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THE RELATIONSHIP BETWEEN IMPLEMENTING ISO 9001:2015 QUALITY MANAGEMENT SYSTEM AND CUSTOMER SATISFACTION: A SAMPLE STUDY OF PHARMACEUTICAL AND MEDICAL SUPPLIES COMPANIES IN IRAQ

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Abstract

This study examined the effect of implementing ISO 9001:2015 Quality Management System on customer satisfaction in pharmaceutical companies in Iraq. A quantitative methodology was used, questionnaires were distributed to (150) employees from four companies, and (111) responses was collected. The results showed a major positive effect of the Quality Management System on customer satisfaction. The study also revealed a strong relationship between Quality Management Systems and customer satisfaction, indicating that health institutions that adopt such systems are very effective.

Keywords: Quality System; ISO 9001:2015; Customer Satisfaction; Pharmaceutical Companies; Iraq.

Introduction:

The issue of quality and its management is one of the topics that received great attention recently, as it has become commonly discussed in many administrative publications. In light of these challenges, quality has become a competitive asset, especially with the emergence of international standards for Quality Management Systems that industrial organizations seek to implement, as well as obtaining an ISO certificate to improve their performance and gain a competitive advantage.

Pharmaceutical and medical supplies companies play an important role in the health care system by providing basic medicines and medical supplies for health care organizations. In recent years, there has been an increasing focus on quality management in the pharmaceutical and medical supplies industry, especially with the adoption of different standards and certificates, such as ISO 9001, which is an international standard that is widely recognized for Quality Management Systems that aim to ensure that products, customer requirements and regulatory requirements are effective, safe, and of high quality. (ISO, 2015)

Some studies such as the ones done by David Cooper and David Otley in 2004 in Britain have proven that implementing ISO 9001 has a positive impact on the quality of the performance of organizations in various sectors (Cooper & Otley, 2004); these studies were published in the Journal of Management and Organization (Henttonen & Korhonen, 2011).

This study analyzed data in more than (300) Finnish organizations, and found that organizations which have an ISO 9001 certificate have higher levels of quality and financial performance compared to those which do not have it.

The health care sector in Iraq was greatly affected by the continuous conflict and political instability in the country. According to the report issued by the International Committee of the Red Cross (ICRC) in 2020, the health care system in Iraq was "severely affected" during years of violence, as many hospitals and clinics were damaged and destroyed, and health care workers were targeted. This has led to a shortage in health care facilities and employees, which made it difficult for many Iraqis to access the health care they need. (ICRC, 2020).

The report also indicates that the health care system in Iraq is highly centralized, since most health care facilities and employees are located in civilized areas. This has led to a situation in which access to health care is more complicated in rural areas affected by the conflict. In addition, the report indicates that the health care system is also affected by the lack of financing and investment, as many hospitals and clinics lack basic equipment and supplies. (ICRC, 2020).
The situation has exacerbated due to the economic crisis, which led to a decrease in the purchasing power of citizens, and thus increasing the number of patients who are unable to afford health care costs. According to the World Bank report (2020), the economic crisis and the COVID-19 epidemic exacerbated the challenges facing the health care system in Iraq, where many people have lost their jobs and were unable to afford health care costs. .(World Bank, 2020)
One of the special sectors in the Iraqi health care system is the pharmaceutical and medical supplies sector. According to the report issued by the World Health Organization (WHO) in 2020, the pharmaceutical and medical supplies sector in Iraq suffers from the absence of the organization and control, which led to a high degree of corruption and illegal activity. The report also indicates that there is a lack of control and regulation related to: distributing, storing, and selling medicines and medical supplies; therefore, low-quality and fake medicines and medical supplies are sold to patients. (World Health Organization, 2020).
Another major issue facing this sector in Iraq is the lack of basic medicines and medical supplies. According to the World Health Organization report, the Ministry of Health is responsible for buying basic medicines and medical supplies, but it lacks the capabilities and resources necessary to do this effectively. As a result, there is often a lack of these basic products, especially in rural areas affected by the conflict. This has led many patients to lose access to medications and medical supplies they need; also, the quality of products currently available is often suspicious.
Moreover, the economic crisis had a severe impact on the pharmaceutical and medical supplies industry in Iraq, as the purchasing power of citizens decreased significantly, which led to a shortage of these products in the market. According to the World Bank report (2020), the economic crisis led to the high prices of medicines and medical supplies, which made it difficult for many people to bear the costs of health care. (World Bank, 2020)
A study by Psomas et al. (2015) indicated that the corrective conceptual structure analysis clearly affected the effectiveness of the ISO 9001 Quality Management System in its following dimensions: the internal motivation and characteristics of the company, as well as employees' characteristics. (Neyestani, 2016). The Quality Management System has a major impact on customer satisfaction. A study by Kiew et al. (2016) showed that Implementing the ISO 9001 Quality Management System has improved the company's image in the construction industry, improved the company's management benefits, solved quality problems in emerging construction processes, reduced failure costs and liability risks, complied with government requirements, and met the requirements of its owners and customers. (Int, Chem., 2019). Customer satisfaction is the most important reason for implementing the quality system; the proper implementation of quality standards is the responsibility of all employees, members, and managers in the company; also, implementing the quality system provides oil and gas services to customers with high quality. (Nestor, 2019).
It turns out that involving employees in leadership activities positively affects the performance of the university, as the commitment of officials in the continuous development process and focusing on the customer has positive effects on the performance of the university; the study also found that the positive impact of the ISO 9001 certificate was clearer in the higher level of focusing on customers. Although many studies have been conducted before, there is not much known about the relationship between the ISO 9001 certificate and customer satisfaction in

pharmaceutical companies and medical supplies in Iraq. As such, the study will try to implement the ISO 9001 Quality Management System to the quantitative indicator system to measure customer satisfaction in companies that import medicines and medical supplies in Iraq (in Baghdad Governorate, Basra Governorate, and Salahuddin Governorate in particular).

Study Problem:

Professional companies always seek to improve their performance daily to achieve material and moral profits by increasing production and sales on the one hand, and to satisfy customers on the other hand. Therefore, companies implement ISO 9001 Quality Management System which focuses on providing high-quality products and services to their customers and sets approved procedures for employees. Due to the importance of quality in the pharmaceutical sector, especially in developing countries that require continuous development, the implementation of the ISO 9001:2015 quality system can have a significant impact on the performance of pharmaceutical companies in Iraq. This study will study the relationship between the various aspects of implementing the ISO 9001:2015 Quality Management System and customer satisfaction within these companies.

