

## Examining the impact of total quality management on the provision of healthcare services: A study of Jordanian healthcare organizations

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### ABSTRACT

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This study investigates how Total Quality Management (TQM) influences the quality of Health care services in Jordan. To test this relationship, a survey was distributed to 220 employees working at different Jordanian hospitals. The results show significant and positive association between all TQM dimensions (customer focus, top management support, fact-based decision making, employees' involvement, and continuous improvement) and the quality of health care services in Jordan. The study concludes by emphasizing the importance of TQM in enhancing the quality of health care service and recommends hospitals 'management and policy makers to adopt and integrate various TQM practices into the Jordanian health sector.

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### 1. Introduction

Jordan is known, in the region and internationally, for its high-quality healthcare services. The country is considered as one of the leading medical tourism destinations. According to the World Bank, Jordan was ranked first in the MENA region and fifth internationally in terms of medical tourism. Moreover, the Jordanian health sector is one of the main pillars of the Jordanian economy, and medical tourism accounts for 40% of the country's total tourism revenues (Jordan Investment Commission, 2017). The Jordanian government has recognized the importance of maintaining the excellent reputation of the health sector, and it strives to improve the quality of its medical services (Amman Vision, n.d). Although the research on the quality of healthcare services has grown, little work has been conducted on the role of Total Quality Management (TQM) in enhancing the quality of healthcare services. Therefore, this study aims to investigate how TQM impacts the quality of healthcare services provided in Jordan (Al-Mhasnah et al., 2018). considering the emerging events such as the COVID-19 pandemic and its consequences on the nature of healthcare services provided and the organization's ability to meet individuals' minimum expectations and achieve strategic organizational objectives (Al-Gasawneh et al., 2022). TQM has become a popular topic in the past few decades. Contemporary Academics and practitioners have recognized the importance of integrating TQM practices into strategic and daily operations to gain a competitive advantage (Abu-Rumman, 2018). It can lead to positive outcomes, such as cost reduction, time savings, improved performance, and sustainable organizational success (Agyabeng-Mensah et al., 2021). Implementing TQM can also help organizations meet customer needs, and support organizational efforts to enhance their capabilities and overcome challenges, as this implementation can improve the quality of outputs and overall organizational performance (Alarabi & Mekid, 2017).

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The importance of this study stems from the significant economic value of the healthcare sector in Jordan and its critical role in attracting medical tourism and reducing the unemployment rate. Therefore, finding evidence that TQM can improve the quality of healthcare service may not only be beneficial to the health sector, but also for other sectors in the country. The study also fills a gap in the literature regarding the role of TQM in the healthcare sector of a developing country like Jordan.

The remainder of this article is organized as follows. Section two reviews the literature on TQM and its relationship to the quality of services. Section three describes the data and methodology. Section four reports and discusses the findings of the study. The study, then, concludes by discussing the theoretical and practical implementations of the study.

## 2. Literature Review

There have been numerous studies that have investigated TQM and its different concepts and outcomes in various contexts. Many of these studies have focused on the association between TQM and service quality issues and have provided interesting findings over the past few decades. Recent researchers have emphasized the importance of TQM in service quality and organizational development processes, which can lead to the incorporation of great methods and character in operations that help develop the service sector (Ferdousi et al., 2018; Daboor et al., 2021). Although many studies have explored the impact of TQM on industry performance and the benefits of adopting it, the healthcare sector, which is highly important and contributes significantly to national economies, lacks studies that examine the current issues of TQM with a focus on service quality in the service sector in Jordan. This lack of research leads to a failure to acknowledge the consequences of poor service quality in healthcare, which can negatively affect various features and characteristics of the business environment (Murray, 2017).

### 2.1 TQM Concept

The meaning of TQM has evolved over time, taking into account changes in business and various perspectives and interests. The American Society for Quality, for instance, has defined TQM as the management-driven operation and process that meets the organization's desired objectives, focusing on higher levels of customer satisfaction and loyalty. To achieve this, TQM requires the comprehensive and productive involvement of all members of an organization to maximize the quality of outputs, resulting in a positive impression that meets or exceeds expectations (Van Kemenade, 2019). Tobin (1990) introduced the TQM concept, defining it as the complete integration of efforts to gain a competitive edge by continuously developing organizational service processes.

