



Study of the Effects of Total Quality Management (TQM) on Customer Satisfaction at Telecommunication Company

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Abstract: The aim of this research was to The Effects of Total Quality Management (TQM) on Customer Satisfaction at Telecommunication Company of Hormozgan. The research is descriptive-survey. Study population was all telecommunication company staff that 404 were studied by Stratified random sampling using Cochran formula. The research instrument was consisting of Total quality management based on TQM dimensions and customer satisfaction questionnaire, respectively. The validity was calculated by Item analysis and reliability using Cronbach's alpha. Data were analyzed by descriptive statistics such as frequency, mean, standard deviation, percent, and inferential statistics such as linear regression, multiple regression, Friedman test and path analysis. The results of the regression analysis for each question showed that 1. Empowerment of Positive and significant impact on customer satisfaction. 2. Response of positive and significant impact on customer satisfaction. 3. Service Speed of Positive and significant impact on customer satisfaction .4.Health services and significant impact on customer satisfaction. 5. Outdoor beauty services of Positive and significant impact on customer satisfaction. 6. Services Trust oriented of Positive and significant impact on customer satisfaction. 7. Transparency and Information significant impact on customer satisfaction. 8. Flexibility in providing a positive and significant impact on customer satisfaction. .9. Consideration of values and beliefs of a significant positive impact on customer satisfaction. 10. Finally, the impact of the variables in the final model using multiple regressions showed that the responsiveness, reliability-centered health care services and other variables have a significant influence on customer satisfaction.

Key words: Total Quality Management, Staff Empowerment, Customer Satisfaction, Customer Orientation, Telecommunication Company.

INTRODUCTION

Today, many markets have become extremely competitive. In order for organizations to survive in this competitive ambient, they should produce and present high quality goods and services to attract satisfied and loyal customers.

The major goal of every enterprise should be creating and achieving satisfied customers because there is a strong relationship between the quality of products (services) and customers' satisfaction and profitability¹. Bedics believed that the main key of the organization's life is preserving satisfied customers².

Customer satisfaction is an important theoretical and experimental issue for most marketers and researchers of marketing. It could be considered as the essence of success in the present commercially competitive world. Therefore one cannot ignore the importance of satisfying and preserving customers in devising strategies for customer-oriented and market-centered organizations³.

In fact, one can say that the contemporary era is a period of customer-orientation and audience-orientation. Success of each organization is directly related to the extent of its attention to the customers, their demands, and the quality of services and products⁴. The modern international economy with characteristics such as technological change, integration of economic systems and global markets in intense competitions have created a set of threats from one side and provided some opportunities on the other side⁵. Attention to advancement, improvement, promotion of life style and productivity has always been demanded by humans. Humans are the only beings on the earth whose life has never been similar to their past. Humans' life has always had a developing process. This shows their serious attention to concepts such as quality.

Regarding the foregoing and as concerns customer satisfaction, the expression total quality management may have been one of the most common commercial terms ever used on the attempts made for quality promotion in recent years⁶. Today, total quality management is accepted by thinkers and professional specialists as a modern management paradigm. Management ideology is based on sustained quality improvement, attracting the customers' satisfaction, and heeding to process instead of result⁷.

Total quality management movement began in manufacturing industry because it was easier there to assess the quality function and commitment to produce high quality products. In fact, manufacturing section is a very appropriate place to apply total quality management as the quality control radical concepts⁸.

It influenced the service centers in public sector too. Recently, a great number of organizations in public sector apply customer-based ideology management principles for customers' consent. The organizations which work in public sector, such as health care organizations, local governments, police, emergency services, and other organizational governments, learn that serving the customer and considering quality are important topics of the late 1990s⁹. Today customer satisfaction is an important issue for organizations. An organization is recognized as winner or loser on the basis of the customers they keep¹⁰.

Telecommunication companies compete with other organizations and institutes over acquiring the profit of internal markets through attracting customers' satisfaction. Taking the customers' interest in diversity and the

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feedbacks received from customers' reference to this company and the problems associated with lack of a total quality management and its impacts on customer satisfaction, this research studies the influence of total quality management on the customers' consent in Hormozgan province Telecommunication Company .

