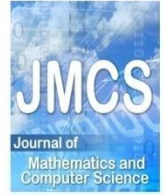


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**A model for prioritization of social security home health services with SERVQUAL& FAHP  
(Case study: Shariat Razavi hospital)**

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***Abstract***

Today, the modern age is mentioned as the quality stage and the quality is viewed as one of the most important competitive advantages for most of the organizations in order to promote the profitability, to reasonably reduce the costs, to maintain and to increase market share to boost customer satisfaction and to find new methods for a growing improvement of the quality of their products and services. On the other hand, due to the fact that quality has been defined as " what the customer wants", in order to boost customer satisfaction, first the quality needs to be measured in customers views by using a valid and comprehensive tool. Next, it would be considered within the improvement plans for the future. Here, the aim is to measure and to prioritize the factors influencing on the quality of the services provided by the treatment division of the social security organization (Case study: Shahid Mehdi Shariat Razabi Hospital). To do so, five aspects of SERVQUAL (reliability, responsiveness, assurance, empathy, tangibility) were used to analyze the gap of service quality based on the difference between the expectations and perceptions of the customers, with respect to the proposed model, five hypotheses will be provided which, in consequence, testing the hypotheses showed that all of the five aspects have negative gaps. Then by using FAHP process, the factors influencing the services quality will be prioritized which could be provided to the respective organizations as a Strategy.

**Keywords:** Service quality, Customer Satisfaction, SERVQUAL, fuzzy Analysis Hierarchical process (FAHP)

## 1. Introduction

Today, the quality is considered as an important and effective factor for the organization to be successful or unsuccessful. Therefore, most of the organizations, especially the service organizations including those organizations providing public services to the people must seek to increase the quality of their services because quality is viewed as a basic factor which brings a powerful and strong advantage for the organizations [1].

It should be noted that provision of higher quality services is not a selected competitive strategy which might be accepted by the organization in order to be distinguished from its rivals. Never, to day, service quality is considered as a vital factor for survival and profitability of the organization. Recent investigations showed that "quality costs" can swallow 30% to 50% of the incomes from sales of the service companies. In fact, improved quality became the main strategy of the organizations for increasing their competitiveness.[2].

## 2. Problem statement

In service organizations, quality occurs through the process of service provision and as a contrast between the customer and the service provider. In order to measure the service quality, the difference between what the customers think they must receive and what is really provided will be measured. The social security organization is one of the very large national service organizations the customers of which include most of the people. The branches of the organization provide different services like pension salary, disability, unemployment insurance and treatment insurances to the people. The main problem of the research is to study and measure the provided quality of treatment services and to identify the effective and important factors influencing on patients' satisfaction in one of the treatment centers of Tehran's social security organization (Shahid Mehdi ShariatRazavi Hospital).

Since the objective of the modern organizations is to satisfy the customers, the social security organization is not also an exception to this principle. It always seeks ways of increasing service quality. The most comprehensive model which is significantly used for measuring the quality level for providing services and for determining the expectations of the customers in terms of services is the one called as SERVQUAL developed by Parasuraman et al. The concept is the result of comparing the customer's expectation of service quality and his or her perceptions of service quality various scales have used to measure the service quality in the firms and the institutes, mostly know of which is SERVQUAL.

The SERVQUAL model considers quality as equal to Satisfaction. For customer satisfaction, five main aspects of service quality could be used which include:

**1-Reliability:** Employees' knowledge and humility and their capacities for transferring trust and confidence

**2-Tangibility:** the existence and representation of physical facilities, equipments and employees.

**3-Empathy:** Regarding special importance for the individual customers

**4-Assurance :** Employees' awareness and their capabilities in inducting trust and confidence to the customer.

**5-Responsiveness:** enthusiasm for helping the customers and provision of instant services.

In SERVQUAL model. The customers are asked to firstly determine the factors in terms of their expectations based on Likert scale. Then, they are asked to identify their perceptions of their real performances in terms of the characteristics. Now, if the perceived performance less than the individual's expectations, it indicates that the service quality is important. In fact the model seeks to find gaps which will lead to customer dissatisfaction. The main aim of the research is to measure and to prioritize the factors of service quality provided to the insured in treatment centers of social security organization (Tehran's ShariatRazavi Hospital) based on SERVQUAL model and FAHP. Other objectives including recognition of the current status of the quality of the provided services, determination of their difference with customers' expectations and improved service quality will be considered by recognizing the effective factors.

