

## **The Relationship between Total Quality Management and Firm's Comprehensive Performance: An Empirical Study**

- **Abdul Aziz Ahmad Abdul Rahman**  
abdazeez1970@hotmail.com
- Kingdom University, Bahrain
- **Hayan Mahmoud Hamdan**  
abdazeez1970@hotmail.com
- Alwataniya University, Syria

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**Abdul Aziz Ahmad Abdul Rahman**  
Kingdom University, Bahrain

**Hayan Mahmoud Hamdan**  
Alwataniya University, Syria

## **Abstract**

The main purpose of this study is to test the relationship between total quality management (TQM) and the comprehensive performance which is expressed by employee satisfaction, product quality, strategic performance, and customer satisfaction. The sample of the study consists of the employees of the largest three pharmaceutical companies in Hama and Homs in Syria. A questionnaire was developed to collect the data. The results showed that a statistically significant relationship exists between TQM practices and product quality, strategic performance, and customer satisfaction. The results also showed a weak statistically significant relationship between TQM practices and employee satisfaction. The research recommended to focus on all aspects of the comprehensive performance, specifically employees' satisfaction.

**KEYWORDS:** TQM, Employee Satisfaction, Product Quality, Strategic Performance, Customer Satisfaction.

# العلاقة بين إدارة الجودة الشاملة وأداء المؤسسة: دراسة ميدانية

عبد العزيز أحمد عبد الرحمن  
جامعة المملكة - مملكة البحرين  
حيان محمود حمدان  
الجامعة الوطنية - سوريا

## ملخص

تهدف هذه الدراسة إلى اختبار العلاقة بين إدارة الجودة الشاملة (TQM) والأداء الشامل الذي يعبر عنه برضا العاملين وجودة المنتج والأداء الاستراتيجي ورضا العملاء. تتكون عينة الدراسة من موظفي أكبر ثلاث شركات أدوية في حماه وحمص في سورية. تم تصميم استبانة لغرض جمع البيانات. أظهرت النتائج وجود علاقة ذات دلالة إحصائية بين ممارسات إدارة الجودة الشاملة وجودة المنتج والأداء الاستراتيجي ورضا العملاء. كما أظهرت النتائج وجود علاقة ضعيفة ذات دلالة إحصائية بين ممارسات إدارة الجودة الشاملة ورضا العاملين. أوصى البحث بالتركيز على جميع جوانب الأداء الشامل، وبالأخص رضا العاملين.

الكلمات المفتاحية: إدارة الجودة الشاملة، رضا العاملين، جودة المنتج، الأداء الاستراتيجي، رضا العملاء.

## **Introduction**

Business organizations currently face significant challenges arising from the increasingly competitive environment, which requires improve their comprehensive performance and take all actions that help them in managing their operations to ensure that their objectives are effectively achieved. Organizations adopt different processes in operations management such as on time delivery (OTD), material requirements planning (MRP), six sigma, organizational resource planning (ORP), supply chain management (SCM), and total quality management TQM (Heizer and Render, 2004).

Jung and Wang (2006) believe that (TQM) is one of the most important operational management applications, and the quality has recently been considered as one of the most important factors in competition. The increasing demand by customers for featured products and services has been a key factor in pushing many companies to focus on providing high-quality products and services. Therefore, many organizations are working to invest substantial resources in applying TQM (Munizu, 2013).

Total quality management basically aims to achieve multiple objectives including quality improvement for products and services, reducing costs and time needed to perform activities, customer satisfaction, employee empowerment as well as maximize profitability. Most studies failed to provide a clear vision about the impact of applying TQM on achieving those multiple objectives with each other, and abbreviate them to examine the impact of TQM on achieving those objectives separately. This paper seeks to study the impact of TQM as independent variable on employee satisfaction, product quality, strategic performance, and customer satisfaction as dependent variables. The dependent variables mentioned previously constitute the comprehensive performance used in this study. Accordingly, the problem of this study can be formulated in the following main question: "Is there a relationship between the application of TQM and the firm's comprehensive performance?"

Based on the above, this research aims to examine the relationship between TQM practices and the firm's comprehensive performance for a group of pharmaceutical companies under consideration that TQM is an important factor to improve efficiency and performance for those firms.

