

# The Mediating Role of Innovation in the Relationship between TQM Practices and Organizational Performance in Industrial SMEs in Jordan

Odeh Mohammad Al Nohoud, Zainudin Awang

Faculty of Economics and Management Science, University Sultan Zainal Abidin, Malaysia.

Corresponding Author Email: odehkhaldy@yahoo.com

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## Abstract

Within the arena of industrial Small and Medium-sized Enterprises (SMEs) in Jordan, this study analyzes the mediating function of innovation in the intricate relationship between total quality management (TQM) practices and organizational performance. Specifically, the research focuses on Jordanian SMEs in the manufacturing sector. The methods of Total Quality Management (TQM) have been recognized as a strategic strategy to enhance the efficiency and competitiveness of organizations. This study investigates whether or not innovation plays an important role as a vital mediator that channels the positive influence that TQM techniques have on enhanced organizational performance. The study reveals the extent to which innovation serves as a mediator of this relationship by conducting an extensive survey of small and medium-sized industrial businesses in Jordan. The findings indicate that innovation does play a mediating function, which sheds light on the significance of encouraging new activities to optimize the benefits of TQM implementation. **Purpose:** This study explores the relationships between TQM Practices, innovation, and organizational performance in Jordan's SMEs. It aims to understand the mechanisms influencing these components and the mediating function of innovation in the relationship between TQM practices and organizational performance. **Methodology:** The current study is an attempt to analyze the mediating role of innovation in the impact of the relationship between total quality management (TQM) practices and organizational performance on the industrial sector of small and medium enterprises (SMEs) in Jordan. This study is quantitative in nature. A quantitative analysis approach was used. The survey was tested by nine academic and administrative experts and three practitioners in the Jordanian industrial sector using a self-administered questionnaire. There are about 45,910 employees and 6,098 businesses among the population under study. Where the unit of analysis is the owner (managers) and engineers in the Jordanian small and medium industrial companies, the target population of the study are the owner (managers) and engineers in The Engineering, Electrical, and Information

Technology Industry. Stratified random sampling technique was used to select a sample of 381 respondents from the population. Respondents were given a self-administered questionnaire to respond at their convenience, A total of 344 usable responses were received, Data were analyzed using structural equation modeling (SEM) in IBM-SPSS-AMOS 25.0 software. **Result:** The study shows that innovation is closely related to organizational performance. The relationship between total quality management practices and organizational performance is also important. Innovation provides a complete mediation of the relationship between TQM practices and organizational performance. **Applications:** The findings of this study may be helpful to people working in the field of research and academia as well as owners, managers, supervisors, and engineers in the industrial sector in Jordan. The findings of the research are helpful in that they suggest that innovation plays a very significant role as a mediator between total quality management and organizational performance. This is one of the ways in which the findings are valuable. Identifying other factors that influence organizational performance in Jordan's industrial SMEs will be one of the most significant contributions that may be made to the existing body of research in the not-too-distant future. **Novelty and originality:** At the present time, the research on the mediating function of innovation in the relationship between TQM practices and organizational performance is being considered for researchers, academics, owners, managers, supervisors, and engineers working in the manufacturing sector in Jordan. It is critical for Jordan's small and medium industrial enterprises to have strong organizational performance in order to maximize their chances of long-term survival and success in the global marketplace.

**Keywords:** Total Quality Management, TQM Practices, Innovation, Organizational Performance, Industrial SMEs, Mediating Role, Jordan.

## **Introduction**

Improved organizational performance is crucial for industrial firms to survive and thrive. Flexible work schedules and a fair incentive structure, focusing on employee skills development, provide a competitive edge and help achieve organizational performance (Austin-Egole et al., 2020). Business leaders should implement organizational performance improvement policies, motivating employees, offering suggestions, and creating positive relationships to boost competitiveness, increase profitability, and enhance organizational performance (Agbo & Nwankwo, 2019). Total quality management to improve organizational performance through collaboration leads to improved overall performance, continuous process improvement, long-term sustainability, increased market share and financial performance (Ayodeji et al., 2021). Manufacturing businesses must prioritize innovation to remain competitive in the global industrial production environment, focusing on resource-intensive projects and organizational performance (Abu-Mahfouz, 2019). In other words, managers are responsible for producing and refining intellectual capital assets towards enhancing their capabilities and skills for innovation and performance (Akay & Kunday, 2018). In addition, the use of TQM procedures and assessment of their effects on organizational performance (OP) is mainly seen in industrialized countries while it is relatively rare in developing countries (Baye & Raju, 2016). Because of the scarcity of research, it should be noted that the application of TQM practices and their implications for organizational performance (OP) in developed countries may not apply to developing countries. Few studies were found only in the context of Pakistan, Ethiopia, and Jordan (Abu-Mahfouz, 2019; Shafiq et al., 2019; Singh, 2019). In the context of Jordanian small and medium industrial firms, the purpose of this research is to investigate the elements that have a favorable influence on

organizational performance. The manager of the Jordanian companies will develop strategies that will help enhance organizational performance by examining the significance of innovation and its role as a mediator between overall quality management and organizational performance. These strategies will help improve organizational performance. In addition to expanding experiences in the academic community, those working in Jordan's small and medium industrial firms have gained a lot of valuable knowledge.

### **Literature Review**

**Total Quality Management (TQM) Practices:** The present study examines the practices of Total Quality Management (TQM) is a comprehensive management of supplier quality management, customer focus, Process Management, leadership, and Top management, and it is these practices that this study has focused on.

