

The Effect of Total Quality Management (TQM) on Organizational Performance: A Case Study

Hamid Reza Fooladgar^{#1}, Alireza Khojasteh Pour^{#2}

^{#1}*Department of Industrial Engineering, Science & Research Branch, Islamic Azad University, Tehran, Iran*

^{#2}*Deputy of Commercial & Industrial Services, Industrial Services Engineering Company of Iran Khodro, Tehran, Iran*

¹foulad_hr@yahoo.com

²alireza.kh.manager@gmail.com

Abstract—TQM as a management paradigm has been accepted by many organizations around the world. TQM is an organization that attempts to make the structures, procedures, customs, behaviour and even their infrastructure in order to maintain customer satisfaction, coupled with the emphasis on compatibility, quality improvement and organizational competitiveness improvement. So, this study aimed to examine the impact of TQM principles on organizational performance. The study was conducted in Industrial Services Engineering Company of Iran Khodro (ISEIKCO), the study sample size was 272 managers and experts from different levels. The researcher depended on primary and secondary data. The results show that TQM has positive impact on organizational performance. In light of these findings, the study provided a set of recommendations.

Keywords: TQM practices, organizational performance

1. Introduction

Today's quality improvement has high importance in parts of industry, production, hygiene, treatment and education and service. In general, one organization has emerged based on public and social needs. Organizations in order to obtain their purpose must have relationship with other parts.

Total Quality Management (TQM) is a management tool, philosophy, and a set of principles which can be applied to all functions and processes of an organization to continuously improve the quality of products and services, to exceed customer satisfaction at any given period, as well as continuously reduce the cost of production [8].

Ref. [7] posited that the core objective of TQM is to meet and exceed customer

expectation by “do it right the first time and every time, for customer satisfaction” meanwhile TQM is aimed at achieving customer needs through quality product and services. Hence, understanding and translating customer needs and expectations into organizational action plans is a key point of TQM implementation [4]. Furthermore, TQM practices also involve employees in all levels of activities for continuous process by using top down and bottom up approach especially on the quality implementation stage [5].

Successful TQM could be achieved when a company is focusing in continuous improvement as one of the fundamental dimensions [2]. In recent decades, Total Quality Management has become the buzz word in the management practice [2].

Performance measurement is critical for the organizational effectiveness. Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives). Organizational performance involves the recurring activities to establish organizational goals, monitor progress toward the goals, and make adjustments to achieve those goals more effectively and efficiently.

The organizational performance shows that how an organization reach to its mission and goals.

Ref. [12] in study with title "The effect levels of total quality management on performance of insurance companies in Iran" has paid to reviews the effect of dimension different levels of total quality management on performance of insurance companies according to model David Garvin in insurance industry. The results showed that the effect of dimension different levels of total quality management on performance of insurance companies in Iran is different.

2. Literature review

The impact of QM practices on firm performance has been the subject of constant interest and challenge among researchers. In this study, the reviewed literature is organized and classified along three main themes: Total Quality Management, TQM principles, organizational performance and relationship between TQM –performance.

2.1 Total Quality Management

The subject quality management is broad, many of researchers who defined the concept. The Chartered Quality Institute defines TQM as organizational management philosophy which enables it to meet stakeholder needs and expectations efficiently and effectively, without compromising ethical values. The American Society for Quality looks to TQM as a management approach to long-term success through customer satisfaction. We can see TQM as a systematic approach to planning and implementing continuous organizational improvement process focusing on customer satisfaction, building commitment and promoting open decisions.

A researcher looks at TQM as the interaction of input including individuals, methods, policies and instruments to achieve high quality output. It is a management philosophy with a comprehensive set of tools and approaches to the purposes of implementation. [1]

2.2 Total Quality Management Principles

There is a consensus view that companies should follow a number of principles in an integrated way for successful TQM implementation. Furthermore, to determine critical factors of total quality management, various studies have been carried out and different instruments were developed by individual researchers. The researcher chose the following eight TQM principles:

- ✓ customer focus
- ✓ leadership
- ✓ continuous improvement
- ✓ employee involvement
- ✓ fact-based management
- ✓ process management
- ✓ strategic quality management
- ✓ supplier involvement.