## **Importance of study**

The importance of this study arises from the benefits that TQM can achieve in

the studied companies since TQM has a comprehensive philosophy for managing organizations through several aspects such as building a strong relation with the internal and external customers, continuous improvement, quality improvement and cost reduction. This will be reflected in firm's comprehensive performance by achieving a high degree of employees and customer satisfaction, high product quality, and strategic performance. This study will be an important indicator for pharmaceutical companies in that it will explain the strengths and weaknesses within these companies in that it will help take the appropriate procedures to develop their performance and increase customer satisfaction. This study will also serve as a basis for further studies that seek to identify the underlying values of TQM practices and its role in maximizing performance.

### **Literature review**

Salah (2018) aims to discuss the impact of employee involvement, continual improvement management commitment, and customer focus on commercial banks' performance in Garissa County, Kenya. The study concludes that banks embrace good customer service to attract and retain more customers. The study also found a significant and positive relationship between, top management commitment, continuous improvement, customer focus, and employee involvement and operational performance of commercial banks.

Sayyad (2017) aims to explore the relationship between TQM practices and the firms' performance in Palestine. The results found a significant and positive relationships between TQM practices and the improvement of firms' quality. Al-Damen, (2017) examined the impact of TQM application on organizational performance. The study was conducted on Jordan Petroleum Refinery Company (JPRC). The results showed a positive impact of TQM on operation efficiency and employee satisfaction.

Kim (2016) examined the relationship between TQM and customer satisfaction. The study found that the adoption of top management by organizations and staff commitment to TQM enables the organization to gain competitive advantage and performance excellence, and applying TQM has a positive and significant impact on customer satisfaction. Ngambi and Nkemkiafu (2015) studied the impact of TQM on organizational performance in manufacturing companies in Cameroon. The results found that training and empowerment have a significant impact on financial performance and corporate social responsibility. The results also indicated that leadership commitment, quality control and inspection have a significant impact on cost reduction. The study indicated that there was no

relationship between TQM practices and customer satisfaction.

Kaur and Sharma (2014) aimed to determine the relationship between TQM practices and business performance for a group of manufacturing sector companies operating in Tri-City in United States. The results showed a statistically significant relationship between the components of TQM and business performance. The study also found that the TQM platforms can include all aspects of the organization's activity in addition to improve customer satisfaction, business performance, quality and competitive advantage, especially in industrial establishments. Similar study by Golmohammadi et al. (2014) found that applying TQM principles has a significant positive impact on customer satisfaction and financial performance.

Bon and Mustafa (2013) examined the impact of TQM on innovation in service organizations. The study showed a strong and positive relationship between TQM practices and product and service development and innovation. Munizu (2013) examined the impact of TQM on competitive advantage and business performance in large and medium scale fish farming facilities in Indonesia. The results showed that TQM practices have a positive and significant impact on firm's competitive advantage and business performance.

UI Hassan, et al. (2013) aimed to identify the effect of TQM practices such as customer focus, leadership, personnel management, information and analysis, operations management, and strategic planning on the performance of the studied companies in Pakistan. The study found a positive impact of TQM practices on Pakistani manufacturing companies performance. The results also found that customer focus, as a part of TQM, has a big role in enhancing the quality of performance. Finally, Zehir et al. (2012) studied the impact of TQM activities on quality and / or innovative performance. The results found a significant relationship between TQM practices and quality and innovation.

Most studies focus on exploring the relationship between the TQM and the operational or financial performance of the organization. This study differs from previous studies by focusing on the relationship between TQM practices and a group of dependent variables which are expressed in the study as the comprehensive performance. This group of variables includes employee satisfaction, product quality, strategic performance and customer satisfaction. This study will complement previous studies by demonstrating the role of TQM on comprehensive performance.

