the current information technology company and research talks about information technology companies in general. It was essential to address the role of Trust as a moderating, and we finished the literary part by talking about performance quality. The research moved to the second part and dealt with the statistical analysis, which was done by Building the research tool, which is the questionnaire. The questionnaire was distributed to the managers of those companies and executives working for those companies. This current study examines the fundamental ways this sector can develop in Jordan in particular and an attempt to apply them worldwide in general. Hence the importance of this research is to know "The impact of IT Alignment and Supply Chain Resilience on the Companies quality of performance: The Moderating Role of Trust."

Literature Review

It Alignment

Previous studies have devoted considerable attention to the topic of IT-business alignment. IT-business alignment is envisioned as a fit between the operations of institutions of commercial companies along the four specified aspects of the idea; in the literature, various measuring methodologies have been offered. For instance, Venkatraman (1989) presented six distinct viewpoints through which alignment may be defined and examined. However, according to (Dickson, Owusu, & Boateng, 2021), each method has its measurement model and theoretical implications. As the determination of this study is to qualitatively appraise the state of IT-business alignment in Engineering and IT companies in Jordan, the accomplishment rating scale enables respondents to identify whether, in their view, IT alignment with their core business has been accomplished. In addition, IT-business alignment has been studied and conceptualized in various ways; as the fit between IT and supply chain resilience by Venkatraman and Henderson (1993), as the degree to which IT influences and reinforces a company's mission and quality performance guarantee (Reich & Benbasat, 1996), and as the congruence between a company's goals and IT systems (Reich & Benbasat, 1996; Smith & McKeen, 2003). Other conceptualizations include that of Sauer and Yetton (1997). They claim that IT-business alignment entails paying equal attention to the management of IT resources and the company's management. T-business alignment dimensions are one of the classifications of IT alignment that is still the subject of debate. According to Schlosser et al. (2012), the extant literature is characterized by several conceptualizations, most of which lack accuracy and often overlap. In the literature on IT alignment, however, the intellectual, social, and human dimensions stand out as three essential classifications.

Supply Chain Resilience

The executive suite has put supply chain resilience (SCRes) at the top of its priorities after the COVID-19 outbreak. Supply Chain Resilience (SCRes) focuses on the performance with which a supply chain can recover from and even improve upon the effects of sudden disruptions (Jain et al., 2017; Hendry et al., 2019). According to Scholten et al. (2019), SCRes may be measured at each of a disruption's three phases: prevention (or proactive, pre-disruption), response, and recovery (reactive, post-disruption). Prior studies stress the idea of an equilibrium state that needs to be restored after a sudden disruption, which may explain why this term was chosen. However, the recent global disruption produced by the COVID-19 outbreak gives rise to the innovative theory of adaptive resilience, which proposes that complex and linked supply networks cannot be in a state of equilibrium. Therefore, it is essential to recognize resilience as a quality acquired via exposure to and subsequent adaptation to various stressful situations (Belhadi et al., 2022). Resilience supply networks are more resistant to shocks and better weather supply chain interruptions. As a result, SCRes aids companies in ensuring a steady flow of their products and services to customers (Namdar et al., 2018). However, since Christopher and Peck's seminal work, the literature on SCRes has expanded. Research on the mechanisms through which supply networks build resilience is still in its infancy, as noted by Sahu & Datta (2017) and Dubey et al. (2020), and should be revised to account for technological developments and changes in the supply chain. As we'll see in the next section, this shortfall directly impacts supply chain performance, which is a primary goal of SCM.

Quality Performance

According to (Bartezzaghi & Turco, 1989), "quality performance" "constitutes the actual outputs of operation strategies deployed, which are influenced by operational situations and represent or reflect intrinsic attributes of a manufacturing system." Quality Performance is "a crucial facilitator to the entire firm performance," as stated by (Lu, Ding, Asian, & Paul, 2018), "which is generally the aggregated output from various components and enablers in the system." Therefore, researchers must be more precise and explicit when defining the features of the performance measurement systems they examine (Alrifai et al., 2023). Non-financial indicators, such as process quality and flexibility, are just as important as financial measurements, such as cost, profitability, revenue, and return on investment, when assessing a company's supply chain's performance (Aboramadan, Dahleez, Farao, & Alshurafa, 2021). Quality Performance was selected as the independent variable due to its broad applicability. To begin, there has been much research on operational performance and its role as a facilitator of supply chain performance (Ramadan & Borgonovi, 2015). A quality performance is the second quantitative component and may be influenced by supply chain resilience and IT alignment. Finally, Quality Performance is an undeniably important aspect of many contemporary performance evaluation systems (Obaid, 2018), despite its outcomes being inconsistent. Ultimately, the dependability, flexibility, and dependability of Quality Performance may impact its costs, productivity, and quality, as suggested by (Neely, 2005) and (Venkatesh & Bala, 2008). (Maani & Sluti, 1990), (Fierros et al., 2016) all contributed to determining the quality, productivity, and cost performance factors.

