

Total Quality Management (TQM) and Its Impact  
on Organizational Culture (OC) in Private Hospitals  
in Sana'a Capital Municipality, Yemen

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# **Total Quality Management and Its Impact on Organizational Culture in Private Hospitals in Sana'a Capital Secretariat, Yemen**

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### **Abstract**

**This study aims to determine the impact of Total Quality Management (TQM) on organizational culture in private hospitals in Sana'a Capital Secretariat, Yemen. A quantitative approach, employing both descriptive and analytical methods, was used to achieve the research objective. The study population consisted of management levels (top, middle, and first-line, as well as medical and technical staff) from private hospitals in the Yemeni capital. A stratified random sample, including 50% of employees in each position, was selected. Questionnaires served as the primary data collection tool. A total of 444 questionnaires were distributed to the University of Science and Technology Hospital (USTH), Modern European Hospital, and Azal Hospital, with 399 valid questionnaires collected, representing an 89.87% response rate. Data analysis was conducted using appropriate statistical methods within the SPSS 26v software, and structural equation modeling (SEM) was applied using AMOS 21v. The study concluded that there is a positive impact of TQM on organizational culture in private hospitals in Yemen.**

**Keywords:** Total Quality Management, Organizational Culture, Top Management Commitment, Organizational Values, Organizational Beliefs.

### ملخص الدراسة:

هدفت هذه الدراسة إلى تحديد أثر إدارة الجودة الشاملة على الثقافة التنظيمية في المستشفيات الخاصة في أمانة العاصمة صنعاء - اليمن. ولتحقيق هدف البحث تم استخدام المنهج الكمي، وذلك باستخدام الطريقتين الوصفية والتحليلية. ويتألف مجتمع الدراسة من مستويات الإدارة (العليا، والوسطى، والدنيا، والطبية، والفنية) من المستشفيات الخاصة في العاصمة اليمنية. كما تم أخذ عينة عشوائية طبقية شملت 50% من عدد الموظفين في كل وظيفة، وكانت الاستبانة بمثابة الأداة الأساسية لجمع البيانات. تم توزيع (444) استبانة، لمستشفى جامعة العلوم والتكنولوجيا، ومستشفى الأوربي الحديث، ومستشفى أزال، وتم جمع (399) استبانة صالحة بنسبة استجابة (89.87%) لتحليلها. تم تحليل البيانات باستخدام الأساليب الإحصائية المناسبة ضمن برنامج الحزم الإحصائية للعلوم الاجتماعية (SPSS 26v)، وتم تطبيق نمذجة المعادلات الهيكلية (SEM) باستخدام برنامج الاموس (AMOS 21v). وتم استنتاج ان هناك أثراً إيجابياً لإدارة الجودة الشاملة على الثقافة التنظيمية في المستشفيات الخاصة في اليمن.

الكلمات المفتاحية: إدارة الجودة الشاملة، الثقافة التنظيمية، التزام الإدارة العليا، القيم التنظيمية، المعتقدات التنظيمية.

## **1.0 Introduction**

The health sector is one of the most important vital sectors for each country and one of the indicators that measure development rates in the countries of the world. It is one of the most important services of human beings (Al Bakri, 2005). Therefore, improving the performance of health institutions and the services provided should be the main concern of the top management and employees of the health care organizations, including private hospitals.

Organizational culture the (OC) expresses a common set of beliefs, values, and perceptions that form impressions, establish attitudes, and influence behaviors that constitute the basic rules for the performance of workers in organizations. The term culture has gained organizational importance as a factor affecting organizations' trends and the development or backwardness of their level of performance.

In additions OC plays a major role at all levels and activities within the administrative organization. It contributes to creating the appropriate organizational climate that works to develop the quality management in an appropriate and effective manner, that helps to achieve individual, collective and organizational goals, and this is through the developing values, attitude, behavior and modern standards that work on developing and developing organizational performance.

According to Serpa (2016), healthcare OC is the set of shared values, beliefs and norms that influence the way employees think, feel, and behave in the workplace. Therefore, the researcher will focus on the main dimensions of OC: organizational believes, organizational values and organizational expectations.

A worldwide objective, the implementation of complete quality in the healthcare industry, is becoming more and more applicable with each passing year. The lives and health of citizens and their families are directly impacted by the services offered by basic health care.

Furthermore, quality is essential for success in a society where competition is the primary driver and where numerous changes are occurring in a variety of spheres, including political, social, environmental, health, and economic.

Total Quality Management (TQM) today has more gained attention among scholars and researcher especially in the field of strategic management. As a practice, TQM aims at continuous improvement in quality and thus performance of the organization. Quality is perceived as one of the drivers of culture among organizations in the globalized economy (Jaca & Psomas, 2015). The desire to implement total quality in the field of health care is a global goal whose scope of application is expanding year after year. The services provided by basic health care

have a direct impact on the life and health of citizens and for their families. In addition, quality is the key to success in a world that depends mainly on competition, and where the modern world today is witnessing many changes in all fields, whether economic, political, social, environmental and others. Therefore, several studies were conducted in different countries and contexts focusing on the impact of TQM in OC or the relationship between TQM and OC in different organizations such as the study of Coelho et al. (2022), Adhiambo (2020), Mishnan (2016), Al-Jalahma (2012), Gröndahl et al. (2011), and Kaluarachchi (2010). Such studies have revealed that TQM has an influence on performance. However, in previous studies, there has been no consensus among researchers regarding the key dimensions of TQM.

Despite the inconsistency among researchers in identifying the exact dimensions of TQM, review of the literature shows that the majority of the researchers agree that the most important dimensions of TQM are customer focus, continuous improvement, employee involvement and top management support (McAdam & Keogh, 2004; Prajogo and Sohal, 2006; Hoang et al., 2006; and Sabella et al., 2015).

Based on the grounded data and some existing literature on TQM (Deming, 1986; Juran, 1992; Crosby, 1979; Feigenbaum, 1991; Ishikawa, 1985; and Dale, 1999), the following variables were used to conceptualize TQM practices of the hospital: Senior Management Commitment (SMC), Staff Commitment (SC), Stakeholder Focus (SF), Integration of Continuous Improvement (ICI), Quality Culture (QC), Measurement and Feedback (MFB), and Learning Organization (LO).

The current study will consider using the following dimensions of TQM: Top Management Commitment (TMC), Customer Focus (CF), Continuous Improvement (CI), Human Resource Focus (HRF), and Information Technology (IT).

Based on the foregoing, this paper investigates the impact of Total Quality Management (TQM) on organizational culture in private hospitals in Yemen.