**Innovation and Organizational Performance:** The impact of innovation on organizational performance is manifested through the enhancement of efficiency, competitive advantage, and market share (Bigelow & Barney, 2021).

**Mediating Role of Innovation:** The role of innovation in enhancing organizational performance is crucial, as it encompasses the creation and execution of original concepts and methodologies (Hassan & Jaaron, 2021).

1385 factories in Jordan failed to renew their membership with the Amman Chamber of Commerce for the year 2020, which resulted in the closure of those factories and the transfer of another 60 factories to Egypt. Jordan is one of those countries in which the industrial sector faces many challenges, which caused many industrial companies to leave the market. This is one of the factors that led to many industrial companies leaving the market (Al-Kabariti, 2017).

- The shortage of Jordanian competencies is one of the main factors that contribute to the weak competitiveness of the industrial sector.
- The difficulty of obtaining financial investments from external sources due to the unfavorable environment for investment in general. A variety of onerous taxes and fees. Transportation expenses that would lead to an increase in import prices, which may have a negative impact on production costs in the industrial sector and increase the difficulty of exporting due to the possibility of using price differences for the benefit of the producer (Industrial, Sep 01, 2022).

### **Organizational Performance**

In the body of scholarly work, the idea of organizational performance has been dissected and categorized from a dizzying variety of perspectives and orientations in order to provide a comprehensive understanding of the subject. the effectiveness of the business or organization in question (Richard et al., 2009). Is the process through which an organization successfully completes its stated mission as a result of effective management, consistent efforts, and superior governance. In addition to this, it is the operation of a firm that finally results in the accomplishment of organizational goals, therefore it is a consequence of the operation of the company (Farrukh et al., 2020). The amount of success that is attained by an organization is directly related to the sorts of steps that it takes in order to accomplish the goal that it has set for itself. The success of an organization can be evaluated based on its end results, which are observable and quantitative characteristics that can be measured (Valmohammadi & Servati, 2011).

In addition to enhancing staff performance, teamwork, and other elements of the business, as well as a number of other difficulties, increasing organizational performance means lowering employee turnover, costly accidents and disorders, and a number of other issues.

This is in addition to improving a number of other aspects of the business (Raval et al., 2020). Performance aspects related to the organization elements of financial performance and non-financial performance are employed most frequently (Khan & Naeem, 2018).

### **Total Quality Management (TQM)**

TQM is a customer-centric approach that emphasizes collaboration with customers to ensure their needs and preferences are met and exceeded. This holistic approach fosters innovation, continuous evaluation, and excellence, driving growth and positive transformation. TQM encourages employees to contribute to the improvement process, fostering a culture of innovation and responsibility. By ensuring customer requirements are met and exceeded, organizations can achieve sustainable success in a competitive business landscape. TQM is a fundamental framework for meeting consumer needs and expectations (Chen et al., 2020).

A comprehensive method of management known as total quality management (TQM) is one that ensures all organizational activities and operational procedures are carried out in the same manner in order to fulfill the requirements set out by customers. It improves the overall system quality of an organization, which results in increased production and profitability, as well as increased efficiency and decreased expenses (Mehralian et al., 2016). This study aims to provide a conceptual framework in order to analyze Total Quality Management (TQM) and how it connects to organizational performance.

It is a resource that can be managed and has a bearing on how successfully a company operates (Mahmud et al., 2019). Total Quality Management is a concept that strives to integrate production and management with the intention of enhancing productivity with the end goal of attaining customer happiness. Specifically, the concept seeks to achieve this goal by connecting production and management. The successful implementation of TQM by managers has resulted in an increase in the quality of the products being produced (Abu-Mahfouz, 2019).

### **Total Quality Management Practices**

TQM practices are a set of guidelines for managing quality and improving operational performance through employee empowerment, teamwork, creating a system based on equitable compensation and employee compensation, leadership management, successful employee participation, employee promotion, and attaining a competitive advantage. The Total Quality Management (TQM) Institute was responsible for developing TQM practices in the 1980s. The satisfaction of both customers and employees must be the primary focus of the company (Chang et al., 2010). The Likert scale may be used to evaluate each and every TQM practice, and TQM practices can be implemented to improve service quality, which in turn has a positive impact on customer satisfaction (Harimurti & Suryani, 2019).

Those studies focused their attention on researching different TQM practices as their topic of inquiry. Take, for example, supplier quality management (Singh, 2019). Abubakar & Mahmood (2016) Previous studies have been empirically developed frameworks that involved measurable TQM practices (Al-Dhaafri & Alosani, 2020; Chen et al., 2020; Sweis et al., 2019; Yan et al., 2019).

Those studies investigated different practices of TQM. For examples, supplier quality management Singh (2019), customer focus Mahmud et al (2019), process management Abu-Mahfouz (2019), leadership Shafiq et al (2019), and top management (Subramani et al., 2019).

### **Supplier Quality Management**

The term "supplier quality management" refers to the process of placing a greater emphasis on the responsibility of suppliers for the quality of their own production while simultaneously drawing attention to the necessity of direct buyer investment in the growth of suppliers. In order to investigate the management of supplier quality, it is necessary to assess not only the investments made by buyers to improve supplier quality but also the financial incentives offered to suppliers to encourage them to make efforts to improve product quality. In addition, we take into account the whole relationship between the buyer and supplier efforts to enhance the quality of suppliers, which enables them to operate in an integrated manner. This helps us to improve the overall quality of the suppliers we work with. Utilizing outsourcing as a means to improve supply (Lee & Li, 2018).