2.3 Organizational performance

Performance measurement is critical for the organizational effectiveness. Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives). Organizational performance involves the recurring activities to establish organizational goals, monitor progress toward the goals, and make adjustments to achieve those goals more effectively and efficiently. While examining the relationship between quality principles and practices and performance scholars have used different performance types such as financial, innovative, operational and quality performance. In this study two performance variables will be used to measure organizational performances which are the satisfaction level which will be measured by employee satisfaction, and operational performance results which will be measured by operational efficiency. A brief description of each measure: Operational Efficiency: - It is the Company converts inputs into outputs in the form of products and services more valuable than the value of the inputs through the conversion processing. In this research operational efficiency will be measured by following indicators: unit cost, quality, delivery, flexibility, and speed of new product introduction.

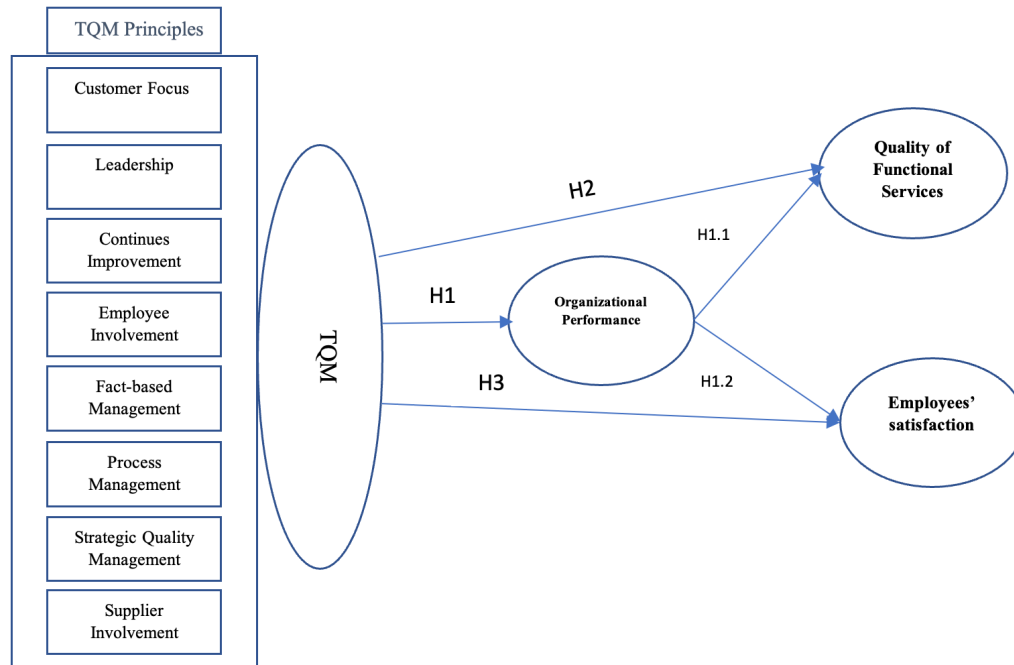
Employee satisfaction: is a measure of how workers are pleased with their job and working environment. Different factors influencing employee satisfaction such as: working condition, job safety and security, rewards system and career development.

2.4 Relationship between TQM and Organizational Performance

There are many articles, studies, and surveys that describe the roles of quality in improving the organizational performance. It's quite evident that manufacturing and service industries business performances are impacted by TQM.

One researcher revealed that the implementation of TQM has a positive effect on both the operational and the organizational performance. The results show that customer focus, continuous improvement, top management commitment, employee involvement and product innovation are significantly and positively related to product quality [11]. The other researcher found that different TQM practices significantly affect different performance outcomes and the main obstacles were lack of employee involvement, awareness and commitment of the employees, inappropriate firm structure, and lack of the

resources [3]. One research indicated that the Jordanian private hospitals applying the total quality management practices with high degree. The highest focus of private hospitals within total quality management practices is on customer orientation, supplier management, high support from top management to the quality efforts and a concern from the target hospitals in



3.1 Research hypothesis

Main hypotheses

H1: There is statistically significant impact of TQM principles on organizational performance.

H2: There is statistically significant impact of TQM principles on quality of functional services.

H3: There is statistically significant impact of TQM principles on employees' satisfaction

Sub-hypotheses:

H1.1: There is statistically significant impact of organizational performance on quality of functional services.