### Hypotheses of study

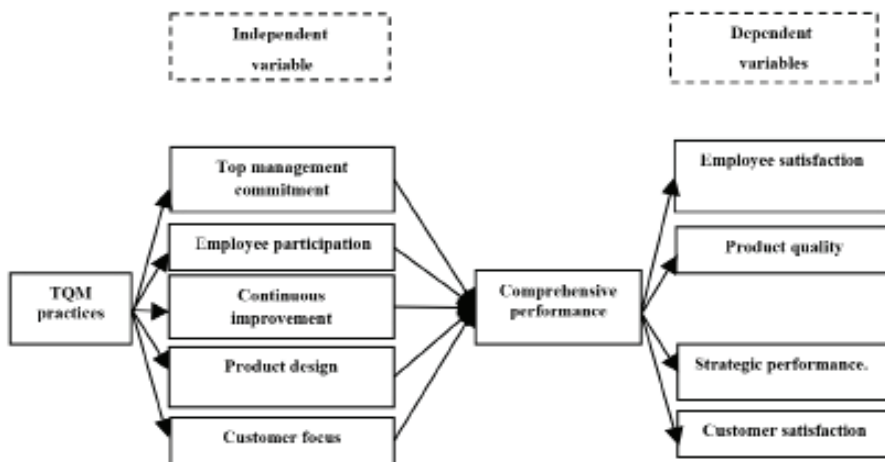


Figure 1: Research framework

### Methodology

#### Population and sample

The research population consists of four pharmaceutical companies in the cities Hama and Homs in Syria, which implement the TQM. Only three pharmaceutical companies were selected due to the difficulty of obtaining information from the remaining company. The companies are Afamyia with 39 employees, Afamyia Pharma with 43 employees and Ibn Hayyan with 133 employees. The total number of employees is 215. The following statistical sample equation will be adopted:

Where: N: Sample, n1: population size, E: permissible error percentage %5,; standard score 95%, P: maximum percentage of available properties to be studied in any population 0.50

A total of 138 questionnaires were distributed to employees by hand (Financial departments, quality departments, and top management) in the three companies, 46 questionnaires each company. The section of the questionnaire related to customer satisfaction was distributed separately to the customers of these companies to determine the degree of satisfaction for those customers about product quality and services provided by their companies. The statistical

units were selected, 22 questionnaires were not returned, and 16 questionnaires were excluded due to lack of validity. 100 questionnaires or 72.5% were used in the statistical analysis.

The questionnaire consisted of five sections, the first one included questions that measure the independent variable total quality management practices, and four sections measure the dependent variables namely: employee satisfaction, product quality, strategic performance and customer satisfaction. To gather data, the researchers designed the questionnaire according to the five-point Likert scale with the following rating: (Strongly disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly agree = 5). The responses' means were classified into three levels high (3.67–5), medium (2.34–3.66), and low (1–2.33). SPSS 17.0 was used for data analysis purposes.

## **Variables of study**

### **1. Total quality management**

Total Quality Management (TQM) is defined as a comprehensive management philosophy that aims to do a continuous improvement for all organization's functions that will lead to provide customers with high quality services (Demirbag et al., 2006). Applying TQM practices has a positive impact on organization's performance, because it will reduce costs and improve performance, employee relationships, customer relationships, product quality, market share, and profitability (Joiner, 2007).

#### **a. Top management commitment**

Top Management Commitment includes the dissemination of quality policy to increase the awareness of employees and motivate them, meeting the customer needs, establishing an efficient and effective quality management system, ensure availability of resources, periodically reviewing for the quality management system, making decisions about quality policy and objectives, making decisions related to the development of quality management. This is reflected in the commitment to employee empowerment, participation, education and training, which positively reflects in the employee satisfaction and thus in the continuous improvement of the operations system and product quality (Abolarin et al., 2013).



### **b. Employee participation**

Workers participation in quality management will help them to acquire a new knowledge and will give them a good feeling regarding achievement. Allowing workers to make suggestions will also give them satisfaction. Recognition and reward are important resources for motivating human resources to innovate and create new methods for doing activities. This will help them improve performance (Sivaprakasam and Hasan, 2010).

### **c. Continuous improvement**

The organization must design its operations in a way that minimizes the likelihood of staff error (Hackman and Wageman 1995). It is a method for identifying opportunities for streamlining work and reducing waste. Organization can use activity based costing outcomes to reduce waste time, improve performance and speed of completion of operations.

### **d. Product design**

Product design is increasingly important, especially in today's competitive business environment, where good design contributes to customer attraction, maximize sales revenue and enhance the competitive advantage of the organization. Product design is a strategic activity it increases the market share and improves the strategic performance for organizations. Products design must touch the wishes and expectations of the customers (Talib et al., 2010).

