



أثر إدارة الجودة الشاملة على تحسين الأداء التنظيمي
دراسة حالة على المستشفيات الخاصة في اليمن

**The Effect of Total Quality Management on Improving Organizational
Performance: A Case Study of Some Private Hospitals in Yemen**

Ahmed Mohammed Al-Shami

*Researcher - Faculty of Commerce & Economic - Sana'a
University - Yemen*

أحمد محمد الشامي

باحث - كلية التجارة والاقتصاد - جامعة صنعاء - اليمن

Samah Motlak Al-Sufi

*Researcher – Central of Business Administration
Faculty of Commerce & Economic
Sana'a University - Yemen*

سماح مطلق الصوفي

باحث - مركز إدارة الاعمال
كلية التجارة والاقتصاد - جامعة صنعاء - اليمن

الملخص:

يجب مراعاة أحكام القانون المتعلقة بشروط وضمانات الحبس الاحتياطي، مالم فإنه عند مخالفة تلك الأحكام أو عدم مراعاتها يحق للمتهم المحبوس احتياطياً الدفع ببطلان هذا الحبس، ومن أهم ما توصلنا إليه في هذا الدراسة هو أن الأساس القانوني لهذا الدفع في القانون اليمني هو نص المادة (398) من قانون الإجراءات الجزائية، وفي القانون المصري هو نص المادة (333) من قانون الإجراءات الجنائية، وأن هذا الدفع من الدفع التي لا تتعلق بالنظام العام، بل من الدفع المتعلقة بمصلحة الخصوم، كما أنه من الدفع التي يختلط فيها الواقع بالقانون، وأخيراً يعد هذا الدفع من الدفع الجوهرية، أما بالنسبة إلى الأثر المترتب على هذا الدفع هو بطلان الدليل المستمد من إجراء الحبس الباطل الذي جاء مخالفاً لشروط وضمانات الحبس الاحتياطي استناداً إلى أحكام المادة (402) من قانون الإجراءات الجزائية اليمني، والمادة (336) من قانون الإجراءات الجنائية المصري.

الكلمات المفتاحية: إدارة الجودة الشاملة، الأداء التنظيمي، التزام الإدارة العليا، الكفاءة، الفعالية.

Abstract:

This paper aimed to determine the effect of Total Quality Management (TQM) on improving Organizational Performance (OP) in private hospitals in Yemen. To achieve the objectives of the study, a quantitative approach was used, utilizing both the descriptive and the analytical methods. The study population consisted of management levels such as Top management, Middle management and First-line management, Medical and Technical from private hospitals in the capital city, Yemen. A stratified random sampling was also taken, including 50% of the number of employees in each position. Questionnaires served as the primary tool for data collection. A total of (444) questionnaires were distributed, and (399) valid questionnaires (89.87%) response rate was collected for analysis. Data were analyzed 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 effect of TQM on improving organizational performance in private hospitals in Yemen. The paper presented a number of recommendations including the following: Top Management Commitment should pay more attention to improving TQM because of its ability to have an effective positive impact on organization performance levels. 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 performance, managers make connections between applying TQM and performance of their organizations.

Keywords: Total Quality Management, Organizational Performance, Top Management Commitment, efficiency, effectiveness.

1. Introduction

Organizational performance (OP) has been the most significant factor for all organizations, whether for profit or non-profit. Managers must understand which factors influence an organization's performance in order to fully capitalize on them and take appropriate action. Performance is the common denominator for all management and staff

activities (Balout, 2005:41). Performance expresses employee satisfaction in administrative organizations in general and service organizations in particular. Public and private entities' development of OP is crucial for global economic and cultural growth. Reliability and quality of work build trust. However, poor performance, ineffective management techniques, resource waste, and

conflicting authority contribute to weak competitiveness in these institutions (Farajallah, 2012, 2; (Al-Hayek, 2016, 9)

One of the most crucial industries for every nation and a key metric used to gauge global development rates is the health sector. Among the services provided by humans, health care ranks among the most vital (Al Bakri, 2005). Therefore, the senior management and staff of all healthcare organizations, including private hospitals, should be primarily focused on enhancing the performance of these facilities and the services they offer.

Nowadays, academics and researchers are paying more and more attention to total quality management (TQM), particularly in the discipline of strategic management. TQM as a practice strives for ongoing improvement in quality and, consequently, in the organization's performance. In the globalized economy, quality is seen as one of the factors that influences an organization's performance (Jaca & Psomas, 2015). 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.

Based on the foregoing, this paper investigates the effect of Total Quality Management (TQM) on improving organizational performance 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 in improving OP 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 performance of private hospitals, 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)). As OP is the most important consideration for every organization, several studies have been conducted in different countries and contexts focusing on the impact of TQM on OP or on the relationship between TQM and OP. Results have shown that TQM has a significant role on performance. However, some findings have shown that only some dimensions of TQM are positively correlated with organizational performance. (Jaafreh, 2013; Alamri et al., 2014; Idriss et al., 2022; Adhiambo, 2020; Rashwan, n.d.).