### **3.Research background**

In a research entitled "Evaluation of the quality of the services of the social security organizations in view of the employees" done by SeyyedJavadin and Almasi, it showed that the employees in the social security organization believed the that the organization performed in all five service quality aspects much lower than what the customers expected [3].

In her thesis entitled " the relationship between service quality aspects based on Servqual model for customer satisfaction in agencies of Irankhodro, Karaj", SomayyehKeshavarz used the SERVQUAL model for investigating the customer satisfaction in agencies of Iran khodro Co[4]. in terms of objective, the research is an applied one z SERVQUAL Model" carried out by Kumar, the scores of quality in five aspects of the SERVQUAL model we higher than zero as viewed in several branches of the private banks. The findings indicated that the satisfaction levels had different degrees in SERVQUAL aspects and responsiveness was a significant basis for predicting satisfaction of banking services and the investigations stated that with increasing service quality, the banks con satisfy their customers more. Also, promotion of customer satisfaction helps the banks retain their valuable clients .

In their research entitled "the distance from service quality to customer satisfaction evidences from Malaysian commercial banks" (Tahir et al 2010) studied the service quality. An analysis of the five aspects showed that the customers received the Malaysian commercial banking as permanently lower than their expectations[5].

#### 4. Research Method

In terms of objective, the research uses an applied method and, in terms of data collection, it uses a descriptive method with applying field study. A descriptive methodology has been used since it provides an image of the current status. Also, it is a survey method since it collects data from the statistical community by using questionnaire and its most important advantage is generalization of the results.

Here, the main variable of the research is service quality which is comprised of five aspects including reliability, responsiveness, empathy, assurance and tangibility. In order to determine the reliability of the test, the Chornbach alpha was used. The method is used for determining the internal consistency of the measurement tools which measure different characteristics.

In order to determine the Chornbach alpha, first the variances of the scores of the subsets of the questions of the questionnaires and the total variance should be calculated. Next, the value of Chornbach alpha will be determined by the following formula:

$$\alpha = \frac{k}{k-1} \left[ 1 - \frac{\sum_{i=1}^k S_i^2}{S^2} \right]$$

where:

K: is the number of the subsets of questions

$S_i^2$  : subset variance

S: total variance of the questionnaire or the test.

To do so, an initial Sample including 20 questionnaires were pretested and the reliability coefficient was determined as 0/92 by using Cronbach's alpha.

A value of 0/965 was obtained for the total questionnaire. These values indicate that the questionnaire has the required reliability.

In order to do pair comparison for prioritizing the aspects of service quality, a questionnaire matched with the frameworks of AHP questionnaire was developed. Here, a guideline is also developed which helps the responder in doing pair comparisons.

The AHP questionnaire includes 6 parts. The First part prioritizes the aspects of quality. The second part prioritizes the sub criteria of validity, the fourth part prioritizes the sub criteria of responsiveness, the fifth part prioritizes the sub criteria of assurance and the six part prioritizes the sub criteria of empathy. The validity of each part of the AHP questionnaire was confirmed by thesis advisor and the consulting advisor and the treatment experts. In order to measure the reliability of FAHP questionnaire, the consistency rate is used which should be less than 0/1. The reliability of the questionnaire and the model is guaranteed b this value. The statistical community of the research includes the patients referred to the Shahid Mehdi SahriatRazavi Hospital.

## **5. Data analysis:**

Here, 98 questionnaires were distributed among those referred. They were asked to completely and exactly answer the questions. Next, all of the questionnaires were collected. It should be noted that the researcher should invest at least 30 minutes in place and he or she should provide the required descriptions on questionnaire and its responding manner. Thus, all of the 98 questionnaires have the responses and could be analyzed. The questionnaires of expectations and perceptions each of which includes 22 questions were analyzed by SPSS. In order to measure the expectations and perceptions in the SERVQUAL questionnaire, the likert Scale was used by the items including "I completely agree, I agree, I have no comment, I disagree and I completely disagree".