Study Hypotheses:

To answer previous questions and other questions, the study is based on the following basic hypothesis, which are:

There is a relationship between implementing the ISO 9001:2015 Quality Management System and the satisfaction of customers in the pharmaceutical and medical supplies companies in Iraq, and this hypothesis includes the following sub-hypotheses:

There is a relationship between implementing the ISO 9001:2015 Quality Management System regarding the dimension of (Customer Focus) and (Customer Satisfaction) in the pharmaceutical and medical supplies companies in Iraq.

There is a relationship between implementing the ISO 9001:2015 Quality Management System regarding the dimensions of (Leadership) and (Customer Satisfaction) in pharmaceutical and medical supplies companies in Iraq.

There is a relationship between implementing the ISO 9001:2015 Quality Management System regarding the dimension of (Support) and (Customer Satisfaction) in the pharmaceutical and medical supplies companies in Iraq.

There is a relationship between implementing the ISO 9001:2015 Quality Management System regarding the dimension of (Operations) and (Customer Satisfaction) in the pharmaceutical and medical supplies companies in Iraq.

There is a relationship between implementing the ISO 9001:2015 Quality Management System regarding the dimension of (Performance Appraisal) and (Customer Satisfaction) in the pharmaceutical and medical supplies companies in Iraq.

There is a relationship between implementing the ISO 9001:2015 Quality Management System regarding the dimension of (Development) and (Customer Satisfaction) in pharmaceutical and medical supplies companies in Iraq.

The Significance of the Study:

Customer satisfaction is the capital of the company, and service quality is one of the most important foundations for the company to obtain this satisfaction. The company strives to achieve customer satisfaction by providing excellent service and products. Failure to achieve customer satisfaction will cause negative results towards the company and what it provides, leading customers to not deal with it again and search for another company. This study seeks to discover the Quality Management System and apply it to customer satisfaction in pharmaceutical and medical supplies companies, which is very important academically and practically.

Study Objectives:

The study aims to measure the impact of implementing the 9001 ISO Quality Management System in the company's performance in gaining customer satisfaction. The purpose of measuring this effect is to discover the extent of its influence on the benefits of implementing the Quality Management System by measuring the customer satisfaction index in companies that import pharmaceuticals and medical supplies in Iraq. It also aims to discover the strengths and weaknesses of the Quality Management System applied to enhance the strengths and address the weaknesses, which will improve it continuously; it also seeks to increase customers' confidence in the products provided by the company to achieve the results that help improve the competitive position of the company and ensure its existence in the drug market.

Defining Study Terms:

ISO: It is the largest international standardization organization specialized in creating and issuing international specifications. It is located in Geneva and includes more than 155 national standards. The most common type of ISO certificate is ISO 9000 that focuses on quality management; this certificate proves that the company which is capable of obtaining it applies all standards and guidelines at a high quality, so it can use specific tools to meet customer requirements. Also, the ISO 9001 certificate is derived from ISO 9000, and it deals with the principles of quality management, focusing on customer needs and following the policy of continuous improvement of the product. (ISO, 2015).

Quality Management System: It is an official approved system that documents the processes, procedures, and responsibilities that achieve quality policies and their goals, and helps in coordinating and directing companies' activities to meet the needs of the customer, organizational requirements, and improve their effectiveness constantly. It includes all steps taken to ensure the production of company products and services according to the required specifications and at the appropriate cost. It also ensures that the product or service reaches the customer on time. This process also guarantees that the company's product or its service is coordinated, and it focuses on the quality of the product and service, as well as the ways to achieve this. (ASQ, 2022).

Organizational Performance: It relates to the efficiency of the company and its effectiveness in achieving its goals. Organizational performance is usually measured by various measures, such as: financial performance, customer satisfaction, employee satisfaction, increased sales, and operational efficiency. (E. B. R. Al-Arabiya, 2022).

Leadership: Leadership is necessary in maintaining unity between employees to achieve interconnected goals. Kobiruzzaman (2022) indicated that leaders can form an appropriate environment to work effectively, in which all employees work to achieve the organization's goal. Therefore, the principle of leadership appears to be an important principle of Total Quality Management.

Support: People of all levels exert their total efforts and dedication in achieving the organization's profits, as the entire employee's commitment enables the development of products and increases sales growth. Therefore, employees of the organization should be well trained, committed, and loyal to achieving an interconnected goal. Moreover, the industry needs to create a responsive environment, in which each employee will be motivated to complete the task properly. Effective motivation and retaining employees can satisfy customers, and the participation of workers can achieve effective collective work. (Kobiruzzaman, 2022).

Operations: The company needs to improve operations continuously to obtain customer satisfaction. Hence, Total Quality Management focuses on the operation as an approach to ensuring the quality of the product or service. (Kobiruzzaman, 2022).

Development: The development of the process is an essential step for every industry to make its customers satisfied. Therefore, Total Quality Management helps the company with

continuous improvement of its services or products. Above all, the continuous improvement of the company helps in achieving competitive advantage, which is the most important principle among the eight principles for Total Quality Management. (Kobiruzzaman, 2022).
Customer Satisfaction: Customer satisfaction indicates the degree of the customers' satisfaction with the products or services they received from the company. It is a measure of the extent to which the company's products or services fulfill customer expectations or exceed them. In other words, customer satisfaction is the feeling of satisfaction that the customer feels after receiving and evaluating the product or service. It is a major indication of the organization's success, closely related to the performance of business, and high levels of customer satisfaction are associated with increased loyalty. (Kobiruzzaman, 2022).

Study Limitations:

- Spatial limitations: It was a field study in four pharmaceutical companies in Iraq located in: Baghdad Governorate, Basra Governorate, and Salahuddin Governorate.
- Time limitations: the field research has gone through three basic stages in general in which data was collected, and this process started with: The first stage: This stage included collecting private data questions and adding other important questions to the research.
- It also included reconsidering the way to ask the questions to patients, as it has been taken into account that the questions should be understood by some patients.
- It included the field application for the form starting from 2022-2023.

Study Approach:

The current study uses the quantitative method, which is one of the practical methods used in administrative research; the quantitative method is based on the principle of quantitative measurement for this observation according to the quantitative method of monitoring a specific phenomenon, determining its size, determining the test method, and the quantitative method depends on the tools.

Data Collection Methods:

The data collection process is important, through which data and information needed to implement search requirements in each step is obtained; data collection process includes several tools depending on the research methods used in the study.
The questionnaire has been used in this study; the researcher uses the questionnaire tools to obtain information related to the search variables designed for: collecting, unloading, arranging, analyzing, and extracting the results from them to achieve research goals; this is based on creating questions regarding research issues and hypotheses that researchers must answer.
The questionnaire was divided into 3 parts:
Part 1: It is the personal variables data for the statistical community sample. Part 2: it deals with implementing the ISO 9001:2015 Quality Management System. Part 3: deals with customer satisfaction.