### **1.1 Statement of the Problem**

Over the past years, Yemen has witnessed the establishment of a large number of private hospitals. Most of these hospitals are located in Sana'a Capital Municipality. According to the Ministry of Public Health and Population (62) licensed private hospitals centralize in Sana'a Capital Municipality (Ministry of Public Health and population, 2021).

Quality of health services provided to patients by these hospitals must be of a prime concern to health authorities, hospital management and employees since

these services relate to human life. However, this goal should be achieved through TQM. TQM is considered more relevant to health services institutions compared to other services due to the importance of TQM and OC of a very important sector i.e., health sector. Thus, private hospitals have to ensure that quality services are offered to customers in the most convenient way (Ooi, 2012 as cited in Mwikali & Bett, 2019).

To improve the cultures in private hospitals, the hospitals need to adopt TQM system that calls for the most important elements (dimensions) of TQM represented in (Top Management Commitment (TMC), Customer Focus (CF), Continuous Improvement (CI), Human Resource Focus (HRF), and Information Technology (IT)).

Results of the previous studies denote that TQM is responsible in prevailing OC that affecting the quality management. Such results, as well as the absence of an in-depth study of the relationship between TQM and OC in the Yemeni health sector in general and the private hospitals in particular, therefore, the current study seeks to fill the research gap by examining the impact of TQM on OC in Private Hospitals in Sana'a Capital Municipality, Yemen.

Accordingly, the research problem can be formulated in the following main question:

## **2.0 Study Questions**

Accordingly, the research problem can be formulated in the following main question:

Is there an impact of Total Quality Management (TQM) with its various dimensions (Top Management Commitment (TMC), Customer Focus (CF), Continuous Improvement (CI), Human Resource Focus (HRF), and Information Technology (IT)) on Organizational Culture (OC) in private hospitals in Yemen?

This question examined through the following sub-questions:

1. Is there an impact of TMC of TQM on OC in private hospitals in Yemen?
2. Is there an impact of CF of TQM on OC in private hospitals in Yemen?
3. Is there an impact of CI of TQM on OC in private hospitals in Yemen?
4. Is there an impact of HRF of TQM on OC in private hospitals in Yemen?
5. Is there an impact of IT of TQM on OC in private hospitals in Yemen?

## **1.2 Study Objectives**

The aim of this study is to verify the impact of TQM with its various dimensions (TMC, CF, CI, HRF and IT) on OC (organizational values, organizational beliefs and organizational expectations) in private hospitals in Yemen.

### 1.3 Hypothesis of the Study

H: There is a statistically significant impact of TQM with its various dimensions (TMC, CF, CI, HRF and IT) in OC in private hospitals in Yemen, according to Al-Nur et al., 2022, Al-Jalahma ,2012, and Jabnoun et al. ,2005). This hypothesis verifies through the following sub- Hypothesis:

Ha: There is a statistically significant impact of TMC of TQM in OC in private hospitals in Yemen.

Hb: There is a statistically significant impact of CF of TQM in OC in private hospitals in Yemen.

Hc: There is a statistically significant impact of CI of TQM in OC in private hospitals in Yemen.

Hd: There is a statistically significant impact of HRF of TQM in OC in private hospitals in Yemen.

He: There is a statistically significant impact of IT of TQM in OC in private hospitals in Yemen.

### 1.4 Study Significance

The researcher expects that this research will be of two major significances i.e.: theoretical and practical significances:

#### 1.5.1 Theoretical Significance

Regarding the scientific significance, researcher hope that the current research will contribute to the following:

- Expand researchers' understanding of the factors and variables that contribute to applying quality in hospitals by revealing the direct effect of TQM in OC.
- The current research can contribute to understanding the inconsistent research findings in previous studies regarding the direct (unmediated) impact of TQM in OC, including its expected contribution to identifying the most critical dimensions of TQM that are responsible for improving culture in the hospitals.
- The current research can contribute to providing two research tools (measurements) that are valid and reliable for use by researcher in future research, particularly Yemeni and Arab researchers studying the same variables included in this research (OC, and TQM).
- The current research will contribute to enriching the Yemeni, Arab and international library through the results it will provide that addresses a knowledge gap regarding the effect of TQM in improving OC, or by confirming previous results on the impact of TQM in its dimensions as an independent variable on OC as a dependent variable.

#### 1.5.2 Practical Significance



Regarding the practical significance, the researcher hopes that the current research will contribute to the following aspects:

- The current research represents a practical significance of a high value in the field of health care in general and private hospitals in particular as its expected results and recommendations will enable decision makers to recognize the level of performance.
- The researchers hope that the current research will draw the attention of administrators and professionals in private hospitals to the need for the application of TQM to clarify their effect in improving OC.
- The researcher hope that it will be a reference for researchers and professionals in this field.

### 1.5 Definitions of Terms

#### 1.5.1 Total Quality Management (TQM)

“Total Quality Management is an approach which focuses on improving the organization’s effectiveness, efficiency and responsiveness to customers’ and other stakeholders’ needs by actively harnessing people’s skills and competencies in the pursuit of achieving sustained improvements to organizational performance “(Porter & Tanner, 2005).

Operational Definition: TQM is a management approach that seeks to provide long-term success by providing unparalleled customer satisfaction through the constant delivery of quality its services, to properly execute on TQM methods, the entire organization needs to operate as a single unit in the pursuit of excellence. TQM includes five dimensions (TMC, CF, CI, HRF and IT).

#### 1.5.2 Organizational Culture (OC)

Culture is the set of shared values, beliefs, and norms that influence the way employees think, feel, and behave in the workplace Schein (2011). It has also been described as a set of values, beliefs, and behavior patterns that differentiate one organization from other organizations Ortega-Parra & Sastre-Castillo (2013).

Operational Definition: A cognitive and behavioral framework that has a positive or negative impact on the hospital in general and the staff in particular, that includes three dimensions (organizational values, organizational beliefs and organizational expectations).