### **e. Customer focus**

Customer focus is one of the key pillars of TQM. The company's long-term success is associated with its efforts to maintain its ability to respond rapidly to the needs and desires of its customers, as well as to deliver products that meet or exceed their expectations.

The organization must take all procedures that would allow the customer to participate in the design and development of products to reduce quality problems and reduce the gap between the customer's expectations and the final form of the product (Chipandambira, et al., 2012).

## **2. Comprehensive performance**

To achieve the objectives of this study, four aspects of comprehensive performance were adopted.

### **a. Employee satisfaction**

The human resources are one of the most important factors responsible for the institution's competitive advantage and its success in penetrating international markets. The focus on this element through its development and providing them a positive working environment is one of the most important pillars of TQM. These human resources are responsible for implementing most of the strategic and executive decisions of TQM that may give the institution an opportunity to own competitive advantage. Thus, the poor performance of human resources due to the inefficiency of the approved management methods is a major reason for the failure of total quality strategies. Employee satisfaction has a positive impact on business performance. The companies need to focus on employees, meeting their basic needs, supporting and rewarding them, and encourage them to innovation. The satisfaction of workers by providing attractive salaries will help to increase the loyalty of employees and reduce the employee turnover (Zahari and norhayatizakuan, 2016; Jun et al., 2006).

### **b. Product quality**

For competitive purposes, companies should provide products and services with a high quality and reasonable price. TQM is one of the best management practices in the company. In early 1980 TQM had more attention because it can help managers in improving the company's performance. TQM is a new business model to maximize the organization's competitiveness by focusing on customer satisfaction, employee engagement, and continuous improvement for quality, services, people, processes and the regulatory environment (Munizu, 2013).

### **c. Strategic performance**

Strategic performance refers to measures that can be addressed by the board of directors. The board of directors monitors the company performance in terms of achieving its key objectives such as profitability, growth, market share, and annual sales (Mann & Kehoe, 1994). Strategic performance indicates market share, maximize revenue, and / or profit (Naumann & Giel, 1995). The strategic performance in this study was determined as follows: market share, sales revenue growth, and profitability.

### **d. Customer satisfaction**

Customer satisfaction is a psychological state that can be measured by the difference between the customer's expectations and the perceived performance

(Kim, 2016). For succeeding in current competition markets, the organization should consider the customer as the most important element and move away from the concept of sales and focus on the concept of marketing, which starts and ends with the needs and desires of customers and how to satisfy them. Customer satisfaction is very important in the policy of any institution and is considered one of the most effective criteria for judging its performance, especially when the orientation of the institution is towards success in total quality management.

### Reliability test

The researchers carried out reliability test by distributing the questionnaire to the customers and employees of the pharmaceutical companies under study separately. Table (1) shows that the value of stability coefficient ranged between 50.4% and 92.9%. This means that the questions used in the questionnaire have an acceptable stability rate.

**Table 1: Stability and honesty coefficients**

No.	Variables	No. of Questions	Stability coefficient	Honesty coefficient
1	TQM	25	0.929	0.963
2	Employee satisfaction	5	0.546	0.738
3	Product quality	5	0.614	0.783
4	Strategic performance	3	0.618	0.786
5	Customer satisfaction	5	0.504	0.709
6	Total coefficient	43	0.953	0.976

### Results and analysis

#### a. TQM: The independent variable

Table (2) shows the descriptive statistics analysis (mean, standard deviation, percentages and ranking) for responses of the independent variable (TQM) including five main practices: top management commitment, employee participation, continuous improvement, product design and customer focus. Descriptive statistics were calculated for each metric statement and for each variable:

**Table 2: Descriptive statistics of responses for independent variable (TQM) practices**

No.	Statement	Mean	Standard deviation	Percentages	Ranking
.a	Top management commitment				
1	Top management ensures that all employees are aware of the company's objectives	4.09	0.604	0.818	4
2	Top management strives excellence in quality	4.26	0.596	0.852	1
3	Top management allocates adequate and appropriate resources to improve quality	4.19	0.506	0.838	2
4	Top management strongly encourages personnel to participate in quality management and improvement activities	4.06	0.736	0.812	5
5	There are channels of direct communication between top management and employees	3.84	0.598	0.768	16
6	Top management takes care of employees in terms of social, health and safety	4.02	0.619	0.804	8
7	Top management meets its social responsibilities towards society	3.79	0.640	0.758	18
.b	Employee participation				
1	Staff are actively involved in quality activities	3.86	0.696	0.772	15
2	The company strives to adopt employee suggestions with great interest	3.79	0.832	0.758	18
3	The company rewards the distinctive proposals	3.63	0.733	0.726	20