In Yemeni context, very few studies have focused on the role of TQM on OP and in sectors other than the health sector. (Khrais,2021; Al-Mashdli,2019; AL-Hajji, 2022). Several studies have investigated the relationship between TQM and OP, most of these studies were conducted in different countries and the majority relate to sectors other than the health sector such as banking, industry, telecommunication, electricity, IT, education...etc.

Results of the previous studies denote that TQM is responsible variable for improving OP. Such results, as well as the absence of an in-depth study of the relationship between

TQM and performance and any other variables responsible for the relationship between TQM and OP 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 effect of TQM in improving OP in private hospitals in Sana'a Capital Municipality, Yemen.

1.2 Questions of the Study:

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

- Is there an effect of TQM with its various dimensions (TMC, CF, CI, HRF and IT) on improving OP on private hospitals in Yemen? This question was examined through the following sub-questions:
 1. Is there an effect of TMC of TQM on improving OP in private hospitals in Yemen?
 2. Is there an effect of CF of TQM in improving OP on private hospitals in Yemen?
 3. Is there an effect of CI of TQM in improving OP on private hospitals in Yemen?
 4. Is there an effect of HRF of TQM in improving OP on private hospitals in Yemen?
 5. Is there an effect of IT of TQM in improving OP on private hospitals in Yemen?

1.3 Objectives of the Study:

The aim of this study is to highlight the effect of TQM with its various dimensions (TMC, CF, CI, HRF and IT) on improving OP (efficiency, effectiveness and customer satisfaction) in private hospitals in Yemen.

1.4 Hypothesis of the Study:

- H:** There is a statistically significant effect of TQM with its various dimensions (TMC, CF, CI, HRF and IT) on improving OP in private hospitals in Yemen. This hypothesis verifies through the following sub- Hypothesis:
- Ha:** There is a statistically significant effect of TMC of TQM on improving OP in private hospitals in Yemen.

Hb: There is a statistically significant effect of CF of TQM on improving OP in private hospitals in Yemen.

Hc: There is a statistically significant effect of CI of TQM on improving OP in private hospitals in Yemen.

Hd: There is a statistically significant effect of HRF of TQM on improving OP in private hospitals in Yemen.

He: There is a statistically significant effect of IT of TQM on improving OP in private hospitals in Yemen.

1.5 Significance of the Study:

It was expected that this study would be of two major significances i.e.: theoretical and practical:

1.5.1 Theoretical Significance:

Regarding the scientific significance, the researchers hoped that the current study may :

- Expand researchers' understanding of the factors and variables that contribute to improving performance in hospitals by revealing the direct effect of TQM on improving OP.
- contribute to understanding the inconsistent research findings in the previous studies regarding the direct (unmediated) impact of TQM on OP, including its expected contribution to identifying the most critical dimensions of TQM that are responsible for improving performance.
- provide two research tools (measurements) that were valid and reliable for using by researchers in future research, particularly Yemeni and Arab researchers studying the same variables included in this research (OP, and TQM).
- enrich the Yemeni, Arab and international library through the results it provides that address the knowledge gap regarding the effect of TQM in improving OP, or by confirming previous results on the impact of TQM in its dimensions as an independent variable on OP as a dependent variable.

1.5.2 Practical Significance:

Regarding the practical significance of this study, the researcher hoped that it may:

- represent 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.
- draw the attention of administrators and professionals in private hospitals to the need for the application of TQM to clarify its effect in improving OP.
- The researchers hope that it will be a reference for researchers and professionals in this field.

1.6 Definitions of Terms:

1.6.1 Total Quality Management (TQM):

Sadikoglu (2014) and Crosby (1979) define TQM as the systematic, organized way to ensure the progress of activities that were planned in advance. It is the optimal method that helps to prevent and avoid problems by encouraging good behavior as well as the optimal use of control methods that prevent these problems and make their prevention is possible.

▪ Procedural Definition of TQM:

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).

1.6.2 Organizational Performance (OP):

Daft (2000) and Richardo (2001) defined organizational performance as the ability of the organization to achieve its goals and objectives. According to Cascio (2014) organizational performance is the degree of attainment of work mission as measured in terms of work outcome, intangible assets,

customer link, and quality services. Kaplan and Norton (2001) defined organizational performance as the organization's capacity to accomplish its goals effectively and efficiently using available human and physical resources.

▪ Procedural Definition of (OP):

OP Means the actual output or results of an organization as measured against its intended outputs, or organization's actual output or outcomes in comparison to its expected outputs (goals and objectives), that includes three dimensions (efficiency, Effectiveness and customer satisfactions).