## 1.6 Conceptual Framework of Study

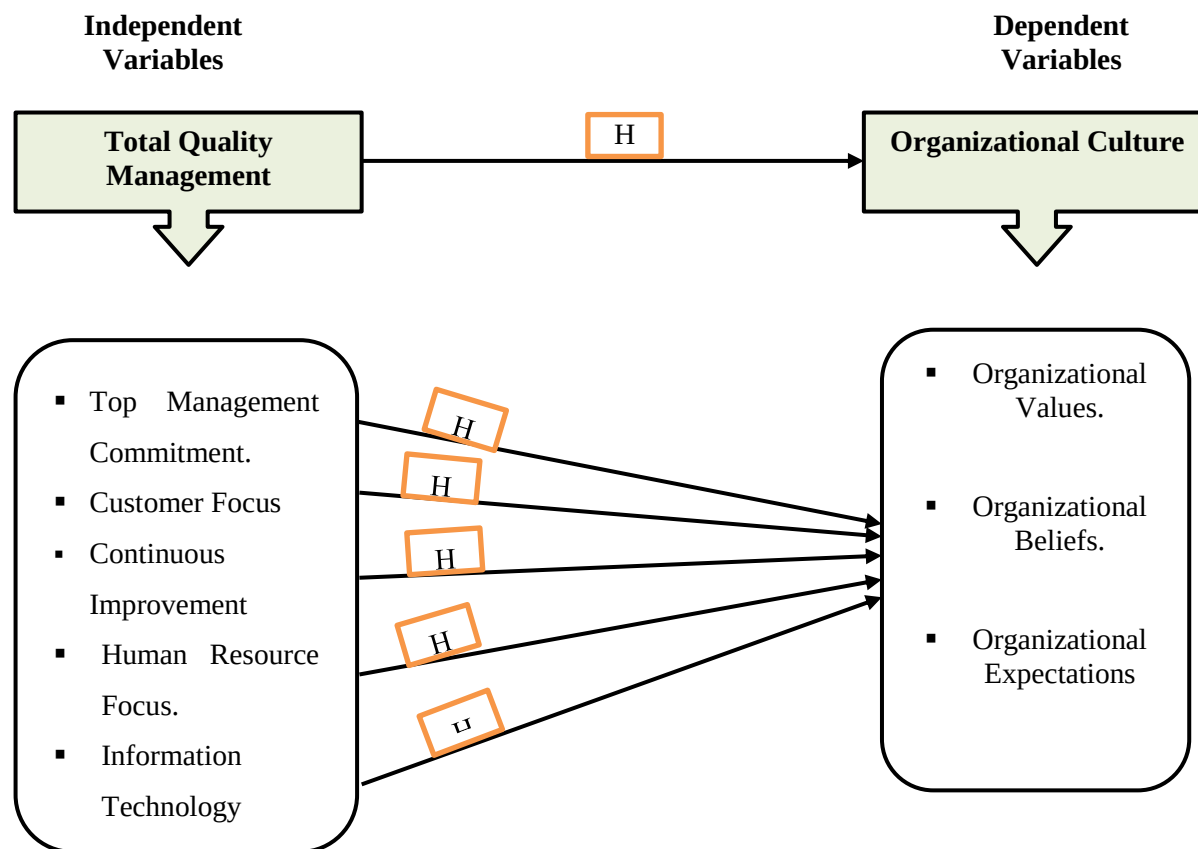


Figure 1 Model (Prepared by the researcher based on previous studies)

## 1.7 Literature Review and Previous Study

### 1.7.1 Total Quality Management (TQM)

In today's competitive business world, quality is critical. For many years, firms have focused on the quality of their performance in order to maintain a competitive advantage. Various initiatives were improved the quality of performance, and services had evolved over time. At the turn of the twentieth century, the emphasis was on observation. (Dale, 1999). Some authors (Deming (1982), Kano (1984), Ishikawa (1985), Juran and Gryna (1980)) defined quality as Quality is a philosophy focusing on doing things right for competitiveness and profitability, encompassing two distinct concepts: consistency and suitability for purpose. Quality means many things to different individuals and varies by sector (Dale, 1999). Quality is included in this definition because TQM is the peak of a hierarchy of quality definitions: Quality: means consistently exceeding customers' expectations. Total quality: achieving high quality at a reasonable cost.

TQM's historical evolution or development has occurred in four stages, which can be classified as follows, according to Dahlgaard et al. (2007), Quality Inspection (QI)- the goal of the inspection was for the inspectors to separate the poor-quality

from the acceptable quality product, which would then be scrapped, reworked, or sold as lower quality. Quality Control (QC)- monitoring and regulating services to assist in distinguishing and separating two categories of process variation: variation caused by random causes and variation caused by assignable or specific causes. The primary procedures that assist services in meeting the needs of consumers are inspection and quality control, which necessitate more process control and less evidence of nonconformance. Quality Assurance (QA)- includes all preceding phases (quality inspection and control) to provide sufficient assurance that a service will meet the expectations of customers. During this stage, there was also a change in emphasis from detection to prevention of poor quality, with the goal of ensuring that products and services fulfill quality standards. Total Quality Management (TQM)- requires understanding and applying quality management principles and concepts in all aspects of activities; it must also be applied at every level, stage, and department of the organization. TQM concept must be supplemented by the use of sophisticated quality management techniques. The goal of TQM is to achieve total quality through everyone's participation. TQM, according to Dahlgaard et al. (2007), is "the way of life of an organization committed to customer satisfaction through continuous improvement." This style of life differs from one organization to the next and from one country to the next, but it shares certain fundamental concepts that can be followed to grow market share, profits, and reduce costs. Therefore, this study will adopt on the dimensions that were included in the previous studies of (Idriss et al. ,2022; Al-Hajji ,2022; Khrais ,2021; Adhiambo ,2020; Al-Mashdli ,2019; Sabella et al., 2015; and Alamri et al., 2014) which can be identified as follows: (top management commitment, customer focus, continuous improvement, human resource focus, and information technology).

### **1.7.2 Organizational Culture (OC)**

Culture is an arrangement of various characteristics that express an organization and distinguish the firm from others (Forehand and von Gilmer, 1964). According to Hofstede (1980), culture is the collective thinking of minds that distinguishes members of one group from members of another. According to Schein (1990), culture is a set of various values and practices that can be considered too guide to success. Culture, according to Kotter and Heskett (1992), is a fairly established set of beliefs, behaviors, and values that society contains in general. In simple terms, culture is the knowledge, explanations, values, beliefs, communication, and behaviors of a large group of individuals at the same time and location.

Thus, culture as a concept is an abstraction. If an abstract idea is to be beneficial in human thinking, it should be observable while also improving our knowledge of a series of events that are otherwise confusing or poorly understood. The culture can be defined as a pattern of shared basic assumptions learned as it solved its problems of external adaptation and internal integration, which has proven to be valid enough to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (Schein, 2011).

Consultants and researchers have promoted "culture surveys" and claimed that they can improve organizational performance by assisting organizations in creating specific types of cultures, but these claims are frequently based on a very different definition of culture than the one (Denison, 1990; Sackman and Bertelsman, 2006). As we will see, whether a culture is "good" or "bad," "functionally effective" or not is determined not by the culture alone, but by the culture's connection to the environment in which it exists.

