Evaluation of Quality and Cost in Public and Private Health Care Institutions: A Case Study in Turkey

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Abstract

This study aims to determine the level of quality and cost of public and private hospitals according to the opinions of physicians, nurses, administrative staff, and patients. Conducted in the public and private hospitals in the province of Kahramanmaraş, Turkey, a total of 995 participants were surveyed in this study, including 113 physicians, 246 nurses, 200 administrative staff, and 436 patients. Data were analyzed using SPSS 20.0 package program. It was revealed in the study that the quality levels of public and private hospitals are at a good level, have acceptable level of cost, private hospitals were considered better than public hospitals, and physicians in private hospitals, and patients in the public hospitals were found to have more positive opinions about the respective institutions. As a result, it was emphasized that the conditions in public hospitals should be improved, and the public and private hospitals needs to be more competitive.

Keywords: Quality, Cost, Public and Private Health Institutions

1. Introduction

Health care services have a very important place since they directly affect people's lives, and people who receive health services want a higher quality of service at lower costs. Being aware of this fact, and knowing that healthcare services are highly sensitive to irrecoverable mistakes, health care providers pay attention to many important aspects in the services they offer. Among these, the most important aspects are as follows: the adequacy and competency of the staff employed in the institution, up-to-date, modern technology used in the institution, ability to make necessary investments, ability to create a reliable environment in the institution, acceptable costs and prices, adequacy of the physical facilities, good level of overall satisfaction towards the institution, ease of communication between the healthcare professionals and patients, perception of the institutional felt by all stakeholders, creation of necessary human resources and public relations to inform patients and train healthcare professionals, and ensuring the employee satisfaction.

In short, healthcare providers and hospitals that want to continue their existence have to meet these criteria and needs of patients fully. In the study, physicians, nurses, administrative staff, and patients were asked to evaluate the above-mentioned factors (staff competencies, technology, investments, reliability, cost, physical facilities, price, overall satisfaction and trust, communication, the perception of the institution, information, and employee satisfaction). This study aims to investigate the cost and quality analysis made by physicians, nurses, administrative staff, and patients, which are the most important stakeholders of healthcare providers, about the hospitals located in the Province of Kahramanmaraş, Turkey.

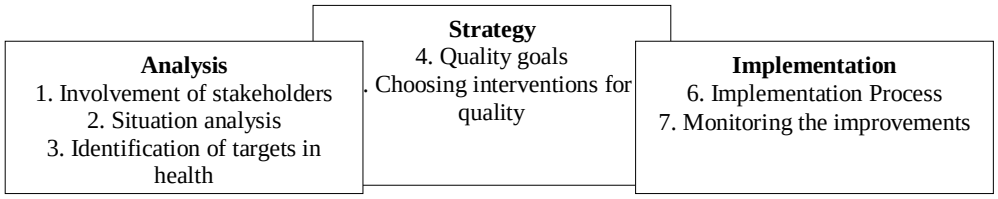
This study first addresses the quality, cost and quality-cost analysis in the health sector. This is followed by the comparison of the public hospitals and private hospitals in Kahramanmaraş in terms of costs and service quality according to opinions of physicians, nurses, administrative staff and patients. This study aims to comparatively analyze the physical facilities, reliabilities, technologies, overall satisfaction and trust levels, price and cost considerations, employee satisfaction and the perception of the institution, staff competencies, information given to individuals, and investments on the basis of physicians, nurses, administrative staff and patients. The evaluation of the results and recommendations are presented in the last section.

2. Quality and Cost in Healthcare Institutions

According to the American Society for Quality, quality means "excellence in product/goods and services, and especially customer satisfaction and meeting their needs" (Chandrupatla 2009). According to Crosby (1979), quality is compliance with the requirements (Suarez 1992). According to the Center for Public Health in UK, quality in health care services is "applying the right things with the right people at the right time by doing it right at the first time." And, National Institutes of Health (NIH) in the United States defines quality as "raising the level of health care services provided to individuals and society to the desired health outcomes in line with today's knowledge" (Arpat et al. 2014).

In order to achieve quality in health care services, the system must be effective, efficient, accessible, acceptable, equitable, and reliable (WHO 2006). Figure 1 shows the quality strategy that is needed to be set by an institution.