Total Quality Management

Total quality management began in the midst 1920s at Western Electric Factory in the process of designing a telephone call system. Total quality management was in fact statistical quality control. In 1931, Shohart published a book titled "economic control of the quality of industrial products". In his book, Shohart defined quality control and expansion of statistical techniques for assessment of production, improvement, and quality ¹¹.

Besterfield ¹² divides total quality management into three parts by which every individual involved in this quality process (including customers and suppliers) is referred to by specific needs of customer and management, and senior managers. In fact, total quality management is a customer-orientation process which seeks to sustainably improve and satisfy the needs of customers ¹³.

Hellsten and Klefsjo ¹⁴ define total quality management as a management system which is permanently changing values, methods, and tools in order to increase satisfaction in internal and external customers with the minimum resources. In the following picture, several tools, values, and methods are shown .

During the last ten years, total quality management has remarkably influenced the practical methods of business administration in famous companies such as General Motors, Motorola, and Xirax. Total quality management can influence the public sector just as it left profound impacts in private sector⁸ .

Total quality management is a managerial system of values, methods, and tools with the aim of increasing satisfaction of internal and external customers with little resources ¹⁵. In general terms, total quality management can be defined as follows: total quality management means smart, sustained, and gradual efforts with ascending influence to meet the goals of organization. It ends in customer satisfaction, increased efficiency, and promoted competition in the market. Therefore, three basic issues are latent in total quality management: determining the prior needs of customer "customer taste", production in such a way that is desired by customer "final quality", finding the customer needs "market" ⁷.

Today people live in an environment, which is proceeding toward service-based economy. Services are no longer a small part of economy but are regarded as the heart of value creation in economy. Services are not limited to bank, post, insurance, health, and educational services. Most of the products we buy have some elements of services. In fact, a wide range of goods and services concentrate on service-based activities in order to have competitive advantage ¹⁵.

One of the most important changes in the last decade of 20th century for improvement in function was measuring the customers' satisfaction as one of the main elements and necessities of management systems in enterprises. The efforts and endeavors made by researchers, experts, and manager of commercial

organizations to promote function management tools and expand customer-orientation indicates that customer satisfaction is now one of the important factors in determining success of organizations in commerce and profitability. Therefore, creating and implementing measurement systems and monitoring customer satisfaction as an important indicator for improvement of function are the basic needs of organizations ¹⁶.

Today, manufacturing or service organizations consider customer satisfaction as an important standard to assess the quality of their work. That is why this process is improving. The importance of customer and attracting customer's satisfaction is something of a competition in global levels ¹⁷.

Parafat and Sebastian state that customer satisfaction is meant for organization to conduct the organization's activities and resources in such a way as to achieve the most important goal which is keeping customers and establishing long-time relationships upon receiving feedback from customers. Customer satisfaction influences their immediate reactions against the organization ¹⁸.

The main objective of manufacturing and service institutes is satisfying customer needs. Negative statements of unsatisfied customers against the company's products will cause potential customers get pessimist about the products and avoid purchasing these products in the future. As a result, due to reduction in the number of customers, sales and market share of company will decrease and the company will have problem to subsist.

What is more important today is attention to customer, commitment to customer, and customer satisfaction. Customer satisfaction has many advantages including public trust, encouragement, repeated deals and loyalty, increasing company's sales, reducing the costs of new customers, creating competitive advantages, and finally sustainable growth and development of organization ¹⁹. Customer satisfaction is something beyond positive influence on the efforts made by the company. This will not only persuade the employees to work, but it is regarded as a source of profitability.

Based on the findings of previous research and the theoretical fundamentals of this research, the following hypotheses were studied:

Research Hypotheses:

- 1- Total quality management and its dimensions (employees empowerment, responsiveness, speed in rendering services, beautification of the space of rendering services, trustworthiness in rendering services, transparency and proper informatics, flexibility in rendering services, and observing religious considerations, have a positive and significant influence on customers' satisfaction.
- 2- Total quality management components can predict customers' satisfaction .
- 3- How is the final model of the influence of total quality management on customers' satisfaction?