TQM's supply chain management techniques include decreasing and streamlining the supplier base, working together to ensure that needs are met, and involving suppliers early in the product development cycle. TQM also tries to take advantage of the knowledge and abilities of its suppliers. In addition, TQM's supply chain management practices include working together to ensure that requirements are fulfilled (Ong & Tan, 2018; Sadikoglu & Olcay, 2014).

### **Customer Focus**

Customer focus is an extension of the word "brand loyalty," which was formed under the brand umbrella, developed over time, and was first used in the United States at the turn of the 20th century. Customer focus refers to a company's attention on the satisfaction of its customers (Kiseleva et al., 2016).

When companies first learn about the requirements and preferences of their customers, they are in a better position to supply goods and services that are tailored to meet those requirements. This is because customers tend to have similar tastes. Because there are operational customer service procedures, production can be organized in such a way that it takes into account the requirements, preferences, and concerns of end users. The supply of timely, efficient, and high-quality goods and services, in addition to advances in productivity and profitability, is a crucial concern for businesses in today's modern world. When the demands of a client are met, that customer's level of satisfaction rises, which in turn drives an increase in sales and gives the company a larger portion of the market (Sadikoglu & Olcay, 2014).

### **Process Management**

Implementing a wide range of operational methods and procedures in order to reduce the amount of variance that occurs during the manufacturing process is one of the key points of process management. Despite the fact that a particular company employs a diverse workforce in order to improve operations and improve quality (Zeng et al., 2015). Focuses on the ways in which various analytical and behavioral processes function. Because of this, it is necessary to develop proactive and positive quality management techniques in order to reduce the variability of the process and raise the quality of the product (Parsana & Desai, 2016). The procedures can be improved in a couple of different ways: by routinely controlling the processes, and by regularly analyzing the quality of the data. The implementation of an effective system for managing processes leads to the occurrence of fewer negative effects on the surrounding environment. The company has witnessed a gain in profitability as a direct result of the prevention-focused efforts that have been implemented, which have resulted in a reduction in the overall costs of the business (Zhou & Li, 2020).

### **Leadership**

The ability to lead people is one of the most significant aspects of Total Quality Management, and it is one of the most crucial techniques for a company to take in order to achieve extraordinary and one-of-a-kind results. The term "leadership" refers to a crucial component of an organization's performance that may be found at every level of the organizational structure. the capacity to quickly adjust to changing conditions while enabling participation that is both beneficial and appropriate (Yan et al., 2019).

A TQM framework helps leaders to perceive the business as a system, supports the personal development of staff members, facilitates several lines of communication with staff members, managers, and customers, and encourages the application of learned skills in a manner that is both effective and productive. In addition, executives should distribute authority to staff members and foster an environment that encourages employees to participate in decision-making (Yan et al., 2019).

### **Top Management**

Top management should establish a robust foundation for particular concepts and methods, ensure that appropriate tools are at their disposal, communicate quality objectives to both suppliers and employees, encourage continuous performance improvements, and evaluate those advancements in the context of quality standards (Yan et al., 2019).

Senior management is one of the most important practices of comprehensive quality management, and it is also one of the most critical components in the performance of enterprises. Therefore, in order for managers to better comprehend the adoption and implementation of TQM among all stakeholders, they need to demonstrate their different managerial talents to handle variables, develop solutions to problems, and break away from traditional management practices. Only then will they be able to better comprehend the adoption and implementation of TQM (Psomas & Jaca, 2016; Elhawa, et al., 2019).

### **Innovation**

At this time, it is widely acknowledged that innovation is one of the fundamental driving forces behind economic growth, industrialization, the maintenance of a product's competitive advantage, and decision making that is based on impending or predicted changes. It is conceivable to define the primary purpose of economic activity as promoting innovation as the primary function of economic activity. Additionally, the significance of being innovative was driven home. According to the research that has been conducted, innovation is a crucial component of the process of making decisions, whether those decisions concern manufacturing initiatives or investments. The benefits of innovation include, amongst other things, an increase in product quality as well as a reduction in expenses, time, and waste (Kogabayev & Maziliauskas, 2017).

It is absolutely necessary for a manufacturing firm to take part in and provide support for innovation projects in the current environment of global industrial production if the manufacturing company want to keep its competitive edge and remain relevant in the market. As a consequence of this, manufacturing companies are subjected to an extreme amount of pressure and are compelled to place a large emphasis on innovation (Abu-Mahfouz, 2019). When it comes to enhancing and maintaining their competitiveness, small and medium-sized firms (often known as SMEs) are finding that innovation is becoming an increasingly vital issue to consider. The goal of innovation is to arrive at a brand-new idea that can afterwards be developed into a brand-new product, method, or service in its entirety.

This will not only be advantageous to the creative industry, but it will also contribute to the swift expansion of the economy as a whole and the production of new job opportunities (Lages et al., 2020).