The Moderation Of Trust

A corporation's readiness to depend on its trading partners is an example of trust in its supply chain (Moorman et al., 1992). As shown by several studies, trust is a crucial factor in the success or failure of partnerships in business (Raweewan and Ferrell Jr, 2018). While a lack of trust may be a significant barrier to supply chain cooperation, it is widely acknowledged as an essential relational element that enables collaborative activities like IS among supply chain

partners (Yeung et al., 2009). Information technology may be made more accessible, building trust between business partners (Janowicz-Panjaitan & Noorderhaven, 2009), which is crucial for effective data exchange (Ghosh and Fedorowicz, 2008). When there is trust between supply chain partners, IS may be successful. However, many businesses are reticent to share sensitive information with their partners (Beccerra and Gupta, 1999). Trust fosters collaboration among supply chain participants, which is particularly important in supply chain management in electronic marketplaces. This will be a final indicator of the quality of the company's performance (Hsu et al., 2014).

Conceptual Model

Previous research on TAM has concentrated almost entirely on three primary areas of interest. In the beginning, a significant number of research were done over and focused on the psychometric aspects of TAM (e.g., Adams et al., 1992; Segars & Grover, 1993). Second, further studies provide theoretical evidence for TAM components' relative relevance, such as perceived ease of use and perceived usefulness (e.g., Karahanna, Straub, & Chervany, 1999). Third, some studies added new constructs as TAM construct determinants to make TAM bigger (e.g., Karahanna & Straub, 1999; Venkatesh, 2000; Koufaris, 2002). By putting together TAM research from the past, we made a theoretical framework that includes all the information we've learned over the years. The picture shows four factors that affect how useful and easy something is: personal differences, system features, societal effects, and enabling circumstances. Individual difference variables are personality and demographic characteristics (like a person's traits or states, gender, and age) that affect how helpful they seem to be. Third, system characteristics are the most noticeable parts of a system that help people decide whether it is helpful or easy to use. Fourth, social influence is a wide range of social processes and methods that help people determine what they think about different parts of IT. Lastly, enabling circumstances are organizational supports that make it easier to use an IT system.

As they were developed for marketable items and factored in the subjective standards of society, the Technology Acceptance Models (TAM2) by Venkatesh and Davis (2000), TAM3 by Venkatesh and Bala (2008), and UTAUT by Venkatesh, Morris, Davis, and Davis (2003) were not selected. With this research focusing on a novel payment system known as a single platform E-payment, this was superfluous. With information system applications like the single platform E-payment System being so private and left to the individual's discretion, Davis, Bagozzi, and Warshaw (1989) argued that social norms scales had a very weak psychometric viewpoint that may not alter consumers' intentions to act. As UTAUT extends TAM2, so is TAM2 developed by TAM3 to account for the social effect. Neither will be used in this study due to ethical concerns. Although moderators are used in all TAM2, TAM3, and UTAUT, this research focuses only on the variables and whether consumers would want to adopt a unified E-payment platform.

In the current research, organizational theory is that an organization's dynamic capability is its ability to change its resources based on its goals. In their 1997 article *Dynamic Capabilities and Strategic Management*, David Teece, Gary Pisano, and Amy Shuen defined the term as "the firm's ability to integrate, create, and reconfigure internal and external competencies to deal with dynamically changing environments." The word is sometimes used in the plural as "dynamic capabilities" to show that responding to changes correctly and on time requires a mix of skills. According to Rindova and Kotha's (2001) analysis of Yahoo and Excite, dynamic capabilities can only be made and used by organizations that are not centralized. Dynamic capabilities Competitive pressure Organizational performance internal conformity of organizational structure External fit local autonomy. They think that "organizational form is linked to dynamic capabilities and can be used as a strategic tool to

allow the quick strategy changes needed to compete in dynamic contexts" (Rindova and Kotha, 2001, p. 1264). The best organizational structure for dynamic capabilities to improve firm performance is highly organic and responsive. Quick decisions and a smooth market data flow to decision-makers need "non-bureaucratic decision-making that is decentralized or perhaps autocratic, self-managed when feasible" (Teece, 2000, p. 41). Decentralized decision-making in organic organizational systems has the potential to be more responsive, innovative, and responsive to changing conditions (Andersen and Nielsen, 2009). Organic organizational structures also make it easier for employees to be engaged, loyal, involved, creative, and responsive to the market. These features of organic systems make it easier to see and take advantage of opportunities and to change how a business operates.

