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EVALUATION OF SERVICE QUALITY CRITERIA FOR A PRIVATE MEDICAL CENTER BY USING SERVQUAL AND DEMATEL METHODS

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ABSTRACT

Health care sector has an important role in service industry. All kinds of negativity and dissatisfaction in this area affect not only companies but also has a major impact on public life. It should be determined for hospital enterprises to provide a better service quality in which area they have deficiencies. The aim of this paper is to determine the difference between the expected and perceived service quality levels of patients and also to reveal the factors that lead to this difference. For this purpose, the expected and perceived service quality levels and difference between them are determined for a private medical centre in Istanbul via SERVQUAL (Service Quality) method. Then it is tried to determine on which criteria it will be focused in achieving the expected service quality level via DEMATEL (Decision Making Trial and Evaluation Laboratory) method. In consequence of the study, the criteria are determined by taking into account patient requests and feedback and opinions of the hospital management.
Keywords: Service quality criteria, SERVQUAL, DEMATEL.

SERVQUAL VE DEMATEL METOTLARI KULLANILARAK ÖZEL BİR TIP MERKEZİ İÇİN HİZMET KALİTESİ KRİTERLERİNİN DEĞERLENDİRİLMESİ

ÖZET

Sağlık sektörü, hizmet sektörü içinde önemli bir paya sahiptir. Bu alanda yaşanan her türlü olumsuzluk ve memnuniyetsizlik sadece işletmeleri etkilemekle kalmayıp toplum yaşantısı üzerinde de önemli etkilere sahiptir. Hastane işletmelerinin daha kaliteli bir hizmet sunabilmeleri için hangi alanlarda eksikliklerin olduğunun belirlenmesi gerekmektedir. Bu çalışmanın amacı da hastaların beklenen ve algılanan kalite düzeyleri arasındaki farkın belirlenmesi ve bu farkı yaratan etkenlerin ortaya konmasıdır. Bu amaçla SERVQUAL (Service Quality) metodu ile İstanbul'daki özel bir tıp merkezinin algılanan ve beklenen hizmet kalitesi düzeyleri ile bunlar arasındaki fark belirlenmiş, daha sonra DEMATEL (Decision Making Trial and Evaluation Laboratory) metodu ile beklenen kalite düzeyine ulaşmada hangi kriterler üzerinde durulacağı tespit edilmeye çalışılmıştır. Çalışma sonucunda hem hasta görüşleri ve istekleri hem de hastane yönetiminin fikirleri dikkate alınarak ortak bir karar ile bu kriterler saptanmıştır.
Anahtar Sözcükler: Hizmet kalitesi kriterleri, SERVQUAL, DEMATEL

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1. INTRODUCTION

Service quality in health care area is satisfaction of all parties within the customer classification. It can also be defined as to ensure patients leave satisfied by the health care provided timely and accurately and at the lowest cost [1]. It is highlighted in the literature that it can be achieved competitive advantage in the health care delivery by means of *service quality* and *customer satisfaction*. Since the customer is in interaction with the enterprise during the whole production process, he/she concerns about the quality of product arose from the production as well as the other elements of the service pack that the customer interacts during the whole production period [2]. In the literature it is indicated that people who get health care are not capable to assess the technical quality of the service but can evaluate the perceived and expected dimensions of service. Therefore, managers of health care organizations should focus on technical and humanitarian dimensions of the health care [3]. Technical dimensions of quality in health care are mostly included within the scope of health care personnel. Because, this knowledge is not known by the consumer society [4].

The determinants of service quality in the health care are presented in Figure 1 [5]. As shown in the figure, the criteria qualified as technical quality that includes the preciseness of the process from the patient arrival to the discharge are also crucial except the perceived quality.