Organizational culture emerges as a result of ongoing conversations regarding values, meaning, and properties between members of an organization and their surroundings (Seel, 2000).

Organizational culture refers to the shared values, beliefs, and norms that shape employees' thoughts, feelings, and behaviors in the workplace (Schein, 2011).

According to Marcoulides & Heck (1993) and Schein (1990), organizational culture helps members learn, feel, and establish the values, expectations, behavior, patterns, and norms that support high levels of success. This makes it easier to identify acceptable solutions to challenges. Therefore, this study will adopt on the dimensions that were included in the previous studies of (Mohamed, 2018; Alnusur, 2012; and Barakat, 2007) which can be identified as follows: (organizational values, organizational believes and organizational expectations) because these dimensions meet the purpose of measuring the variable, and they are appropriate with the sample of the study population.

### **1.7.3 Previous Study**

#### **1.7.3.1 Coelho et al., (2022). Entitle:**

"Influence of Organizational Culture on Total Quality Management Implementation in the Australian Construction Industry". The study examines the impact of organizational culture on total quality management implementation in the Australian construction industry. The research uses the Competing Values Framework (CVF) and an online questionnaire. Results show that Australian construction organizations are dominated by market and external cultures, with

hierarchical cultures potentially hindering successful TQM implementation. A mix of adhocracy and market cultures can improve TQM implementation.

#### **1.3.7.2 Mishnan (2016). Entitle:**

"The Role of Organizational Culture in the Application of Total Quality Management in Institutions of Higher Education: - A Case Study of Hajj Lakhdar University - Batna, - Lakhdar University, Algeria". The study aimed was to examine the role of organizational culture in the effective application of Total Quality Management (TQM) in higher education institutions. It found a strong correlation between the degree of practicing organizational values and the extent of applying total quality, as these values play a crucial role in improving performance. However, the study also identified obstacles such as weak relationships with the labor market and lack of customer satisfaction standards.

#### **1.3.7.3 Al-Jalahma (2012). Entitle:**

"Impact of Organization Culture on TQM Implementation Barriers in Bahrain Companies". This study aimed to examine the impact of organizational culture (OC) on Total Quality Management (TQM) implementation barriers in Bahrain companies. The research used a quantitative methodology, using an online survey questionnaire and structured interviews with 325 organizations. Results showed that group culture helped decrease TQM implementation barriers, as did employee, information, and customer barriers. Rational culture decreased top management barriers, but not employee and customer barriers. Hierarchical culture significantly reduced planning and process management barriers, while developmental culture had potential to lower employee and customer barriers.

#### **1.3.7.4 Gröndahl et al., (2011). Entitle:**

" Impact of Organizational Culture on Quality Management A case study in Manufacturing in Sweden". This thesis aims to increase the understanding of the relation between quality management practices and organizational culture. The research has shown that the practice in greatest need of more focus at the specific unit is the process management practice, which implies a shift from quality control towards preventive actions and work towards reduction of variation within production. In order to achieve a higher performance in the process management practice, it is important to increase the feeling of empowerment among employees and to involve the people closest to the process in the quality efforts at the unit. Finally, it can be concluded that the use of frameworks and models for evaluating organizational cultures has shown to be difficult, due to the complexity of the cultural concept.

- Comment on previous studies:

- Differences:

It became clear from reviewing previous studies that dealt with total quality management and its impact on organizational culture that there is a difference between the environments in which the studies were applied, the difference in the activity of the organizations in which they were applied, the diversity of variables, and the multiplicity of statistical methods used to obtain and analyze data.

- Points of agreement:

The current study agreed with previous studies in the methodology followed, which is the descriptive analytical methodology, and with some of them in the application sector, in addition to the fact that there is agreement in the independent variable and its dimensions with some of those previous studies and also agreement in some dimensions of the dependent variable.

- Distinguishes the current study from previous studies:

The current study focused on total quality management and its impact on organizational culture. This study was also applied as an administrative topic to the private hospital sector, as the hospital represents an important sector because it focuses on human health.

## **2.0 Research Methodology**

### **3.0 Study Design**

The purpose of this paper is to investigate the impact of TQM (TMC, CF, CI, HRF and IT) in organizational culture (organizational values, organizational believes and organizational expectations) in private hospitals in Yemen, with a focus on the interaction between exogenous and endogenous variables. Quantitative research is a crucial technique for explaining connections between variables, involving data gathering, analysis, and interpretation. It employs statistical, validity, and reliability testing methodologies, allowing for generalization of results to the entire population.

#### **3.1 Population of the Study**

In this study, the researcher will target category (A) of the private hospitals that are located in the Sana'a Capital Municipality as a research population, which number (8) hospitals, on the basis of the Ministry of Public Health and Population (2020) including (University of Science and Technology Hospital, Azal Hospital, Al-Yemen Al-Saeed Hospital, German Saudi Hospital, Modern European Hospital, Al-Arabi International Hospital, Dr. Abdul Qader Al-Mutawakel Hospital and Modern German Hospital).

The following hospitals are classified as category A: University of Science and Technology Hospital (USTH), Modern European Hospital and Azal Hospital. This



category of hospitals was targeted as a research population for the following reasons:

- 1- Category (A) are all general hospitals, which include all specialties and they are focusing in applying quality management.
- 2- Category (B and C) are mostly specialized, small hospitals and they don't focus for applying quality management.

It should be noted that each of these hospitals consists of a number of different functions job, which are: management levels such as top management, middle management and first-line management, medical, medical assistant and technical, as shown in the Table (1).

| No           | Name of Hospitals        | Top Management | Middle Management | First-Line Management | Doctors    | Nurses     | Laboratories | Anesthetics Technical | Operational Technical | Radiographers | Maintenance of Medical Devices | Total      |
|--------------|--------------------------|----------------|-------------------|-----------------------|------------|------------|--------------|-----------------------|-----------------------|---------------|--------------------------------|------------|
| 1            | USTH                     | 16             | 20                | 50                    | 50         | 150        | 30           | 10                    | 15                    | 15            | 5                              | 361        |
| 2            | Modern European Hospital | 5              | 6                 | 26                    | 16         | 120        | 13           | 9                     | 11                    | 11            | 3                              | 220        |
| 3            | Azal Hospital            | 6              | 16                | 30                    | 45         | 140        | 17           | 10                    | 12                    | 15            | 4                              | 295        |
| <b>Total</b> |                          | <b>27</b>      | <b>42</b>         | <b>106</b>            | <b>111</b> | <b>410</b> | <b>60</b>    | <b>29</b>             | <b>38</b>             | <b>41</b>     | <b>12</b>                      | <b>876</b> |