- Part 1: It includes (personal features) that can have an effect on the difference in the awareness of the sample towards the study variables.
- Part 2: It contains (35) items related to the ISO 9001:2015 Quality Management System. 2015.
- Part 3: it consists of (6) items aimed at highlighting the aspects on which customer satisfaction is based on.

Table No. (1): Likert five-point scale

Response	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
Score	5	4	3	2	1

Study Community:
The study community is represented by four pharmaceutical and medical supplies companies in Iraq, specifically in: Baghdad Governorate, Basra Governorate, and Salahuddin Governorate. Below is a profile of these pharmaceutical companies; these companies have witnessed an evolution in terms of their number and structure levels, as well as the level of drug and medical supplies distribution.

Study Sample:
The researcher chose a intentional, appropriate, and guided sample of the managers and engineers, who are decision-makers, from the target community of four companies for pharmaceutical and medical supplies in Iraq to carry out the practical study, specifically in: Baghdad Governorate, Basra Governorate and Salahuddin Governorate. An electronic questionnaire, containing a number of acceptable responses, has been distributed; this questionnaire is suitable for analysis. As for the characteristics of the demographic sample referred to in Table No. (3-2), it can be summed up in the following:

Table (2): Repetitions and percentages of demographic variables of the study sample

Gender	No.	Percentage %
Male	63	56.8%
Female	48	43.2%
	111	
Age	No.	**Percentage %**
Less that 20 years	29	26.1%
From 20 to 30	56	50.5%
From 30 to 40	12	10.8 %
From 40 to 50	14	12.6%
	111	
Academic Qualification	No.	**Percentage %**
n/a	15	13.5%
Elementary school	12	10.8%
Bachelor	16	14.4%
Master's	58	52.3%
PhD	10	9.0%
	111	
Years of Experience	No.	**Percentage %**
Less than 1 year	16	14.4%
From 1 to 3 years	13	11.7%
From 3 to 5 years	18	16.2%
From 5 to 10 years	25	22.5%
More than 10 years	39	35.1%
	111	
Job Category	No.	Percentage
Administrative	67	65%
Technical	44	35%
	111	100%

Based on Table (2), the percentage of men prevails in pharmaceutical and medical supplies companies, as it reached (56.8 %) of the study sample, while the percentage of women reached (43.2 %). We conclude that men are more inclined to seek employment in these companies than women. Table 2 also shows that the age group of 20-30 is the largest percentage in regards to pharmaceutical and medical supplies companies, reaching (50.5 %) of the study sample; the

remaining percentage is estimated at (26.1 %), which is the largest percentage of the survey sample, as (12.6 %) and (10.8 %) of the respondents are from the remaining categories. The percentage of holders of a master's degree was (52.3%), while the rest of the percentages were distributed as follows: (10.8%) for elementary school. It is also evident from Table No. (2) that the members of the study sample who have more than 10 years of experience were (35.1%), while the rest of the percentages were distributed as follows: (22.5%) for members of the sample who have 5-10 years of experience, (16.2%) for members who have 3-5 years of experience, (11.7%) for members who have 1-3 years of experience, and (14.4%) for members who have less than one year of experience.

Study Variables and Model:

Stevenson (2007) identifies the main principles and elements of ISO 9000 quality standards, including ISO 9001:2015, which are as follows: Customer focus, leadership, support, operations, performance appraisal, and development (Figure No. 1).

Figure 1: ISO 9001: 2015 Principles and Implementation of Total Quality Management Source

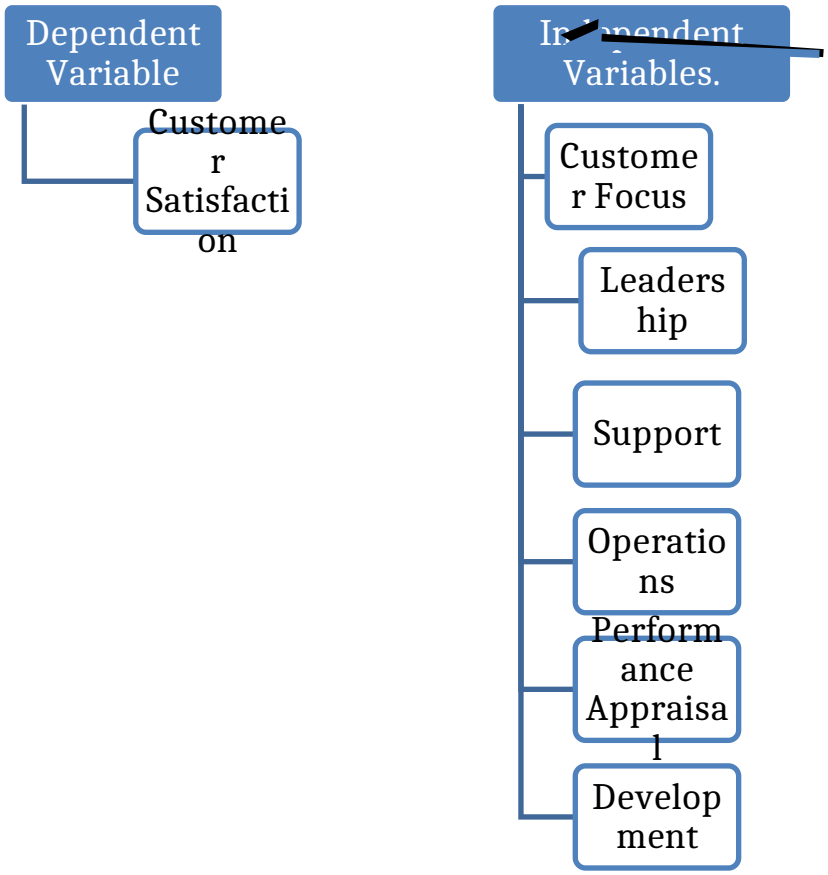

Figure 2: A model for the relationship between services focusing on the customer and customer satisfaction. Prepared by the researcher

Accuracy of the Questionnaire:
Since the effectiveness of the questionnaire depends on testing the effectiveness of the study based on relevant scientific research, the effectiveness of the questionnaire is taken into account when choosing a research question to match the study problem. Therefore, after preparing a questionnaire based on the published scientific literature and presenting it to the supervising professor to indicate how suitable these questions are with the study variables; some items were modified, and those which were not suitable with the study variables were canceled. Then it was submitted to three arbitration experts at Al-Jinan University to ensure the authenticity of the independent and dependent variables items, the interconnection between them, and the dimensions represented by the ISO 9001:2015 Quality Management System and customer satisfaction; a series of notes was made in terms of form and content, and all the notes were taken into account after the supervising professor has reviewed them. Questions were clear and comprehensive by the research community members; finally, we used the SPSS statistical program to conduct KMO and Bartlett's test to determine the validity of the samples. The factors analysis was performed to identify the most powerful and sufficient domain. Table (3) shows the approved level of acceptance of this test, which is more than 60 %. (KMO and Bartlett, 2020)

Table No. (3): KMO and Bartlett's adequate levels of acceptance

KMO value	Adequacy
0.90 and above	Excellent
0.90-0.80	Very good
0.80-070	Good
0.60 -0.70	Satisfactory
0.50 and less	Weak and inadequate

As such, Table No. (4) shows that the condition of the sufficiency of the study sample is available, as the Kaiser-Meyer-Olkin (KMO) value was (0.779), which is a good value for conducting the study according to the classification levels in Table No. (5).

