The Effect of European Foundation for Quality Management (EFQM) Excellence Model Applications on the Perceived Service Quality

An Application in Health Sector

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Abstract

This study was conducted in order to examine the effect of EFQM Excellence Model on the perceived service quality. Within this context, the perceived service quality at a maternity hospital that effectively applies EFQM Excellence Model and received the National Quality Prize in 2006 and the perceived quality at another maternity hospital that do not apply the model in question were comparatively analyzed by the **SERVQUAL** scale, which was developed by Parasuraman, Zeithaml and Berry and used extensively in the literature. The **SERVQUAL** method consists of 4 distinct sections, 5 quality dimensions (Tangible, Reliability, Responsiveness, Assurance and Empathy) and 22 elements. The hypothesis of the study could be wrapped up as "the perceived service quality at the hospital which applies EFQM Excellence Model and has received the National Quality Prize is higher than the other hospital which does not apply these practices". Data gathering tool for accomplishing the aim of the study was provided by the questionnaire forms created with the primary resources. The questionnaire form was prepared according to 5-point Likert scale.

The SERVQUAL scale was adapted to the health sector in order to measure the perceived service quality. The patients were provided with some judgments on the services, and they were asked to evaluate each statement according to their expectations and their realization. In the evaluation, **"1"** denotes **very low**, whereas **"5"** denotes **very high** level. The SERVQUAL scale was analyzed based on gap-based principal. The service quality based on the gap for each dimension is calculated with the following equation (Lee et al., 2004).

$$GSQ_i = \frac{\sum_{j=1}^{n}\left(P_{ij} - E_{ij}\right)}{n_i}$$

In this formulation;

$P_{ij} =$ the perceived level of service for the ith aspect at the jth dimension,

$E_{ij} =$ the expected level of service for the ith aspect at the jth dimension,

$n_i =$ number of observations.

The data gathered from two different hospitals was evaluated by SPSS 16 package program. The data analysis was conducted by means of reliability, mean calculation, independent t-test to compare the service quality at the hospitals and ANOVA (one-way analysis of variance), respectively.

The negative average gap-based SERVQUAL for both hospitals demonstrates that they do not fulfill the expectations of the patients, and thus, the perceived service quality of patients towards the hospital services is low. At the end of analyzing the most important dimension among the 5 dimensions considered for service quality and the dimension that required the most improvement at the hospital, it was found out that both hospitals scored very low on empathy and physical appearance, which were considered the least important by the patients, whereas they scored relatively higher on reliability, responsiveness and assurance that the patients considered more important.

Key words: Service Quality, SERVQUAL, EFQM Excellence Model

Introduction

The term service quality has increasingly come into prominence worldwide. One of the reasons for this growing attention is that quality of service plays an important role in the accomplishments of the enterprises. The enterprises attain stability, increase their market share, gain customer loyalty and maintain their position in the competition by making a difference compared to the other enterprises as much as they augment the quality of the services provided.

Quality Award Models are used in many countries as means of creating an apt management system that could be effective in maintaining, continuously enhancing and developing service quality. The EFQM Excellence Model is one of them. It could be stated that the EFQM Excellence Model is an important management tool in applying total quality understanding in Turkey, with its structure based on European and National Quality Award.

Thus, application of the EFQM Excellence Model could have a positive effect on the perceived quality of service. This study seeks to find out the extent to which this statement is valid.

Castleberry and Mclntyre (1993) define the perceived quality of service as “the belief about the excellence level of the service” (Quester and Romaniuk, 1997: 181). According to Zeithaml, **perceived quality of service** is “the judgment of consumer on the superiority or the excellence of a product or service” (Parasuraman et al., 1988:15, Tavmergen et al, 2007: 332). Perceived quality of service differs from the objective quality. **Perceived quality of service** is the consumers’ perception, which is unequal to satisfaction, obtained by comparing the consumers’ expectations from the service and the performance of the received service

(perception) (Cronin and Taylor, 1992: 56; Parasuraman et al., 1988: 15). Perceived quality of service is an attitude that is related to but different than contentment, and it is attained by comparing the expectations with perceived performance (Tavmergen et al, 2007: 332).