The source is human resources and quality management in hospitals (2022)

### 3.2 Sample of the Study:

The research sample is a sub-section of the research population. The researcher selected the research sample from among the (A)-class hospitals in two steps:

#### ■ The First Step

Selecting a random sample of hospital. The researcher at this step selected three hospitals by following the simple random sampling method, where the lottery method was used. This step resulted in selecting the following hospitals: USTH, Modern European Hospital and Azal Hospital. The researcher chooses the three hospitals from eight hospitals, as what the researcher mentioned before in the population of study. In addition, firstly the three hospitals are from category(A),secondly, these hospitals homogeneous, finally, difficulty in studying the entire target population. After selecting the three hospitals randomly, the researcher conducted a field visit to these three private hospitals to find out the size of the employees at each job level. The statistics obtained After selecting the three hospitals randomly, the researcher conducted a field visit to these three

private hospitals to find out the size of the employees at each job level. The statistics obtained by the researcher were as shown in the table (1).

#### ■The Second Step

Selection of a sample of hospital employees. It is clear from the first step, according to which the random selection of three hospitals was carried out, that they include a large number of employees, reached to (876) individuals distributed among number of different functions job, which are: management levels such as top management, middle management and first-line management, medical, medical assistant and technical.

Therefore, the researcher, for the purpose of achieving the objectives of the study, will draw up a proportional stratified random sample that includes 50% of the number of employees in each job (stratum) that is a total of (444) employees representing the three hospitals, which means that there is a proportionality between the number of each job (stratum) and between the number of employees in the job they represent in each hospital. Table (2) shows the number of members of the proportional stratified random sample according to the jobs they occupy in each of the three hospitals.

**Table (2) A Proportional Stratified Random Sample of the Employees in Private Hospitals**

| No          | Name of Hospitals        | Top Management | Middle Management | First-Line Management | Doctors | Nurses | Laboratories | Anesthetics Technical | Operational Technical | Radiographers | Maintenance of Medical Devices | Total |
|-------------|--------------------------|----------------|-------------------|-----------------------|---------|--------|--------------|-----------------------|-----------------------|---------------|--------------------------------|-------|
| 1           | USTH                     | 16             | 20                | 50                    | 50      | 150    | 30           | 10                    | 15                    | 15            | 5                              | 361   |
|             |                          | 8              | 10                | 25                    | 25      | 75     | 15           | 5                     | 8                     | 8             | 3                              | 182   |
| 2           | Modern European Hospital | 5              | 6                 | 26                    | 16      | 120    | 13           | 9                     | 11                    | 11            | 3                              | 220   |
|             |                          | 3              | 3                 | 13                    | 8       | 60     | 7            | 5                     | 6                     | 6             | 2                              | 113   |
| 3           | Azal Hospital            | 6              | 16                | 30                    | 45      | 140    | 17           | 10                    | 12                    | 15            | 4                              | 295   |
|             |                          | 3              | 8                 | 15                    | 23      | 70     | 9            | 5                     | 6                     | 8             | 2                              | 149   |
| Total       |                          | 27             | 42                | 106                   | 111     | 410    | 60           | 29                    | 38                    | 41            | 12                             | 876   |
| Sample Size |                          | 14             | 21                | 53                    | 56      | 205    | 31           | 15                    | 20                    | 22            | 7                              | 444   |

The source is human resources and quality management in hospitals (2022)

### 3.3 Instrument of the Study

A self-administered questionnaire was conducted to collect the data., depend on previous study, literature that related to the current research that help to design the questionnaire, and Its procedures are subject to validity and reliability according to scientifically recognized procedures. On a seven-point Likert scale, these questions in the paper's questionnaire were evaluated. The survey asked about TQM and OP.



The questionnaire was divided into three parts as follows: The First Part: contain demographic data (sex, age, qualification, job title, number of years of service in health sector, and hospitals). The Second Part, independent variables: TQM represented in five dimensions as Top Management Commitment (TMC), Customer Focus (CF), Continuous Improvement (CI), Human Resource Focus (HRF), and Information Technology (IT), also, the items for each dimension. The third part dependent variables: OC represented in three dimensions as organizational values, organizational beliefs, and organizational expectations), also. All of the measuring items used in the current paper were taken from (48) item investigations, as in the Table (3).

| Table (3) description of questionnaires                                                          |              |
|--------------------------------------------------------------------------------------------------|--------------|
| Variables                                                                                        | NO. of Items |
| Demographic Data                                                                                 | 6            |
| TQM                                                                                              | 27           |
| OC                                                                                               | 15           |
| <b>Total of Items</b>                                                                            | <b>48</b>    |
| The source is prepared by the researcher based on the outcomes of the statistical program (SPSS) |              |

### 3.0 Findings and Discussion

#### 3.1 Respondent Profile

According to the respondent profile, firstly by gender, the majority of private hospital employees were males, with a total of (258) out of (399), accounting for approximately (64.7) percent, while the rest were female, with only (35.3%). Secondly, the most common age of the respondents was between 20 and 30 years, accounting for (52.4%) of the participants. This was followed by respondents aged 31 years and over, which represented (1.8%) of the sample. Thirdly, the highest qualification was in holders of bachelor degrees, accounting for (51.4%) of the individuals, while the lowest educational level was in secondary school certificates (3.8%). Fourthly, according to job title, the majority of private hospital employees were technical (65.2%), while the lowest was the doctor (11%). Fifthly, the number of years of service in the health sector (48.4%) of the respondents have served between 3 and 7 years, which was the majority of survey respondents, while the employees' age of 18 and over (10.3%) was the lowest. Lastly, hospitals: 45.6 percent of the respondents worked in USTH, while the employees worked in modern European hospitals (26.3%), and the respondents worked in Azal Hospital (28.1%). The findings illustrated that the in the Table (4) below.