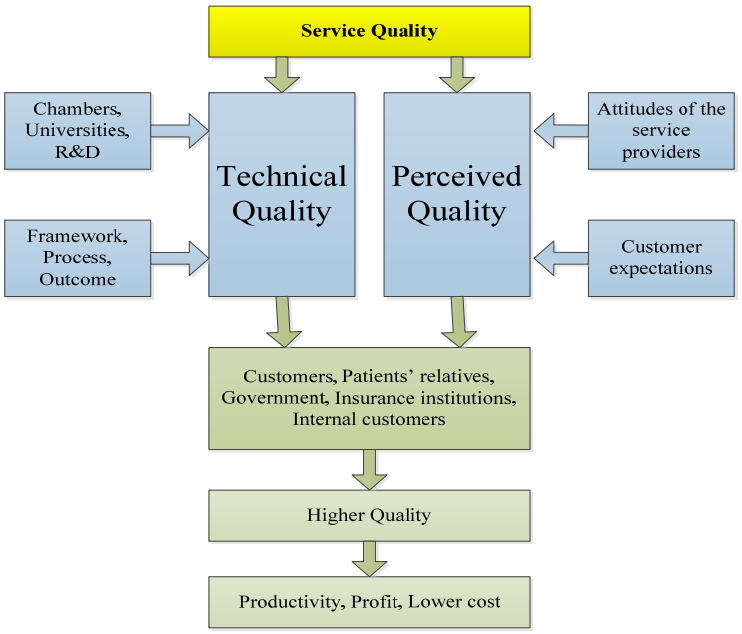

Figure 1. Determinants of quality of service in health care

In recent years quality in health care becomes more popular than ever since it is one of the most frequently mentioned topic in health care area and health institutions attempt to document service quality of their organizations. SERVQUAL is a scale developed to measure service quality. This scale is divided into two parts as expectations and perceptions and each part has 22 items. In the study the items are considered as 20 for each part. The use of SERVQUAL method about customer satisfaction and service quality dimensions is extremely common in the literature [7-18]. Babakus and Mangold [7] apply SERVQUAL in a hospital service environment

and they profit by its measurability of service quality related to the patient expectations and perceptions. Similarly, Lam [8] uses of SERVQUAL for measuring patients' perceptions of health care quality in Hong Kong. Gorji et al. [9] obtain a negative gap in all dimensions of SERVQUAL and conclude that expectations of patients are not met. Fotiadis and Vassiliadis [12] examine the effect of a transfer to new premises on service quality in Greece unlike merely examining of service quality in healthcare organizations. They conclude that the transfer to new premises most affects the "tangibles" dimension and the remaining four dimensions of SERVQUAL are positively influenced. Amin and Nasharuddin [13] investigate hospital service quality and its effect on patient satisfaction and behavioral intention. The findings of their study indicate that the establishment of higher levels of hospital service quality will lead customers to have a high level of satisfaction and behavioral intention. Mahapatra [14] and Andaleeb [17] study on comparative analysis of service quality between public and private hospitals. The first study provides hospital managers an insight for efficient resource allocation and mobilization based on patients' evaluation of service quality delivered by these hospitals. In the second study, it is emphasized that private hospitals try to better provide service quality than public ones. Mahdzir and Ismail [16] study to determine the level of patient satisfaction and its contributing factors as well as to determine the quality of services in physiotherapy clinics. Chakravarty [18] evaluates service quality in hospital outpatient departments (OPD) services. The study concludes that significant service quality gaps existed in the delivery of the hospital OPD services, which need to be addressed by focused improvement efforts by the hospital management.