Various scholars have defined the concept of TQM from different perspectives and interests. The American Society for Quality views TQM as a management approach that aims to meet organization's objective by maximizing customer satisfaction and loyalty through the comprehensive involvement of all individuals in the organization. Tobin (1990) however, defined TQM as the integration of efforts to achieve a competitive advantage through continuous development of organizational processes. Roosevelt (1995) defined TQM as a strategic asset that involves evaluating and improving service methods to meet customer expectations. While TQM was initially designed for production settings, it has been extended to the service sector and has received attention as a tool for enhancing organizational competitiveness. Recent studies have emphasized the importance of customer focus and continuous improvement in TQM practices and have recognized the need for adaptation and change to meet growing demands and experiences. Research in this area focuses on understanding these changes and developing solutions to address deficiencies.

### 2.2 TQM in Healthcare Services

In recent years, healthcare organizations have used outdated operational systems for their internal processes. This method has faced several challenges and limitations that have significantly affected various aspects of organizational operations, including infrastructure, cost, and quality. Consequently, there has been an increasing focus on the use of quality systems and TQM approach in healthcare operations, particularly regarding quality features, and how healthcare managements have established their quality systems (Balasubramanian, 2016). TQM in the healthcare industry has become an important topic, focusing on patient care, managerial behaviors, and service delivery matters.

The studies that examine the effects of TQM approaches and methods face significant challenges, not only due to limited organizational resources, but also because organizations aim to achieve greater competitive advantage and expand their market shares (Turkyilmaz et al., 2015). For instance, paper-based registration systems, which are part of traditional management systems, increase the risks and likelihood of errors occurring. Therefore, healthcare providers currently focus on modern operations that ensure service quality, which is a crucial factor in the healthcare industry (Faloudah et al., 2015). The use of different TQM systems and applications in healthcare has enabled decision-makers to consider changes in various aspects of daily organizational processes, such as standardizing documentation systems and creating added value to their services, ultimately resulting in positive recommendations for their services (Rouf et al., 2017). However, the differences and inconsistencies of quality approaches used in healthcare could also affect the simplicity of operations and treatment outcomes, as well as staff attitudes, for example.

### 2.3 TQM Dimensions

Several studies have identified the intangible and behavioral aspects of TQM as critical dimensions. These dimensions, also known as soft factors, mainly focus on meeting customer needs and expectations and the role of human resources in achieving this goal. Despite being invisible, these dimensions directly impact organizational goals such as performance and service quality, according to professionals (Hassan et al., 2014). Comprehensive literature has identified some agreed quality dimensions crucial to achieving these ultimate goals. While these dimensions vary based on the nature of the sector, they typically emphasize essential characteristics such as top management support, customer focus, continuous improvement, and employee involvement (Ershadi et al., 2019; Lagrosen, 2001).

#### 2.3.1 Top Management Support

The attainment of high levels of service quality and overall performance, leading to organizational success, heavily relies on the support and dedication of all management levels. Top management commitment is crucial in developing strategic objectives that guide the organization's efforts and operations towards achieving excellent performance (Hanandeh et al., 2021). Significant evidence supports top management's critical role in championing quality programs that can establish effective quality practices and methods, thereby leading to sustainable outcomes (Mahmood et al., 2014). According to Dubey and Gunasekaran (2015), support from management has a significant and positive effect on firm performance, and top management plays a crucial role in directing efforts toward achieving quality goals that align with the objectives of the organization. In the quality field, management support also provides a conducive environment for enhancing organizational performance. Saleh et al. (2017) suggested that top management support is an effective method for improving service quality. Therefore, based on these studies we hypothesize that:

**H<sub>1a</sub>:** *There is a positive and significant impact of top management support on services quality.*

#### 2.3.2 Focus on Customer

The second aspect of TQM concerns the degree to which a company prioritizes meeting the needs and expectations of its customers. This customer focus is a crucial component of successful businesses and is considered by professionals in the field to be the most commonly used TQM dimension for evaluating organizational practices (Samat et al., 2006). It involves obtaining and analyzing key customers' information and perceptions of the services and products offered. Meeting customer needs efficiently on a continuous basis is a major factor in achieving future organizational success. The customer focus dimension emphasizes establishing a perceived value of customers that contributes to organizational development, and appropriate implementation of all TQM dimensions can lead to improved organizational performance. Studies have shown that implementing TQM can increase customer satisfaction and improve organizational performance (Sit et al., 2009). In quality management, managers use different methods to adjust to evolving customer needs and identify ways to meet their demands. Asikhia (2010) discovered that a customer-oriented approach is directly linked to enhancing service quality, it involves ongoing feedback about the services or products and their ability to meet customer expectations. According to previous research, customer focus is one of the fundamental dimensions of TQM.