So, this is what the current research model is based on. The research model is made up of the two previously mentioned perspectives. The present study is about IT Alignment and Supply Chain Resilience in the presence of Moderation of Trust on the dependent variable quality performance because of these two things.

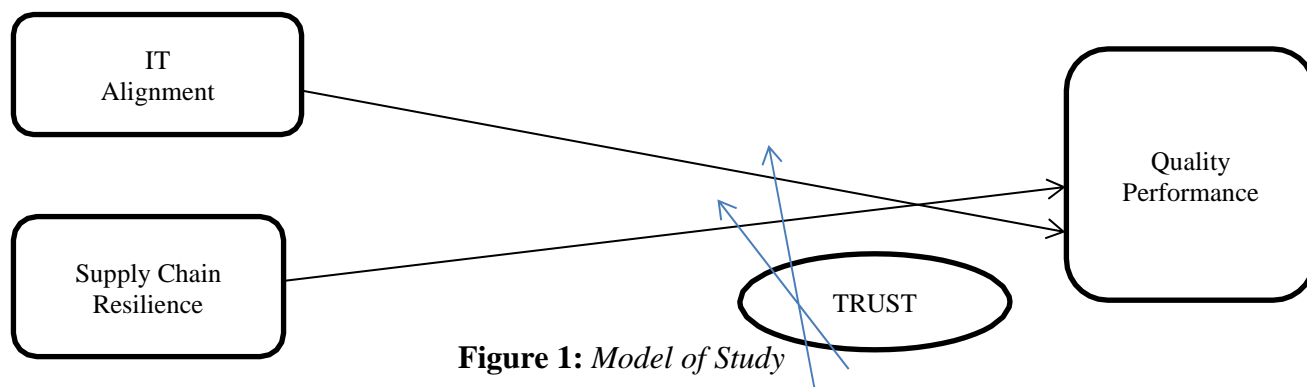


Figure 1: Model of Study

Research Model

The data of this study was collected through the questionnaire, and this indicates that the current research is quantitative; previous research was looked at to determine the study variables, IT alignment and Supply Chain Resilience were selected, which was referred to in the earlier studies, where the current study adopted an IT alignment variable from the study Naghshineh & Lotfi. (2019) and Supply Chain Resilience from the (Ali et al., 2023) study, and concerning the dependent variable, the quality performance was adopted by Saryatmo & Sukhotu. (2021). study, and finally, the Moderation of the Trust variable was taken from a study by Naghshineh & Lotfi. (2019).

According to the (Jordan Chamber of Industry, 2022), our sample population includes 453 establishments with expertise in engineering, electricity, and computer science. Therefore, 308 businesses made up the study's sample. In addition, companies' top-level managers and CEO were the study's subjects.

Data Analysis

For partial least squares (PLS) modelling, we used version 3.3.2 of SmartPLS. The researchers used a two-step process to examine the study's main idea. The measuring model that has been shown to reliably separate groups is the first step. After establishing that its claims are valid, it will test its hypotheses and make a model of how things work. First, Convergent validity examines whether a measure accurately captures the target hidden variable

(Fornell and Larcker 1981). To evaluate the measuring model, you must examine how each concept and its items relate. Exploring the reflective measurement model includes figuring out how much weight each indicator has, how reliable each indicator is, how consistent each hand is with itself, how valid the model is, and how well it can tell people apart. As a general rule, indicator loading should be at least 0.708%. (Hair et al., 2014) says that it is common in social science research to find items with low loading and get rid of them. Also, if lowering the number of items with external loadings between "0.4 and 0.7" increases composite reliability and extracted average variance (AVE), consider doing so. Table 1 summarizes "factor loadings."

Table 1. *Cross Loading Analysis*

Constructs	Items	Factor loadings	Cronbach's Alpha	CR	(AVE)
Quality Performance	QPERF-1	0.853	0.878	0.916	0.733
	QPERF-2	0.833			
	QPERF-3	0.864			
	QPERF-4	0.874			
IT Alignment	ITALIG-1	0.640	0.815	0.863	0.513
	ITALIG-2	0.803			
	ITALIG-3	0.711			
	ITALIG-4	0.744			
	ITALIG-5	0.686			
	ITALIG-6	0.702			
Supply Chain Resilience	SCHRE-1	0.840	0.899	0.925	0.712
	SCHRE-2	0.828			
	SCHRE-3	0.868			
	SCHRE-4	0.839			
	SCHRE-5	0.842			
Trust	TRUST-1	0.726	0.802	0.870	0.626
	TRUST-2	0.853			
	TRUST-3	0.819			
	TRUST-4	0.761			