In analyzing the data by using SPSS, the mathematical numbers are needed. Therefore, the abovementioned phrases were turned into the following phrases:

Completely agree(5). Agree(4). A little(3), disagree(4), completely disagree(5).

For data analysis, the subjects of mean expectations and perceptions, Pearson correlation and pair comparison were used to reach the answers of the research questions and to test the hypotheses.

In order to identify the aspects of service quality at ShariatRazavi Hospital, Certain factors were identified according to the literature and in order to determine the effects of the individual factors, the respondents were asked to define the effects of the identified factors of the likert scale as the service quality level. The following Table shows a relative evaluation of the respondents on the following Cases.

**Table1 -Distribution of the respondents based on Tangibles**

	Tangibles	Spectrum evaluation					Mean	SD
		Completely disagree	Disagree	Moderate	Agree	Completely agree		
1	A good hospital has modern equipment	9	11	38	40	0	3.11	0.940
2	The physical facilities at the hospital is looking good	7	11	33	35	12	3.35	1.066
3	staff have neat and tidy appearance	1	2	31	34	30	3.92	0.893
4	documents are placed in hospital regularly	1	1	32	39	25	3.88	0.841

**Table2 -Distribution of the respondents based on Reliability**

	Reliability	Spectrum evaluation					Mean	SD
		Completely disagree	Disagree	Moderate	Agree	Completely agree		
1	Hospital gives importance to the time of service	1	2	35	51	9	3.66	0.717
2	staff are interested in resolving the problem of patients	1	1	41	44	11	3.64	0.736
3	hospital provides instantly services without the wrong	1	1	36	51	9	3.67	0.700
4	hospital provides services to their patients until promised time	1	2	36	59	0	3.56	0.593
5	Hospital emphasizes submission of reports without wrong	1	1	32	38	26	3.89	0.848

**Table3 -Distribution of the respondents based on Responsiveness**

	Responsiveness	Spectrum evaluation					Mean	SD
		Completely disagree	Disagree	Moderate	Agree	Completely agree		
1	Hospital has accurate information about care services time	2	2	27	55	12	3.75	0.777
2	hospital staff provide services without delay (fast) to their patients	1	2	35	51	9	3.66	0.717
3	staff are always willing to help patients	1	2	28	55	12	3.77	0.729
4	staff are ready to answer patient questions anyway	1	3	29	52	13	3.74	0.767

**Table4 -Distribution of the respondents based on Assurance**

	Assurance	Spectrum evaluation					Mean	SD
		Completely disagree	Disagree	Moderate	Agree	Completely agree		
1	Patients can be assured by staff behavior	0	0	12	56	30	4.18	0.632
2	Patients feel safe in dealing with hospital staff	0	0	7	53	38	4.32	0.602
3	hospital staff always behaves courteously and modestly with patients	0	1	25	48	24	3.97	0.739
4	staff have sufficient knowledge to answer patient questions	1	0	16	58	23	4.04	0.702

**Table5 -Distribution of the respondents based on empathy**

	Empathy	Spectrum evaluation					Mean	SD
		Completely disagree	Disagree	Moderate	Agree	Completely agree		
1	hospital shows attention to their individual patients	1	3	30	63	1	3.61	0.620
2	hospital provides convenient times for patients	1	4	32	57	4	3.60	0.685
3	hospital employees show personal attention to patients	1	4	38	48	7	3.57	0.732
4	hospital are demanding the best interests of their patients	1	3	27	60	7	3.70	0.692
5	hospital staff understand the specific needs of patients	1	3	30	34	30	3.91	0.909

The results from the above table show that the respondents tended in average (4/32) to the question "the patients feel Security when facing hospital employees" while the least tendency (3/11) is given to the question "the hospital is equipped with modern devices".