Table1

*The main hypothesis of this study and method of testing*

	Hypothesis statement	Statistical Analysis to employ
H1	TQM Practices has positive and significant effect on Innovation Performance.....	Path Analysis in SEM
H2	Innovation has positive and significant effect on Organization Performance .....	Path Analysis in SEM
H3	Innovation mediates the relationship between TQM Practices and Organization Performance	Path Analysis in SEM and Bootstrapping

**TQM Practices and Innovation**

TQM Practices places an emphasis on innovation and efficiency. It is essential for managers to take into consideration the part that TQM Practices plays in fostering creativity and innovation. Learn how using innovation as a mediator can assist in understanding the times when TQM Practices may influence innovation. In a similar vein, there is evidence that Check if it's true Mediation will most certainly have a similarly big impact on a variety of sub-industries within the industry (Abu Salim et al., 2019).

Total Quality Management, sometimes known as TQM, is an approach that emphasizes steadily making processes more efficient. The work procedures that go into achieving product quality and the impact those processes have on the overall performance of a business. One of the most challenging things for a business to do is to implement overall quality management in their organization; innovation is critical to accurate long-term projections. The survival of organizations, determining the success of the organization, and maintaining its global competitiveness are particularly important factors, especially in an environment in which technologies, competitive position, and customer demands can change almost overnight, and in which the life cycles of products and services are becoming shorter (Abu-Mahfouz, 2019).

Total Quality Management (TQM) is an ongoing process of improving business processes to improve product quality and, in turn, the performance of a company. Total Quality Management (TQM) can be hard to implement inside a company, mostly because of how it affects employees. Innovation is a key part of predicting the long-term viability of organizations, figuring out what they've accomplished, and keeping their global competitiveness, especially in a world where technology is changing quickly, competition is shifting, and customer tastes are changing. Also, the fact that goods and services don't last as long as they used to makes innovation even more important. Using creative methods to reach the goals of this study project in a successful way (Abu-Mahfouz, 2019).

Table 2

*The sub hypothesis of this study and method of testing for direct effect*

	Hypothesis statement	Statistical Analysis to employ
H1a	Supplier Quality Management has positive and significant effect on Innovation .....	Path Analysis in SEM
H1b	Customer Focus has positive and significant effect on Innovation .....	Path Analysis in SEM
H1c	Process Management has positive and significant effect on Innovation .....	Path Analysis in SEM
H1d	Leadership Style has positive and significant effect on Innovation .....	Path Analysis in SEM
H1e	Top Management Commitment has positive and significant effect on Innovation .....	Path Analysis in SEM

**Total Quality Management (TQM), Innovation and Organizational Performance**

The mediating role of innovation concept posits that innovation acts as a mediating mechanism through Total Quality Management (TQM) actions that affect company performance. There is a hypothesis that the implementation of TQM methods has a motivating effect on innovative efforts, which improves organizational performance outcomes subsequently (Imran et al., 2022).

Organizations have many goals, such as being competitive, making a lot of money, and staying around for a long time. But sustainability has become a task for both business and non-business organizations because it helps them do better. Sustainability doesn't just happen on its own; it needs enough means and skills. Studies that already exist have looked at the things that affect sustainability, but they haven't talked much about innovation from this point of view. This study looks at how innovation affects the performance of a company and how sustainability acts as a mediator. The results show that innovation makes a big difference in the long-term success and performance of the company. We suggest that CEOs and other top managers focus on innovation, sustainability, and staying in business in the long run (Zhang et al., 2019).

Achieving the organization's objective through good management, constant efforts, and strong governance. It additionally assists companies reach their goals(Farrukh et al., 2020). Organizational performance dimensions most commonly used are non-financial performance and financial performance aspects (Khan & Naeem, 2018).

A notion is going to be developed and put forward as a result of this investigation. A theoretical framework and research model for the effects of overall quality management methods on the performance of organizations, based on exploratory research. The anticipated function of practices and innovations as a channel through which to strengthen this connection. Managers and people in charge of making decisions would benefit from adopting this kind of conceptual model for complete quality management and organizational performance. Certain decision-makers in the performance of the company have a deeper understanding of the influence of overall quality management. In addition to this, it is essential to have practices on organizational performance and to recognize the function of innovation as a mediator (Anifowose et al., 2022).



Adopting such a conceptual model of TQM and organizational performance would help managers and decision-makers, especially in organizational performance, better understand how TQM practices affect organizational performance. It would also help organizations be strong in the goal of this study is to find out how total quality management (TQM) techniques affect the success of organizations, especially in terms of presence and innovation. at the same time, improving how well the manufacturing business in Jordan works (Abu-Mahfouz, 2019).

Table.3

*The sub hypothesis of this study and method of testing for mediation effect*

	Hypothesis statement	Statistical Analysis to employ
H3a	Innovation mediates the relationship between Supplier Quality Management and Organization Performance	Path Analysis in SEM and Bootstrapping
H3b	Innovation mediates the relationship between Customer Focus and Organization Performance	Path Analysis in SEM and Bootstrapping
H3c	Innovation mediates the relationship between Process Management and Organization Performance	Path Analysis in SEM and Bootstrapping
H3d	Innovation mediates the relationship between Leadership Styles and Organization Performance	Path Analysis in SEM and Bootstrapping
H3e	Innovation mediates the relationship between Top Management Commitment and Organization Performance	Path Analysis in SEM and Bootstrapping

### **Innovation and Organizational Performance**

It is becoming increasingly anticipated of businesses that in order for them to adhere to the concept of sustainable development, they will generate innovations that are able to reconcile economic, environmental, and social goals. These kinds of inventions are referred to as sustainable innovations. However, achieving this goal is not an easy endeavor, and despite the fact that a large number of studies have been undertaken in an effort to expand our understanding of sustainable innovation in order to improve organizational performance, we still have a long way to go before we can consider ourselves successful (Cillo et al., 2019).