**H<sub>1b</sub>:** *There is a positive significant relationship between focus on customer and services quality.*

#### 2.3.3 Employee Involvement

Implementing TQM may require some organizations to adopt a decentralized approach and create a more collaborative working environment through the use of teams or groups. This approach allows for greater employee involvement in organizational decision-making processes and promotes a better understanding of the work, resulting in increased employee satisfaction and improved service delivery (Jurburg et al., 2019). In addition, incorporating teamwork into the company's operations supports problem-solving approaches that focus on customer needs and satisfaction and encourages initiatives aimed at process improvement (Abualoush et al., 2022; Hammouri et al., 2022; Hanandeh et al., 2023).

According to Hwang et al. (2020), human resources management plays a crucial role in achieving high levels of quality in products and services. Empirical studies have shown a strong relationship between employee empowerment, involvement, and various factors that contribute to higher product quality, such as product design and supplier quality (Gözükara et al., 2019). In addition, employee involvement positively and significantly affects service and product quality (Ababneh, 2021). It is also an important dimension in achieving organizational objectives. Therefore, the literature suggests that employees should be more involved in different aspects of company operations to develop service quality, increase company productivity, and enhance customer satisfaction. This is consistent with the TQM approach, which emphasizes employee involvement and cooperation between all departments as a key component in achieving these goals. Hence:

**H<sub>1c</sub>:** *There is a positive significant impact of employee involvement on services quality.*

### 2.3.4 Decision-Making Based on Facts

The process of decision making involves analyzing different options to identify and choose the best alternative that aligns with the organization's core values and decision makers' preferences. Making effective decisions requires considering all alternatives and selecting the best option that fits the organization's objectives and needs (Mehmood et al., 2014). Since decision making is a crucial task for top management, various strategic decisions are made using different approaches, such as TQM, over different periods. To ensure organizational improvement, decision making should be based on factual and reliable information, and models should be used to plan steps for continuous development (Yusr et al., 2017). The decision-making frameworks in use have been improved and are now more efficient (Hammouri & Altaher, 2020). To effectively make decisions, there must first be a clear understanding of the problem at hand. This requires a thorough and accurate definition of the problem, including examining its causes and consequences. However, some problems are not adequately explained or defined, which can hinder the decision-making process and the ability to find appropriate solutions (Balasubramanian, 2016). The organizations' competitive advantage and effectiveness in complex environments have now become dependent on their ability to innovate in their decision-making processes, which results in higher quality outcomes. This innovation enables companies to adapt to rapid changes and develop new products and markets, protecting them from volatile and unstable business environments (Aquilani et al., 2016). Numerous studies have demonstrated the benefits of advanced innovation in decision-making, including improved quality through the integration of Total Quality Management (TQM) processes (Mashal & Ahmed, 2015). These studies consistently emphasize the critical connection between effective decision-making and quality, highlighting the importance of this positive association. Therefore:

**H<sub>1d</sub>:** *There is a significant positive impact of decision making based on fact on quality of services.*

### 2.3.5 Continuous Improvement

In today's competitive market, organizations that provide poor quality products or services risk losing customers and operating at a loss. Total Quality Management (TQM) is both a science and an art that ensures the entire production process meets the desired level of organizational excellence (Hohan et al., 2015). This science involves adopting various integrated systems, methods, and procedures to achieve customer satisfaction. The continuous development of TQM is focused on improving organizational operations to provide high-quality outputs (Ershadi et al., 2019). Ultimately, TQM aims to meet customers' expectations and perform operations in a professional manner. As such, customers are the ultimate judges of quality.

Continuous efforts and development in operations are necessary to improve products or services, as customers' preferences are constantly changing. To focus on this aspect of TQM, there are recommended quality principles that organizations should prioritize, according to Prashar and Antony (2018). Effective implementation of these principles can lead to improved services and system enhancements and encourage innovation through staff participation in training programs to acquire new skills. Continuous improvement can result in numerous benefits, such as increased management knowledge and capabilities, improved performance, and better alignment with organizational goals and objectives. This enables management to respond quickly and handle crises and failed processes more effectively, as noted by Van Assen (2021). Hence:

**H<sub>1e</sub>:** *There is a positive significant impact of continuous improvement on services quality.*

## 3. Data and Methodology

This study developed a survey instrument to investigate the impact of TQM on the quality of healthcare services provided in the Jordanian hospitals located in Amman. The survey was collected online from (220) administrative and medical staff with a response rate of (64%). Table 1 shows the demographic characteristics of the participants.