MATERIALS AND METHODS

This research is applied and correlative. The statistical population consists of all customers of Hormozgan province Telecommunication Company. 404 individuals were selected as research sample by stratified random method using Cochran’s formula. Research tools included total quality management questionnaire based on total quality management aspects ²⁰, Khanifer and Haidernia ²¹ and customers’ satisfaction questionnaire ²². The validity of questionnaires was calculated by item analysis and their reliability by Cronbach’s alpha method. Linear and multiple regression analysis tests, Friedman test, and path analysis were used to analyze data.

RESULTS

A) Descriptive findings:

Based on descriptive findings of sample population, 38% of customers were female and 62% were male. The education of 22% of customers was below high school, 33% had high school diploma, 32% had associate degree, 10% had bachelor’s degree, and 3% had master’s degree and higher.

B) Inferential Findings: Analysis of Research Questions

Linear (simple) regression test was used to answer the first hypothesis of research and results were presented in table 1. According to first hypothesis, the aspects of total quality management (employees empowerment, answering, timely service, beautification of service place, trustworthiness in rendering services, transparency and proper informatics, flexibility in rendering services, and observing religious and value considerations, have significant and positive influence in customers’ consent.

Table 1. The Results of Linear Regression Tests in Explaining Total Quality Management and its Aspects on Customers’ Satisfaction

Aspects	R	R ²	B	T	Significance level
Employees empowerment	0.25	0.06	0.25	5.26	0.0001
Answering	0.58	0.33	0.58	14.34	0.0001
Timely service	0.67	0.45	0.67	18.40	0.0001
Precision in rendering services	0.60	0.36	0.60	15.18	0.0001
Beautification of service place	0.44	0.19	0.44	9.83	0.0001
Trustworthiness in rendering services	0.53	0.28	0.53	12.58	0.0001
Transparency and proper informatics	0.58	0.34	0.58	14.43	0.0001

Flexibility in rendering services	0.74	0.55	0.74	22.24	0.0001
Observing value and religious considerations	0.43	0.19	0.43	9.73	0.0001
Total quality management	0.77	0.59	0.77	24.04	0.0001

According to table 1, total quality management and its aspects-employees empowerment, responsiveness, timely service rendering, beautification of service place, trustworthiness in rendering services, transparency and proper information, flexibility in rendering services, and observing religious and value considerations, each explain respectively 0.59, 0.06, 0.33, 0.45, 0.36, 0.19, 0.28, 0.34, 0.55, and 0.19 percent of customers' satisfaction variance. Based on coefficient β , it could be stated that total quality management and its aspects- employees empowerment, answering, timely service, beautification of service place, trustworthiness in rendering services, transparency and proper information, flexibility in rendering services, observing religious and value considerations, had 0.77, 0.25, 0.58, 0.67, 0.60, 0.44, 0.53, 0.58, 0.74, 0.43 percent positive and significant influence on customers' satisfaction in significance level 0.0001.

The multiple regression models were used to answer to the second hypothesis of research and results were shown in table 2. The second hypothesis stated that total quality management is capable of predicting customers' satisfaction.

Table 2. Studying the Prediction Role of Total Quality Management Aspects in Customers' Satisfaction

Total quality management aspects	β	t	f	p	R	R ²	Significance level
Employees empowerment	0.15	4.22					0.0001
Answering	-0.04	0.84					0.40
Timely service	0.30	7.44					0.0001
Precision in rendering services	0.03	0.60					0.54
Beautification of service place	-0.20	4.66					0.0001
Trustworthiness in rendering services	0.04	0.92	116.61	0.0001	0.85	0.73	0.35
Transparency and information	0.21	5.93					0.0001

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Flexibility in rendering services	0.51	12.46	0.0001
Observing religious and value considerations	0.13	4.10	0.0001

From table 2 it is seen that the aspects of total quality management predict 73 percent of customer satisfaction variance. The findings show that flexibility in rendering services is the strongest predictor of customer satisfaction in a positive and significant way. $\beta=0.51$. Afterwards, timely service ($\beta=0.30$), and transparency and information ($\beta=0.21$) were significant and positive predictors. Beautification of service place ($\beta=-0.20$) is negative and significant predictor, employees empowerment ($\beta=0.15$), and observing value and religious considerations ($\beta=0.32$) are significant predictors of customer satisfaction. Answering, trustworthiness in rendering services, and precision in rendering services were not significant predictors for customer satisfaction.