Figure 1: The Process of Developing a Strategy for Quality



Source: World Health Organization.(2006). Quality of Care - A Process for Making Strategic Choices in Health Systems. WHO Library Cataloging in Publication Data, France

As can be seen in Figure 1, the first phase is the analysis part. This section addresses the analysis of the current status, objectives set, and the participation of stakeholders, which are involved in this process. And, the second part is the strategy part, where the goals of quality are set, and necessary actions are planned in line with these goals. The third and final phase is the implementation part. In this part, the implementation process is started, and progress is monitored.

Cost is the resource waived or sacrificed for achieving the predetermined targets. Cost is defined as the resources used for purchasing goods or services (such as materials or advertisements, etc.) through monetary criteria in the traditional accounting systems (Horngren et al. 2012). In healthcare services, the cost is the lump sum of expenses to bear in order to accomplish the set goals. The only cost in health services is the cost of production. This is because, the services rendered are not a product, has no secondhand market, and consequently has a real cost of purchase. When we consider within the context of the cost of production, the condition that keeps a healthcare provider at the breakeven point is its lowest sales price of health services (Bardak 2013).

Juran (1951) has mentioned the concept of avoidable cost (wastage, rework, and failures) and unavoidable cost (quality improvement measures) associated with quality (Wang et al. 2010). Feigenbaum (1956) has developed the generally accepted classification of the prevention, appraisal and failure (internal and external) cost of quality (Schiffauerova and Thomson 2006). Crosby (1979) has focused on the concept of cost is priceless (Sower et al. 2007), and has argued that the sum of costs of compliance and non-compliance would give the cost of quality (Suarez 1992). Companies attach so much importance on the quality of the cost analysis since it has a major impact on their economy. For example, it was observed in a study by Kent (2005) conducted in the UK that total cost of quality accounts for 5-15% of the company's turnover. And, in a study conducted by Crosby (1984) in US, this rate was 20-35%. In a study by Fiegenbaum (2001), it was reported that it was 10% of the income (Sower et al. 2007).

The concept of cost of quality in industrial enterprises and related techniques has been adopted to the health care sector in the late 1980s. In reality, however, they have not been implemented much since the process is difficult to control. Focus on continuous quality improvement and measurement is preferred (Jarlier and Charvet-Protat 2000). According to Paris and Krishnamoorthi'ye (2010), the reasons for not using the quality cost analysis in the health care services are the difficulty in defining the quality, financial system used in health care services, and disagreements between quality experts and professionals in health sector.

3. Literature Review on Service and Cost in Health Institutions

Some case studies similar to this study were reviewed in this section. For example, service qualities of public and private institutions have been assessed in a study by Kumaraswamy (2012) conducted with 100 people, and it has been concluded that behaviors of physicians, hospital environment, and success of the surgical operations are of major importance for patients' preferences on healthcare providers, and it has been emphasized that appropriate strategies should be developed for increasing the patient satisfaction. In a study by Wanjau et al. (2012) conducted in Kenya, the conditions that affect service quality in public health sector were investigated with the participation of 16 physicians, 32 nurses, 20 clinical staff, 14 laboratory technicians, and 20 pharmacists in a state hospital. As a result, incompetent employees, ineffective communication channels, lower levels of technology adoption, and inadequate financial resources have been found to have a negative impact on the efficiency of the quality of the services. Ross and Venkatesh (2015) have conducted a study on all hospitals in the city of Tamil Nadu in India with 208 patients and 64 healthcare managers to investigate patient satisfaction and to provide adequate and clear information about the fundamentals of quality improvement in services given by healthcare professionals.

As a result, the physical structure of the institution has been found to be very important, followed by the dining facilities and behaviors of the staff and managers. In order to reveal the factors that affect healthcare services, Mosadeghrad (2014) has conducted a study with 222 people in Iran who benefit from health services and working in those services. As a result, it has been revealed in that study that cooperation between health care providers and patients in a supportive environment leads to quality in health services, and personal factors of patients and health care providers, factors of health care institutions, factors of the health care system and environmental factors have been found to affect the quality of the health care services. A study by Hvenegaard et al. (2009) has investigated the relationship between quality and cost in the hospital departments. Then, the study has ranked the departments according to the cost, and revealed that the rank varies greatly when the quality factor is taken into consideration, and concluded that quality has a multi-faceted impact in the evaluation of the departments. A study by Zaim et al. (2011), conducted in İstanbul, has compared the service quality and cost between public hospitals and private hospitals. The study on physicians, nurses, administrative staff and patients has revealed that administrative staff are satisfied with the public hospitals, whereas the physicians, nurses and patients were found to be satisfied with the private hospitals. As a result, it was concluded that employee satisfaction and physical facilities should be increased as well as strengthening the technological infrastructure in order to become more efficient in the public sector. And, it was also emphasized that knowledge management, customer relationship management, employee satisfaction, and cost should be considered important in the private industry.