**Table 1**  
Sample Demographic

Measure	Category	Count	Percentage %
Experience	1-5 years	67	30.5
	6-10years	64	29.1
	11-15years	59	26.8
	more than 15	30	13.6
Education	Secondary	5	2.3
	Bachelor	179	81.4
	Master	33	15.0
	PhD	3	1.4
Gender	Male	121	55
	Female	99	45
Job Position	Nurse	104	47.3
	Administrative	59	26.8
	Technician	23	10.5
	Head of dep.	22	10.0
	Manager	12	5.5

The survey questionnaire was adapted from previous studies to align with the scope of the current research. It consists of three sections; the first section gathers information on demographics. Section two asked questions about the dependent variable which is quality of healthcare services. section three gathered information on the independent variable in the study which is the TQM dimensions.

#### Measures:

Dependent Variable: an index of quality of healthcare services was developed using 8 items that derived from El-Tohamy et al. (2015) and Izogo & Ogba (2015). All items are on five Likert scales ranging from “strongly disagree” to “strongly agree.” Independent variables: TQM dimensions were used as independent variables of the study. An index variable was developed for each dimension. For example, the TQM dimensions (focus on the customer) were developed by Al-Manni et al. (2018) and Tsai et al. (2017), while the dimension of top management support was adapted from Sureshchandar et al. (2001), and the dimension of employee participation from Stamatis (1995). The decision-making items were taken from Omachonu & Ross (2004), and the dimension of continuous improvement was adapted from Sureshchandar et al. (2001). All items are on five Likert scales ranging from “strongly disagree” to “strongly agree.”

## 4. Data Analysis and Results

In this section of the analysis, the mean values of all the variables indicate a high level of TQM and service quality constructs. This is evidenced by the high mean values of the participants' responses. The standard deviation (SD) values provide information about the agreement of respondents' perceptions of the items being examined. Descriptive analysis is important because it provides key information about the research items before further analysis (Brown & Robinson, 2002). Table 2 illustrates the means and standard deviations of all measurements, which are concentrated within a high level of central tendency theory (ranging from 3.74 to 4.07). Most of the means indicate high perceptions of TQM and service quality. Additionally, the low dispersion in the data based on the standard deviation values is a good indicator that the subjects are aware of the benefits of TQM, according to common social science studies and a 5-point Likert scale.

**Table 2**  
Mean and standard deviation of the study's factors

Variable	Item Code	Mean	SD
Focus on Customer (Patient)	FC1	4.07	0.715
	FC2	3.97	0.675
	FC3	4.00	0.718
	FC4	3.95	0.739
	FC5	3.93	0.662
Management Support	MS1	3.85	0.644
	MS2	3.83	0.644
	MS3	3.92	0.583
	MS4	3.89	0.653
	MS5	3.81	0.694
Employee Involvement	EI1	3.76	0.588
	EI2	3.81	0.627
	EI3	3.79	0.658
	EI4	3.78	0.612
	EI5	3.74	0.677
Decision-Making Based on the Facts	DM1	3.86	0.622
	DM2	3.85	0.579
	DM3	3.90	0.535
	DM4	3.83	0.587
	DM5	3.85	0.597
Continuous Improvement	CI1	4.00	0.593
	CI2	4.02	0.715
	CI3	3.95	0.670
	CI4	4.01	0.641
	CI5	4.02	0.593
Service Quality	SQ1	3.88	0.644
	SQ2	3.83	0.632
	SQ3	3.89	0.563
	SQ4	3.86	0.612
	SQ5	3.87	0.583
	SQ6	3.88	0.603
	SQ7	3.84	0.610
	SQ8	3.91	0.627

### 4.1 Reliability

This study also utilized reliability as a measure to evaluate the trustworthiness of the model's measurements in measuring the study variables. Internal reliability is the most commonly used measure for this test, which is determined by the value of Cronbach's Alpha (Vaske et al., 2017). This value confirms a good level of reliability of the questionnaire's coefficient before

conducting the main analysis and checking the validity of the items before distributing the questionnaire to the sample. The reliability coefficients of items range from 0 to 1, and different debates exist on this test and its reliability coefficient values. However, according to Sekaran and Bougie (2019), the higher the coefficient value, the higher the degree of reliability. Additionally, Hair et al. (2009) suggests that a minimum acceptable value for this test is 0.70 and above, and a Cronbach's alpha value of 0.6 or more indicates good reliability. Table 3 displays the results of the internal consistency test, which mostly met the required minimum threshold of 0.70 or above.