Small and Medium Enterprises (SMEs) are very important to the growth of the economy in most countries, especially in countries like Kuwait which are still growing. But there are still problems and obstacles to overcome. They are looked after to improve efficiency and ensure long term success. Small and Medium Enterprises (SMEs) often use Total Quality Management (TQM) techniques as a key method to improve their competitiveness and improve organizational performance. But there aren't a lot of studies looking at how these ideas affect the growth of small and medium-sized enterprises (SMEs) in developing countries. The results of this study show that total quality management practices have a positive and significant impact on organizational performance in the company (Sawaeen & Ali, 2020).

The importance of innovation in the realm of international entrepreneurship (IE) and in small and medium-sized businesses (SMEs) is becoming an increasingly prominent topic of study in academic circles. To be more specific, on the part that innovation plays as well as the positive and considerable impact it has on the international organizational performance index of small and medium businesses (Zhang et al., 2019)

**Participants**

Data was collected from employers, engineers and supervisors of various small and medium industrial firms in Jordan. About 344 participants in this study consisted of employers, engineers, and supervisors. For example, 42.7% are managers/engineers, 35.8% are facility owners/managers, and 21.5% are technicians/managers.

**Procedure**

Before proceeding with distributing the questionnaire to the study participants, it was absolutely necessary to obtain approval from the university administration. All study participants were given a questionnaire to fill out once they had given their consent to participate in the research. Before starting the questionnaire, a brief review of its contents was given in the form of a written explanation. This was done before anyone actually started filling out the questionnaire.