Path analysis was used to answer to the question how the final model of the influence of total quality management on customer satisfaction was. The results were presented in table 3.

Path analysis was made by Lizrel software for validation and presentation of final model of research. The results were summarized in figures 1 and 2. Figures 1 and 2 study the influence of total quality management aspects on customers' satisfaction from the point of view of the customers of Hormozgan Province Telecommunication Joint Stock Company based on path analysis. For this purpose, total quality aspects were considered as independent variable and customer satisfaction as dependent variable. The obtained results indicate that some aspects of total management influence customer satisfaction. These results include:

The results of figures 1 and 2 showed that each aspect of total quality management has a significantly positive influence on customer satisfaction: (employees empowerment $P<0.05$, $\beta=0.15$, and $t=4.22$), timely service ($P<0.05$, $\beta=0.26$, and $t=7.44$), beautification of service place ($P<0.05$, $\beta=-0.20$, $t=4.46$), transparency and information ($P=0.05$, $\beta=0.21$, and $t=5.93$), flexibility in rendering services ($P<0.01$, $\beta=0.51$, and $t=12.46$), observing religious and value considerations ($P<0.01$, $\beta=0.13$, $t=4.10$). On the contrary, trustworthiness ($P>0.05$, $\beta=0.04$, $t=0.92$), responsiveness ($P>0.05$, $\beta=-0.04$, and $t=0.84$), and accuracy of rendering services ($P>0.05$, $\beta=0.03$, and $t=0.60$) have no significant impact on customer satisfaction.