H1.2: There is statistically significant impact of organizational performance on employees' satisfaction

4. Methodology

In this study is used from random sampling. Statistical population in this study included all the managers and experts of Industrial Services and Engineering Company of Iran Khodro that according to the data collected in total, 272 people (managers, experts) are working in this company. In this study is used questionnaires tools for data gathering.

participation of employees in quality management activities. [10]

3. Research model

This model was developed by the researcher based on some studies: [6], [3] and [12]. The research framework can be seen below:

Regarding reliability of the questionnaire, a Cronbach Alpha for each dimension was computed to check internal consistency. Cronbach Alpha in this study ranged from (0.72-0.95), It is obvious that all values of alpha are high, this indicates, that for each measure of variable, the items are highly correlated, and hence highly consistent.

The data collected was presented in a tabular form and t-test was used with the aid of Statistical Package for Social Science (SPSS) version 20.0. The research result was further interpreted, discussed and analyzed in line with the research problem, hypotheses and relevant literature and experience. Conclusion shall be drawn, recommendations made and suggestions for further studies proffered.

5. Findings

The demographic findings of this study show that 85% of the respondents were male and 15% were female. Bachelor's degree levels were 67%, Masters 30% and PhDs 3%, respectively. 70% of the respondents were employed in non-specialist jobs, 20% in supervisory jobs, 7% experts and 3% in managerial jobs. The age ranges of 30 to 40 years and the age ranges of 40 to 50 years had the highest frequency with about 60% and 30%, respectively. (Table 1)

Table 1: Characteristics of the survey respondents

Variable	Frequency	percentage
Gender		
Male	231	85
Female	41	15
Age		
31- 40	163	60
41- 50	82	30
51 and more	27	10
Qualification		
Bachelor	182	67
Master degree	82	30
PHD	8	3
Position		
non-specialist jobs	191	70
supervisory jobs	54	20
experts	19	7
managerial jobs	8	3

According to Table 2, it can be seen that there is significant linear relationship between total quality management and service quality in level error 0.05 ($t=5.865$, $\text{Sig}<0.05$). Also, the variable of TQM principles can determine %34.1 changes of Organizational performance, its mean independent variable can predict %34.1 of dependent variable changes the first main hypothesis is confirmed.

Also, there is significant linear relationship between TQM principles and Quality of functional services in level error 0.05 ($t=5.962$, $\text{Sig}<0.05$). Also, the variable of TQM principles can determine %28.6 changes of Quality of functional services, its mean independent variable can predict %28.6 of dependent variable

changes the second main hypothesis is confirmed.

In the table 2, there is significant linear relationship between TQM principles and employees' satisfaction in level error 0.05 ($t=6.013$, $\text{Sig}<0.05$). Also, the variable of TQM principles can determine %31.1 changes of employees' satisfaction, its mean independent variable can predict %31.1 of dependent variable changes the third main hypothesis is confirmed.

Table 2: Regression model between variables to test main hypotheses

Independent Variable	Dependent Variable	Regression Coefficients	t	Significant	Determination Coefficient
TQM Principles	organizational performance	0.144	5.865	0.000	0.341
TQM Principles	Quality of functional services	0.216	5.962	0.000	0.286
TQM Principles	employees' satisfaction	0.140	6.013	0.000	0.311

According to the table 3, it can be seen that there is significant linear relationship between organizational performance and quality of functional services in level error 0.05 ($t=3.603$, $\text{Sig}<0.05$). Also, the variable of organizational performance can determine %27.1 changes of Quality of functional services, its mean independent variable can predict %27.1 of dependent variable changes the first Sub-hypotheses is confirmed. Also, there is significant linear relationship between organizational performance and employees' satisfaction in level error 0.05 ($t=3.402$, $\text{Sig}<0.05$). Also, the variable of organizational performance can determine %26.6 changes of

employees' satisfaction, its mean independent variable can predict %26.6 of dependent variable changes the second Sub-hypotheses is confirmed.

Table 3: Regression model between variables to test sub-hypotheses

Independent Variable	Dependent Variable	Regression Coefficients	t	Significant	Determination Coefficient
organizational performance	Quality of functional services	0.221	3.603	0.001	0.271
organizational performance	employees' satisfaction	0.228	3.402	0.001	0.266

6. Conclusion

This study focuses primarily on the implementation of TQM in an industrial unit and its impact on the organizational performance (OP). Overall, the results of this study indicated that the TQM principles were found to be correlated with organizational performance. The results highlighted the crucial role played by quality of functional services and employees' satisfaction in the OP of the firm. Furthermore, the results also highlighted the relative significance and interlinkage of TQM principles, and OP.