It is rather difficult to evaluate quality in service products and to measure the results of the services (Brown and Swartz, 1991:240; Carmen, 1990:33, Parasuraman et al., 1985:42, 1988:13, Peyrot, Cooper and Schnapf, 1993: 24). Despite the difficulties in measuring service quality, the literature presents diverse quality measurement methods and models, such as **INTQUAL** developed by Caruana and Pitt (Caruana&Pitt,1997:606), **SERVPERF** by Cronin and Taylor (Cronin&Taylor,1994:125), and **SERVQUAL** by Parasuraman, Zeithaml and Berry (Parasuraman et al.,1985:48). This study employs the 4 diverse sections commonly used for measuring service quality in the literature, the 5 dimensions of quality (Tangibles, Reliability, Responsiveness, Assurance, and Empathy) and the **SERVQUAL** method composed of 22 elements (Anderson & Zwelling, 1996: 11; Anderson, 1995:33, Parasuraman et al., 1988:23, Babakus &Glynn, 1992: 769, Kilbourne, et al., 2004:524). Based on the comparison of the consumers' expectations of the service and their perceptions of the service, this approach indicates that the quality is lower than satisfactory if the expected service is greater than the perceived service (Anderson & Zwelling, 1996:11). Zeithaml, Parasuraman and Berry (1985) affirm that the only criterion for measuring service quality is the match between the service provided and the consumers' expectation from quality; that is, they establish that the definition of quality of service is determined by the consumer (Parasuraman et al., 1985, 42). In service sector, the consumer determines not only the quality of service but also its limits. Therefore, the quality of service and its limits are **consumer-oriented**.

Since each sector is unique, the Servqual scale is composed of the five dimensions of quality that are generally valid in organizations providing service. These dimensions are as follows:

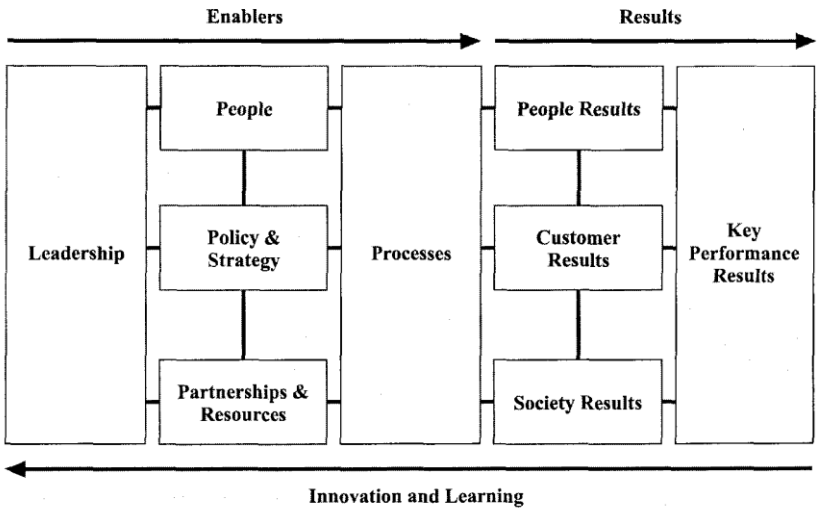
- **Tangibles:** the physical opportunities of the hospital to provide services, the equipments and the opinion of the personnel,
- **Reliability:** the ability to realize the promised service properly and reliably has been promised.
- **Responsiveness:** aid to the patients and rapid provision of service.
- **Assurance:** knowledgeable and kind employees and their ability to provoke assurance for the patients.
- **Empathy:** the hospital personnel to put themselves in the patients' place, paying personal attention to the patients.

The EFQM Excellence Model

The EFQM Excellence Model is a framework that accepts numerous diverse ways to achieve continuous excellence and that does not provide a recipe. The principal concepts that form the infrastructure of this framework are focus on problems, consumer-oriented attitude, consistency of leadership and the aims, management with processes and data, development and participation of the employees, constant learning, innovativeness, development of collaboration and institutional social responsibility.

The EFQM Excellence Model is set up with nine main criteria, among which five are "inputs" and four are "results", and thirty two sub-criteria (**Figure-1**). The input criteria include the activities of an organization, whereas the result criteria show what the organization has accomplished. Leadership, employees, policy and strategy, collaboration and resources, and processes comprise the input criteria of the model, while the results about the employees, the customers, the society and the performance add up to the output criteria.