## 6. SERVQUAL dimensions of service quality criteria in prioritizing

Prioritization of the aspects of service quality and the current criteria of SERVQUAL aspects In order to prioritize the aspects of quality and its criteria, 96 completed questionnaires were analyzed by those who referred to the treatment centers. To enter the collected data, the geometrical means of the provided responses of each of the questions were calculated. The results were as following:

**Table6 -The relative weight matrix**

Quality aspects	Physical	Reliability	Responsiveness	Assurance	Empathy	Relative Weight
Physical	(1,1,1)	(0.47,0.58,0.76)	(0.80,0.88,1.02)	(1.02,1.12,1.41)	(0.78,0.85,1.02)	0.136
Reliability	(1.31,1.73,2.13)	(1,1,1)	(0.84,0.95,1.12)	(0.92,1.15,1.45)	(1.19,1.41,1.59)	0.306
Responsiveness	(0.98,1.13,1.25)	(0.89,1.05,1.19)	(1,1,1)	(0.95,1.09,1.20)	(1.22,1.49,1.96)	0.264
Assurance	(0.71,0.89,0.98)	(0.69,0.87,1.09)	(0.83,0.92,1.05)	(1,1,1)	(0.89,1.12,1.37)	0.168
Empathy	(0.98,1.18,1.28)	(0.63,0.71,0.84)	(0.51,0.67,0.82)	(0.73,0.89,1.12)	(1,1,1)	0.126

The analysis of the data indicated that the mean of the gaps for perceptions and expectations of the receivers are negative for all of the factors and aspects. This shows that those referred to the hospital were not satisfied with the received service quality.

The highest score was given to the reliability which indicates the patients' regard to the reliability and correctness of the treatment stages. Also, the least score was given to empathy which indicates that the patients' don't give importance for the staff's observations toward them.

For perceptions, the highest score was given to reliability which indicates security and peace when facing the employees. The least score was given to tangibility which indicates that the lower level of appearance for the Personnel, equipments and facilities.

The highest negative quality gap was for assurance which indicates that there is a significant difference between the expectations and perceptions of the customers in terms of all aspects this indicates that the customers had lower perceptions as compared to their expectations which has the longest distance in terms of responsiveness and the least distance in terms of empathy. Therefore, the current perceptions need to be increased so that the gap could be reduced.

The least gaps, in terms of comparing five aspects of SERVQUAL, were considered for the following items: " 15: The patients feel security when facing the staff" (4/32) and " 14" The employees assure the patients with their conducts" (4/18 mean). Thus, the highest quality was observed among the 22 items of SERVQUAL. Item 1: "the hospital has modern equipments" (mean 3/11) and item 2:" It appears that the hospital enjoys desirable physical facilities" (mean 3/35) has the highest gap between the perceptions and expectations and consequently has the least quality among the items of SERVQUAL. It should be mentioned that good quality doesn't mean a higher ideal quality because good quality in Servqual model means perceptions higher than expectations. Here, the perceptions were lower than expectations in terms of all aspects and the quality of the services provided by the hospitals was not ideal. However, it means, among all of the aspects, some of them were closer to customers' expectations and some of them were far from the expectations.

## **7. Prioritization of five aspects and items of SERVQUAL by using FAHP combined Model**

The above mentioned data shows that the treatment division should perform according to the above monitored prioritization in order to improve the service quality. Also, it should do most of its investments on increasing the exactness and validity of the treatment Steps by increasing the level of knowledge and incentives of the personnel and also by rising the efficiency and credit of the equipments



in order to provide better and more valid services. In physical dimension, the largest investment should be done on modernization of the equipment.

In terms of reliability, the largest investments should be done in order to increase the personnel's carefulness through education and with increasing the correctness of the units with regularly calibrating them. The results from reliability indicate that the factor with highest level of assurance is the patient understands the personnel have sufficient knowledge. Therefore, this could be done through permanent education of the personnel.

According to the comments provided by the patients, it could be perceived that the good and appropriate environment which provides them with security and welfare is very important. This is a little related to the hospital's situation and it is also linked with other patients and their companions so that they don't meddle in each other's rest and peace.

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