1.7 Literature Review

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 Kanji (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 Performance (OP)

Cascio (2006) defines performance as "the degree of achievement of the mission at work that builds up an employee job." Different researchers have different perspectives on performance. The term performance was commonly used by researchers to represent the range of measurements of transactional efficiency and input & output efficiency (Stannack, 1996). According to Barney (1991),

performance is a continuous process that is a source of contention among organizational experts.

According to Cascio (2001), Kaplan and Norton (2001) and Daft (2000), the organizational performance is the organization's capacity to achieve its goals effectively and efficiently using resources. Similarly, Daft (2000) and Richardo (2001) stated that organizational performance is defined as attaining organizational goals and objectives. According to Richardo (2001), the organization's success is demonstrated by a high return on equity, which is made possible by the construction of a solid employee performance management system. Therefore, this study will adopt on the dimensions that were included in the previous studies of (Idriss et al., 202; Khrais ,2021; Evangeline ,2021; Adhiambo ,2020; Al-Mashdli ,2019; and Hunt et al. ,2012) which can be identified as follows: (efficiency, effectiveness and customer satisfaction).

OP is influenced by various contexts and factors, but common characteristics include, according to Locke & Latham (2006), Eccles & Serafeim (2013), Deming (1986), and Kaplan & Norton (2001). Goal orientation in organizational performance involves setting clear targets and aligning efforts to achieve desired outcomes, providing direction and purpose to ensure successful achievement., organizational performance is assessed through systematic measurement and evaluation of key performance indicators (KPIs), enabling data-driven decisions, improvement identification, and accountability over time, organizational performance is enhanced through continuous improvement, which involves regularly reviewing data, identifying enhancement opportunities, and implementing changes to optimize performance and remain competitive, organizational performance is closely aligned with the strategic objectives and priorities of the organization. It involves ensuring that performance measures and initiatives are directly linked to the overall strategy. By aligning performance with strategy, organizations can focus their efforts on areas that contribute most significantly to their success, organizational performance takes into

account the needs and expectations of various stakeholders. It involves considering the interests of customers, employees, shareholders, suppliers, and the broader community. Organizations that prioritize stakeholder orientation are more likely to achieve sustainable and balanced outcomes, and the last Characteristic of OP is organizational performance requires accountability, adaptability, and transparency. It involves establishing responsibility and ownership at all levels, ensuring individuals and teams are held accountable for their performance. It also emphasizes effective communication of performance information to foster trust and engagement.

Several studies have been conducted in different countries and contexts focusing on the impact of TQM on OP or on the relationship between TQM and OP. Results have shown that TQM has a significant role on performance. However, some findings have shown that only some dimensions of TQM are positively correlated with organizational performance (Idriss et al., 2022; Adhiambo, 2020; Alamri et al., 2014 Jaafreh, 2013; and Rashwan, n.d.).

In the Yemeni context, very few studies have focused on the role of TQM on OP and in sectors other than the health sector. (AL-Hajji, 2022; Khrais,2021; Al-Mashdli,2019).

2. Research Methodology

2.1 Study Design

The purpose of this paper is to investigate the effect of TQM (TMC, CF, CI, HRF and IT) on improving the organizational performance (efficiency, effectiveness and customer satisfaction) 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.

2.2 Population of the Study

In this study category (A) of the private hospitals that are located in the Sana'a Capital Municipality was targeted as the study population, in which the number hospitals is (8), depending on the list of hospitals found in 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 were classified as category A: University of Science and Technology Hospital, Modern European Hospital and Azal Hospital. This category of hospitals was targeted as the population of this study for the following reasons:

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

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).

Table (1) Total Number of Employees in the Selected Hospitals According to Job Levels

| 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 | University of Science and Technology Hospital | 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 |
| Total | | 27 | 42 | 106 | 111 | 410 | 60 | 29 | 38 | 41 | 12 | 876 |

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

2.3 The Sample of the Study

The study sample was a sub-section of the population. It was selected from Category (A) hospitals in two steps as follows:

- **The First Step**

Three hospitals from Category (A) were selected randomly by following the simple random sampling method, where the lottery method was used (University of Science and Technology Hospital, Modern European Hospital and Azal Hospital). 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 of the sample obtained by the researcher were as shown in the table (1).

- **The Second Step**

The selection of the hospital employees included in the sample. It is clear from the first

step, according to which the random selection of three hospitals was carried out, that they included 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 sample was drawn 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 | University of Science and Technology Hospital | 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)

2.4 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 two parts as follows: **The First Part:** contain **demographic data** (Sex, Age, Qualification, Job title and

number of years of service in health sector). **The Second Part:** contains two variables as the follows: **Independent variables:** TQM was 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. **Dependent variables:** OP was represented in three dimensions as efficiency, effectiveness and customer satisfaction, also. All of the measuring items used in the current paper were taken from (41) item investigations, as in the table (3).