Many studies on evaluation of service quality in health care are conducted in Turkey. Pakdil and Harwood [6] study the patient satisfaction in a hospital-based preoperative assessment clinic by using SERVQUAL. They find that patients' most highly ranked expectation is 'adequate information about their anesthesia and surgery', and the second one is 'adequate friendliness, courtesy'. Taner and Antony [19] study the gaps of service quality between the public and private hospitals in Turkey. Altuntas et al. [15] use multi criteria decision making methods-AHP and ANP-with SERVQUAL scales to measure perceived service quality in Turkish hospitals. They conclude that perceived service quality differ among different hospital classes and the most important service quality dimensions are empathy, the knowledge of employees, sympathetic and reassuring employees, services provided at the time promised to do so, and safe feeling of patients in interactions with hospital employees. Rahman et al. [33] measure service quality of four hospitals in Elazığ using SERVQUAL method and they conclude that the hospitals do not meet the patients' expectations. Devebakan and Aksaraylı [34] study for measurement of perceived service quality of a private hospital in Izmir, Turkey. Patients who take part in the survey consider *reliability* and *assurance* as the most important service quality dimensions. Like this study, Bakar et al. [35] conduct a study of patient attitudes regarding important aspects of service dimensions using SERVQUAL. Caha [36] focuses on a dynamic model related to the patient satisfaction of private hospitals different from the studies in the literature mentioned above. Camgoz-Akdag et al. [40] propose an integrated Quality Function Deployment (QFD)-SERVQUAL methodology for quality improvement of private hospitals. They find that behavior of staff is the highest weight score and there is strong relationship among skills of physician, behavior and attitude of staff, and having enough modern equipment.

DEMATEL method such as the SERVQUAL is used in health care area in order to aid service quality evaluation. Shieh et al. [20] use DEMATEL method in identifying the key success indicators with respect to the service quality of Taiwanese hospital. Nasiripour et al. [37] study on identifying the determinants influential in performance of pre-hospital emergency system of Iran and analysis of the relationships among them. In another study, it is aimed to determine the perceived barriers affecting access to preventive dental services in an Iranian dental clinic using DEMATEL method [38]. They determine the cost and patient-dentist relationship as the first and last priorities. Wang et al. [39] evaluate ten criteria as the influence elements of medical service

quality by using DEMATEL with several experts. The results of the study show that diagnosis quality and treatment result are the most important criteria of medical service quality.

In this study, a two method based approach is followed in evaluating the service quality criteria for a private medical center. First, with SERVQUAL method, it is aimed to reveal the most important service quality dimension by means of patients' points of view. Second, DEMATEL method is applied in order to determine on which criteria it will be focused in achieving the expected service quality level with the medical center management standpoint. In doing so, both sides make a consensus on evaluating the key success criteria of medical center service quality. The study is further aimed to contribute to the research on the application of the SERVQUAL and DEMATEL methods concurrently for health service quality evaluation in Turkey.

The outline of the study organizes as follows: In the second and third section of this study, respectively SERVQUAL and DEMATEL methods with their steps are presented. In the fourth section a real case application for the evaluation of quality of service in a private medical center in Istanbul is presented. The last section includes the final conclusions and recommendations.

2. METHODS

In this section, process steps of SERVQUAL and DEMATEL methods used in the study are presented.

2.1. SERVQUAL Method

SERVQUAL is a most frequently used method to measure service quality in the literature. This method is a survey analysis based on evaluation of perceived and expected quality by customers. With the results of the evaluation, the gap between service expectations (e.g. required quality as important-unimportant) and the performance level of the service (e.g. good-poor perceived quality) determines the quality of the service. In other words evaluation of service quality in SERVQUAL analysis is based on calculating the difference between the scores which the customers respond to the pairs of expressions "*expectation-perception*" [21]. In addition to the health care sector SERVQUAL is applied to many service industries such as tourism, transportation, local government, education and so on [22]. Researchers indicate that the service quality has various dimensions [23]. Parasuraman et al. [24] suggest five service quality dimensions for all the service sectors [22,25]. They are as follows:

Tangibility: Physical facilities, equipment and appearance of personnel,
Reliability: Ability to perform the promised service dependably and accurately,
Responsiveness: Willingness to help customers and provide prompt service,
Assurance: Knowledge and courtesy of employees and their ability to inspire trust and confidence,
Empathy: Caring, individualized attention the firm provides its customers.