Table No. (4): (KMO) and (Bartlett) Test

Kaiser-Meyer -Oikin Measure of Sampling	0.779
Approx. Chi- Square	2176.605
Bartlett's Test of Sphericity df	666
Sig	0.000

Study Stability:
This means that the data collected through the questionnaire gives relatively stable results; stability is verified through the application of the Cronbach's Alpha format that shows the strength of the correlation and consistency between study variables, and the value of the stability factor is limited between (0.0 and 1.0). If the value of the stability factor is high, this is a good indication of the stability of the questionnaire; it is known that the stability factor is acceptable at (0.6).
It is clear from Table No. (5) that the Cronbach's Alpha value for the independent variable (implementing ISO 9001:2015 Quality Management System) was high at (0.942) and the Cronbach's Alpha value of the dependent variable (Organizational Excellence) was high at (0.956), which is strong and good; the stability ratio for both of the independent variables was high at (0.954), which is a good ratio for conducting research and answering research questions to test hypotheses.

Table No. (5): Stability results using Cronbach's Alpha factor

Domain	Independent Variable Implementing the Quality Management System	Stability value (Cronbach's Alpha)	Acceptability

1	Customer Focus	.942	Good
2	Leadership	.939	Good
3	Support	.940	Good
4	Operations	942.	Good
5	Performance Appraisal	.950	Good
6	Development	.942	Good
The value of Cronbach for the independent variable is 952.			Good
1	The variable (Customer Satisfaction)	.956	Good
The value of Cronbach for the dependent variable is 956			Good
The value of independent and dependent variables is 0.954, which is a good percentage			

Analyzing the Study Variables:

Independent Variable:

The first dimension: Customer Focus:

We see from Table (6) that the general arithmetic mean of the (Customer Focus) dimension was at a high level of (3.84) with a general standard deviation of (0.958); the highest percentage of the (third) item confirms that the company offers reliable and fast services to customers, since the arithmetic mean was (3.88) with a standard deviation of (0.902). The lowest percentage was for item No. (1); also, the company considers the customer's requirements to be essential, since the arithmetic mean was (3.73) with a standard deviation of (1.035). This generally indicates that the role of the pharmaceutical and medical supplies company is good in terms of providing the necessary requirements.

Table No. (6): The arithmetic mean, standard deviation, and relative significance for the (Customer Focus) dimension

	Arithmetic Mean	Standard Deviation	Significance
1	3.73	1.035	7
2	3.86	.962	4
3	3.88	.902	1
4	3.84	1.049	6
5	3.87	.896	2
6	3.86	.919	3
7	3.85	.946	5
	3.84	**.958**	

The second dimension: Leadership:

The general arithmetic mean of the (Leadership) dimension was at a high level of (3.77) with a general standard deviation of (0.992); the highest relative significance was for item (6) which indicates that the administration encourages employees to participate in decision-making regarding quality and continuous improvement. It had an arithmetic mean of (3.97) and a

standard deviation of (.958). As for the lowest percentage, it was for item (3), which indicates that senior management provides incentives for the departments that achieve quality goals, with an arithmetic mean of (3.65) and a standard deviation of (.960), indicating that the company has the desire to provide and try incentives to achieve its goals, as shown in Table No. 7.

Table No. (7): The arithmetic mean, standard deviation, and the relative significance of the (Leadership) dimension.

	Arithmetic Mean	Standard Deviation	Significance
1	3.74	1.015	4
2	3.73	.891	5
3	3.65	.960	6
4	3.82	1.029	2
5	3.76	1.011	3
6	3.97	.958	1
	3.77	**.992**	

The third dimension: Support:

Table No. (8) indicates that the total of the general arithmetic mean of the (Support) dimension was good at (3.82) with a general standard deviation of (0.969); item (4) had the highest relative significance, which indicates that the company assigns a competent work team to implement the ISO 9001 Quality Management System effectively, with an arithmetic mean of (3.99) and a standard deviation of (.929). The lowest significance was for item No. (6),which indicated that employees realize the challenges that can arise from a specific problem, with and arithmetic mean of (3.59) and a standard deviation of (0.994), meaning that the company has the desire to take risks and try new opportunities.

Table No. (8): The arithmetic mean, standard deviation, and relative significance for the (Support) dimension.

	Arithmetic Mean	Standard Deviation	Significance
1	3.85	.955	4
2	3.73	.962	5
3	3.92	.936	2
4	3.99	.929	1
5	3.88	1.042	3
6	3.59	.994	6
	3.82	**.969**	

The fourth dimension: Operations:

Table No. (9) indicates that the general arithmetic mean of the (Operations) dimension was at a high level of (3.85) and a general standard deviation of (1.024); this confirms that the relative significance of item (2) is higher, with its arithmetic mean of (3.95) and its standard deviation of (1.017), indicating that precautionary measures are taken to reduce the negative effects that may result from change.

Item No. (3) had the lowest percentage, which indicated that services are designed or developed based on the ISO 9001 standard, with an arithmetic mean of (3.76) and a standard deviation of (1.029), meaning that the company has the desire to implement the quality standard. The value of the standard deviation was approximately 1, which indicates that the data dispersion is small, the data is completely consistent, and is not significantly variable, which facilitates extracting conclusions about the data.

Table No. (9): Arithmetic means, standard deviations, and the significance of the (Operations) dimension

	Arithmetic Mean	Standard Deviation	Significance
1	3.88	.979	3
2	3.95	1.017	1
3	3.76	.996	6
4	3.84	1.049	4
5	3.91	1.049	2
6	3.78	1.074	5
	3.85	**1.024**	

The fifth dimension: Performance Appraisal:

We see from Table No. (10) that the general arithmetic mean for the (Performance Appraisal) dimension was at a good level of (3.84) and a general standard deviation of (0.943); the (third) item, which stated that the company sets criteria to measure the extent of the compatibility of customers' needs with the services provided, had an arithmetic mean of (3.90) and a standard deviation of (.924); item (4) had the lowest percentage with an arithmetic mean of (3.77) and a standard deviation of (1.009), which stated that the company measures its actual performance indicators against the desired goals.