Table (3) Items for TQM and OP’s Dimensions in the Questionnaire

| Dimensions of TQM | |
|---|--|
| Code | Items |
| First Dimensions: Top Management Commitment (TMC) | |
| TQM1 | The hospital's senior management provides the necessary capabilities to implement total quality management. |
| TQM2 | The hospital administration holds periodic meetings to ensure that the set goals are achieved. |
| TQM 3 | The hospital administration spreads a culture of quality among employees. |
| TQM 4 | The hospital administration develops staff capabilities in accordance with comprehensive quality. |
| TQM 5 | The hospital's senior management constantly keeps pace with medical and administrative technological developments. |
| TQM 6 | The hospital's senior management responds to and resolves customer complaints. |
| Second Dimensions: Customer Focus (CF) | |
| TQM 7 | The hospital administration constantly studies patients' needs. |
| TQM 8 | The hospital administration seeks patients' opinions and suggestions. |
| TQM 9 | The hospital management constantly meets the needs of patients. |
| TQM 10 | Hospital workers are committed to treating patients well. |
| TQM 11 | The hospital management continues to make patient satisfaction a strategic priority. |
| Third Dimensions: Continuous Improvement (CI) | |
| TQM 12 | The hospital administration continuously updates its quality policies. |
| TQM 13 | Hospital management provides mechanisms to measure continuous improvement in quality. |
| TQM 14 | The hospital has the information necessary for continuous quality improvement. |
| TQM 15 | The hospital administration trains employees on continuous quality improvement processes. |
| TQM 16 | The hospital management takes customer suggestions to constantly improve the service provided. |
| TQM 17 | The hospital administration follows up the performance of employees according to the policy of continuous quality improvement. |
| Fourth Dimensions: Human Resource Focus (HRF) | |
| TQM 18 | The hospital has a clear recruitment mechanism. |
| TQM 19 | The Human Resources Department follows a policy of control and supervision of employees. |
| TQM 20 | The job performance of all hospital employees is constantly evaluated. |
| TQM 21 | The hospital has a fair system of wages and incentives. |
| TQM 22 | The hospital administration provides training programs according to the needs of employees on an ongoing basis. |
| Fifth Dimensions: Information Technology (IT) | |
| TQM 23 | The hospital administration has sufficient and modern computers. |
| TQM 24 | The hospital management uses advanced and modern information systems. |
| TQM 25 | The hospital administration has workers specialized in information systems and updating them. |
| TQM 26 | Hospital information systems contribute to the timely completion of hospital work. |
| TQM 27 | Hospital information systems contribute to storing and retrieving information. |
| Dimensions of OP | |
| Code | Items |
| First Dimensions: Efficiency | |

| | |
|--|---|
| OP 1 | The hospital administration provides qualified personnel. |
| OP 2 | The hospital administration employs an appropriate number of workers depending on the number of patients. |
| OP 3 | The hospital administration provides the modern technologies necessary to meet patients' needs. |
| OP 4 | Hospital work is completed on time. |
| OP 5 | Hospital services are provided at the lowest possible costs. |
| Second Dimensions: effectiveness | |
| OP 6 | The hospital provides appropriate health care to patients. |
| OP 7 | The hospital seeks to achieve good recovery rates. |
| OP 8 | The hospital administration uses its available resources to achieve the desired goals. |
| OP 9 | The hospital has a highly competitive ability. |
| OP 10 | The hospital is showing positive results in increasing its footfall. |
| Third Dimensions: Customer Satisfaction | |
| OP 11 | The hospital administration provides its employees with a safe and healthy work environment. |
| OP 12 | The hospital administration appreciates the efforts of the employees and rewards them. |
| OP 13 | The hospital administration applies the principle of justice and equality among its employees. |
| OP 14 | The hospital administration responds to employee complaints and suggestions. |
| OP 15 | The hospital administration is keen to constantly measure the satisfaction of its employees. |

3. Findings and discussion

3.1 Reliability of the study instrument:

In order to test the reliability of the questionnaire, Cronbach’s Alpha test for reliability was used in SPSS 26 V. If the value of the alpha coefficient is less than 60% the reliability of the questionnaire list is weak, while if it’s between 60% to 70% the credibility

is considered acceptable, and if the alpha value is between 70% to 80% the study instrument is considered good, while if the value is more than 80% the reliability is high (Al-Hajji,2022). Table (4) displays the Cronbach's Alpha coefficient for each of the variables and dimensions that were assessed.