Figure 1. EFQM Excellence Model



Note: Copyright 1999-2003 EFQM

According to the EFQM Excellence Model, the excellent results that reflected in the performance, customers, employees and the society could be obtained by directing the policy and strategy, the employees, the resources and the processes in line with a proper leadership understanding. The arrows in the upper and lower parts of the Figure demonstrate the dynamic structure of the model. These arrows show the innovative learning approach that enable improvement in the inputs, and thus, enhancement of the results.

The most reliable information on what to do in the fight for creating quality is provided to the organizations by the quality award models via their meticulous criteria. The quality award models could guide the process of improving the service quality to an excellent level with a wider point of view. Moreover, the presented quality award models could help the organizations during establishing and developing their management systems with their details (Tavmergen et al, 2007: 369).

Thus, perceiving the customers as one the output components of the model, the applications of the EFQM Excellence Model are expected to result in an improvement in the service quality. Previous research shows that consumer satisfaction and loyalty to the organization increase in settings that function systematically and steadily. Given that the EFQM Excellence Model as well foresees a similar structure and functioning, the problems are systematically solved in such an environment, and thus, affirmative results are obtained regarding the customers, employees and society.

The Aim And The Hypothesis Of The Study

This study aims to find out whether the EFQM Excellence Model applications and the National Quality Award make a difference in the perceived quality of service.

The hypothesis of the study is: "the perceived quality of service at the hospital that applies the EFQM Excellence Model and has received the National Quality Award is higher than the hospital that does not employ these applications".

The Method of The Study

The data gathering tool to achieve the aim of the study is the questionnaire form prepared using primary sources. The questionnaire form was prepared using a 5-point Likert scale.

This questionnaire was distributed to the patients staying at two inpatient public hospitals in Eskişehir: Eskişehir Maternity Hospital and Zübeyde Hanım Maternity Hospital. The patients were incorporated in the questionnaire some time after they started to stay at the hospital. Four groups of questions were posed in the questionnaire. The first one investigated the general expectations of the patients from the hospital. At this stage, the patient was asked to consider an ideal hospital and to answer the questions according to this ideal. The second stage comprised of asking the patients about the perceived performance of the hospitals in which they stay. The following stage, to assess the relative importance of five services quality attributes, we asked the patients to allocate a total of 100 points among these five attiributes. In addition to these, the patients' satisfaction from the hospital services was asked.

Sampling Method

The sample of the research is composed of inpatients of two hospitals in Eskişehir, among which Eskişehir Maternity Hospital effectively applies the EFQM Excellence Model and received the 2006 National Quality Award in public sector category, whereas Zübeyde Hanım Maternity Hospital does not apply such a model and did not receive any quality awards yet.

With random sampling, 200 questionnaires were distributed to each hospital, adding up to a total of 400 questionnaires. However, 150 questionnaires from Eskişehir Maternity Hospital and 149 questionnaires from Zübeyde Hanım Maternity Hospital were taken into evaluation, amounting to a total of 299 questionnaires. The research was conducted between 1 March and 30 April 2009 in the inpatient wards of the related hospitals.

Data Analysis Method

The data gathered from two different hospitals was evaluated by SPSS 16 package program. The data analysis was conducted by means of reliability, mean calculation, independent t-test to compare the service quality at the hospitals and ANOVA (one-way analysis of variance), respectively.

This study made use of the SERVQUAL scale adapted to the health sector in order to measure the perceived quality of service. The number of items of the Servqual scale with 5 dimensions and 22 items was increased to 28 by adding 6 more items that were considered significant for the hospitals.

The patients were provided with some judgments on the services, and they were asked to evaluate each statement according to their expectations and their realization. In the evaluation, **"1"** denotes **very low**, whereas **"5"** denotes **very high** level. The SERVQUAL scale was

analyzed based on gap-based principal. The service quality based on the gap for each dimension is calculated with the following equation (Lee et al., 2004).

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In this formulation;

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$n_i =$ number of observations.

Findings And Discussion

The findings related to the demographic variables of both hospitals are presented in the table below.