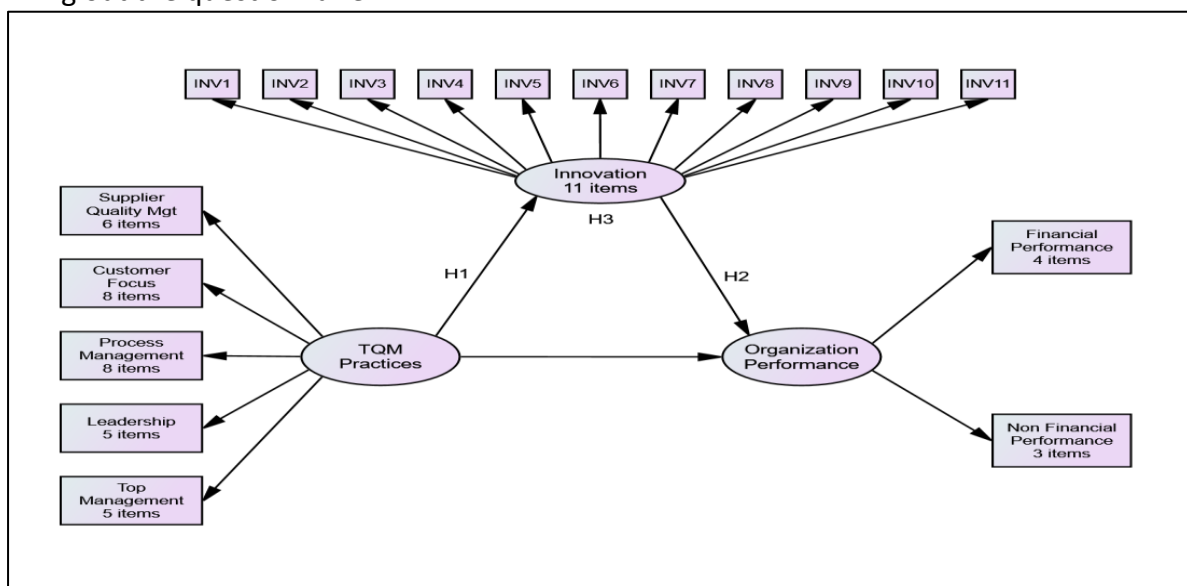


Figure 1: The Framework and main hypotheses of this study

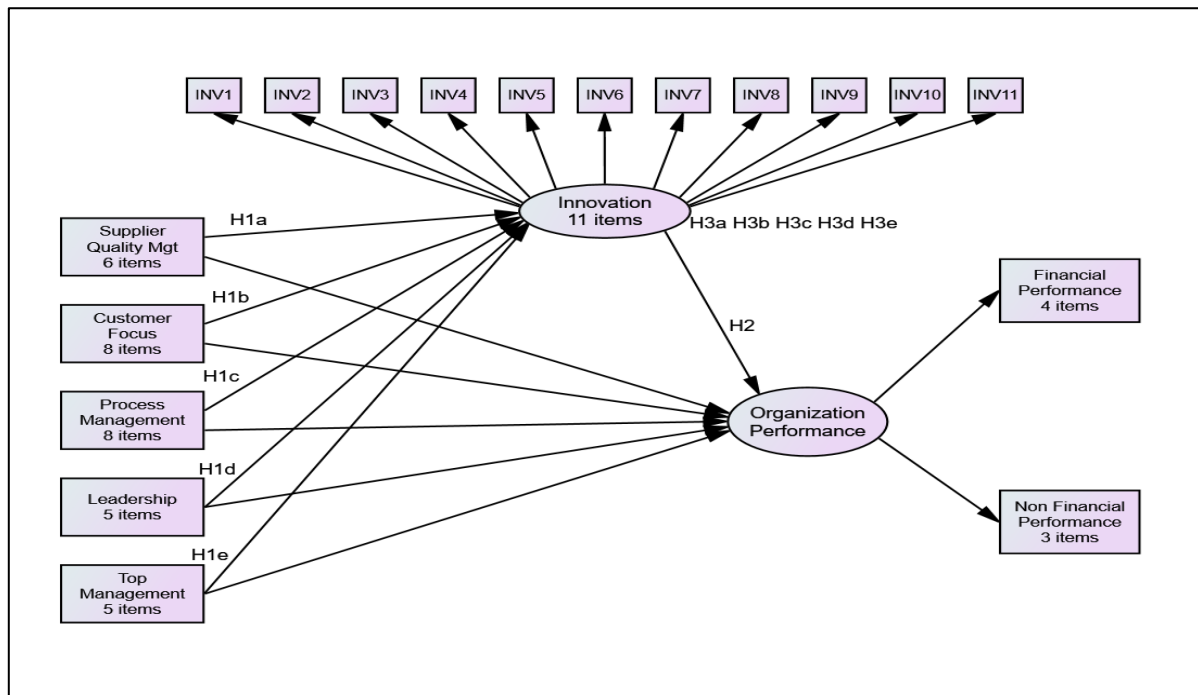


Figure 2: The framework for sub hypotheses in the study

### Measurement of Constructs

The measuring tool is made and built for this field. It has four parts that work together to make the survey tool. General questions for Part I (a) are about the respondent's background. These questions cover things like age, gender, experience, and level of schooling. Part (b) of the questionnaire is used to measure the performance of the company, Part (c) is used to measure the practices of total quality management, and Part (d) is used to measure innovation.

On a 10-point scale, the tools that were looked at were used to rate the things in this study. From 1 (which means "strongly disagree") to 10 (which means "strongly agree"), the scale is now used, which has been used a lot to judge behavior and performance. The chosen items are based on research that has already been done and has been proven to be accurate (Hosany & Martin, 2012). In this study, the interval scale was seen as a useful way to measure how variables might change over time. The scale now goes from 1 for "strongly disagree" to 10 for "strongly agree," so there are ten possible answers.

Here's a quick look at the measurement variables used in the suggested model to measure each theoretical concept: In this study, the TQM techniques that were used as independent variables were supplier quality management, customer focus, operations management, leadership, and senior management. As well as the success of the organization (which is the dependent variable) and innovation (which is the mediator).

### Measure of Supplier Quality Management

Previous studies were Adopted by (Mahmud et al., 2019; Singh, 2019; Yan et al., 2019). Elements of approved supplier quality management (6 elements) and how they are measured in the supply chain, as well as the tool used to measure them.

**Measure of Customer Focus**

Previous studies were Adopted by Mahmud et al (2019); Yan et al (2019) The Consumer Focus Assessment Tool is derived from the (8 items) Customer Focus Components.

**Measure of Process Management**

Following a previous study by (Abu-Mahfouz, 2019; Mahmud et al., 2019; Singh, 2019). The tool used to measure process management is adapted from (8 items).

**Measure of Leadership**

Following a previous study by (Abu-Mahfouz, 2019; Shafiq et al., 2019; Yan et al., 2019). The instrument for measuring leadership is adopted from (5 items).

**Measure of Top Management**

Following previous study by (Abu-Mahfouz, 2019; Subramani et al., 2019; Sweis et al., 2019; Sweis et al., 2019). The instrument for measuring top management is adopted from (5 items).

**Measure of Innovation**

Following previous study by (Khan and Naeem, 2018; Modarres and Pezeshk, 2017; Shan et al., 2016). The instrument for measuring innovation is adopted from (11 items).

**Measure of Organizational Performance (Financial Performance)**

Following previous study by (Imran et al., 2018; Khan and Naeem, 2018; Pambreni et al., 2019). The instrument for measuring financial performance is adopted from (4 items).

**Measure of Organizational Performance (Non-Financial Performance)**

Following previous study by (Khan and Naeem, 2018; Ong and Tan, 2018). The instrument for measuring non-financial performance is adopted from (3 items).