Table (4) Summary Statistics of Reliability Analysis

| Study Variables | Cronbach's Alpha |
|-----------------------------------|------------------|
| Total Quality Management | 0.989 |
| Organizational Performance | 0.968 |

As explained above in table (4), the result of Cronbach’s Alpha for TQM is (0.989) and OP is (0.968) which are within the recommended value of reliability, according to (Al-Hajji,2022). In addition, the study used correlation coefficients between dimensions and variables, and between each item of the

questionnaire and its dimensions. So, the following table (5) shows the results of the correlation coefficients between dimensions and variables

Table (5) Correlation Coefficients between Dimensions and Variables

| Correlation of TQM | | | | | | |
|---------------------------|------------|---------------|-----------------------|--------|--------|--------|
| Dimensions | TMC | CF | CI | HRF | IT | TQM |
| TMC | 1 | .859** | .832** | .756** | .726** | .917** |
| CF | .859** | 1 | .844** | .767** | .753** | .924** |
| CI | .832** | .844** | 1 | .777** | .794** | .935** |
| HRF | .756** | .767** | .777** | 1 | .786** | .896** |
| IT | .726** | .753** | .794** | .786** | 1 | .885** |
| TQM | .917** | .924** | .935** | .896** | .885** | 1 |
| Correlation of OP | | | | | | |
| Dimensions | Efficiency | Effectiveness | Customer satisfaction | OP | | |
| Efficiency | 1 | .818** | .788** | .943** | | |
| Effectiveness | .818** | 1 | .682** | .896** | | |

| | | | | | | |
|-----------------------|--------|--------|--------|--------|--|--|
| Customer satisfaction | .788** | .682** | 1 | .911** | | |
| OP | .943** | .896** | .911** | 1 | | |

** . Correlation is significant at the 0.01 level (2-tailed).

Table (5) above shows that the correlation values between dimensions and variables were at high values, and all the correlation coefficients of each dimension with its variable are statistically significant at the level of significance (0.005). This indicates that

there is an internal consistency of the study tool and its validity to measure what it was prepared for. The following table (6,7) shows the results of the correlation coefficients between dimensions and their items.

Table (6) correlation coefficients between dimensions and their items

| TMC | Pearson Correlation | CF | Pearson Correlation | CI | Pearson Correlation | HRF | Pearson Correlation | IT | Pearson Correlation |
|-------|---------------------|--------|---------------------|--------|---------------------|--------|---------------------|--------|---------------------|
| TQM 1 | .870** | TQM 7 | .936** | TQM 12 | .896** | TQM 18 | .909** | TQM 23 | .881** |
| TQM 2 | .936** | TQM 8 | .906** | TQM 13 | .956** | TQM 19 | .935** | TQM 24 | .955** |
| TQM 3 | .938** | TQM 9 | .959** | TQM 14 | .959** | TQM 20 | .921** | TQM 25 | .925** |
| TQM 4 | .930** | TQM 10 | .913** | TQM 15 | .930** | TQM 21 | .864** | TQM 26 | .941** |
| TQM 5 | .935** | TQM 11 | .936** | TQM 16 | .940** | TQM 22 | .950** | TQM 27 | .907** |
| TQM 6 | .881** | | | TQM 17 | .952** | | | | |

** . Correlation is significant at the 0.01 level (2-tailed).

Table (7) correlation coefficients between dimensions and their items

| | | | |
|-------|-----|------|-------|
| Total | 393 | 98.5 | 100.0 |
| Total | 393 | 98.5 | 100.0 |

The above tables (6,7) show that the correlation values between the dimensions and their items were at high value, and all the correlation coefficients of each items with its dimensions are statistically significant at the level of significance (0.005). This indicates that there is an internal consistency of the study tool and its validity to measure what it was prepared for.

3.2 Descriptive Analysis:

To determine the alternative to the seven - point Likert Scale (lower and upper

limit) used in the tool, the range was calculated through the following:

- 1- Range = the difference between the highest value and the lowest value = (7- 1 = 6).
- 2- Then divide the range by the number of alternatives to get the length of the category = (6 ÷ 7 = 0.86).
- 3- After that, this value (0.86) is added to the lowest value in the scale (the correct one) to determine the upper limit for this category (Idriss, et al. 2022) Thus, the length of the categories became as shown in the following table (8).

Table (8) Criterion Used in the Study

| Alternative Value | Arithmetic Mean | Category | Degree of Agreement |
|-------------------|-----------------|-------------------|---------------------|
| 1 | 1 - 1.85 | Strongly Disagree | Weak** |
| 2 | 1.86 - 2.71 | Disagree | Weak* |
| 3 | 2.72 - 3.57 | Somewhat Disagree | Weak |
| 4 | 3.58 - 4.43 | Neutral | Middle |
| 5 | 4.44 – 5.2 | Somewhat Agree | High |
| 6 | 5.3 - 6.15 | Agree | High* |

| | | | |
|---|----------|----------------|--------|
| 7 | 6.16 - 7 | Strongly Agree | High** |
|---|----------|----------------|--------|