2.2. DEMATEL Method

DEMATEL method is originally developed by the Battelle Memorial Institute of Geneva between 1972 and 1976 in order to resolve the complicated and intertwined problem groups [26]. The method could improve understanding of the specific problematique, the cluster of intertwined problems, and contribute to identification of workable solutions by a hierarchical structure [20]. Unlike the traditional techniques such as analytic hierarchy process with the assumption that elements are independent, this method, one of the structural modeling techniques, can identify the interdependence among the elements of a system through a causal diagram [20]. The main

advantage of DEMATEL method is to include indirect relations containing cause-effect model. DEMATEL is an effective method to analyze structure and relations between system components or a good few of alternatives. DEMATEL can put the criteria in priority order in terms of types of relations and importance of the impact on each other. The criteria that are supposed to have a high priority on the other criteria name as cause criteria. The criteria that are supposed to have low priority and are the mostly under the influence name as result criteria. [26]. The steps of DEMATEL method are summarized as follows [20, 26-28]:

Step 1: The average matrix is computed. A five level scale by an integer score ranging from 0 to 4 is given to each respondent in order to make pair wise comparisons between the criteria. The numbers represent the direct influence between any two criteria with an expression of ‘‘no influence”, ‘‘low influence”, ‘‘medium influence”, “high influence”, and ‘‘very high influence”, respectively. The notation of X_{ij} indicates the degree to which the respondent believes factor *i* affects factor *j*. For $i = j$, the diagonal elements are set to zero. For each respondent, an $n \times n$ non-negative matrix can be established as $X^k = [X_{ij}^k]$, where *k* is the number of respondents with $1 \le k \le H$, and *n* is the number of factors. Thus, $X^1, X^2, X^3, \ldots, X^H$ are the matrices from *H* respondents. To incorporate all opinions from *H* respondents, the average matrix $A=[a_{ij}]$ can be constructed as follows:

$$a_{ij} = \frac{1}{H}\sum_{k=1}^{H} X_{ij}^k \tag{1}$$

Step 2: The normalized initial direct-relation matrix is calculated. Initial direct-relation matrix *D* is normalized by $D=A \times S$, where,

$$S = 1 / \max_{1 \le i \le n} \sum_{j=1}^{n} a_{ij} \tag{2}$$

Each element in matrix D falls between zero and one.

Step 3: The total relation matrix is calculated. The total relation matrix *T* is defined as $T=D(I-D)^{-1}$, where *I* is the identity matrix. *r* and *c* are defined as $n \times 1$ and $1 \times n$ vectors representing the sum of rows and sum of columns of the total relation matrix *T*, respectively. Suppose r_i be the sum of *i*th row in matrix *T*, then r_i summarizes both direct and indirect effects given by factor *i* to the other factors. If c_j denotes the sum of *j*th column in matrix *T*, then c_j shows both direct and indirect effects by factor *j* from the other factors. When $j=i$, the sum $(r_i + c_j)$ shows the total effects given and received by factor *i*. That is, $(r_i + c_j)$ indicates the degree of importance that factor *i* plays in the entire system. On the contrary, the difference $(r_i - c_j)$ depicts the net effect that factor *i* contributes to the system. Specifically, if $(r_i - c_j)$is positive, factor *i* is a net cause, while factor *i* is a net receiver or result if $(r_i - c_j)$ is negative.

Step 4: A threshold value is set up and the digraph is obtained. Since matrix *T* provides information on how one factor affects another, it is necessary for a decision maker to set up a threshold value to filter out some negligible effects. In doing so only the effects greater than the threshold value are chosen and shown in digraph. The digraph is acquired by mapping the dataset of $(r+c, r-c)$.

3. A REAL CASE APPLICATION IN A PRIVATE MEDICAL CENTER

The private medical center where the application is carried out is located in Besiktas, Istanbul since 2001. It has several medical departments such as internal diseases, general surgery, gynecological diseases, maternity, pediatrics, ophthalmology, ear, nose and throat, dermatology, urology policlinics and so on. Our application consists of two stages. First results of the questionnaires on patients are evaluated with SERVQUAL scale and secondly with the opinions

of hospital management and staff as experts, DEMATEL method is applied on the determined criteria. The aim here is to reach a common conclusion by getting patient opinions and requests as well as hospital management ideas.