Structural Model

The structural design is examined after establishing confidence in the accuracy of the measuring system. Analyzing structural models requires assessing the extent to which the theory or concepts are empirically supported by the data and, consequently, determining whether the hypothesis is empirically supported. The two approaches for determining validity are known as discriminant analysis and cross-validation. Discriminant validity of the HTMT was tested. Henseler et al. (2015) offered the idea first, and it was later approved and revised by (Franke & Sarstedt, 2019). A HTMT of 0.90 or below is preferred. The HTMT findings are shown in Table 3, and it can be seen that all of the numbers are within the acceptable range. This means that no two buildings are alike in any way. The reliability and validity of the constructs were established using the measurement methodology.

Table 2. *Discriminant Validity (Fornell-Larcker's test)*

	IT Alignment	Quality Performance	Supply Chain Resilience	Trust
IT Alignment	0.716			
Quality Performance	0.582	0.856		
Supply Chain Resilience	0.639	0.663	0.844	
Trust	0.509	0.512	0.454	0.791

Table 3. Discriminant Validity HTMT

	IT Alignment	Quality Performance	Supply Chain Resilience
IT Alignment			
Quality Performance	0.632		
Supply Chain Resilience	0.675	0.735	
Trust	0.627	0.595	0.531

Demographic Variables

The demographic data of the current study included a sample of 308 CEOs of Jordanian companies. It was noted that the total number of respondents to the questionnaire were males 76.30%, where the proportion of males while females reached the response rate 24.70% and it is worth mentioning that the number of holders of a bachelor's degree has reached 184, and this is because the nature of work is imposed on managers. Therefore, these companies have access to a certain level of education to advance their jobs.

Table 4. Demographic Information of Respondents.

Characteristic	Frequency	Percentage
Gender		
Male	235	76.30%
Female	73	24.70%
Age		
less than 27	30	10%
27-less than 35	52	15 %
35-less than 45	138	45%
45 and above	94	30%
Education		
Diploma	33	11%
Undergraduate degree	184	60%
Postgraduate degree (Master/PhD)	89	29%
Experience		
less than 10	33	11%
10-less than 15	58	19%
15-less than 20	102	33%
20-less than 25	73	24%
25 and above	42	14%
Specialization		
Business Administration	169	55%
Accounting	68	22%
Social sciences	53	17%
Other	18	6%

Hypotheses Testing

PLS examined the structural model's path coefficient. SmartPLS 3.0's path coefficient resembles the regression's beta weight. These estimated route coefficients might vary from -1

to 1, with -1 indicating no connection and 1 suggesting a significant positive or negative correlation. Table 4 displays the significance level, T-Value, P-Value, path coefficient, and standard error.