After determining the arithmetic mean of this category and adjusting the length of the

categories accordingly, Table (9) presents the result of descriptive statistics

Table (9) The Result of Descriptive Statistics

| Dimensions of study | Mean | Std. Deviation | Ranking | Degree of Agreement |
|------------------------|------------|----------------|---------|---------------------|
| TMC | 5.4 | 1.29862 | 2 | High |
| CF | 5.3 | 1.31650 | 3 | High |
| CI | 5.3 | 1.30152 | 4 | High |
| HRF | 5.1 | 1.39816 | 5 | High |
| IT | 5.5 | 1.26252 | 1 | High |
| Total TQM | 5.3 | 1.19856 | | High |
| Efficiency | 5.3 | 1.26727 | 2 | High |
| Effectiveness | 5.6 | 1.22958 | 1 | High |
| Customer Satisfactions | 4.9 | 1.49738 | 3 | High |
| Total OP | 5.2 | 1.22248 | | High |

It is clear from table (9) above that all the Variables and dimensions have high means. **Firstly**, the TQM have High mean with a value of (5.3) and standard deviation is (1.19856). The dimensions of this variables come as follow, TMC is ranked the second. It means that it is highest degree of agreement from the sample member’s point of view with mean of (5.4) and the standard deviation is (1.29862). CF is ranked third, the highest degree of agreement from the sample member’s point of view with mean is (5.3) and the standard deviation is (1.31650). CI is ranked as the fourth in which the highest degree of agreement from the sample member’s point of view with mean is (5.3) and the standard deviation is (1.30152). HRF is ranked as the fifth in which the degree of agreement from the sample member’s point of view with mean is somewhat high (5.1) and the standard deviation is (1.39816) and IT is ranked as the first, the degree of agreement from the sample member’s point of view with mean is the highest (5.5) and the standard deviation is (1.26252).

From the above results, some results were concluded that all dimensions of quality were agreed upon to be of a high degree by the sample members, and this indicates the attention of the hospitals under study in the importance of TQM. This result partially agreed with the studies of (Idriss et al.,2022), (Arqawi and Ziad, 2020), (Kagiri and Njung, 2020), (Badr and Al-Madhoun, 2017), (AbdulWahab, 2017), and (Shakot,2015).

While the studies of (Hawari, 2014), (Darwish, 2017) don't match such conclusions. **Secondly**, OP was concluded to be high with a mean (5.2) and the standard deviation is (1.22248). The dimensions of this variables come as follow: The Efficiency is ranked as the second dimension, the degree of agreement from the sample was high with a mean (5.2698) and the standard deviation is (1.26727). The Effectiveness is ranked the first, the degree of agreement is high with a mean of (5.6) and the standard deviation is (1.22958). Finally, the customer satisfaction is ranked the third. This means that the degree of agreement is somewhat high (4.9) and the standard deviation is (1.49738). So. It can be concluded that all the dimensions of performance are agreed upon by the sample members to be of high degree in private hospitals except one of these dimensions (Customer Satisfactions) which is viewed as somewhat high. This indicates that the selected hospitals as the sample of the current study are striving to improve their performance and provide the necessary requirements to reach customer satisfaction. This result partially agreed with the study (Idriss et al.,2022), (Abdulrahman, 2018), (Ben Odeh and Ayoub, 2017), (Badr and Al-Madhoun, 2017).

3.3 Structural Equation Modeling (SEM)

To test this hypothesis, SEM was used by the researcher to test the extent the model

that matched the data of the study sample with the proposed conceptual framework, and whether that data measured what it was designed to measure, as well as to interpreting the relationship between the study variables.

To explain this hypothesis, an integrated structural model was built by using the SEM method using the (AMOS 21v) program, which explained the effect between the two research variables (TQM and OP). The following is an explanation of that.

3.4 Testing the validity of the hypothesis:

The hypothesis (H) stated that there was a statistically significant effect of TQM with its various dimensions (TMC, CF, CI, HRF and IT) on improving OP in private hospitals in Yemen. This hypothesis has five sub- Hypotheses as:

Ha: There is a statistically significant effect of TMC of TQM on improving OP in private hospitals in Yemen.

Hb: There is a statistically significant effect of CF of TQM on improving OP in private hospitals in Yemen.

Hc: There is a statistically significant effect of CI of TQM on improving OP in private hospitals in Yemen.

Hd: There is a statistically significant effect of HRF of TQM on improving OP in private hospitals in Yemen.

He: There is a statistically significant effect of IT of TQM on improving OP in private hospitals in Yemen.