**Table (4): Shows demographic characteristics of the respondents**

| Variables                                                                                        | Items                    | Frequency  | Percentage   |
|--------------------------------------------------------------------------------------------------|--------------------------|------------|--------------|
| Gender                                                                                           | Male                     | 258        | 64.7         |
|                                                                                                  | Female                   | 141        | 35.3         |
|                                                                                                  | <b>Total</b>             | <b>399</b> | <b>100.0</b> |
| Age                                                                                              | 20 to 30 years           | 209        | 52.4         |
|                                                                                                  | 31 to 40 years           | 132        | 33.1         |
|                                                                                                  | 41 to 50 years           | 51         | 12.8         |
|                                                                                                  | 51 years and over        | 7          | 1.8          |
|                                                                                                  | <b>Total</b>             | <b>399</b> | <b>100.0</b> |
| Qualification                                                                                    | Secondary                | 15         | 3.8          |
|                                                                                                  | Post-Secondary Diploma   | 71         | 17.8         |
|                                                                                                  | Bachelor's               | 205        | 51.4         |
|                                                                                                  | Master's                 | 77         | 19.3         |
|                                                                                                  | PhD (Board)              | 31         | 7.9          |
|                                                                                                  | <b>Total</b>             | <b>399</b> | <b>100.0</b> |
| Number of years of service                                                                       | 3 to 7 years             | 193        | 48.4         |
|                                                                                                  | 8 to 12 years            | 118        | 29.6         |
|                                                                                                  | 13 to 17 years           | 47         | 11.8         |
|                                                                                                  | 18 years and over        | 41         | 10.3         |
|                                                                                                  | <b>Total</b>             | <b>399</b> | <b>100.0</b> |
| Job title                                                                                        | Doctor                   | 44         | 11.0         |
|                                                                                                  | Technical                | 260        | 65.2         |
|                                                                                                  | Administrative           | 95         | 23.8         |
|                                                                                                  | <b>Total</b>             | <b>399</b> | <b>100.0</b> |
| Hospitals                                                                                        | USTH                     | 182        | 45.6         |
|                                                                                                  | Modern European Hospital | 105        | 26.3         |
|                                                                                                  | Azal Hospital            | 112        | 28.1         |
|                                                                                                  | <b>Total</b>             | <b>399</b> | <b>100.</b>  |
| The source is prepared by the researcher based on the outcomes of the statistical program (SPSS) |                          |            |              |

### 3.2 Reliability Analysis for Questionnaire Items:

The reliability of instruments concerns the degree to which a particular instrument gives similar results over a number of repeated trials (Mugenda & Mugenda, 2003). In order to test the reliability of the questionnaire, Cronbach's alpha test for reliability was used (Otieno, 2017) in SPSS 26V. If the value of the alpha coefficient is less than 60%, the reliability of the questionnaire list is weak; if it's between 60% and 70%, the credibility is considered acceptable; if the alpha value is between 70% and 80%, the study instrument is considered good; and if the value is more than 80%, the reliability is high (Al-Hajji, 2022). Table (5) displays the Cronbach's alpha coefficient for each of the variables and dimensions that were assessed.

**Table (5) Summary statistics of reliability analysis**

| Constructs                                                                                       | Cronbach's Alpha |
|--------------------------------------------------------------------------------------------------|------------------|
| Total Quality Management                                                                         | 0.989            |
| Organizational Culture                                                                           | 0.971            |
| The source is prepared by the researcher based on the outcomes of the statistical program (SPSS) |                  |

As explained above in Table (5), the result of Cronbach's alpha ranges between 0.971 and 0.989, which are within the recommended value of reliability, according to Al-Hajji (2022). Additionally, the study used correlation coefficients between dimensions and variables and between each item of the questionnaire and its variable.

### 3.3 Descriptive Analysis

According to Sekaran and Bougie (2010), researcher can have a thorough understanding of how the survey respondents responded to the questionnaire items by using the descriptive statistics of the variable mean and standard deviation. The predicted range is not exceeded by the values of the mean or standard deviation (Sekaran & Bougie, 2010). The researcher can get a clear sense of how survey respondents have answered the survey's questions using the descriptive statistics of variables through mean and standard deviation (Sekaran & Bougie, 2010). The descriptive statistic was used to make sure that the mean and standard deviation of the data were usually as predicted and that no entries were outside the expected range. Table (6) presents the results of descriptive statistics.

**Table (6) The result of descriptive statistics**

| Table (6) The result of descriptive statistics                                                   |      |                |         |                     |
|--------------------------------------------------------------------------------------------------|------|----------------|---------|---------------------|
| Dimensions of study                                                                              | Mean | Std. Deviation | Ranking | Degree of Agreement |
| TMC                                                                                              | 5.4  | 1.3            | 2       | High                |
| CF                                                                                               | 5.3  | 1.3            | 3       | High                |
| CI                                                                                               | 5.3  | 1.3            | 4       | High                |
| HRF                                                                                              | 5.1  | 1.4            | 5       | High                |
| IT                                                                                               | 5.5  | 1.3            | 1       | High                |
| Total TQM                                                                                        | 5.3  | 1.2            | High    |                     |
| Organizational Values                                                                            | 5.3  | 1.2            | 1       | High                |
| Organizational Beliefs                                                                           | 5.03 | 1.3            | 2       | High                |
| Organizational Expectations                                                                      | 5.0  | 1.5            | 3       | High                |
| Total OC                                                                                         | 5.11 | 1.3            | High    |                     |
| The source is prepared by the researcher based on the outcomes of the statistical program (SPSS) |      |                |         |                     |

From Table (6) above, all variables and dimensions had high means. Firstly, the TQM had a high mean with a value of (5.3) and a standard deviation of (1.2). The dimensions of this variables come as follow, TMC ranked second, highest degree of agreement from the sample member's point of view with mean was (5.3) and standard deviation was (1.3), CF ranked third, highest degree of agreement from the

sample member's point of view with mean was (5.3) and standard deviation was (1.3), CI ranked fourth, highest degree of agreement from the sample member's point of view with mean was (5.3) and standard deviation was (1.3), HRF ranked fifth, somewhat highest degree of agreement from the sample member's point of view with mean was (5.1) and standard deviation was (1.4) and IT ranked first, highest degree of agreement from the sample member's point of view with mean was (5.5) and standard deviation was (1.3).

In conclusion, all dimensions of quality were agreed upon to a high degree by the sample members, and this indicates the attention of the hospitals under study to the importance of TQM. This result partially agreed with Idriss et al. (2022), Arqawi and Ziad (2020), Kagiri and Njung (2020), Badr and Al-Madhoun (2017), Abdul Wahab (2018), and Shakot (2015). While disagreeing with Hawari (2014) and Darwish (2017).

Secondly, OC was high; the mean was (5.1) and the standard deviation was (1.3). The dimensions of these variables are as follows: organizational values ranked first, highest degree of agreement from the sample member's point of view with a mean of (5.3) and a standard deviation of (1.2), organizational beliefs ranked second highest degree of agreement from the sample member's point of view with a mean of (5.0) and a standard deviation of (1.3), and organizational expectations ranked third highest degree of agreement from the sample member's point of view with a mean of (5.0) and a standard deviation of (1.4).