4. Material and Method

4.1. Objective of the Study

This study aims to reveal opinions of physicians, nurses, administrative staff, and related patients about quality of service and costs in public and private health institutions.

4.2. Research Hypotheses

Hypothesis 1: There is no significant difference between the assessments of participants on public hospitals in terms of the personnel competencies factor.

Hypothesis 2: There is no significant difference between the assessments of participants on private hospitals in terms of the personnel competencies factor.

Hypothesis 3: There is no significant difference between the assessments of participants on public hospitals in terms of the technology factor.

Hypothesis 4: There is no significant difference between the assessments of participants on private hospitals in terms of the technology factor.

Hypothesis 5: There is no significant difference between the assessments of participants on public hospitals in terms of the investments factor.

Hypothesis 6: There is no significant difference between the assessments of participants on private hospitals in terms of the investments factor.

Hypothesis 7: There is no significant difference between the assessments of participants on public hospitals in terms of the reliability factor.

Hypothesis 8: There is no significant difference between the assessments of participants on private hospitals in terms of the reliability factor.

Hypothesis 9: There is no significant difference between the assessments of participants on public hospitals in terms of the cost factor.

Hypothesis 10: There is no significant difference between the assessments of participants on private hospitals in terms of the cost factor.

Hypothesis 11: There is no significant difference between the assessments of participants on public hospitals in terms of the physical facilities factor.

Hypothesis 12: There is no significant difference between the assessments of participants on private hospitals in terms of the physical facilities factor.

Hypothesis 13: There is no significant difference between the assessments of participants on public hospitals in terms of the price factor.

Hypothesis 14: There is no significant difference between the assessments of participants on private hospitals in terms of the price factor.

Hypothesis 15: There is no significant difference between the assessments of participants on public hospitals in terms of the overall satisfaction and trust factor.

Hypothesis 16: There is no significant difference between the assessments of participants on private hospitals in terms of the overall satisfaction and trust factor.

Hypothesis 17: There is no significant difference between the assessments of participants on public hospitals in terms of the communication factor.

Hypothesis 18: There is no significant difference between the assessments of participants on private hospitals in terms of the communication factor.

Hypothesis 19: There is no significant difference between the assessments of participants on public hospitals in terms of the perception of the institution factor.

Hypothesis 20: There is no significant difference between the assessments of participants on private hospitals in terms of the perception of the institution factor.

Hypothesis 21: There is no significant difference between the assessments of participants on public hospitals in terms of the informational factor.

Hypothesis 22: There is no significant difference between the assessments of participants on private hospitals in terms of the informational factor.

Hypothesis 23: There is no significant difference between the assessments of participants on public hospitals in terms of the employee satisfaction factor.

Hypothesis 24: There is no significant difference between the assessments of participants on private hospitals in terms of the employee satisfaction factor.

4.3. Study Population and Sampling

The study population consisted of physicians, nurses, administrative staff working at two public and two private hospitals in the province of Kahramanmaraş, and patients admitted for outpatient services in these hospitals between October 1, 2015 and January 1, 2016. In line with this, all personnel who work in the institutions, and patients admitted to the hospitals on the said dates were tried to be reached, however, sampling was preferred due to time and cost constraints. The convenience sampling method was used in this study.

In this context, a total of 995 usable questionnaires were filled out through face-to-face interviews, of which 113 from physicians, 246 from nurses, 200 from administrative staff, and 436 from patients.

4.4. Data Collection Instrument

The scale developed by Zaim et al. (2011) was used for data collection in the study. The scale consists of two parts and 101 items. The first part contains 5 items to determine the descriptive characteristics of patients, and the second part contains 96 items to determine physical facilities, reliability, technology, overall satisfaction and trust, price and cost, employee satisfaction and the perception of the institution, staff competencies, information provided, and investments. A Likert-type scale was used in the second part, and the responses were scored with the options of 1- strongly disagree, 2- disagree, 3- neither agree nor disagree, 4- agree, 5-strongly agree.