To verify the validity of these hypotheses, a structural model was made for effecting the TQM in improving OP. Figure 1 and tables 8,9 explains that:

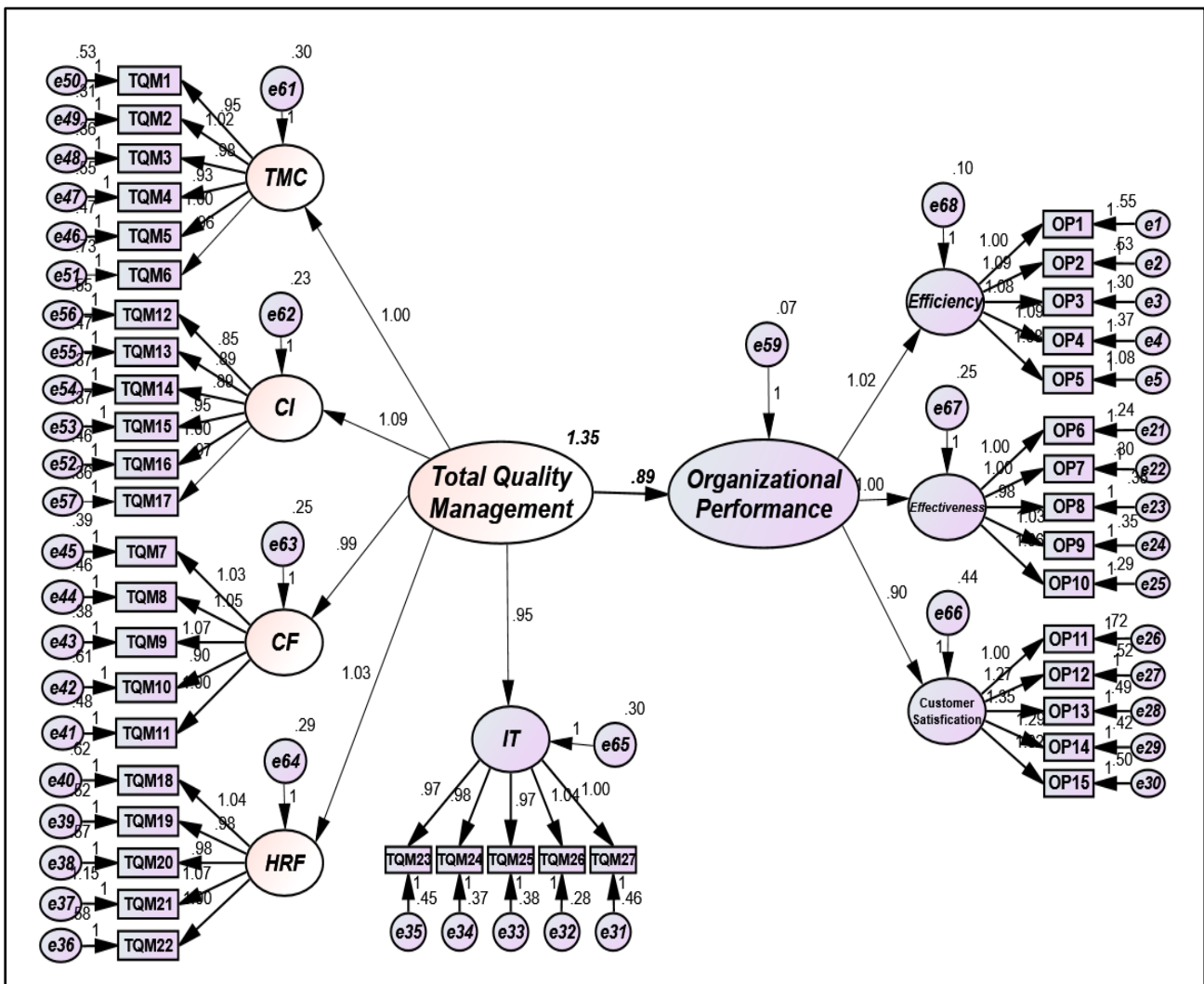


Figure (1) The Relationship Mode between TQM and OP

Table (10) The Fit Result of the Relationship between TQM and OP

| Model Quality Testing Indicator | Level of Acceptable | Level of Excellent | Value |
|---|---------------------|--------------------|-------|
| X / Degree of freedom (CMIN/DF) | < 5 | < 2 | 3.743 |
| Root Mean Square Error of Approximation (RMSEA) | 0.05 to 0.08 | ≤ 0.05 | 0.083 |
| Goodness of Fit Index (GFI) | Between (0,1) | ≥ 0.90 | 0.715 |
| Adjusted Goodness of Fit Index (AGFI) | Between (0,1) | ≥ 0.80 | 0.682 |
| Comparative Fit Index (CFI) | Between (0,1) | ≥ 0.90 | 0.897 |
| Normed Fit Index (NFI) | Between (0,1) | ≥ 0.90 | 0.864 |
| Incremental Fit Index (IFI) | Between (0,1) | ≥ 0.90 | 0.897 |
| Tucker-Lewis Index (TLI) | Between (0,1) | ≥ 0.90 | 0.890 |

Table (11): Pathways Testing the Impact of TQM on OP

| IDV | Path | Variables | Estimate B | S.E. | C.R. | P | Result |
|-----|------|-----------|------------|-------|--------|-----|--------|
| TQM | ---> | OP | 0.890 | 0.046 | 19.490 | *** | Sig. |

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

It is clear from the figure (1) and tables (10,11) 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 performance.
- There is a positive effect of TQM on OP in private hospitals in Yemen, where the value of (B) reached (0.890), and the Critical Ratio (CR) shown in Table (9) reached a value of (19.4), 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 (0.890) indicates that an increase of (0.890) units in TQM contributes to an increase of (0.890) units in organizational performance.