3.1. Application of SERVQUAL Method

In recent years competition in private hospitals has a significant increase with the start of providing health service to all people from different types of insurances. In this context, using all resources efficiently by hospital managements will have a significant impact on competition ability. Considering how the patients perceive the service provided by hospitals enable them to make arrangements on the processes in this direction. From this point SERVQUAL model is a self evaluation tool for hospitals The analysis presents the current state of the hospital and also reveals the areas where are needed to be designated and improved. Results of the study will provide an opportunity for hospital management to increase service quality. The survey is taken among 100 patients on April, 2013. From the conducted surveys 50 of them are found valid and suitable for use in the study. Two questionnaires are designed that contain four items for each five service quality dimensions. One of the questionnaires is to measure expected service quality (Appendix 1) and the other is for perceived service quality (Appendix 2) [21, 29-30, 41]. There are 20 questions with respect to the five service quality dimensions (tangibility, reliability, responsiveness, assurance, empathy) in the part of patient expectations of SERVQUAL scale used in questionnaires. In both questionnaires, a Likert-type five-point scale, where 1 and 5 represent very unimportant and very important, respectively is used instead of the original seven-point scale. The five-point scale is considered to increase response rate and quality and to prevent the confusion on respondent patients. According to the results of answers about the demographic characteristics of patients, 64% percentage of patients is female and the remainder (36%) is male. 20% of respondents are in 15-20 age group, 56% in 21-40 age group and %24 in 41-65 age group. In addition, 14% of them have primary school education, 34% of them have high school education and the remainder have university education level. In collected data of the perception section it has been seen lots of unanswered questions although there is no "do not know" option in the questionnaire items. The case is not the same in expectation section. The most important limitations of the research are time, cost and patients' special cases. Due to the high cost of the field survey the sample size is kept in minimum level. In addition, another factor that restrict the sample size is the suitability of the patients' care status to include the in the application study [21]. The hypothesis of the research is as follows:

H_0: *There is no gap between perceived and expected service quality in hospital.*
H_1: *There is a gap between perceived and expected service quality in hospital.*

The distribution about patient perceptions and expectations is shown in Table 1. The most important item in patient expectations is the seventeenth one in empathy dimension (Employees should have adequate information to respond the patients well). The most unimportant item is the fourth one in tangibility dimension (The appearance of physical facilities such as toilets, canteen should be seen visually impressive). The most important item in patient perceptions is the eighteenth one in empathy dimension (The hospital operates 24 hours a day). In addition, it is determined by a paired t-test that the sixth and eighth items have a high perception. P-values with respect to the three items are higher than 0.05 and H_0 is accepted. The most unimportant item is the fourth one in tangibility dimension (The appearance of physical facilities in the hospital such as toilets, canteen should be seen visually impressive).

SERVQUAL score is calculated as *Perception service quality score-Expectation service score*. A positive SERVQUAL score indicates that it is exceeded the patients' expectations and therefore patients' quality perceptions on hospital service are high. A negative SERVQUAL score is indicates that it is not met patients' expectations and therefore patients' quality understanding on hospital service is low. If the score is zero, patients' expectations are met at least and therefore

service quality of the hospital is satisfying. SERVQUAL scores of the medical center where the application is carried out are shown in Figure 2. As shown in the figure SERVQUAL score of eighteenth item is positive. In this case, the hospital meets the patients' expectation level regarding this item. But apart from this item, scores of all the other items negative and therefore the hospital is not met the patients' expectation in general.

In the study, a Cronbach's Alpha Analysis is used to reveal the reliability of SERVQUAL model. Cronbach's Alpha Analysis enables determination of internal homogeneity of a group of variable with an alpha coefficient. The alpha coefficient measures an existing internal correlation between groups of variable [31]. If the alpha coefficient is between 0– 0.4 (excluding), the scale is not reliable. If it is between 0.4 – 0.6 (excluding), 0.6 – 0.8 (excluding) and 0.8 – 1, the scale is low reliable, high reliable and very high reliable respectively [32].