Table No. (10): Arithmetic means, standard deviations, and relative significance for the (Performance Appraisal) dimension.

	Arithmetic Mean	Standard Deviation	Significance
1	3.83	.913	2
2	3.82	.926	3
3	3.90	.924	1
4	3.77	1.009	4

	3.84	**.943**	

The sixth dimension: Development:

Table No. (11) indicates that the general arithmetic mean of the (Development) dimension was at a high level of (3.88) with a general standard deviation of (1.296) and a high relative significance of (5), indicating that workers have the characteristics of initiative and risk taking with the aim of excelling in their job. Item No. (5) had a higher significance, with an arithmetic mean of (3.42) and a standard deviation of (1.06), indicating that both companies had the desire to risk and try new opportunities.

Table No. (11): Arithmetic mean, standard deviation, and relative significance for the (Development) dimension

	Arithmetic Mean	Standard Deviation	Significance
1	3.80	.913	4
2	3.76	.926	5
3	3.89	.924	3
4	3.91	1.009	2
5	4.00	1.176	1
	3.88	**1.296**	

It is clear from the above that all the dimensions of the quality system: (customer focus, leadership, support, operations, performance appraisal, and development) are important in achieving customer satisfaction, since the sixth dimension comes first among the dimensions of the independent variable, with an arithmetic mean of (3.88) and a standard deviation of (1.296), indicating that companies which take the necessary measures to improve their services in order to enhance customer satisfaction have a positive role, since they adopt the continuous improvement plan to stay aligned with the quality of service. The company implements the suggestions and ideas provided related to development within the company. Next, (Operations) comes in the second place with an arithmetic mean of (3.85) and a standard deviation of (1.024), which indicates that the company performs the planning and implementation of changes for any process/service in a controlled manner. Precautionary measures are also taken to reduce the negative effects that may contribute to change; also, the company provides post-sales services.

Then, the (Performance Appraisal) variable comes in the third place as one of the dimensions of the independent variable with an arithmetic mean of (3.84) and a standard deviation of (.943), indicating that the company is performing a comprehensive evaluation process regularly. It also uses internal audits to evaluate the Quality Management System. It also measures its actual performance indicators against the desired goals.

As for the fourth place, it was for the (Customer Focus) dimension with an arithmetic mean of (3.84) and a standard deviation of (.958), which requires the company to discover ways to improve its main product (or service) to achieve the highest satisfaction of customers. Companies are also improving in regards to complaints and suggestions. As for the fifth place, it was for the (Support) dimension with an arithmetic mean of (3.82) and a standard deviation of (.969), which also requires companies to provide the resources necessary to implement the ISO 9001 Quality Management System. Companies are also striving to discover ways to provide the necessary information in order to match products and services with customer needs to improve the main product (or services) to achieve the highest satisfaction of customers. Finally, the (Leadership) dimension had an arithmetic mean of (377) and a standard deviation

of (.992), which also requires companies to emphasize that the higher management should implement Quality Management System policies and goals clearly. Higher management also provides incentives for the departments that achieve quality goals. Moreover, higher management must also conduct periodic reviews of the performance of the company to verify that the quality goals have been achieved.

The dependent variable (Customer Satisfaction):

The study results showed that the dependent variable (Customer Satisfaction) had an arithmetic mean of (3.99) and a standard deviation of (0.938) with a good level according to Likert five-point scale, indicating that the company considers customer satisfaction as a priority. Companies also bear the responsibility for any error and provide an appropriate solution. In general, the customer feels comfortable dealing with the management of pharmaceutical companies.

Table No. (12): Arithmetic means, standard deviations, and relative significance of the dependent variable

	Arithmetic Mean	Standard Deviation	Significance
1.	3.92	1.071	6
2.	3.95	1.004	5
3.	4.01	.879	3
4.	4.05	.928	2
5.	4.05	.862	1
6.	3.97	.889	4
7.	**3.99**	**.938**	

Results of the correlation coefficient of variables:

Before testing our study hypotheses, the Spearman correlation coefficient was applied through the SPSS program to verify the relationship between the dimensions of the independent variable (Quality Management System) and the total dependent variable (Customer Satisfaction).

Table No. (13) indicates a direct relationship between the dimensions of the system with statistical significance.

Quality compared with customer satisfaction:

- The correlation coefficient between the (Quality Management System) and (Customer Satisfaction) is less than the level of (0.01) (0.865), reaching the significance level of 0.000, which indicates a strong direct relationship between the (Quality Management System) and (Customer Satisfaction); this means that the customer satisfaction increases as the quality of the system increases.

The value of the correlation coefficient between the (Cusomer Focus) dimension and (Customer Satisfaction) was (0.522) with a significance level of (0.01), which is less than (0000). This means that there is a strong direct relationship between (Customer Focus) and (Customer Satisfaction), indicating that the more quality is effective, the better customer satisfaction becomes.

- There is a statistically significant level between (Leadership) and (Customer Satisfaction) at (0.529), which is less than the significance level of (0.01) (0000); this means that the company's customer satisfaction improves with more effective leadership.
- The value of the correlation coefficient between the (Support) dimension and (Customer Satisfaction) was (.587) with a significance level of (0000), which is less than (0.01). These

results show that there is a strong direct relationship between (Support) and (Customer Satisfaction), so the more support you get, the greater your company's customer satisfaction becomes.

- There is a statistically significant relationship between the (Operations) (as one of the dimensions of the Quality Management System) and (Customer Satisfaction at (.661) with a significance level less than (0.01) (0000). This means that customer satisfaction increases as the operations increase within a company.
- There is a direct statistically significant relationship between (Performance Appraisal) (as one of the dimensions of Quality Management System) and (Customer Satisfaction) at (.577) and a significance level of (0000), which is less than (0.01). This means that the higher the performance within a company, the higher its customer satisfaction will become.
- There is a direct statistically significant relationship between (Development) (as one of the dimensions of the Quality Management System) and (Customer Satisfaction) at (.753) and a significance level less than (0.01) (0000). This means that the more the company is developed, the more its customer satisfaction will become.

Table No. (13) Analysis of the correlation coefficient between the dimensions of independent variables and all dependent variables

Dependent variable (Customer Satisfaction) Independent variable (Quality Management System)	Correlation Coefficient
Customer Focus	0.522**
Leadership	0.529**
Support	0.587**
Operations	0.661**
Performance Appraisal	0.577**
Development	0.753**
The association between independent and dependent variables	0.865**

** The correlation coefficient is statistically significant at the level of 0.01

In conclusion, we can say that the results of this study are consistent with the study of Al-Hila (2014) in terms of a statistically significant relationship between the components of the Quality Management System and Customer Satisfaction. They are also consistent with the study by Al-Nuwairi (2016) in regards to the positive relationship between the dimensions of educational organizations and the patterns of organizational culture.