4	The company allocates sufficient resources to educate employees about quality methods	3.88	0.700	0.776	14
.c	Continuous improvement				
1	The company has a coordinating body for quality improvement	4.03	0.758	0.806	7
2	Optimization teams are active in all sections	3.96	0.634	0.792	10
3	The company always excludes excess procedures at work	3.90	0.522	0.78	12
4	The company uses quality improvement techniques and tools extensively	4.11	0.490	0.822	3
5	The company practices continuous improvement for all its products, services and operations	4.16	0.443	0.832	2
.d	Product design				
1	Engineers have high design skills	4.01	0.703	0.802	9
2	The company receives customers' feedback continuously	3.89	0.737	0.778	13
3	Customers' views are taken into consideration when developing products	3.96	0.634	0.792	10
4	The new product is tested carefully before starting production	4.26	0.484	0.852	1
.e	Customer focus				
1	The company collects and analyzes customer complaints information	3.94	0.693	0.788	11
2	Quality complaints are handled with great interest	4.11	0.694	0.822	3
3	The company conducts customer satisfaction on a regular basis	3.80	0.724	0.760	17

4	The company offers guarantees on products sold to customers	3.68	0.694	0.736	19
5	The company is interested in customer suggestions about quality improvement	4.05	0.538	0.810	6
<b>Average</b>		3.97	0.640	0.794	

Table (2) contains 45 statements related to the different components of TQM that are intended to familiarize with the reality of TQM implementation in a group of pharmaceutical companies in Hama and Homs in Syria. The means ranged between (3.63 - 4.26) indicate that which respondents have a good knowledge in TQM and it is available in their companies. This result will be reflected positively on the degree of confidence in the results that will emerge from the study of the relationship between TQM practices and various variables of comprehensive performance of this study.

#### **b. The dependent variables**

Table (3) shows the descriptive statistics of responses for dependent variables: employee satisfaction, product quality, strategic performance, and customer satisfaction.

The statements of employee satisfaction in table (3) shows that the means ranged between (3.66 - 4.12) which indicates an initial satisfaction of employees with their companies but not necessarily absolute satisfaction. However, this matter will be more evident when examining the relationship between TQM and employee satisfaction. For statements of product quality in section (b), the means ranged between (3.60 - 4.44). This suggests the availability of the product quality, where most answers agree and strongly agree. The statements of section (c) related to strategic performance measure the reality of the strategic performance in the pharmaceutical companies. The means ranged between (2.99 - 3.64) which shows a continued improvement in the strategic performance of pharmaceutical companies, either by the continuous increase in market share or the continuous improvement in financial performance through profitability. Finally, the statements of customer satisfaction in section (d) measure the reality of customer satisfaction in the pharmaceutical companies. The means ranged between (3.25 - 3.45) which indicates the availability of customer satisfaction, where most responses were between agree and strongly agree. This result refers to the strong competition among pharmaceutical companies especially under adopting different strategies by those companies to win the loyalty of customers

by offering unique products, high quality of products, competitive prices, or after sales services.

**Table 3: Descriptive statistics of responses for dependent variables  
(Comprehensive performance)**

No.	Statement	Mean	Standard deviation		Ranking
a.	Employee Satisfaction				
1	You are satisfied about benefits and rewards you receive from the company	3.72	0.667	0.744	5
2	Returns and benefits match your qualifications and experience	3.89	0.633	0.778	2
3	Promotion criteria within the company are clear and fair	3.66	0.912	0.732	4
4	Your direct supervisor and colleagues are constantly supporting you	3.83	0.876	0.766	3
5	Are you satisfied with your work	4.12	0.902	0.824	1
<b>Average</b>		3.84	0.798	0.768	
b.	Product Quality				
1	Your products have a high performance and reliability	3.82	0.796	0.764	3
2	The matching rates for your products are good	4.31	0.837	0.862	2
3	Defective product rates are low	3.82	0.808	0.764	3
4	Internal failure costs in your products are low	3.60	0.887	0.72	4
5	The company adopt High specifications for its products	4.44	0.868	0.888	1
<b>Average</b>		3.99	0.839	0.799	
c.	Strategic Performance				
1	Your company's market share is improving constantly	2.99	1.087	0.598	3
2	Your company's sales volume is improving constantly	3.22	1.040	0.644	2
3	Your company's profitability is increasing constantly	3.64	1.068	0.728	1