Table 5: KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.983
Bartlett's Test of Sphericity	Approximate Chi-Square Value	86960.644
	Degrees of Freedom	4371
	P Value	0.000

According to Table 5, the Kaiser-Meyer-Olkin (KMO) value was found as 0.983. In this regard, we can say that the adequacy of the sample is very good. Bartlett Sphericity Test Chi-square value of 86960.644 (p=0,000) also has shown that the scores are appropriate for factoring the correlation matrix.

Table 6: Rotated Factor Loadings

Item 77	0.742											
Item 73	0.736											
Item 80	0.733											
Item 74	0.729											
Item 78	0.708											
Item 72	0.705											
Item 81	0.704											
Item 75	0.703											
Item 76	0.694											
Item 79	0.657											
Item 70	0.557											
Item 71	0.494											
Item 69	0.486											
Item 67	0.451											
Item 68	0.423											
Item 21		0.690										
Item 20		0.666										
Item 22		0.646										
Item 27		0.620										
Item 19		0.617										
Item 23		0.615										
Item 26		0.602										
Item 28		0.575										
Item 24		0.560										
Item 25		0.477										
Item 89			0.719									
Item 88			0.695									
Item 90			0.690									
Item 93			0.687									
Item 87			0.681									
Item 92			0.664									
Item 91			0.617									
Item 94			0.596									
Item 12				0.668								
Item 16				0.620								
Item 10				0.610								
Item 9				0.592								
Item 11				0.586								
Item 14				0.554								

Item 17				0.542								
Item 13				0.540								
Item 18				0.481								
Item 15				0.425								
Item 47					0.780							
Item 48					0.769							
Item 49					0.738							
Item 50					0.690							
Item 45					0.642							
Item 46					0.584							
Item 57					0.421							
Item 2						0.697						
Item 3						0.657						
Item 4						0.595						
Item 7						0.585						
Item 1						0.565						
Item 5						0.560						
Item 6						0.441						
Item 8						0.423						
Item 54							0.853					
Item 55							0.850					
Item 56							0.828					
Item 53							0.824					
Item 52							0.763					
Item 51							0.690					
Item 37								0.612				
Item 38								0.611				
Item 41								0.607				
Item 36								0.593				
Item 39								0.557				
Item 35								0.538				
Item 42								0.502				
Item 32									0.663			
Item 31									0.654			
Item 33									0.652			
Item 30									0.620			
Item 34									0.500			
Item 60										0.657		
Item 58										0.619		
Item 61										0.615		
Item 59										0.596		
Item 83											0.645	
Item 84											0.617	
Item 82											0.606	
Item 85											0.602	
Item 86											0.562	
Item 66												0.641
Item 64												0.575
Item 65												0.549
Item 63												0.522
Eigen values	43.345	4.161	3.165	2.540	2.137	1.962	1.618	1.544	1.343	1.266	1.203	1.087
%	12.314	8.013	6.756	6.534	5.808	5.474	5.362	4.694	4.254	4.092	3.345	2.898
Cumulative	12.314	20.327	27.082	33.616	39.424	44.898	50.260	54.954	59.208	63.300	66.645	69.543

Table 6 shows the results of factor analysis. According to these results, 89 variables were grouped under 12 factors, and the cumulative variance explained was found to be 64.54%. The factor 1 contains 15 items and is named as staff competencies, the factor 2 is called as technology factor and contains 10 items, the factor 3 is investments factor and contains 8 items, the factor 4 is reliability factor and contains 10 items, the factor 5 is the cost factor and contains 7 items, the factor 6 is physical facilities factor and contains 8 items, the factor 7 is the price factor and contains 6 items, the factor 8 is the overall satisfaction and trust factor and contains 7 items.

The factor 9 is the communication factor and contains 5 items, the factor 10 is the perception of institution factor and contains 4 items, the factor 11 is the informational factor and contains 5 items, the factor 12 is named as employee satisfaction factor and contains 4 items. The remaining 29th, 40th, 43rd, 44th, and 62nd items were removed due to their loadings on other factors.