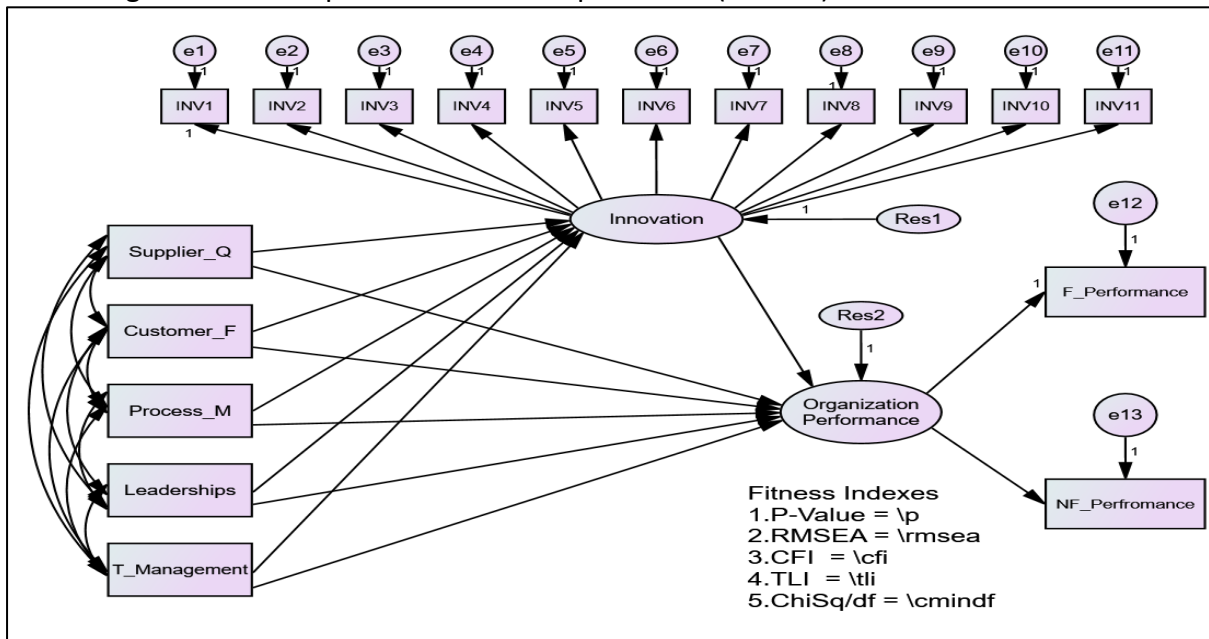


Figure 3: The framework of the study in IBM SPSS AMOS

**Data Analysis**

Two data analysis steps are used in this investigation. CFA and SEM are examples. Structural equation modelling requires data normalcy, validity, and dependability (Bahkia et al., 2021; Mahfouz et al., 2019; Mahfouz et al., 2020; Mohamad et al., 2019); Mohamad et al (2017); Mohamad et al., 2016; Mohamad et al., 2018; Rahlin et al., 2021).

The study was validated using confirmatory factor analysis. FIT indices examine concept validity, AVE (average variance extracted) convergent validity, and the discriminant index summary discriminant validity. Composite Reliability (CR) is the best construct reliability metric and has replaced Cronbach alpha in structural equation modelling (SEM) (Abdul-Rahim et al., 2022; Aziz et al., 2016; Karim & Noor, 2006; Kashif et al., 2015; Kashif et al., 2016; Yusof et al., 2017). For construct validity, the model must achieve Parsimonious Fit, Incremental Fit, and Absolute Fit fitness index categories. In the table, both the fitness indices and their respective thresholds are presented.

Table 4

*Three categories of model suitability and their level of acceptability*

Name of category	Name of index	Level of acceptance
Absolute Fit Index	RMSEA	RMSEA < 0.08
	GFI	GFI > 0.90
Incremental Fit Index	AGFI	AGFI > 0.90
	CFI	CFI > 0.90
	TLI	TLI > 0.90
	NFI	NFI > 0.90
Parsimonious Fit Index	Chisq/df	Chi-Square/ df < 3.0

\*\*\*The indexes in bold are recommended since they are frequently reported in the literature source: (Awang, 2018; Awang et al., 2015; Awang et al., 2016; Awang et al., 2017).

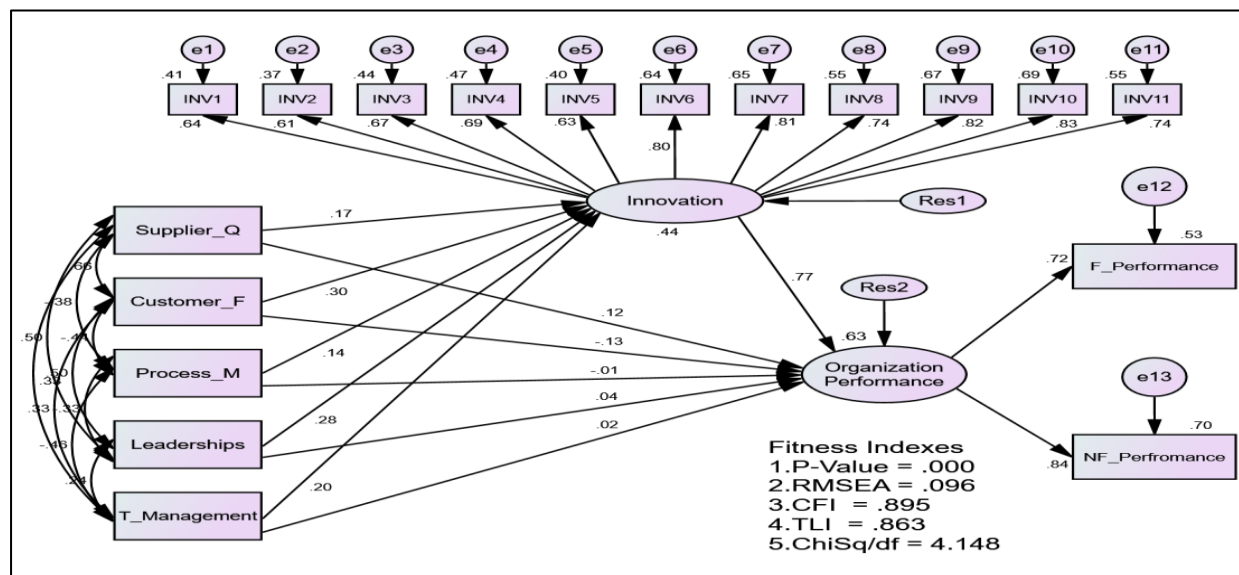


Figure 4: Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Result
Innovation	<---	TQM Practices	.425	.047	8.948	***	Significant
Organization Performance	<---	Innovation	.889	.106	8.382	***	Significant
Organization Performance	<---	TQM Practices	.091	.054	1.670	.095	Not Significant