Average		3.28	1.065	0.656	
d.	Customer Satisfaction				
1	Dealing with this company is considered a sound decision	3.43	1.335	0.686	3
2	I feel an emotional connection between me and the company I deal with	3.53	1.374	0.706	1
3	I feel an emotional connection between me and the company	3.51	1.344	0.702	2
4	I will continue to deal with this company, because of my previous experience with it	3.25	1.445	0.65	2
5	I am satisfied with the company's efforts with its customers	3.35	1.409	0.67	4
<b>Average</b>		3.45	1.157	0.69	

## Test of hypotheses

### 1. Hypothesis 1 test

The first hypothesis states that "There is no significant relationship between TQM practices and employee satisfaction".

Table (4) shows that the correlation coefficient between the independent variable "TQM" and the dependent variable "employee satisfaction" is 0.399, which is a weak relationship, and the direction of this relation is positive. This indicates that any increase in one variable will be accompanied by an increase in the other variable and vice versa. The value of the selection factor is 0.159. This indicates that the independent variable affects 15.9% of changes in the dependent variable. In other words, changes in the independent variable explain 15.9% of changes in the dependent variable, and the remaining percent is due to other random factors. Table (4) shows a significant relationship between the independent variable (TQM) and the dependent variable (employee satisfaction)  $P = 0.000$ . Therefore, we reject the null hypothesis and accept the alternative hypothesis that there is a significant relationship between TQM practices and employee satisfaction.

The weak relationship between TQM and employee satisfaction can be explained by the fact that those employees spend great efforts according to TQM requirements, while benefits and rewards they receive do not often match their efforts. This result is supported by Al-Damen (2017) who showed a positive



impact of TQM on operation efficiency and employee satisfaction.

## 2. Hypothesis 2 test

The second hypothesis states that “There is no significant relationship between TQM practices and product quality”. Table (4) shows that the correlation coefficient between the independent variable “TQM” and the dependent variable “product quality” is 0.894, which is a strong relation and the direction of this relation is positive. This indicates that any increase in one variable will be accompanied by an increase in the other variable and vice versa. The value of the selection factor is 0.799. This indicates that changes in the independent variable explain 79.9% of changes in the dependent variable, and the remaining percent is due to other random factors. The value ( $P = 0.000$ ) indicates a strong and significant relationship between the independent variable and the dependent variable with a correlation factor of 0.894. Therefore, we reject the second null hypothesis and accept the alternative hypothesis that there is a significant relationship between TQM practices and product quality. This is a natural result since the TQM philosophy takes upon itself to make radical changes to all performing activities within the organization, including changing work processes and performance systems to improve and develop all the components of the organization to achieve the highest quality in its outputs (goods and services) with a lowest cost. Therefore, this will be reflected in improving the operational and tactical performance. In other words, the strong relationship between TQM and product quality can be explained by the fact that TQM focuses on adopting advanced methods to perform the internal activities. These methods would reduce product defects and production cycle time, thus improving product quality. This result is supported by Bon and Mustafa (2013) and Zehir et al. (2012) who found a positive relationship between TQM and product and service development, innovation, quality and innovation.

## 3. Hypothesis 3 test

The third hypothesis states that “There is no significant relationship between TQM practices and strategic performance”. Table (4) shows that the correlation coefficient between the independent variable “TQM” and the dependent variable “strategic performance” is 0.751, which is a strong relation and the direction of this relation is positive. This indicates that any increase in one variable will be accompanied by an increase in the other variable and vice versa. The value of the selection factor is 0.564. This suggests that changes in the independent variable explain 56.4% of changes in the dependent variable, and the remaining percent is due to other random factors. The value ( $P = 0.000$ ) indicates a

significant relationship between the independent variable and the dependent variable. Therefore, we reject the third null hypothesis and accept the alternative hypothesis that there is a significant relationship between TQM practices and strategic performance. The strong relationship between TQM and strategic performance can be explained by the fact that the continuous improvement in product quality would lead to increase customer loyalty, thus increasing in sales and market share, which will be reflected in increasing profitability and improving the financial performance. This result is supported by Al-Damen, R. A. (2017) who found a direct relationship between total quality management and organizational performance.