Table 7: The Reliability Analysis of the Research Scale

Sub-Scales	Number of Items	Cronbach's Alpha Value
Overall	**89**	**0.986**
Staff Competencies	15	0.961
Technology	10	0.949
Investments	8	0.945
Reliability	10	0.926
Cost	7	0.911
Physical Facilities	8	0.886
Price	6	0.918
Overall satisfaction and trust	7	0.962
Communication	5	0.867
Perception of the Institution	4	0.926
Informational	5	0.931
Employee satisfaction	4	0.894

As shown in Table 7, the Cronbach's alpha value of the second part, where the physicians, nurses, administrative staff, and patients expressed their opinions about the service quality and costs of health institutions was found to be 0.986. Therefore, we can say that the questionnaire used has a high-level of validity and reliability. Furthermore, the reliability coefficients of the staff competencies (0.961), technology (0.949), investments (0.945), reliability (0.926), cost (0.911), physical facilities (0.886), price (0.918), overall satisfaction and trust (0.962), communication (0.867), the perception of the institution (0.926), informational (0.931) and employee satisfaction (0.894) scale factors were observed to be higher.

4.5. Data Analysis Method

For the data analysis, frequency distributions, arithmetic mean, standard deviation, factor analysis and one way analysis of variance (ANOVA) methods were applied using SPSS 20.0 program. As a result of the One Way Analysis of Variance, the Tukey test was utilized to determine the source of the difference for homogeneous variables, and Tamhane's Test was for inhomogeneous variables.

4.6. Results

This section addresses the demographic characteristics of physicians, nurses, administrative staff, and patients, examines their responses given the questions in the second section separately for the public and private sector, and analyzes the hypotheses created within the scope of the study.

4.6.1. Analysis of the Descriptive Characteristics of the Participants

The descriptive characteristics of the participants are shown in Table 8. Accordingly, the majority (54.1%) of the participants were female. Considering the type of hospital, it was observed that the majority (70.3%) of participants was in public hospitals. Considering the social security, it has been observed that almost all (94.8%) of the participants were covered by the Social Security Institution (SSI).

Table 8: Descriptive Characteristics of the Participants

Demographic Characteristics	Frequency	Percentage	Demographic Characteristics	Frequency	Percentage
Respondent Type			**Type of Hospital**		
Physician	113	11.4	Public	699	70.3
Nurse	246	24.7	Private	296	29.7
Administrative Staff	200	20.1			
Patient	436	43.8	**Gender**		
Educational Status			Male	457	45.9
Elementary School	159	16.0	Female	538	54.1
High School	240	24.1			
University	511	51.4	**Social Security**		
Master's Degree	85	8.5	SSI	943	94.8
			Private	52	5.2
TOTAL	995	100.0	**TOTAL**	995	100.0

The patients (43.8%) were observed to be the main participants in the research. It was observed that this is followed by nurses (24.7%), administrative staff (20.1%) and physicians (11.4%) respectively. Finally, more than half of the participants has been shown to be college graduates (51.4%).

4.6.2. Analysis of the Participants' Responses on the Evaluations

Hospital-related assessments are given in Appendix 1. According to Appendix 1, the most positive factors both in public and private hospitals according to the physicians, nurses, administrative staff, and patients were clear and well-organized warning signs and boards (3.87), administration of medication in timely and accurate manner (3.85), right on time supply of blood (3.80), trusted physicians (3.80), paying attention to the patient privacy (3.83), acting in accordance with ethical principles in health care (3.81), adequate professional knowledge and experience of the physicians (3.82), physicians' careful and attentive examination of patients (3.82), and patients' opportunity to ask questions to the physicians and get adequate answers (3.81). On the other hand, the uncertain points of the respondents were the higher price/quality ratio of the hospitality services (3.09), wage satisfaction (3.13), and higher price/quality ratio in the outpatient services (3.16), laboratory services (3.16), surgical services (3.17), and imaging services (3.18). In general, respondents were satisfied with the quality of service (3.70), whereas it was concluded that they were undecided whether the cost of the service provided was high (2.93). Difference between public and private hospitals was not much noticeable when compared separately, however, the private hospitals were found to be considered better than the public hospitals in terms of quality of service.

Participants' evaluations about service quality and costs of public and private hospitals are shown in Table 9, Table 10, Table 11, and Table 12 below, in accordance with the comparisons based on the given 12 factors.