In conclusion, all dimensions of culture were agreed upon to a high degree by the sample members in private hospitals, and this indicates that hospitals under study are striving to improve their culture. This result partially agreed with the study (Evangeline, 2021) and (Abdulrahman, 2018).

### **3.4 Structural Equation Modeling (SEM)**

The structural equation modeling (SEM) technique, as described by Hair et al. (2010), enables the examination of distinct relationships for each dependent variable within a given set. According to Byrne (2013), SEM is a multivariate statistical technique used to examine the direct and indirect routes among exogenous and endogenous latent variables. Many statisticians and researchers, like Hair et al. (2010) and Kline (2015), have shown that SEM outperformed regression when determining the mediating effect of a study variable. Khine (2015) has further shown how SEM offers explicit estimations of the factors governing error variance. Measurement errors cannot be evaluated or corrected using other multivariate approaches. Additionally, SEM techniques include both observable and latent (unobserved) variables. Additionally, SEM can estimate the direct and

indirect impacts of study variables and test models with multivariate linkages (Hair et al., 2010). Moreover, structural equation modeling (SEM) is becoming a preferred method for theory creation and testing (Hair et al., 2014). There seems to be consensus in the SEM literature among practitioners and theorists that there are processes involved in testing SEM models. According to Hair et al. (2018), these processes are model formulation, identification, estimating, evaluation, and revision.

### 3.5 Testing the validity of the hypothesis

To verify the validity of the hypothesis, a structural model was made for effecting the TQM in OC. Figure (2) and Tables (7,8) explains that:

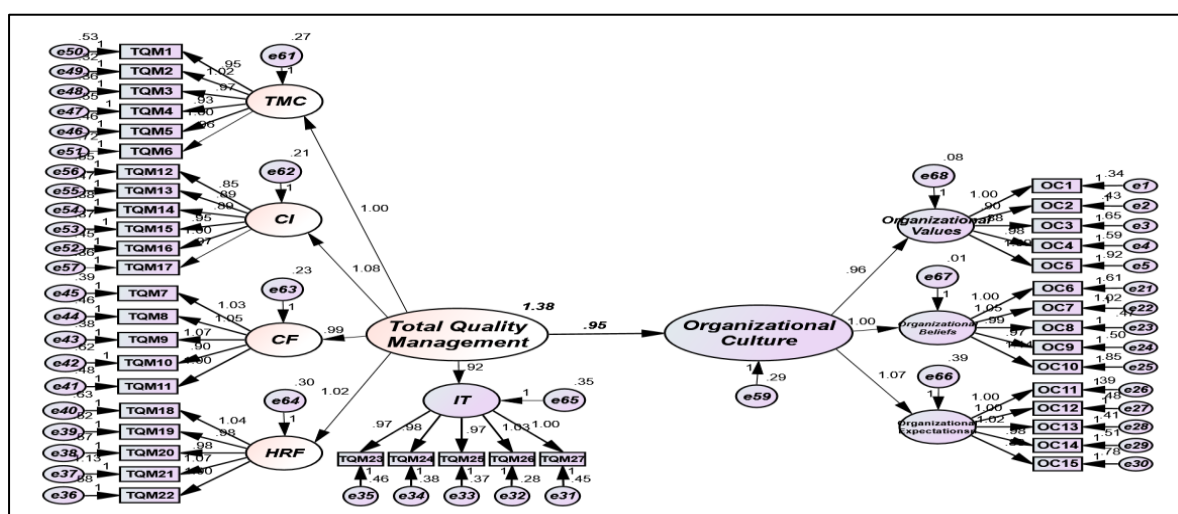


Figure (2) The Relationship Mode between TQM and OC

Table (7) The Fit Result of the Relationship between TQM and OC

| Model Quality Testing Indicator                 | Level of Acceptable | Level of Excellent | Value |
|-------------------------------------------------|---------------------|--------------------|-------|
| X / Degree of freedom (CMIN/DF)                 | < 5                 | < 2                | 3.895 |
| Root Mean Square Error of Approximation (RMSEA) | 0.05 to 0.08        | $\leq 0.05$        | 0.085 |
| Goodness of Fit Index (GFI)                     | Between (0,1)       | $\geq 0.90$        | 0.612 |
| Adjusted Goodness of Fit Index (AGFI)           | Between (0,1)       | $\geq 0.80$        | 0.646 |
| Comparative Fit Index (CFI)                     | Between (0,1)       | $\geq 0.90$        | 0.888 |
| Normed Fit Index (NFI)                          | Between (0,1)       | $\geq 0.90$        | 0.855 |
| Incremental Fit Index (IFI)                     | Between (0,1)       | $\geq 0.90$        | 0.888 |
| Tucker-Lewis Index (TLI)                        | Between (0,1)       | $\geq 0.90$        | 0.881 |

The source is prepared by the researcher based on the outcomes of the statistical program (AMOS)

Table (8) Pathways Testing the Impact of TQM in OC

| IDV | Path | DV | Estimate B | S.E.  | C.R.   | P   | Result |
|-----|------|----|------------|-------|--------|-----|--------|
| TQM | ---> | OC | 0.946      | 0.052 | 18.225 | *** | Sig.   |

(\*\*\*) It means a statistical function at a significance level less than (0.001).

The source is prepared by the researcher based on the outcomes of the statistical program (AMOS)

**It is clear from the Figure (1) and Tables (7,8) that:**

- All indicators of conformity quality came close to the acceptable value, which indicate the acceptance of the model of the relationship between total quality management and organizational culture.
- There is a positive effect of TQM on OC in private hospitals in Yemen, where the value of (B) reached (0.946), and the Critical Ratio (CR) shown in Table (8) reached a value of (18.2), which is a significant value at the significance level (0.001) This confirms that the effect is statistically significant.

According to that, the TQM coefficient (0.946), which indicates that an increase of (0.946) units in TQM contributes to an increase of (0.946) units in organizational culture.

The findings of the most previous studies suggested that organizational culture could enhance TQM success, such as Al-Nur (2022). However, the study objective of the current study is to examine the effect of TQM in organizational culture in private hospitals in Yemen.

The result that obtained through applying SEM using Amos 21 v, illustrated that TQM in dimensions of top management commitment, customer focus, continuous improvement, human resource focus, and information technology had a significant impact in organizational culture according to the result shown in Table (8). Thus, objective one has been achieved.

The result of this study confirmed that there is a positive impact of TQM in organizational culture in private hospitals in Yemen, where the value of ( $\beta$ ) (0.946), the critical ratio (CR) shown in Table (8) has a value of (18.2), which is a significant value at the level of significance (0.001). This confirms that the effect is statistically significant, and the hypothesis H is accepted.