**Table 3**  
Reliability Test

Variable	No. of Items	Cronbach's Alpha
Focus on Customer	5	0.922
Top management Support	5	0.921
Decision Making	5	0.912
Employee Involvement	5	0.900
Continuous improvement	5	0.900
Service Quality	8	0.933

#### 4.2 Multicollinearity Test

Before conducting the main analysis, it is highly recommended to perform a Variance Inflation Factor (VIF) test to check for multicollinearity among the independent variables, as shown in Table 4. This test determines whether there is a problem of multicollinearity. If the VIF values are less than ten and the tolerance is more than 0.1, the model is considered free from multicollinearity, and this assumption is not violated. The results of the VIF test confirm that there is no multicollinearity issue between the independent variables. Therefore, the study can proceed with further analysis.

**Table 4**  
Multicollinearity Result

TQM dimensions	Tolerance	VIF
Focus on Customer (Patient)	0.304	3.288
Top Management Support	0.362	2.760
Employee Involvement	0.341	2.935
Decision Making	0.277	3.605
Continuous Improvement	0.254	3.941

#### 4.3 Multiple Regression Analysis

The study hypotheses were examined through the use of multiple regression test. This statistical method helps to investigate the relationship between a dependent variable and multiple independent variables. The results of the test indicate that the research model was able to explain 44.7% of the variance. Table 5 displays the coefficient table of multiple regression analysis, revealing that all proposed variables of TQM were found to be statistically significant at the 0.05 level. As a result, all the proposed hypotheses were supported.

**Table 5**  
Results of Multiple Regressions Analysis (Coefficients)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.917	0.036		2.514	0.188
Top Management Support	0.645	0.042	0.720	15.321	0.000
Focus on Customer	0.599	0.038	0.731	15.799	0.000
employee involvement	0.659	0.045	0.701	14.519	0.000
Decision-Making Based on Fact	0.811	0.040	0.811	20.448	0.000
Continuous Improvement	0.712	0.040	0.771	17.887	0.000

• Dependent Variable: Service Quality

## 5. Conclusion

The findings of the study revealed a general agreement among various industries regarding the significant role of TQM practices. However, the study focused specifically on the Jordanian hospitals and found that the identified practices in the research model had a positive and significant impact. hospitals in Jordan have increasingly incorporated various TQM practices into their operations due to the rising demand for quality services. The study's results are expected to encourage other organizations to adopt TQM systems, which can improve overall performance and help achieve long-term goals, such as increasing patient satisfaction and loyalty. The hospitals in Jordan were found to have implemented several important TQM practices, including continuous improvement, which is consistent with previous studies that have examined the effect of TQM on service quality (Aburayya et al., 2020).

### 5.1 Theoretical Implications

The primary aim of this research was to investigate the effect of TQM practices on service quality in healthcare institutions in Jordan. Additionally, the study aimed to distinguish the contributions of TQM and service quality to various stakeholders, such as patients and management. This research contributes to the existing knowledge on the impact of TQM practices on service quality, particularly in a developing context. The results of the study provided a comprehensive theoretical model that examined the relationship between TQM and service quality in the healthcare industry. The study concluded that implementing TQM practices can improve the quality of patient-focused services in hospitals in Jordan. This research also contributes to a better understanding of marketing practitioners on how to maintain service quality in competitive environments. The study sought to explore both management and employee perceptions of the impact of TQM practices on service quality in the healthcare sector in Jordan.

### 5.2 Practical Implications

The outcomes of this research can serve as a reference and guidance for TQM practices and achieving high service quality standards. hospitals in Jordan can also use the results to create a regional model in the industry to achieve strategic objectives. Furthermore, by integrating TQM practices into their vision, mission, and daily operations, organizations can better evaluate the impact of these practices. This can be achieved through discussions and analyses to identify the specific needs of the local business and allow hospital management to implement such practices. This study contributes to the existing literature in various ways. First, it provides new insights and practices that can aid decision and policymakers in understanding management standards. Second, it contributes to the advancement of TQM and service quality in hospitals in Jordan. Additionally, the study offers implications and findings that can help quality management and decision-makers to design highly characteristic quality services. The results can serve as a roadmap for practitioners to understand the increasing demands for quality and the changes in customer preferences and expectations due to intense competition in business that mainly focuses on customer satisfaction.

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