

# **The Perceived Service Quality on Patient: Evidence from University Hospital**

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## **ABSTRACT**

The aim of this study is to measure the perceptions of the service providers of the university hospital on the service quality. Servqual scale was developed by Parasuraman, Zeithaml and Berry (1985). For his research, servqual scale with 13 items was used. For this purpose, survey data was collected from 165 university-based outpatients who volunteered to participate in the survey by means of the easy sampling method. By means of AMOS 22.0 package program, frequency distribution, confirmatory factor analysis, goodness of fit indices and average variance extracted (AVE) values were statistically evaluated. Three items with low factor loadings were removed from the original scale developed by Parasuraman, Zeithaml and Berry (1985) who worked on the Servqual scale. The reliability coefficients calculated for the Servqual scale are applied to the participants who were at high reliability level. For CR, it can be stated that the composite reliability condition of all CR values is acceptable. The study is

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limited to 165 participants and provides information to service quality professionals and researchers using the Servqual scale.

**Keywords:** Service quality, Servqual scale, health care quality

## **INTRODUCTION**

It is seen that the concept of service is dealt with in every organization, but there are differentiations in the comprehensible meanings. It is suggested that organizational structure, objectives and activities cause these different service definitions (Carman, 2000; Doğan and Tütüncü, 2003; Çiçek and Doğan, 2009; Gürbüz and Ergülen, 2006; Filiz etc., 2010).

Parasuraman et al. (1985) defined the perceived service quality as the difference between the service offered by the company and the expectations of the users and they developed the service quality scale (Servqual) which is used today. Parasuraman (1985) handled the scale in 10 categories (key categories) and 34 items. Dimensions according to this scale are: (1) reliability; (2) responsiveness; (3) competence; (4) access; (5) courtesy; (6) communication; (7) credibility; (8) security; (9) understanding the customer and (10) tangibles. Then, 22 items were discussed on Servqual scale study by Parasuraman, Zeithaml and Berry (1985). On the other hand, Sultan and Simpson (2000) made analyzes with 13 items of the scale in their study. In this study, the scale was handled with 10 items.

Parasuraman et al., (1988) in their study, the quality of service is a function of customers' expectations and perceptions have been suggested. With this scale, there are many researches in various service sectors (health, transportation, financial, e-services etc.) (Pai and Chary, 2013; Kumaraswamy, 2012; Çelik, 2011; Filiz, Yılmaz and Yağız, 2010; Vanniarajan and Arun, 2010; Çiçek and Doğan, 2009; Eleren and Kılıç, 2007).

In order to determine whether the service-oriented activities have reached the desired level or to reveal the quality level of the service, it is the most accepted Servqual service quality

scale in the related literature. The Servqual service quality scale developed by Parasuraman et al. (1988; 1991; 1993) includes 22 questions and five basic dimensions. The five basic dimensions of the Servqual scale are (1) physical appearance, (2) reliability, (3) responsiveness, (4) assurance and (5) empathy dimension (Parasuraman et al., 1988).

The first dimension, the physical appearance, refers to the physical appearance of the serving staff and the service space. A service-offering unit attaches great importance to its physical appearance in every respect. For this reason, the service of the company is tried to be flashy, and the clothes of the service providers are selected with great care. Customers do not want to receive a service that they do not trust. The second dimension of the Servqual scale is the confidence dimension that shows that the service provided is reliable and responds to the need.

The third dimension of the scale is related to responsiveness. It is the ability of businesses to perform their services in a timely and quick manner to their customers. Customers want to have a number of guarantees to ensure that they do not experience problems in the future. The fourth dimension of the Servqual scale is related to the guarantee in service.

Empathic behavior is an important behavior in any kind of shopping. People who purchase the service want to be understood by the service provider when they have a problem with the service. Therefore, empathy is introduced into the service quality approach. The fifth dimension, which is the last dimension of the scale, is about empathy.

## **MATERIALS AND METHODS**

The survey responses were analyzed using SPSS for Windows 22.00 and AMOS 22.0. Confirmatory factor analyzes related to the scales used in the study were performed in the AMOS program and Cronbach's Alpha values were calculated. In addition, structural equation

modeling and mediation effects were also investigated by the analyzes performed in the AMOS program (Schumaker and Lomax, 1996; Schermelleh-Engel, Moosbrugger and Müller, 2003).

## RESULTS AND DISCUSSION

### Statistical Analysis

#### Participants

The survey was conducted with 165 outpatients. Demographic characteristics of the individuals who voluntarily agreed to fill the questionnaire are shown in Table 1.