#### **4. Hypothesis 4 test**

The fourth hypothesis states that “There is no significant relationship between TQM practices and customer satisfaction”. Table (4) shows that the correlation coefficient between the independent variable “TQM” and the dependent variable “customer satisfaction” is 0.837, which is a strong relation and the direction of this relation is positive. This indicates that any increase in one variable will be accompanied by an increase in the other variable and vice versa. The value of the selection factor is 0.701. This suggests that changes in the independent variable explain 70.1% of changes in the dependent variable, and the remaining percent is due to other random factors. The value ( $P = 0.000$ ) indicates a significant relationship between the independent variable and the dependent variable. Therefore, we reject the fourth null hypothesis and accept the alternative hypothesis that there is a significant relationship between TQM practices and customer satisfaction. The strong relationship between TQM and customer satisfaction can be explained by the fact that TQM focuses on improving product quality and reducing the costs of performing activities, which will be reflected positively in customer satisfaction, increasing in market share, improving in profitability, and improving in strategic performance. This result agrees with Kim, (2016), Golmohammadi et al. (2014), and Kaur and Sharma (2014) who showed a significant relationship between total quality management and customer satisfaction.

**Table 4: Correlation analysis for the relationship between independent and dependent variables**

<b>Sig.Sig</b>	<b>F</b>	<b>Sig. 2-tailed</b>	<b>R Pearson correlation</b>		<b>Variables</b>
0.000	18.595	0.000	0.399		TQM/Employee satisfaction
0.000	390.434	0.000	0.894		TQM/Product quality
0.000	126.602	0.000	0.751		TQM/ Strategic performance
0.000	229.966	0.000	0.837		TQM/Customer satisfaction
<b>R Square</b>	<b>Sig.</b>	<b>T</b>	<b>B* Regression coefficient</b>	<b>Model constant</b>	
0.159	0.000	4.312	0.413	2.010	TQM/Employee satisfaction
0.799	0.000	19.759	0.860	0.537	TQM/Product quality
0.564	0.000	11.252	0.733	0.831	TQM/ Strategic performance
0.701	0.000	15.165	0.769	0.945	TQM/Customer satisfaction
(Y = a + bx (Regression equation*)					

### Conclusions

The study concludes that the application of TQM is generally reflected in the firm's comprehensive performance. Companies follow a strong policy of customer service, as well as interest in improving product quality and strategic performance. The study shows a positive and significant relationship between TQM practices and customer satisfaction, product quality and strategic performance. As for employee satisfaction, the study suggests the need to develop a new strategy ensuring that employees are involved in decision-making, so that will lead to gain their loyalty and improve their satisfaction. Maintaining a high level of employee satisfaction will lead to a continuous improvement in operation systems and product quality. This will lead to improvement in customer satisfaction and thereby increase sales volume. Increasing sales revenues will be reflected in a higher market share which will improve profitability and achieve progress in the firm's comprehensive performance. The results of this study will help companies

benefit from the opportunities provided by the positive aspects that have been concluded and avoid the threats and negative factors that affect the satisfaction of employees and the comprehensive performance of companies.

The results of this study will help companies better understanding of TQM to take advantage from applying it to enhance the relationship with customers and employees and improve product quality and performance. Certain limitations have been observed in this research, for example, the research covered only one region from the country and small number of the companies in the sample. For the future research, we recommend covering more cities and to include more companies in the sample. Considering more variables also would be an appropriate future research leading to more comprehension of the benefit of TQM implementation.

### **Recommendation**

The study recommends that companies need to focus on employee's satisfaction, because it reflects positively on companies and institutions by achieving the desired benefit and improving the comprehensive performance. The companies also need to focus on product quality by enhancing the application of TQM and maintaining a high level of product quality. Keeping a high level of product quality will lead to improve the strategic performance through attention in applying TQM that will reflect positively on the comprehensive performance. The companies should also support their customers by enhancing the application of TQM which will result in a high level of customer satisfaction.

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