The results of the study show that TQM provides significant means to improve and maintain quality. Top leadership provides significant means to improve and maintain quality. In addition, top leadership can anticipate changes and make plans to accommodate it. However, quality could not be successfully implemented if there is a lack of commitment from the top management. The results also have shown that Quality of Functional Services is positively related to OP. Systematic analysis of customer feedback and its use in the product or process improvement, and developing customer-oriented strategies can improve OP. Furthermore, design, development and delivery of products according to the requirements of customers can also improve the OP. The findings have also been found that Employees' satisfaction positively relates to the OP. Effective training, good health and safety practices, and treating workers as a valuable resource can increase the firm performance.

In summary, the findings state that TQM principles have direct effects on organizational performance. Then improving organizational performance brings in the rise of employees' satisfaction and improvement of quality of functional services.

7. Recommendations

The mediating relationships between TQM principles and various performance measures can also be analyzed in future studies. Performance measure such as innovation performance, social performance, and project performance can be included in future studies. The moderating effects of contextual factors such as firm size, firm income, firm type, scope of operations, degree of competition, managerial

knowledge, and ISO certification can be studied to analyze complex relationships among these parameters as well. The multi-group comparison can be made between service and manufacturing organization in future studies. The results of this study were based on cross-sectional data from a relevant Iranian industrial and service organization. Future research may emphasize on a longitudinal design of survey. In addition, the results of this study are limited to Iranian industrial and service organizations, but the similar study may be carried out in other developing countries to analyze if the structural model fits into their systems, which in turn give further validation of the proposed model.

8. References

- [1] Al Ali., Abdalsatar, (2007). Application in Total quality management, Dar Al-Massira. Amman. Jordan. www.massira.jo
- [2] Egwu, I. L. (2014). Total Quality Management and Corporate Failure in Nigeria. IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 16, Issue 9. Ver. V (Sep. 2014), PP 25-33
- [3] Esin Sadikoglu and Hilal Olcay (2014). The Effects of Total Quality Management Practices on Performance and the Reasons of and the Barriers to TQM Practices in Turkey, Hindawi Publishing Corporation Advances in Decision Sciences Volume 2014
- [4] Kriengsak, P., & Thanh, T. N. (2017). Influence of organizational culture on total quality management implementation and firm performance: evidence from the vietnamese construction industry. Management and Production Engineering Review. 8(1).
- [5] Muhammad Saleem, Nawar Khan, Shafqat Hameed, M Abbas Ch (2012). An Analysis of Relationship between Total Quality Management and Kaizen, Life Science Journal, No 9, 3
- [6] Munizu, Musran (2013). The Impact of Total Quality Management Practices towards Competitive Advantage and organizational Performance: case of Fishery Industry in South Sulawesi Province of Indonesia, Journal of Commerce and Social Sciences, 7(1):184-

- 197
- [7] Pilar Corredor *, Salomé Goñi (2011). TQM and performance: Is the relationship so obvious? *Journal of Business Research*, No64, 830–838
 - [8] Prajogo D.I., & McDermott, C.M., (2005). The relationship between total quality management practices and organizational culture, *International Journal of Operations & Production Management*, 25, 11, 1101–1122.
 - [9] Rula Ali Al-Damen (2017), The impact of total quality management on organizational performance, *International journal of business and social science*. Vol 8. No 1. 192-202.
 - [10] Sadikoglu, Esin. and Oclay, Hilal. (2014). The Effects of Total Quality Management Practices on Performance and the Reasons of and Barriers to TQM Practices in Turkey, *Advances in Decision Sciences*. Hindawi Publishing Corporation.
 - [11] Salaheldin, Ismail (2009). Critical success factors for TQM implementation and their impact on performance of SMEs *International Journal of Productivity and Performance Management* Vol. 58 No. 3:215-237.
http://www.csfstudy.com/uploads/Salaheldin_2008.pdf
 - [12] Shahram Gilani nia (2011). Impact of Social Marketing on Consumption Reduction, *Journal of Applied Business and Economics* vol. 12(5).