Table 1. Score statistics about patient perceptions and expectations

Question item	*Maximum value*		*Minimum value*		*Mean value*		*P-value*
	Perception	*Expectation*	*Perception*	*Expectation*	*Perception*	*Expectation*	
1	5	5	2	4	4,06	4,48	0,006
2	5	5	1	3	3,72	4,38	0,000
3	5	5	1	3	3,34	4,04	0,001
4	5	5	1	2	2,90	3,76	0,000
5	5	5	1	3	3,66	4,22	0,001
6	5	5	1	2	3,62	4,06	0,070*
7	5	5	1	3	3,68	4,20	0,014
8	5	5	1	3	3,80	4,14	0,071*
9	5	5	1	4	3,86	4,34	0,008
10	5	5	1	3	3,82	4,34	0,021
11	5	5	1	3	3,30	3,96	0,003
12	5	5	1	2	3,26	3,96	0,000
13	5	5	1	2	3,16	3,96	0,000
14	5	5	1	4	3,62	4,42	0,000
15	5	5	1	3	3,66	4,42	0,000
16	5	5	1	3	3,78	4,24	0,012
17	5	5	1	4	3,68	4,54	0,000
18	5	5	1	3	4,34	4,22	0,573*
19	5	5	1	3	3,28	3,98	0,002
20	5	5	1	3	3,46	4,24	0,000
Mean	5	5	1,05	3	3,60	4,20	0,000

The results of reliability analysis on every service quality dimensions and the overall survey by using SPSS 13.0 statistical analysis software within a 95% confidence interval are shown in Table 2 below. As can be seen from the table, the scores of perceived service quality for five dimensions and the overall survey are found very high reliable. The scores of expected service quality for empathy dimension and the overall survey is found very high reliable but for tangibility, reliability, responsiveness and assurance it is pretty reliable.

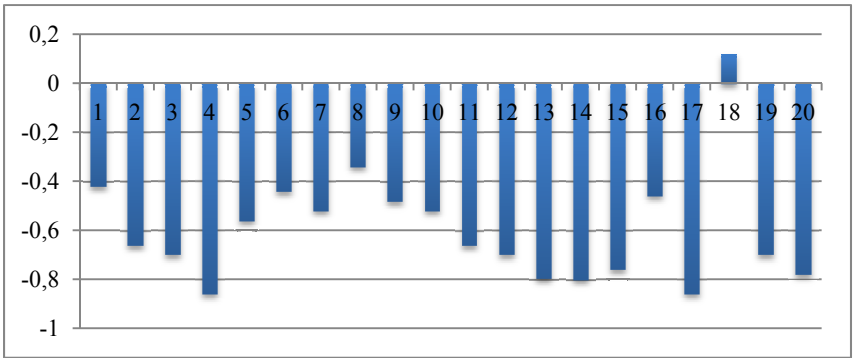

Figure 2. SERVQUAL (Gap) scores

Table 2. Reliability scale coefficients of perceived and expected service quality

Dimension	*Cronbach's Alpha value*	
	Perceived service quality	*Expected service quality*
The overall survey	0,9724	0,8765
Tangibility	0,8523	0,6032
Reliability	0,9132	0,6312
Responsiveness	0,8542	0,7216
Assurance	0,8645	0,7876
Empathy	0,8786	0,8356

As a result of the SERVQUAL analysis H_0 hypothesis (There is no gap between perceived and expected service quality in hospital) is rejected (the mean p-value<0.05). Considering SERVQUAL scores, the hospital is not met the patients' expectations except only one criterion.