Table 1. The Values for Demographic Variables of the Hospital

Demographic Variables		**Eskişehir Maternity Hospital**		**Zübeyde Hanım Maternity Hospital**	
		Frequency	**Percentage %**	**Frequency**	**Percentage %**
Occupation group	Teacher	7	4.7.	6	4
	Housewife	103	68.7	101	67.8
	Doctor	1	0.7	-	-
	Nurse	4	2.7	10	6.7
	Civil Servant	4	2.7	3	2
	Worker	4	2.7	7	4.7
	Other	27	18	22	14.8
Educational Backround	Primary Graduate	87	58	79	53
	High school graduate	43	28.7	42	28.2
	University Graduate	20	13.3	28	18.8
Age	15-20	9	6	8	5.4
	21-25	29	19.3	34	22.8
	26-35	80	53.3	70	47
	36-45	24	16	26	17.4
	45-55	8	5.3	11	7.4

	55+	-	-	-	-
Net Income	300-500	87	58	49	32.9
	500-1000	48	32	70	47
	1000-2000	15	10	29	19.5
	2000-3000	-	-	1	0.7
	3000-Üstü	-	-	-	-

In terms of demographic variables, it is observed that the patient profiles of both hospitals are very similar.

Alpha coefficient was used in order to test the reliability of the 5-dimesion results for both hospitals. Alpha (Cronbach) coefficient was calculated separately for all dimensions in the expectation and perception sections of the Servqual scale used at the hospital. With values greater than 0.6, the results were found to be reliable.

As a result of the study, the mean gap-based servqual result of Eskişehir Maternity Hospital was found to be -0.82. The negative value indicates that the expectations of the patients were not fulfilled, and thus, the perceived quality of service of the hospital is low. Hence, the patients are not content with the hospital in terms of quality of service.

Table 2 . The Mean Values for the Quality of Service and the Mean of Gap Score of Eskişehir Maternity Hospital

Dimensions	**Mean of Perceptions Score**	**Mean of Expectations Score**	**Mean of Gap Score**
Tangibles	3,85	4,81	-0,96
Reliability	4,10	4,73	-0,63
Responsiveness	3,9	4,7	-0,8
Assurance	4,01	4,76	-0,75
Empathy	3,68	4,62	-0,94
MEAN	**3.91**	**4.72**	**-0.82**

As observed from Table, the values for all dimensions of service quality were negative. Moreover, it is observed that tangibles and empathy quality dimensions of the hospital created a greater discontent.

Table 3. The Mean Values for the Quality of Service and the Mean of Gap Score of Zübeyde Hanım Maternity Hospital

Dimension	**Mean of Perceptions Score**	**Mean of Expectations Score**	**Mean of Gap Score**
Tangibles	3,94	4,85	-0,91
Reliability	4,06	4,74	-0,68
Responsiveness	3,95	4,74	-0,79
Assurance	3,98	4,73	-0,74
Empathy	3,63	4,65	-1,02
MEAN	3.91	4.74	-0.83

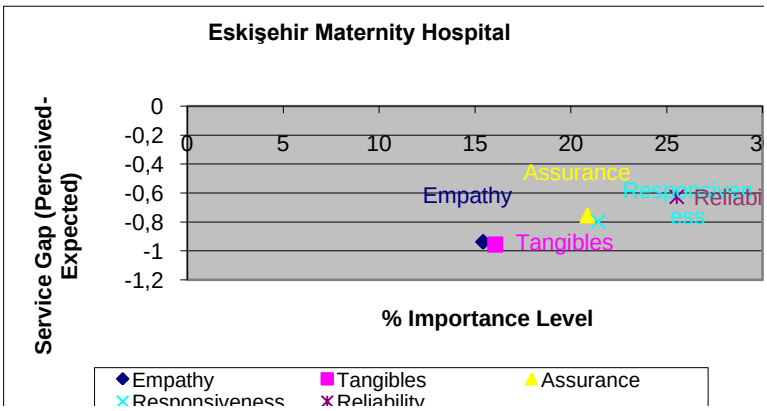
As a result of the study, the mean gap-based servqual result of Zübeyde Hanım Maternity Hospital was found to be -0.83. The negative value signifies that the expected service is lower than the perceived one. Hence, the patients could not receive the expected quality of service from the hospital.