Measuring Hypotheses:

The Basic Hypothesis:

- Null (H0): There is no statistically significant effect to implementing the Quality Management System on customer satisfaction in the pharmaceutical and medical supplies company.
- Alternative (H1): There is a statistically significant effect to implementing the Quality Management System on customer satisfaction in the pharmaceutical and medical supplies company.

The value of the correlation coefficient in Table (14), which was (0.814) (0,000), indicates that there is a positive linear relationship between implementing the Quality Management System and Customer Satisfaction at the significance level of (0,000); the identification factor (R2) was (0.663), indicating that 66.3 % of the variance in customer satisfaction is explained by the

Quality Management System, and 34 % of this difference is due to factors other than the implementation of quality. As for the results of ANOVA, the value of (F) (F = 214.76) indicates its statistical significance (Sig=0.000), which means that the linear regression model is valid, similar to the Durbin-Watson (DW) value, which was (1.706) (ranging between 1.5 and 2.5), indicating that the data has no associations within the linear regression. As for the simple linear regression equation, the fixed value (a = 31.874) indicates that customer satisfaction is (31.9) when the value of the Quality Management System is not available or equal to zero; the value (b = 4.274) leads to rejecting the null hypothesis of the Quality Management System and accepting the alternative hypothesis, which states that implementing the quality system has a statistically significant effect on the customer satisfaction of the company.

No. (14) Linear regression analysis (Quality Management System and Customer Satisfaction)

Linear Regression	R	R2	F	(DW)	
	0.814	0.662	214.67 (0.000)	1.706	
Independent Variable.	**Non-standard Parameters**		**Standard Parameters**	**T-test**	
	B	Standard Error	Beta (β)	(t)	(p-value)
Fixed value (a)	31.874	7.116		4.479	.000
Quality System	4.274	.292	.814	14.652	.000

- 1. The first sub-hypothesis
  - Null: There is no statistically significant effect for the (Customer Focus) dimension on (Customer Satisfaction).
  - Alternative: There is a statistically significant effect for the (Customer Focus) dimension on (Customer Satisfaction).

The value of the correlation coefficient (0.678) in Table (15) indicates that there is a positive linear relationship between implementing (Customer focus) and (Customer Satisfaction) at a significance level of (0.000); the indication coefficient (R2) was (0.460), indicating that 46% of the variance in customer satisfaction is explained by the quality system, and that 54% of this variance is attributed to factors other than the implementation of quality. As for the results of the variation analysis, the value of (F) (F = 92.787) indicates its statistical significance (Sig = 0.000), which means that the linear regression model is valid; this is similar to the value of (Durbin-Watson), which was (2.121) (between 1.5-2.5), which indicates that the data has no associations with the linear regression. As for the simple linear regression equation, the fixed value (a = 9.810) indicates that customer satisfaction is (9.8) when the value of the Quality Management System is not available or equal to zero, while the value (b= .713) indicates that every unit of change in the quality system corresponds to (.71) change in customer satisfaction. As for the value of (t=9.633), which is statistically significant (p-value=0.000) as it is less than the significance level of (0.01), it leads to rejecting the null hypothesis and accepting the alternative hypothesis, which indicates the existence of a statistically significant effect of (Customer Focus) and (Customer Satisfaction) in companies.

Table No. (15) Results of linear regression analysis (Customer Focus and Customer Satisfaction)

Regression results	**R**	**R2**	**F**	**(DW)**
	0.678	**0.460**	**92.787 (0.000)**	**2.121**
Independent	**Non-standard**		**Standard**	**T-test**

Variable.	Parameters		Parameters		
	B	Standard Error	Beta (β)	(t)	(p-value)
Fixed value (a)	9.810	1.806		5.432	.000
Customer Focus	.713	.074	.678	9.633	.000

- The second sub-hypothesis:
- Null: There is no statistically significant effect on (Leadership) dimension on (Customer Satisfaction).
- Alternative: There is a statistically significant effect on (Leadership) dimension on (Customer Satisfaction).

The value of the correlation coefficient (0.674) in Table (16) indicates a positive linear relationship between (Leadership) and (Customer Satisfaction) at the significance level of (0.000); he indication factor (R2) was (0.454), which means that 45 % of the variance in customer satisfaction is explained by the quality system, and 55 % of this difference is due to factors other than the implementation of quality. As for the results of ANOVA, the value of (F) (F = 90.640) indicates its statistical importance (Sig = 0.000), which means that the linear regression model is valid; this is similar to the Durbin-Watson value of (1.861) (between 1.5 and 2.5), indicating that there is no data associations with the linear regression. As for the simple linear regression equation, the fixed value (a = 6.956) indicates that customer satisfaction is 7.5 when the value of Quality Management System is not available or equal to zero, and (b=.656) indicates that every unit change in the quality system equals a (.66) change in customer satisfaction; the t-value (t=9.521) (p-value=0.000) is statistically significant, as it is less than the significance level of (0.01), which leads to rejecting the null hypothesis and accepting the alternative hypothesis, indicating that there is a statistically significant effect of (Leadership) on (Customer Satisfaction) in companies.

Table No. (16) Results of linear regression analysis (Leadership and Customer Satisfaction)

Linear Regression	R value	R2 value	F value	DW value	
	0.674	0.454	90.640 (0.000)	1.861	
Independent Variable.	Non-standard Parameters		Standard Parameters	T-test	
	b value	Standard Error	Beta value (β)	T value	P-Value
Fixed value (a)	6.956	1.861		4.139	.000
Leadership	.656	.069	.674	9.521	.000

- **3. The third sub-hypothesis**
- Null: There is no statistically significant effect on the (Support) dimension and (Customer Satisfaction).
- Alternative: There is a statistically significant effect on the (Support) dimension and (Customer Satisfaction).

The value of the correlation coefficient (0.738) in Table (17) shows a positive linear relationship between (Support) and (Customer Satisfaction) at a large level (0.000); the indication factor (R2) shows a positive linear relationship between (Support) and (Customer Satisfaction) at a large level (.545), meaning that 54.5 % of the variance in customer satisfaction is explained by the quality system, and 54.5 % of this difference is due to factors other than implementing

quality. As for the results of ANOVA, the value of (F) (F = 130.379) indicates its statistical significance (Sig = 0.000), which means that the linear regression is valid; the value of (Durbin-Watson) was (1.784) (between 1.5 and 2.5), indicating that there is no data association within the linear regression. As for the simple linear regression equation, the fixed value (a = 5.736) indicates that customer satisfaction is (6) when the value of the quality system is not available or equal to zero; the value of (b=0.719) indicates that the change of each unit in the quality system corresponds to (0.72) change in customer satisfaction; as for t (t=11.418) (p-value=0.000), which is statistically significant as it is less than the level of significance (0.01), which leads to rejecting the null hypothesis and accepting the alternative hypothesis, which indicates a statistically significant effect of the (Support) dimension on (Customer Satisfaction) of companies.