The distribution of the factors according to the types of hospitals is shown in Table 9. According to these data, participants considered public hospitals adequate in the reliability, overall satisfaction and trust, staff competencies, perception of the institution, and technology factors, however, they were undecided in terms of price and communication factors. Similarly, they have considered the private hospitals adequate in the staff competencies, reliability, overall satisfaction and trust, and technology and informational issues, however, they were uncertain about the price factor. Finally, both public and private hospitals were assessed together, and it was found that respondents considered the hospitals adequate in terms of reliability, overall satisfaction and trust, staff competencies, patient-informing, and technology issues, whereas they were uncertain about the cost and communication factors.

Table 9: Distributions of the Factor Scores (Public and Private Hospitals)

Factors	Public Hospitals	Private Hospitals	Public and Private H.	Minimum	Maximum	Public Hospitals		Private Hospitals		Public and Private H.	
	n	n	n			Ave.	SD.	Ave.	SD.	Ave.	SD.
Staff Competencies	699	296	995	1.00	5.00	3.66	0.94	3.91	0.83	3.74	0.91
Technology	699	296	995	1.00	5.00	3.62	0.92	3.75	0.82	3.66	0.89
Investments	699	296	995	1.00	5.00	3.42	0.93	3.44	1.02	3.43	0.96
Reliability	699	296	995	1.00	5.00	3.67	1.10	3.85	0.98	3.72	1.06
Cost	699	296	995	1.00	5.00	3.48	0.89	3.49	0.95	3.48	0.91
Physical Facilities	699	296	995	1.00	5.00	3.58	0.91	3.57	0.85	3.57	0.89
Price	699	296	995	1.00	5.00	3.16	0.96	3.17	1.12	3.16	1.01
Overall Satisfaction and Trust	699	296	995	1.00	5.00	3.67	1.10	3.85	0.98	3.72	1.06
Communication	699	296	995	1.00	5.00	3.31	1.03	3.57	0.90	3.39	1.00
Perception of the Institution	699	296	995	1.00	5.00	3.64	1.08	3.49	1.03	3.59	1.07
Informational	699	296	995	1.00	5.00	3.60	1.04	3.73	1.02	3.64	1.04
Employee Satisfaction	699	296	995	1.00	5.00	3.29	1.09	3.47	1.06	3.35	1.08

The distributions of the factors according to the types of participants in public hospitals are shown in Table 10. According to these data, the public hospitals were considered the most adequate in terms of staff competencies and informational factors by the physicians, in terms of communication factor by the nurses, in terms of technology, investments, reliability and cost factors by the administrative staff, and in terms of physical facilities, price, overall satisfaction and trust, the perception of institution, and employee satisfaction factors by the patients.

Table 10: Distributions of the Factor Scores According to Type of Respondents (Public Hospitals)

	Physician		Nurse		Administrative Staff		Patient	
Factors	**Ave.**	**SD.**	**Ave.**	**SD.**	**Ave.**	**SD.**	**Ave.**	**SD.**
Staff Competencies	3.76	0.94	3.61	0.99	3.58	0.93	3.71	0.91
Technology	3.46	1.04	3.64	0.89	3.77	0.91	3.58	0.90
Investments	3.26	1.13	3.41	1.07	3.53	0.89	3.42	0.80
Reliability	3.50	1.02	3.61	0.88	3.68	0.87	3.67	0.85
Cost	3.50	0.91	3.44	0.99	3.52	0.93	3.47	0.80
Physical Facilities	3.42	1.06	3.46	0.87	3.60	0.87	3.67	0.90
Price	3.11	1.02	3.08	1.01	3.13	1.04	3.22	0.87
Overall Satisfaction and Trust	3.49	1.10	3.54	1.15	3.62	1.08	3.81	1.06
Communication	3.23	1.18	3.38	1.09	3.26	1.06	3.32	0.94
Perception of the Institution	3.42	1.27	3.61	1.14	3.68	1.05	3.69	1.01
Informational	3.86	0.92	3.55	1.06	3.64	1.04	3.54	1.06
Employee Satisfaction	3.19	1.17	3.22	1.28	3.30	1.13	3.36	0.92

The distributions of the factors according to the types of participants in private hospitals are shown in Table 11. According to this data, participating doctors consider private hospitals adequate in all factors except the price factor. It has been observed that the price factor was considered positive mostly by the nurses.