**Table 1:** Percent distribution of demographic characteristics of participants

	n	%	
Gender	Male	111	39,5%
	Female	170	60,5%
Age	Between 18-24 years	114	40,6%
	Between 25-34 years	123	43,8%
	Between 35-44 years	32	11,4%
	Between 45-54 years	4	1,4%
	Between 55 and more years	8	2,8%
Education	University	249	88,6%
	MS/MBA/Ph.D.	32	11,4%

As shown in Table 1, participants consist of 60.5% female and 39.5% male. All of the participants were selected from the University (88.6%) and Master or Ph.D. (11.4%). The

highest rate in the age groups was 43.8% for the 25-34 age group, followed by 18-24 (40.6%), 35-44 (11.4%) and over 45 years (4.2%).

## Data Collection

A questionnaire was applied to 165 people who received health care services from two university hospitals and who voluntarily agreed to participate in the survey. Serqual scale proposed by Parasuraman, Zeithaml and Berry (1985) has been applied widely in measuring the quality of service. Servqual scale which was tested by Sultan and Simpson (2000) was used for his research. Sultan and Simpson (2000) defined the five-dimensional structure of the Servqual scale in the study, three dimensions (Reliability (GUI), Responsibility (HV), Assurance (GVC)), was not used in the survey designed for this study.

**Table 2:** Servqual scale expressions used in the survey study

Expressions with high factor loads and used for the analysis	
s28	When excellent X health institution promise to do something by a certain time, they will do so.
s29	When a customer has a problem, excellent X health institution show a sincere interest in solving it.
s30	Excellent X health institution will perform the service right the first time.
s31	Excellent X health institution will provide their services at the time they promise to do so.
s33	Employees in excellent X health institution will tell customers exactly when services will be performed.
s34	Employees in excellent X health institution will give prompt service to customers.
s35	Employees in excellent X health institution will always be willing to help customers

s36	Employees in excellent X health institution will never be too busy to respond to customer requests.
s37	The behavior of employees in excellent X health institution will instill confidence in customers.
s38	Customers of excellent X health institution will feel safe in their transactions.
Expressions with low factor loads and excluded from the analysis	
s32	Excellent X health institution will insist on error-free records.
s39	Employees in excellent X health institution will be consistently courteous with customers.
s40	Employees in excellent X health institution will have the knowledge to answer customers' questions.

### **Confirmatory Factor Analysis Results of the Scale Used in the Study**

Confirmatory Factor Analysis (CFA) and Serqual scale were used to determine whether the measurement model was significant or not. When the results were examined, it was seen that the measurement model was acceptable. Then the suitability of the full model was evaluated with the help of goodness of fit indexes.

Especially in samples larger than 200, the chi-square ( $\chi^2$ ) value is high and the Chi-Square ( $\chi^2$ ) test has a low statistical significance (Bollen, 1989; Fornell and Larcker, 1981). Serqual scale used in the evaluation of confirmatory factor analysis and general suitability of the tested models, K-square ( $\chi^2$ ) value is corrected by degree of freedom (chi-square value / degree of freedom), other goodness of fit indexes and standardized residual covariance. It was decided as a result of examination of the values in the matrix (Schermelleh-Engel, Moosbrugger and Müller, 2003). Indexes Good Compliance Acceptable Compliance

**Table 3:** Goodness of fit indices used in confirmatory factor analysis (Schermelleh-Engel, Moosbrugger and Müller, 2003)

Indexes	Goodness of Fit	Acceptable Fit
$\chi^2 / df$	$0 \leq \chi^2/df \leq 2$	$2 < \chi^2/df \leq 3$
GFI	$\geq 0.90$	0.85-0.89
CFI	$\geq 0.97$	$\geq 0.95$
SRMR	$\leq 0.05$	$.06 \leq SRMR \leq .08$
RMSEA	$\leq 0.05$	$.06 \leq RMSEA \leq .08$

### Servqual (Sq) Scale Confirmatory Factor Analysis

From the Servqual scale of 13 items, 3 items were excluded from the analysis because they were less than the factor loadings (0.50). The substance factor weight values (0.743; 0.938) in the CFA with the remaining 10 items are in the range.