Table No. (17) results of linear regression analysis (Support and Customer Satisfaction)

Linear Regression	**R value**	**R2 value**	**F value**	**DW value**	
	0738	**0.545**	**130.379 (0.000)**	**1.784**	
Independent Variable.	**Non-standard Parameters**		**Standard Parameters**	**T-test**	
	b value	**Standard Error**	**Beta value (β)**	**T value**	**P-Value**
Fixed value (a)	**5.736**	**1.536**		**3.733**	**.000**
Support	**.719**	**.063**	**.738**	**11.418**	**.000**

- **The fourth sub-hypothesis:**

- Null: There is no statistically significant effect on the (Operations) dimension and (Customer Satisfaction).
- Alternative: There is a statistically significant effect on the (Operations) dimension and (Customer Satisfaction).

The value of the correlation coefficient (0.785) (0,000) in Table (13) indicates that there is a positive linear relationship between (Operations) and (Customer Satisfaction) at a large level; the indication factor (R2) shows a positive linear relationship between (Operations) and (Customer Satisfaction) at a large level of (616), meaning that 62 % of the variance in customer satisfaction is explained by the quality system, and 38 % of this difference is due to factors other than the implementation of quality. As for the results of ANOVA, the value of (F) (F = 174.522) indicates its statistical significance (Sig = 0.000), which means the linear regression is valid; the value of Durbin-Watson was (1.921) (between 1.5 and 2.5), indicating that there is no data association within th linear regression. As for the simple linear regression equation, the fixed value (a = 3.426) indicates that customer satisfaction is (3.5) when the value of the Quality Management System is not available or equal to zero; the value of (b=.822) indicates that the change of each unit in the quality system equals to (.82) change in customer satisfaction; the value of r (r=13.211) is statistically significant (F-value =0.000) as it is less than the significant level of (0.01), which leads to rejecting the null hypothesis and accepting the alternative hypothesis, indicating a statistically significant effect of the (Operations) dimension on (Customer Satisfaction) in companies.

Table No. (18) results of linear regression analysis (Operations and Customer Satisfaction)

Linear Regression	R value	R2 value	F value	DW value
	0785	0.616	174.522 (0.000)	1.921
Independent	**Non-standard**		**Standard**	**T-test**

Variable.	**Parameters**		**Parameters**		
	b value	**Standard Error**	**Beta value (β)**	**T value**	**P-Value**
Fixed value (a)	3.426	1.518		2.257	.026
Operations	.822	.062	.785	13.211	.000

- **The fifth sub-hypothesis:**

- Null (H0): There is no statistically significant effect of the (Performance Appraisal) dimension on (Customer Satisfaction).
- Alternative (H1): There is a statistically significant effect of the (Performance Appraisal) dimension on (Customer Satisfaction)

The value of the correlation coefficient (0.709) in Table No. (19) indicates that there is a positive linear relationship between (Performance Appraisal) and (Customer Satisfaction) at a large level (0.,000); the indication factor (R2) was (.503), indicating that 50 % of the variance in customer satisfaction is explained by the quality system, and 50 % of this difference is due to factors other than the implementation of quality. As for the results of ANOVA, the value of (f) (F = 110.465) indicates its statistical significance (Sig = 0.000), which means the linear regression model is valid, since it reached (1.821); this is similar to the value of Durbin-Watson, which was between 1.5-2.5 and indicates that there is no data associations within the linear regression. As for the simple linear regression equation, the fixed value (a = 4.046) indicates that customer satisfaction is (4) when the value of Quality Management System is not available or equal to zero; the value of (b=.470) indicates that the change of each unit in the quality system corresponds to (.47) change in customer satisfaction, which is statistically significant (r=10.510) (P-value=0.000) and less than the significance level of (0.01), which leads to rejecting the null hypothesis and accepting the alternative hypothesis, showing that there is a statistically significant effect of (Performance Appraisal) on (Customer Satisfaction) in companies.

Table No. (19) The results of the linear regression analysis between (Performance Appraisal and Customer Satisfaction)

Regression results	R	R2	F	(DW)	
	0.709	0.503	110.465 (0.000)	**1.821**	
Independent Variable.	**Non-standard Parameters**		**Standard Parameters**	**T-test**	
	B	**Standard Error**	**Beta (β)**	**(t)**	**(p-value)**
Fixed value (a)	4.046	1.092		3.706	.000
Performance Appraisal	.470	.045	**.709**	10.510	.000

- **The sixth sub-hypothesis:**

- Null hypothesis: There is no statistically significant effect on the (Development) dimension on (Customer Satisfaction).
- Alternative hypothesis: There is a statistically significant effect on the (Development) dimension on (Customer Satisfaction).

The correlation coefficient of (0.831) in Table No. (20) shows a positive linear relationship between (Development) and (Customer Satisfaction) with a significance level of (0.000); the

indication factor (R2) was (.691), meaning that 69% of the variance in customer satisfaction is explained by the quality system, and that there are 31% of this difference is attributed to factors other than the implementation of quality. As for the results of the variation analysis, the value of (F) (F = 243.284) indicates its statistical significance (Sig = 0,000), and means that the linear regression model is valid; the value of (Durbin-Watson) was (1.486) (between 1.5-2.5), which indicates that there is no data association within the linear regression. As for the simple linear regression equation, the fixed value (a = 1.910) indicates that customer satisfaction is (2) when the value of the Quality Management System is equal to zero value; the value of (b = .894) indicates that every unit change in the quality system corresponds to (.90) change in customer satisfaction; the value of t (t = 15.598) is statistically significant (p-value = 0.000) as it is less than the significance level of (0.01), which leads to rejecting the null hypothesis and accepting the alternative hypothesis, which indicates the existence of a statistically significant effect of the (Development) dimension on (Customer Satisfaction) in companies.

Table No. (20) results of the linear regression analysis between (Development and Customer Satisfaction)

Linear Regression	R value	R2 value	F value	DW value	
	0.831	0.691	243.284 (0.000)	**1.486**	
Independent Variable.	**N o n - s t a n d a r d Parameters**		**Standard Parameters**	**T-test**	
	b value	**Standard Error**	**Beta value (β)**	**T value**	**P-Value**
Fixed value (a)	1.910	1.092		3.706	**.000**
Development	.894	.045	**0.90**	**15.598**	**.000**

Multiple Linear Regressions:

When a multi-linear test is performed to determine the effect of independent variable dimensions (Quality System), as is evident from Table (21) and a statistically significant effect of the quality system in all dimensions in achieving customer satisfaction by testing the main hypothesis shown in Table No. (21), the results showed that the first, second, third, and fifth dimensions had a small effect. In the table below, we notice that the correlation coefficient value was 0.863; when the results of multi-linear regression analysis are compared with the results of the linear analysis obtained by the statistical package program (SPSS), we see a strong positive relationship of the quality system in all dimensions with customer satisfaction in the companies under study, so the indication factor R2 (0.744.2) is explained as (74.5 %). Notice the value of customer satisfaction due to customer satisfaction rates (of independent variables) and customer satisfaction rates (of dependent variables). 25.5 % of the difference is due to other factors that explain this result.