3.2. Application of DEMATEL Method

Total relation matrix and results matrix are calculated according to the Step 3 and 4 depicted in Section 3. The gap between perceived and expected service quality using SERVQUAL method is presented in the first section. It is also revealed that on which service quality dimension should be studied more. In this section of the study it is asked opinion of the hospital management on which item (criterion) is more important than the other. At this step DEMATEL method is used to evaluate and determine the one more important. Thus, both the stakeholders that provides and gets the health care present their opinions and expectations. An expert team that consists of hospital manager, three administrative officers and two physicians is organized. Then 20 items created in SERVQUL study are discussed. After the discussion five items (criteria) are selected as the most important ones by the expert team. The criteria are as follows:

- *Criteria 1 (C_1)*: Reliable service
- *Criteria 2 (C_2)*: Quick service
- *Criteria 3 (C_3)*: Well-equipped personnel
- *Criteria 4 (C_4)*: Hygienic and comfortable environment
- *Criteria 5 (C_5)*: Waiting times

After the determination of criteria working on, the direct-relations matrices are created. At this stage experts are asked to compare one criterion to another and to give a score between 0

and 4 related to the level of superiority. Then the direct-relation matrix is calculated using the formulas (1) and (2) (Table 3).

Total relation matrix and results matrix are calculated according to the Step 3 and 4 depicted in Section 3 (Table 4 and Table 5).

Table 3. Direct relation matrix

	C_1	C_2	C_3	C_4	C_5
C_1	0	0,217391	0,318841	0,086957	0,202899
C_2	0,188406	0	0,318841	0,144928	0,347826
C_3	0,347826	0,289855	0	0,057971	0,246377
C_4	0,173913	0,101449	0,072464	0	0,086957
C_5	0,130435	0,318841	0,289855	0,043478	0

Table 4. Total relation matrix

	C_1	C_2	C_3	C_4	C_5
C_1	1,015441	1,322646	1,470816	0,507665	1,275501
C_2	1,311225	1,309447	1,641172	0,610243	1,526743
C_3	1,311225	1,309447	1,641172	0,610243	1,526743
C_4	0,681604	0,693327	0,719951	0,23035	0,66382
C_5	1,115031	1,376326	1,437178	0,471046	1,100008

Table 5. Results matrix

	r	*c*	*r+c*	*r-c*
C_1	5,5921	5,5186	11,1107	0,0734
C_2	6,3988	6,2105	12,6093	0,1883
C_3	6,2701	6,6522	12,9223	-0,3822
C_4	2,9891	2,3601	5,3492	0,6289
C_5	5,4996	6,0081	11,5077	-0,5086

Based on Table 5, the importance of five criteria is prioritized as $C_3>C_2>C_5>C_1>C_4$ related to the *(r+c)* values. The most and least important criteria here are *well-equipped personnel* and *hygienic and comfortable environment* with the value of 12,9223 and 5,3492 respectively. In contrast to the importance, *reliable service*, *quick service* and *hygienic and comfortable environment* are net causes, whereas *well-equipped personnel* and *waiting times* are net receivers related to the *(r-c)* values.

In literature, numerous studies conducted in Turkey report that personnel based criteria become the biggest determinants of service quality as in our study [15, 19, 36, 40, 41]. By the way, the criterion in the second rank about quick service is only provided by well-equipped and well-trained personnel. In an attempt to improve service quality level, hospital management should put into practice personnel related health policies and strategies in advance.

4. CONCLUSION AND RECOMMENDATIONS

In this paper, perceived and expected quality levels and the gap between them are evaluated for a medical center in Istanbul. It is also revealed the criteria to ensure reaching the expected quality levels. Based on results of the SERVQUAL analysis the medical center can not meet the patients' expectations. In particular, there is a significant difference between the criteria equipped personnel, physical facilities and reliable staff. It is advised hospital management to give priority

to improvements in this area. Then priority status of five criteria to each other taking into account the opinions of hospital management and staff is determined using DEMATEL method. *Equipped personnel* and *waiting time* criteria are affected more than other criteria. It is aimed in the study to reach a consensus considering both the opinions of hospital management and patients. The common conclusion from the real case application is that there are problems about e*quipped personnel* criterion and it is necessary to make improvements in this area. The hospital administration is suggested to organize employee training. It is decided to develop new interviewing procedures to measure technical knowledge in the phase of recruitment.