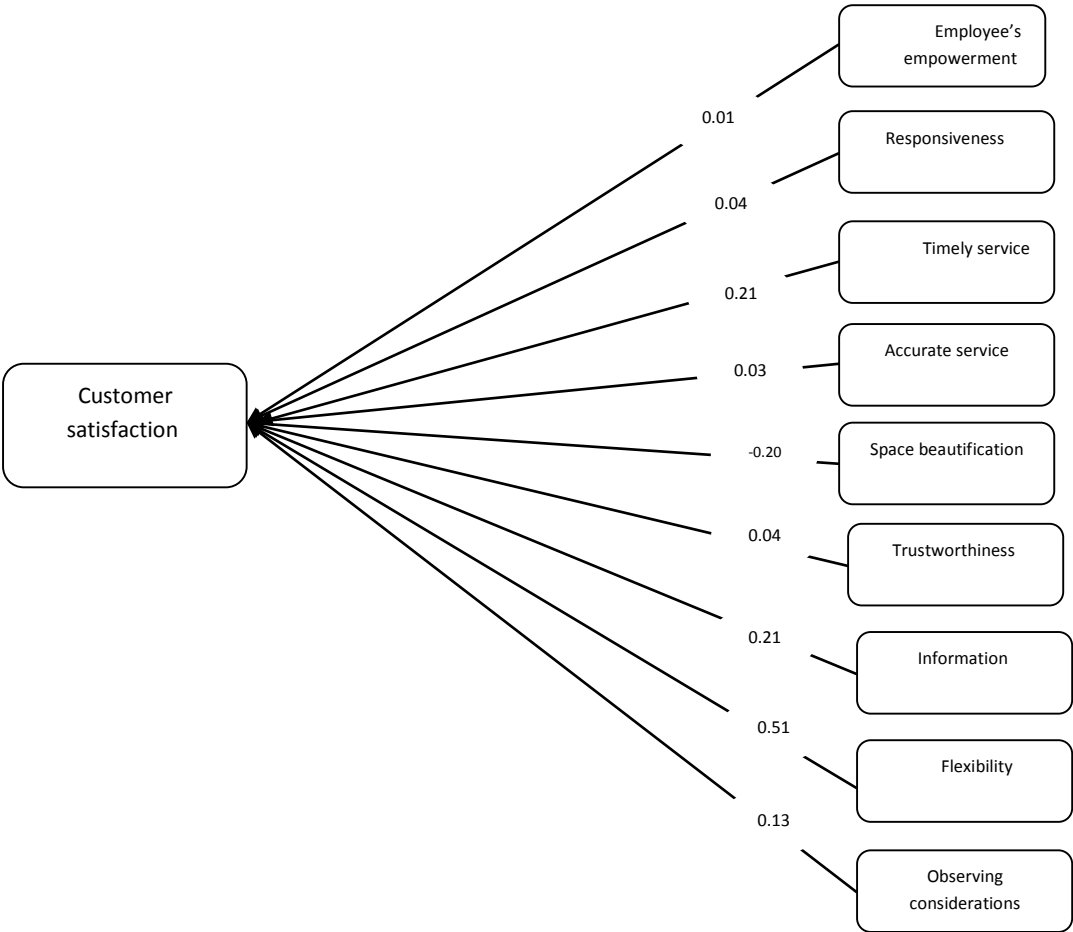


Figure 1. The Influence of Total Quality Management Aspects on the Model Customers Satisfaction in Standard Numbers Mood