Table No. (21) shows that the prediction equation for the achievement of customer satisfaction contains the fixed value a = (4.468), which indicates customer satisfaction. As for the coefficient (b) of the six dimensions (dimensions of the quality system), the values are (b=0.026), ($b_{=}$-194), ($b_{=}$ 0.107), ($b_{=}$ 0.339), ($b_{=}$ 0.025) and ($b_{=}$ 0.567) respectively, indicating that each unit change in the dimensions of the quality system: (customer focus, leadership, support, operations, performance appraisal, development, participation in decision-making, and delegation) corresponds to a change in customer satisfaction by a percentage of (4.468).

Also, we see the value of (T) in Table (21) for all dimensions of the independent variable (quality system), the value of (r) for the customer focus dimension is (.263) at the indication level of (0.793); the value of the leadership dimension at the index level of (0.08) is (1.768); the value of the support dimension at the index level of (0.330) is (0.978); the value of (T) of

the operations dimension at the index level at the index level of (0.001) is (3.444); the value of the performance dimension at the index level is (3.444). Moreover, the (T) value of the performance appraisal dimension is (-.172) at the significance level of (0.863); the (T) value of the development dimension is (5.822) at the significance level of (0.000). From these measurements, the importance of support comes at (0.01) after leadership due to the difference between the distance between operations and development at (0,000), as Sig is greater than the significance level, and the dimension (T) is at the significance level of (0.,000). As for (Development), it was less than the significance level of (0.01), which is believed to be more important in the multi-linear regression model.

When analyzing the simple linear regression of the quality system and customer satisfaction, the first main hypothesis was significance, where the significance level of (0.00) shows weaknesses with weak relationships at: (the first), (the second), (the third), and (the fifth); also, the multi-linear regression that is done for each dimension of the independent variable was less than the significance level of (0.01), so the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted.

Table No. (21): The quality system and customer satisfaction

Linear regression parameter	R value	R2 value	F value		
	0.863	0.744	50.391(0.000)		
Independent Variable.	Non-standard Parameters		Standard Parameters	T test	
	b value	Standard Error	Beta value	T value	Value (p-value)
Fixed value (a)	4.468	1.337		3.342	0.000
Customer Focus	0.026	0.98	.027	.263	.793
Leadership	-.194	.109	-.188	1.768	0.08
Support	.107	0.110	.105	.978	.330
Operations	.339	.099	.356	3.444	0.001
Performance Appraisal	-.025	.145	-.017	-.172	.863
Development	.569	.098	.612	5.822	000

Conclusion:

As for the evaluation of quality indicators, the company's clients give a positive feedback, which means that the company is interested in the dimensions of the quality system; with regard to evaluating customers for the (Customer Focus) items, the items have been evaluated highly neutrally, and these phrases are: (the relationship of the company's employees with customers is always good - the company considers that the customer is always right - the company clarifies the cost of services provided to customers); however, the rest of the effects of customer satisfaction have been evaluated positively.

It becomes clear from the practical study that there is a reflection of the quality system on customer satisfaction, by contributing the quality of services in achieving customer satisfaction through improving all the quality indicators, we see a direct relationship between customer satisfaction and the quality of the services provided, i.e. the more the quality of the services provided, the greater the customer satisfaction, and vise versa, indicating a strong link between the quality system and customer satisfaction. In conclusion, there is a linear relationship

between these variables that is somewhat strong, and this reflects the importance of the quality system variable in determining customer satisfaction.

Sources and References:

The World Health Organization (2020) Iraq: Review of the Health System, adapted from https://www.who.int/Publications/I/item/9789241510703.

World Bank (2020) Iraq: Covid-19 Economic Impact and Recovery.

(E. B. R. Al-Arabiya (2022) Explanation of the meaning of "Performance Management": Harvard Business Review Termination Directory, www.hbrarabic.com. Harvard Business Review. Available at: https://hbrarabic.com/ Administrative Concepts/ Management-Performance. .(Accessed: December 22, 2022)

Foreign Sources:

ASQ, (2022). What is a Quality Management System (QMS)? ASQ. Retrieved February 7, 2023, from https://asq.org/quality-resources/quality-management-system#:~:text=A%20quality%20management%20system%20(QMS)%20is%20defined%20as%20a%20formalized,achieving%20quality%20policies%20and%20objectives.

Cooper, D. J., & Otley, D. A. (2004). The effect of ISO 9001 certification on quality and financial performance: Evidence from the UK service sector. British Accounting Review, 36(1), 69-91

Henttonen, K., & Korhonen, P. (2011). The impact of ISO 9001 certification on quality and financial performance in Finland. Journal of Management and Organization, 17(4), 456-474

Int, Chem. (2019). Effective service delivery through quality management system (QMS) in oil and gas servicing companies, a case study of selected firms, Port Harcourt. 10.31221/osf.io/edaxc.

International Committee of the Red Cross. (2020). Iraq: The healthcare system under strain. Retrieved from https://www.icrc.org/en/document/iraq-healthcare-system-under-strain.

ISO. (2015). ISO 9001:2015 Quality management systems - Requirements. Geneva: International Organization for Standardization.

Kiew, P., Ismail, S & Yusof, A. (2016). Integration of Quality Management System in the Malaysian Construction Industry. Journal of Organizational Management Studies. 1-9. 10.5171/2016.117211.

Kobiruzzaman, M. (2022). Principles of Total Quality Management & 8 principles of TQM. Newsmoor. Retrieved February 7, 2023, from https://newsmoor.com/total-quality-management-tqm-eight-principles-and-practices-of-tqm/

Nestor, F. (2019). Effects Of Quality Management Practices on Organizational Project Performance in Kenya. 10.13140/RG.2.2.32771.76328

Neyestani, B. (2016). Effectiveness of Quality Management System (QMS) on Construction Projects. 10.5281/zenodo.290272.

Psomas, E & Pantouvakis, A (2015). ISO 9001 overall performance dimensions: An exploratory study. The TQM Journal. 27. 519-531. 10.1108/TQM-04-2014-0037.

World Bank. (2020). Iraq: COVID-19 Economic Impact and Recovery