In order to find out whether there is a difference in the perceived quality of service between the hospitals t-test was conducted. According to the results of the t-test, there is no difference between the hospitals in terms of the dimensions that indicate service quality. It could be concluded at this point that both hospitals have a low level of perceived quality of service and they are negative to the same extent. It is seen that the patients could not receive the service they expected from the hospital. In this sense, quality of service is the same in both hospitals.

As the results of this study indicate, the patients in Eskişehir are discontented with the service because they did not find what they were expecting.

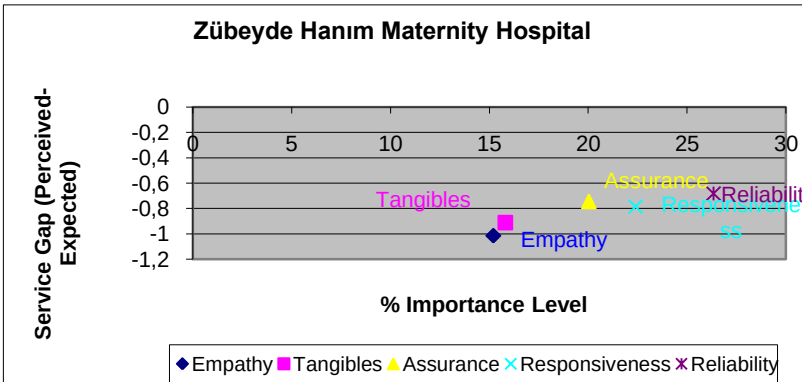
After examining which dimension was more important among the 5 dimensions that are taken into account in service quality and the dimension that need to be improved the most, the following results are obtained.

Table 4 . Service Quality Gap for the Patients of Eskişehir Maternity Hospital in Terms of Importance Assigned



As it is observed from the above table, the most important dimension of service quality for the patients is reliability, whereas the least important dimension empathy. Here, the service quality gap is the largest in tangibles and empathy. These are followed by responsiveness, assurance and reliability, respectively. In brief, it could be inferred that the service is better in terms of the most important dimension of service quality in comparison with the other dimensions. The difference between the expectation and perception is lower than it is for other dimensions. Nevertheless, the level is not satisfactory.

Table 5. Service Quality Gap for the Patients of Zübeyde Hanım Maternity Hospital in Terms of Importance Assigned



In Zübeyde Hanım Maternity Hospital, the most important dimension of service quality for the patients is again reliability. The least important dimension of service quality is likewise empathy. As for the patients of Zübeyde Hanım Maternity Hospital, the largest service quality gap observed is in tangibles and empathy. These two are followed by responsiveness, assurance and reliability. In short, it could be concluded that, in comparison with the other dimensions, the service is better in terms of reliability, which was considered the most important dimension of service quality by the patients. The difference between the expectation and perception is lower

than it is for other dimensions. However, no dimension of service quality reaches a satisfactory level.

When both tables are observed, it is seen that the hospital scores the lowest in empathy and tangibles, which are the least important for the patients, whilst the more important dimensions scored better than these two.

Conclusions

The dimensions of service quality, tangibles, reliability, responsiveness, assurance and empathy, were examined with the Servqual Gap-based scale. The results demonstrated that the patients in general received less service than expected from both hospitals. Particularly, the difference between the mean perceived and the mean expected service is more than the others in tangibles and equipment, empathy and responsiveness dimensions. When two hospitals are compared, there is no significant difference.

This study, which investigated whether the application of the EFQM Excellence Model and the National Quality Award create a difference in the level of service quality, found out that the first hypothesis is rejected, that is, the application of EFQM Excellence Model and the National Quality Award did not affect the perceived service quality, and that another hospital, which does not apply such a model or receive a quality award, has almost the same values in all dimensions of the perceived quality of service, and thus, it provides the same level of satisfaction. The gap-based Servqual scores for both hospitals are negative; hence the expected level of service quality is not attained.

Thus, in a period in which a customer-orientedness is of extreme importance, our research could be valuable in terms of determining and evaluating service quality, which is a delicate topic for hospitals, and thus, become an exemplary study.

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