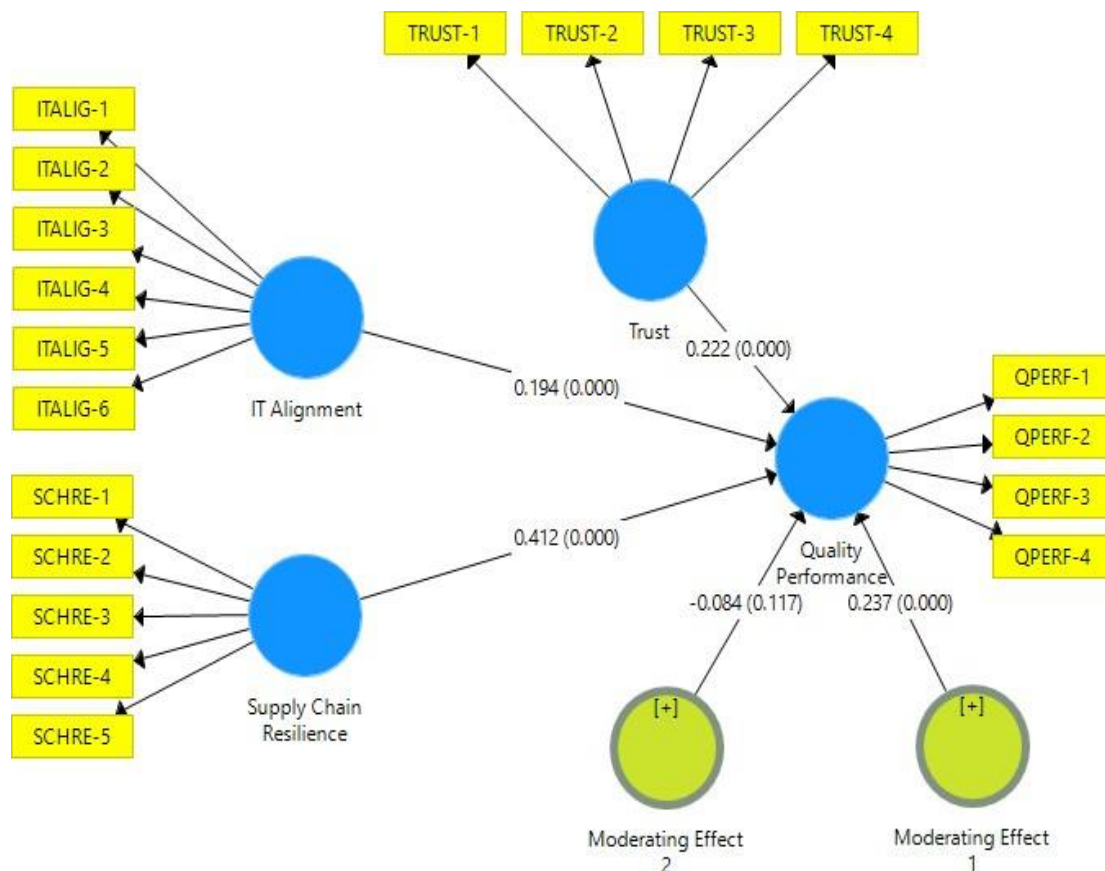


Fig. 2. Testing of hypotheses

Table 5. Structural model estimates (Path coefficients)

Hypo	Relationships	Std. Beta	Std. Error	T-Value	P-Values	Decision
H1	IT Alignment -> Quality Performance	0.194	0.043	4.514	0.000	Supported
H2	Supply Chain Resilience -> Quality Performance	0.412	0.053	7.808	0.000	Supported
H3	Trust -> Quality Performance	0.222	0.050	4.465	0.000	Supported
H4	IT Alignment -> Trust -> Quality Performance	0.237	0.044	5.353	0.000	Supported
H5	Supply Chain Resilience -> Trust -> Quality Performance	-0.084	0.058	1.461	0.145	Rejected

Table 6. R² and R² Adjusted

Variable	R ²	R ² Adjusted
Quality Performance	0.558	0.551

Table 6 contains the findings of R² to assess the accuracy of the forecasts. The Quality Performance R² score is 0.558. These findings demonstrate that explanatory factors account for more than 55 per cent of variations.

Table 7. *Structural model estimates (Path coefficients)*

Hypo	Relationships	Std. Beta	Std. Error	T-Value	P-Values	Decision
H1	IT Alignment -> Quality Performance	0.194	0.043	4.514	0.000	Supported
H2	Supply Chain Resilience -> Quality Performance	0.412	0.053	7.808	0.000	Supported
H3	Trust -> Quality Performance	0.222	0.050	4.465	0.000	Supported
H4	IT Alignment -> Trust -> Quality Performance	0.237	0.044	5.353	0.000	Supported
H5	Supply Chain Resilience -> Trust -> Quality Performance	-0.084	0.058	1.461	0.145	Rejected

Discussion and Conclusion

The current study answers the questions raised in studies to answer whether IT alignment and supply chain resilience have a role in increasing quality performance. These companies can trust them in their work, which will be reflected in their customers and, in the end, will be due to the quality performance of these companies. Resilience helps companies to return to normal after the disruptions that occur to them in cases of uncertainty. Here comes the role of IT alignment, which in turn will enhance resilience, which will undoubtedly happen only with the Moderator's trust. Lack of trust may be a major impediment to supply chain collaboration, but it's also a key relational factor that permits collaborative activities like IS among supply chain partners (Yeung et al., 2009). The results of the current study indicated the absence of a relationship between supply chain resilience and the Moderator's trust. The results of this study agree.

The study's results indicated a statistically significant relationship between the IT alignment variable and confidence, and these results agreed with Naghshineh& Lotfi. (2019) research and the Schlosser et al. (2012) study, where it must be considered that the current study was made up of executives working in Jordanian engineering, power, and information technology enterprises. That the technology sector in Jordan is experiencing a qualitative leap. As it is considered one of the important sectors in Jordan because of its clear contribution to the Jordanian economy, and this matter cannot be ignored, as Jordan is considered one of the developing countries, and this sector, as mentioned previously, is very important and in continuous expansion. The current study recommends conducting more research on information technology and supply chains. Furthermore, the current study recommends taking trust as a mediator variable. To increase the generalizability of the current study outside the scope of the sample size, similar studies might be conducted in other fields, such as with humanitarian organizations.

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