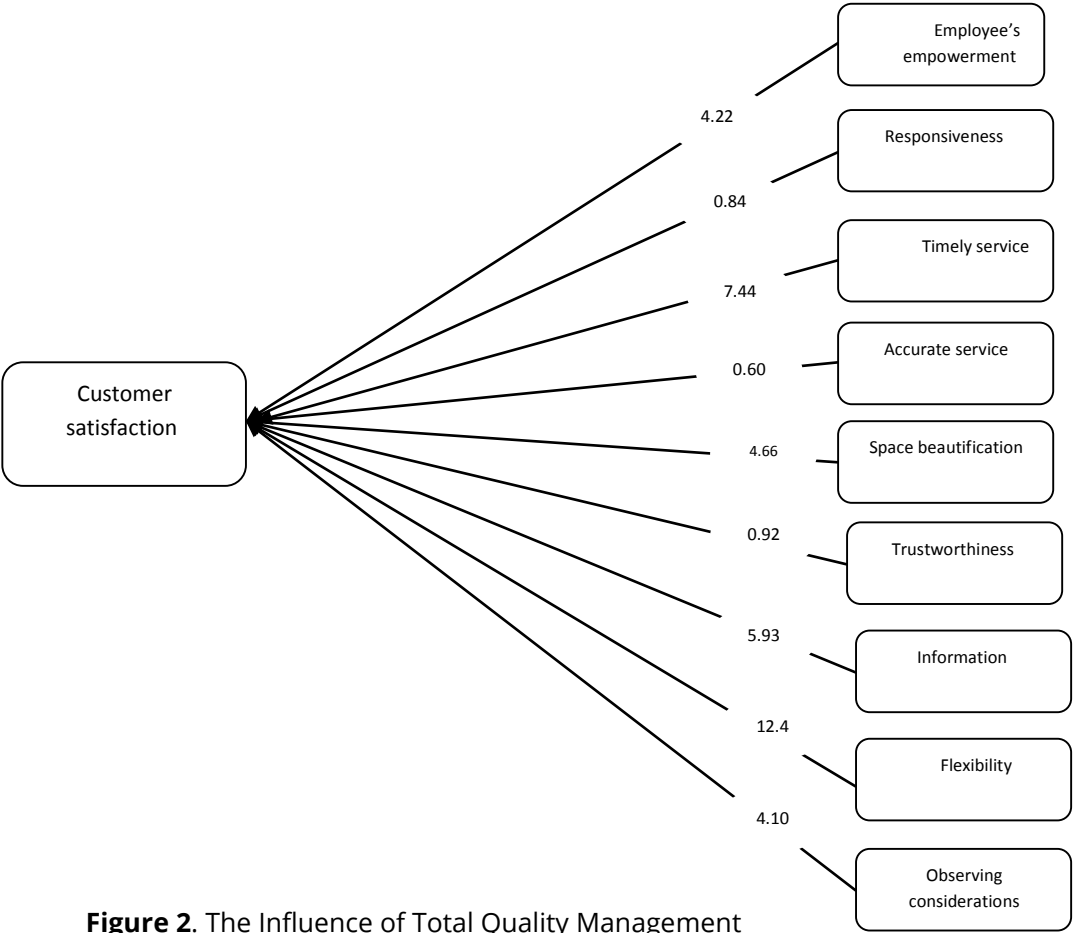


Figure 2. The Influence of Total Quality Management Aspects on the Model Customer Satisfaction in Significant Numbers Mood

In order to determine fitness of the model, various amounts of fitness were compared by Lizerl software (table 3). According to tables it could be understood that according to acceptability of NFI, CFI, IFI, and GFI fitness indexes and low SRMR error index, the model has a relatively good fitness.

Table 3. Model Fitness Indexes of the Influence of Total Quality Management Aspects on Customer Satisfaction

Index	Amount
NFI	0.80
CFI	0.80
GFI	0.87
IFI	0.82
SRMR	0.09

According to results it could be stated that variables showed independent significant influence on the linear regression output. But in multiple regression output and simultaneous input path analysis, the share of variables in their clear and significant influence and insignificance was accredited more precisely. It was found that flexibility, observing value and religious considerations, transparency and information, employees' empowerment and timely services had significant and positive influence on the customer satisfaction. Service place beautification had a significantly negative influence. The aspects of responsiveness, trustworthiness in rendering services, and accuracy in rendering services had no significant influence on customer satisfaction. The highest influence was observed in the simultaneous entry of aspects. The highest influence in path analysis model was observed in the share of flexibility in rendering services.

DISCUSSION

Results showed that total quality management and its aspects (employees empowerment, responsiveness, timely service, beautification of service place, trustworthiness in rendering services, transparency, and proper information, flexibility in rendering services, and observing value and religious considerations) have a significantly positive influence on customer satisfaction. These results conformed to the findings of previous research.

According to results it is inferred that employees of Hormozgan Telecommunication Company have sufficient information and education. Employees had a high potency in working under difficult conditions. Employees were interested in useful and appropriate service. They respected the client's opinion. Care is given to rapidly solve the client's problems. The client's problems are appropriately and favorably investigated. Customer was behaved appropriately and properly. Customer's request was investigated appropriately. Attempts were made to properly behave and communicate with client for clarification purpose. Physical facilities and equipment and rendered services were beautified. There was appropriate ability in rendering services promised by the company to customer in an appropriate way. It could be observed that employees had patience to explain and provide transparent and proper information to client. Customers believed that Hormozgan Telecommunication Company cared about the values and beliefs governing the community and customers. Focus was made

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on heeding to and obliging the employees to religious values against client. These factors led to satisfaction of customers with precision and accuracy of information of Hormozgan Telecommunication Company.

According to other results, variables showed significant influence in the variables linear regression output. But the simultaneous arrival of variables in the output of multiple regression and path analysis led to accreditation of the share of variables in their clear influence, significance, and insignificance. Flexibility, observing value and religious considerations, transparency and information, employee's empowerment, and timely service had a significant and positive influence in customer satisfaction. Service place beautification had a significantly negative influence. Responsiveness, trustworthiness in rendering services, and accuracy in rendering services had no significant influence in customer satisfaction. The highest influence was observed in simultaneous arrival. Path analysis model indicated the share of flexibility in rendering services .

Based on the results of research it is suggested to present the results of this research to all telecommunication centers in the province for the study of managers and employees. Moreover it is recommended to apply efficient and effective management versus total quality management particularly in planning, decision making, and time management and provide the grounds for realization of managers' capabilities regarding attention to total quality management.

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