Main Hypothesis (direct effects)

	Hypothesis statement	P-Value	Result
H1	TQM Practices has positive and significant effect on Innovation Performance.....	.001	Supported
H2	Innovation has positive and significant effect on Organization Performance .....	.001	Supported

Main Hypothesis (indirect effect/ mediation test)

	Hypothesis statement	Statistical Analysis
H <sub>3</sub>	Innovation mediates the relationship between TQM Practices and Organization Performance	Path Analysis in SEM and Bootstrapping

Testing Main Hypothesis (indirect effect/ mediation test)

			P value	Result	Implication
TQM Practices	to	Innovation	***	Significant	Mediation Occurs
Innovation	to	Organization Performance	***	Significant	
TQM Practices	to	Organization Performance	.095	Not Significant	Full Mediation

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P value	Result
Innovation	<---	Supplier QM	.090	.032	2.788	.005	Significant
Innovation	<---	Customer F	.167	.036	4.693	***	Significant
Innovation	<---	Process M	.074	.028	2.661	.008	Significant
Innovation	<---	Leaderships	.163	.032	5.079	***	Significant
Innovation	<---	Top Management	.116	.030	3.876	***	Significant
Organization Performance	<---	Innovation	.928	.112	8.301	***	Significant
Organization Performance	<---	Supplier Q	.076	.041	1.844	.065	Significant
Organization Performance	<---	Customer F	-.089	.045	-1.971	.049	Significant
Organization Performance	<---	Process M	-.006	.035	-.160	.873	Significant
Organization Performance	<---	Leaderships	.029	.041	.714	.475	Significant

			Estimate	S.E.	C.R.	P value	Result
Organization Performance	<---	T Management	.015	.038	.404	.686	Significant

### Discussion

This paper deals with the relationships between total quality management practices and the pivotal and major role of innovation in improving organizational performance by (Abu-Mahfouz, 2019; Al-Dhaafri and Alosani, 2020). By improving the quality management of suppliers and supply chains (Chen et al., 2020). Focusing on customers and meeting their changing needs. Improving operations management, following up work plans, taking notes and finding appropriate solutions in Jordanian small and medium industrial companies. Increasing the possibilities of continuous development, facing risks, increasing productivity, reducing production costs, and adopting a teamwork policy. Innovation mediates the ideals of total quality management in exceptional improvements in organizational performance (Cillo et al., 2019; Damanpour et al., 1989). Total quality management methodologies lay the foundation for continuous improvement, customer focus, and employee empowerment. While innovation helps guide these concepts to create outstanding solutions, products and services (Damanpour et al., 1989; Harimurti & Suryani, 2019).

Total quality management and new ideas enhance the competitiveness, growth and success of small and medium industrial companies in the ever-changing Jordanian business environment (Imran et al., 2022). The results of previous studies show the ability of total quality management practices to have a beneficial effect on promoting innovation (Mahmud et al., 2019). On the other hand, the positive impact of the role of innovation on improving organizational performance and increasing effectiveness, These conclusions support playing the role of innovation as a factor (mediator) between TQM practices (independent variable) and organizational performance (dependent variable) (Abu-Mahfouz, 2019; Cillo et al., 2019; Imran et al., 2022).

### Conclusion

The results of previous studies indicate that there is no significant interest in the application of total quality practices or the relationship between total quality management practices and the performance of other institutions and organizations. Since it is generally known that one of the most important aspects of the Jordanian economy was and still is the Jordanian industrial sector, and that importance was added to innovation as an important mediator for improving organizational performance, which has a significant impact on improving organizational performance in Jordanian manufacturing companies, and in this context it is necessary to conduct future research that takes In consideration of other aspects in order to improve and raise organizational performance, previous studies show little interest in the application of total quality practices, as well as the relationship between total quality management practices and organizational performance in the business field.

The current study sheds light on the complex network of relationships that exist between TQM procedures and creative thinking among small and medium industrial companies in Jordan. The idea of innovation emerges as a major means that translates the objectives of total quality management into major changes in the work of organizations. This transformation is achieved through the use of new ideas. A good change can be seen in the way this shift has taken place. In the same way that the TQM approach creates a foundation

for continuous improvement, customer focus and employee empowerment, innovation contributes to the development of unique solutions, goods and services by helping to guide from these guiding principles. Innovation also contributes to creating a base for continuous improvement, customer focus, and employee empowerment. Building a platform for continuous improvement, customer focus, and employee empowerment are all aspects that can be helped through innovation. In light of the ever-changing economic climate in Jordan, the combination of total quality management and innovation is an effective equation for enhancing the competitiveness, expansion and overall success of small and medium industrial enterprises. This is because TQM and innovation focus on improving customer experience. This is due to the fact that TQM and innovation focus on making incremental improvements.

### **Limitation of The Study and Future Research**

Because this study produced a model with a particular emphasis on small and medium industrial enterprises in Jordan, further research is required to investigate the framework of this study in the context of other countries and in various industries, such as the technology industry, in order to be able to generalize the findings. The authors also proposed establishing the influence of other TQM factors such as Total Employee Involvement and Quality Circles. Other TQM factors include Continuous Improvement, Training and Development, and Quality Circles. In conclusion, future research can study the mediating role that learning orientation plays in the correlation between entrepreneurial leadership and organizational performance, as well as the mediating function that innovation management plays in the same relationship.

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