**Table 4:** Servqual scale confirmatory factor analysis

Item		Dimension	Estimate	Std Estimate	C.R.	P
s28	<---	GUV	.920	.842	18.423	***
s29	<---	GUV	1.000	.871		
s30	<---	GUV	.958	.865	19.542	***
s31	<---	GUV	.952	.842	18.530	***
s33	<---	YV	.807	.802	17.032	***
s34	<---	YV	1.000	.889		
s35	<---	YV	.877	.855	18.993	***
s36	<---	YV	.772	.743	15.001	***
s37	<---	GVC	1.000	.938		
s38	<---	GVC	.900	.829	18.159	***

\*\*\*p<0.001 \*\*p<0.01 \*p<0.05 GUV:Reliability YV:Responsiveness GVC:Assurance

In confirmatory factor analysis, CFA was found to be significant because the model test values were  $\chi^2$  (119.754),  $\chi^2/df$  (3.74). Since the fit index values of the model are within the acceptable limits of GFI (.902), CFI (.965), SRMR (.0358), RMSEA (.079), it is understood that the Confirmatory Factor analysis of the Servqual scale is valid (Schumaker and Lomax, 1996; Schermelleh- Engel, Moosbrugger and Müller, 2003).

### **Reliability, Combined Reliability, Convergence Validity, Decomposition Validity and Average Variance Explained Value**

As it is known statistically, the validity and reliability values of the scale used in a study are important in terms of research results. In this study, Cronbach's Alpha model was used for reliability analysis. Cronbach's Alpha is the inter-question correlation value.

Cronbach's Alpha value shows the reliability level of the questions under the factor. If the Cronbach's Alpha value is 0.70 or higher, the scale is considered to be reliable. When the number of questions is small, this limit value can be accepted as 0.60 and above.

The combined reliability (CR) values are calculated from the factor loads calculated from the confirmatory factor analysis. When the combined reliability value is ( $CR \geq 0.70$ ), it can be said that the combined reliability requirement is met (Raykov, 1997).

The indication of the convergence validity is the average variance explained (AVE) value described. In order to confirm the convergence validity, it should be the average variance ( $AVE \geq 0.50$ ) described (Fornell and Larcker, 1981).

For decomposition validity, the size of the square root of the AVE values should be greater than the correlation+ value with the other dimensions. In this case, it can be said that the validity of separation is validated for each length in the scales used (Fornell and Larcker, 1981).



**Table 5:** A classification for cronbach's alpha values (Schermelleh-Engel, Moosbrugger, and Müller, 2003)

Cronbach's Alpha	Comments
Between 0.80-1.00	High Reliability
Between 0.60-0.80	Moderate Reliable
Between 0.40-0.60	Low Reliability
Less than 0.40	Unreliable

**Table 6:** Correlation, reliability and decomposition validity of the scale used in the research

Ölçek	SQ
Servqual (SQ)	(.848)
Reliability Coefficient (Cronbach's Alpha)	.937
Combined Reliability (CR)	.962
Average Variance Explained Value (AVE)	.720

\*\*\*p<0.001 \*\*p<0.01 \*p<0.05

The reliability coefficients calculated for the participants (Alpha > 0.80) for Servqual (SQ) were higher than those applied to the study. For combined reliability values, it can be said that all CR values (CR > 0.70) are provided for the combined reliability requirement.

For university hospitals, it is important to determine whether the quality of the service provided by the service providers has achieved the desired goals. Servqual scale is known and accepted as a popular measurement tool used in this respect. A number of statistical analyzes were performed with this measurement tool.

The original Servqual scale is a tool developed by Parasuraman, Zeithaml and Berry (1985). Questionnaires were collected with easy sampling method from 165 patients in

university hospitals. AMOS 22.0 package program was used to evaluate the frequency distribution, confirmatory factor analysis, conformity indices and mean variance (AVE) values of the survey data. According to the findings, three items were removed from the original scale. The reliability coefficients calculated for the Servqual scale were at high reliability. For CR, it can be said that the composite reliability condition of all CR values is acceptable. The study is limited to 165 participants and provides information to service quality experts and researchers using the Servqual scale.

Businesses make quality processes measurable and traceable before offering products or services. For this purpose, the enterprises will bring the quality policies they will follow to national and international policies. Before they present their quality standards to their customers' tastes, they receive certificates to show that they have national and international standards. These certificates are considered to be the quality mark of the services offered by the enterprises.

The aim of this research is to measure the perceptions of the service providers of the university hospital on the service quality. Servqual scale developed by Parasuraman, Zeithaml and Berry (1985) was used for his research.

The aim of this study was to draw attention to the quality of service provided by hospitals and the research sample was selected from the people receiving health care.

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