So, to make the result clearer to show the effecting of dimensions of TQM in OC, using Simple Linear Regression Analysis

Regression analysis was carried out to find out the level to which the dependent variable could be predicted by the independent variables was used, the findings of the analysis are indicated in the Table (9) below.



**Table (9) TQM's Dimensions in OC Regression**

| Model Summary                                                                                    |            |                            |                   |                            |         |       |
|--------------------------------------------------------------------------------------------------|------------|----------------------------|-------------------|----------------------------|---------|-------|
| Model                                                                                            | R          | R Square                   | Adjusted R Square | Std. Error of the Estimate |         |       |
| 1                                                                                                | .871a      | 0.759                      | 0.756             | 0.63204                    |         |       |
| a. Predictors: (Constant), IT, TMC, HRF, CI, CF                                                  |            |                            |                   |                            |         |       |
| ANOVA a                                                                                          |            |                            |                   |                            |         |       |
| Model                                                                                            |            | Sum of Squares             | df                | Mean Square                | F       | Sig.  |
| 1                                                                                                | Regression | 494.054                    | 5                 | 98.811                     | 247.356 | .000b |
|                                                                                                  | Residual   | 156.991                    | 393               | 0.399                      |         |       |
|                                                                                                  | Total      | 651.045                    | 398               |                            |         |       |
| a. Dependent Variable: Total OC                                                                  |            |                            |                   |                            |         |       |
| b. Predictors: (Constant), IT, TMC, HRF, CI, CF                                                  |            |                            |                   |                            |         |       |
| Coefficients a                                                                                   |            |                            |                   |                            |         |       |
| Model                                                                                            |            | Unstandardized Coefficient |                   | Standardized Coefficients  | t       | Sig.  |
|                                                                                                  |            | B                          | Std. Error        | Beta                       |         |       |
| 1                                                                                                | (Constant) | 0.405                      | 0.149             |                            | 2.729   | 0.007 |
|                                                                                                  | TMC        | 0.189                      | 0.053             | 0.191                      | 3.588   | 0.000 |
|                                                                                                  | CF         | -0.056                     | 0.054             | -0.057                     | -1.027  | 0.305 |
|                                                                                                  | CI         | 0.229                      | 0.054             | 0.233                      | 4.211   | 0.000 |
|                                                                                                  | HRF        | 0.430                      | 0.042             | 0.470                      | 10.241  | 0.000 |
|                                                                                                  | IT         | 0.106                      | 0.046             | 0.104                      | 2.280   | 0.023 |
| a. Dependent Variable: Total OC                                                                  |            |                            |                   |                            |         |       |
| The source is prepared by the researcher based on the outcomes of the statistical program (SPSS) |            |                            |                   |                            |         |       |

From the above Table (9), a simple linear regression model was conducted to test whether TQM with its various dimensions had an impact in OC in private hospitals in Sana'a city. First, findings of the Model Summary showed that the relationship was strong ( $R = 0.871$ ) between TQM and OC. Secondly, the findings showed that 75.6% of the variance in OC was explained by TQM with its various dimensions (Adjusted R square = 0.756).

Third, the findings of the ANOVA indicated that the relationship was positive and significant with  $F = 247.356$ ,  $N = 399$ ,  $P < 0.001$ . This means that the hypothesis was confirmed and hence TQM's dimensions have a positive impact of OC in private hospital in Sana'a.

Fourth, an analysis of the Regression Coefficients indicated that there is a statistically significant impact of TMC in OC, the Beta value was (0.191) and the significant level was (0.000), there isn't a statistically significant impact of CF in OC, the Beta value was (-0.057) and the significant level was (0.305), there is a



statistically significant impact of CI in OC, the Beta value was (0.233) and the significant level was (0.000), there is a statistically significant impact of HRF in OC, the Beta value was (0.470) and the significant level was (0.000), and there is a statistically significant impact of IT in OC, the Beta value was (0.104) and the significant level was (0.023). In this regard, the strongest factor effecting the OC was HRF, then CI, and IT. The least important variable was TMC. But there isn't statistically significant impact of CF of TQM in OC in private hospitals. These findings mean that a rise in TQM with its various dimensions would have a positive impact in OC in private hospitals. This result partially agreed with a study (Al-Swidi and Mahmood, 2012).

#### **4.0 Conclusion**

The research reached the following conclusions:

- All variables had a high level of agreement from the respondents for means and a moderate standard deviation level of variability in the data, which is generally considered acceptable for analytic data.
- All indicators of conformity quality came close to the acceptable value, which indicates the acceptance of the model of the relationship between total quality management and organizational culture.
- There is a positive effect of TQM on OC in private hospitals in Yemen.
- The strongest factor effecting the OC was HRF, followed by CI and IT. The least important variable was TMC. But there isn't statistically significant impact of CF on TQM in OC in private hospitals. These findings mean that a rise in TQM with its various dimensions would have a positive impact on OC in private hospitals.
- Total Quality Management (TQM) improves organizational culture through commitment, customer focus, continuous improvement, human resource focus, and information technology. It enhances product and service quality, customer satisfaction, and competitiveness.
- TQM fosters employee empowerment, teamwork, and continuous learning, resulting in motivated, engaged, and committed employees committed to high-quality work through training and development programs.
- TQM fosters employee empowerment, teamwork, and continuous learning, resulting in motivated, engaged, and committed employees committed to high-quality work through training and development programs.

#### **5.0 Recommendations and Suggestions**

To improve TQM's impact on organizational culture, senior leaders should demonstrate commitment, actively participate, communicate TQM's importance,



set clear goals, and provide necessary resources. Organizations should foster a culture of continuous improvement by encouraging employees to identify and address inefficiencies, quality issues, and customer concerns through regular feedback mechanisms. Organizations can enhance performance by utilizing data and analytics to monitor quality performance, identify improvement opportunities, and make informed decisions.

Organizations should collaborate with suppliers to ensure quality inputs and materials, implement evaluation systems, and conduct regular audits. Benchmarking against industry leaders and adopting best practices can drive continuous improvement. These recommendations can maximize TQM benefits, increase customer satisfaction, enhance competitiveness, and lead to long-term success.

On the other hand, recommendations including the following: Top Management Commitment should pay more attention to improving TQM because of its ability to have an effective positive impact in organization culture. In order to maintain modern technology in all administrative, medical, and technical domains of work and to achieve efficient and effective performance, professionals in these fields must get ongoing training. An organization's strong management and medical culture contribute to higher performance levels. In order to improve culture, managers make connections between applying TQM and culture of their organizations.

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