The findings of the most previous studies suggested that organizational performance could enhance TQM success, such as Al-Nur (2022). However, the second study objective of the current study is to examine the effect of TQM on improving organizational performance 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 on organizational performance according to the result shown in Table (11). Thus, objective one has been achieved.

The result of this study confirmed that there is a positive impact of TQM on organizational performance in private hospitals in Yemen, where the value of (β) (0.890), the critical ratio (CR) shown in Table (9) has a value of (19.4), 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 on OP, 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 (12) below.

Table (12) TQM's Dimensions in OP Regression

| Model Summary | | | | | |
|--|-------------------|----------|-------------------|----------------------------|------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | |
| 1 | .927 ^a | 0.859 | 0.858 | 0.46147 | |
| a. Predictors: (Constant), IT, TMC, HRF, CI, CF | | | | | |
| ANOVA ^a | | | | | |
| Model | Sum of Squares | DF | Mean Square | F | Sig. |

| | | | | | | |
|---|------------|---------|-----|---------|---------|-------------------|
| 1 | Regression | 511.102 | 5 | 102.220 | 480.004 | .000 ^b |
| | Residual | 83.692 | 393 | 0.213 | | |
| | Total | 594.795 | 398 | | | |

a. Dependent Variable: Total OP

b. Predictors: (Constant), IT, TMC, HRF, CI, CF

| Model | Coefficients ^a | | | | | |
|-------|----------------------------|---------------------------|-------|--------|--------|-------|
| | Unstandardized Coefficient | Standardized Coefficients | | t | Sig. | |
| | B | Std. Error | Beta | | | |
| 1 | (Constant) | 0.356 | 0.108 | | 3.280 | 0.001 |
| | TMC | 0.105 | 0.038 | 0.111 | 2.728 | 0.007 |
| | CF | -0.015 | 0.040 | -0.016 | -0.379 | 0.705 |
| | CI | 0.239 | 0.040 | 0.254 | 6.022 | 0.000 |
| | HRF | 0.354 | 0.031 | 0.405 | 11.554 | 0.000 |
| | IT | 0.246 | 0.034 | 0.254 | 7.251 | 0.000 |

a. Dependent Variable: Total OP

From the above table (12), a simple linear regression model was conducted to test whether TQM with its various dimensions had an effect in OP in private hospitals in Sana'a city. First, findings of the **Model Summary** showed that the relationship was strong ($R = 0.927$) between TQM and OP. Secondly, the findings showed that 85.8% of the variance in OP was explained by TQM with its various dimensions ($Adjusted R^2 = 0.858$).

Third, the findings of the **ANOVA**. The F-ratio in the ANOVA table tests whether the overall regression model is a good fit for the data. In this study, the findings show all the independent variables statistically significantly predict the dependent variable, $F = 480.004$, $N = 399$, $P < 0.001$, and that other variables not included in this model may have accounted for the remaining variance. This means that the regression model was a good fit for the data. Fourth, an analysis of the **Regression Coefficients**. Significant Standardized Beta Coefficients shows that an increase in TMC, CF, CI, HRF and IT by 1 unit would lead to an increase in the OP by 0.111, -0.016, 0.254, 0.405 and 0.254 units respectively. In this regard, the strongest factor effecting the Performance was HRF. This was followed by CI, IT and TMC. The least important variable was CF. These findings mean that an increase in TQM with its various dimensions would have a positive effect in improving OP in private hospitals. This result agreed with the study (Kagiri and Njung, 2020) and (Jaafreh, 2013).

4. Conclusion and Recommendations

Total Quality Management (TQM) significantly enhances organizational performance through top management commitment, customer focus, continuous improvement, human resource focus, and information technology. TQM enhances product and service quality by implementing quality control measures, reducing defects, errors, and waste, thereby improving customer satisfaction, loyalty, reputation, and market competitiveness. TQM emphasizes a customer-centric approach, utilizing data-driven insights and market research to continuously improve products, services, and customer experiences, thereby enhancing satisfaction and organizational performance.

TQM promotes employee involvement and empowerment, encouraging teamwork, collaboration, and continuous learning. Empowered employees are motivated, engaged, and committed to high-quality work. Training and development programs enhance skills, leading to improved productivity and performance.

To improve TQM's impact on organizational performance, 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.

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