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APPENDIX-1

QUESTIONNARIE FOR MEASUREMENT OF EXPECTED SERVICE QUALITY Give a score from 1 to 5 considering a hospital in an excellent quality service level while replying to the following questions. For example, give a score of *1* and tick it if you think that the given criterion is *really unnecessary* for the hospital in an excellent quality service level but if you think that it is *really necessary* for the hospital tick the score *5*.				
1. Hospital employees should be clean and presentable.				
1	2	3	4	5
2. Hospitals should provide hygienic and comfortable environment.				
1	2	3	4	5
3. Hospitals should have modern equipment complying with the technology.				
1	2	3	4	5
4. The appearance of physical facilities such as toilets, canteen in the hospitals should be seen visually impressive.				
1	2	3	4	5
5. Hospital waiting times should be in a reasonable level.				
1	2	3	4	5
6. Hospital staff should work sincerely to solve patient problems.				
1	2	3	4	5
7. Hospitals should apply true diagnosis/treatments/services for the first time.				
1	2	3	4	5
8. Hospitals should conform to the appointment times.				
1	2	3	4	5
9. Reports and documents should be able to received from hospitals quickly and accurately.				
1	2	3	4	5
10. Hospitals should inform patients about time of the services.				
1	2	3	4	5
11. Hospitals should provide all services in the fastest way.				
1	2	3	4	5
12. Hospital staff should work selflessly to aid patients.				
1	2	3	4	5
13. Hospital staff should be able to be reached if required in the fastest way.				
1	2	3	4	5
14 Hospital staff should give confidence to patients.				
1	2	3	4	5
15. Results obtained from the hospitals should be reliable.				
1	2	3	4	5
16. Hospital staff should do patients proud.				
1	2	3	4	5
17. Hospital staff should have adequate information to respond the patients well.				
1	2	3	4	5
18. Hospitals should operate 24 hours a day.				
1	2	3	4	5
19. Hospital staff should pay special attention to patients.				
1	2	3	4	5
20. Hospitals should take into account patients' needs and special requests.				
1	2	3	4	5

APPENDIX -2

QUESTIONNARIE FOR MEASUREMENT OF PERCEIVED SERVICE QUALITY Evaluate the items and score the questionnaire in this section for the private medical center.				
1. Employees of the medical center are clean and presentable.				
1	2	3	4	5
2.The medical center provides hygienic and comfortable environment.				
1	2	3	4	5
3. The medical center has modern equipment complying with the technology.				
1	2	3	4	5
4. The appearance of physical facilities such as toilets, canteen in the hospitals are seen visually impressive.				
1	2	3	4	5
5. The medical center waiting times are in a reasonable level.				
1	2	3	4	5
6. The medical center staff works sincerely to solve patient problems.				
1	2	3	4	5
7. The medical center applies true diagnosis/treatments/services for the first time.				
1	2	3	4	5
8. The medical center conforms to the appointment times.				
1	2	3	4	5
9. Reports and documents are received from the medical center quickly and accurately.				
1	2	3	4	5
10. The medical center informs patients about time of the services.				
1	2	3	4	5
11. The medical center provides all services in the fastest way.				
1	2	3	4	5
12. The medical center staff works selflessly to aid patients.				
1	2	3	4	5
13. The medical center staff are reached if required in the fastest way.				
1	2	3	4	5
14. The medical center staff gives confidence to patients.				
1	2	3	4	5
15. Results obtained from the medical center is reliable.				
1	2	3	4	5
16. The medical center staff does patients proud.				
1	2	3	4	5
17. The medical center staff has adequate information to respond the patients well.				
1	2	3	4	5
18. The medical center operates 24 hours a day.				
1	2	3	4	5
19. The medical center staff pays special attention to patients.				
1	2	3	4	5
20. The medical center takes into account patients' needs and special requests.				
1	2	3	4	5