Table 11: Distributions of the Factor Scores According to Type of Respondents (Private Hospitals)

	Physician		Nurse		Administrative Staff		Patient	
Factors	**Ave.**	**SD.**	**Ave.**	**SD.**	**Ave.**	**SD.**	**Ave.**	**SD.**
Staff Competencies	4.08	0.70	3.93	0.97	3.88	0.91	3.86	0.72
Technology	3.81	0.83	3.78	0.92	3.80	0.96	3.69	0.70
Investments	3.71	0.90	3.44	1.16	3.45	1.08	3.38	0.93
Reliability	4.03	0.84	3.71	1.13	3.84	1.13	3.88	0.85
Cost	3.84	0.65	3.55	1.06	3.59	1.00	3.31	0.91
Physical Facilities	3.60	0.83	3.55	1.06	3.57	0.95	3.56	0.79
Price	3.21	1.01	3.29	1.18	3.16	1.25	3.08	1.06
Overall Satisfaction and Trust	4.03	0.84	3.71	1.13	3.84	1.13	3.88	0.85
Communication	3.74	0.82	3.61	1.00	3.60	1.06	3.49	0.77
Perception of the Institution	3.64	0.81	3.60	1.13	3.59	1.08	3.34	0.99
Informational	3.87	0.84	3.82	1.09	3.82	0.92	3.61	1.05
Employee Satisfaction	3.96	0.72	3.28	1.32	3.79	0.96	3.34	0.93

The distributions of the factors according to the types of participants (in public and private hospitals) are shown in Table 12. According to these data, both the public and private hospitals were considered the most adequate in terms of staff competencies, cost, informational, and employee satisfaction factors by the physicians, in terms of communication factor by the nurses, in terms of technology, investments, reliability, physical facilities, and the perception of institution factors by the administrative staff, and in terms of price, and overall satisfaction and trust factors by the patients.

Table 12: Distributions of the Factor Scores According to Type of Respondents (Public and Private Hospitals)

	Physician		Nurse		Administrative Staff		Patient	
Factors	**Ave.**	**SD.**	**Ave.**	**SD.**	**Ave.**	**SD.**	**Ave.**	**SD.**
Staff Competencies	3.86	0.88	3.71	1.01	3.65	0.93	3.75	0.86
Technology	3.57	0.99	3.69	0.90	3.77	0.92	3.61	0.84
Investments	3.40	1.08	3.41	1.11	3.51	0.94	3.41	0.84
Reliability	3.60	0.95	3.72	0.88	3.76	0.87	3.71	0.81
Cost	3.60	0.85	3.47	1.02	3.54	0.95	3.42	0.84
Physical Facilities	3.48	0.99	3.48	0.89	3.59	0.89	3.64	0.87
Price	3.14	1.01	3.13	1.08	3.14	1.10	3.18	0.93
Overall Satisfaction and Trust	3.66	1.05	3.59	1.15	3.68	1.10	3.83	1.00
Communication	3.39	1.10	3.45	1.08	3.35	1.07	3.37	0.89
Perception of the Institution	3.49	1.15	3.60	1.15	3.66	1.05	3.59	1.02
Informational	3.87	0.89	3.63	1.09	3.68	1.01	3.56	1.05
Employee Satisfaction	3.43	1.11	3.23	1.30	3.42	1.11	3.35	0.92

4.6.3. Analysis of Hypotheses

This section presents the analysis of the hypotheses on the basis of comparison of predetermined factors between public and private hospitals. The Table 13 given below presents the homogeneity of the hypotheses, and the Table 14 gives the analysis of the hypothesis. As shown in Table 14, there was no difference between public and private hospitals in terms of the staff competencies, technology, investments, price, communication, perception of the institution, and informational factors, there was no difference between private hospitals in terms of the reliability, physical facilities, and overall satisfaction-trust factors, and also no difference was found between public hospitals in terms of cost and employee satisfaction factors, and hence the hypothesis 1, hypothesis 2, hypothesis 3, hypothesis 4, hypothesis 5, hypothesis 6, hypothesis 8, hypothesis 9, hypothesis 12, hypothesis 13, hypothesis 14, hypothesis 16, hypothesis 17, hypothesis 18, hypothesis 19, hypothesis 20, hypothesis 21, hypothesis 22, and hypothesis 23 were accepted ($p>0,05$).

Table 13: Homogeneity Test

Factors	Respondents	
	Public (p-value)	**Private (p-value)**
Staff Competencies	0.935	0.006
Technology	0.344	0.086
Investments	0.000	0.021
Reliability	0.457	0.004
Cost	0.100	0.016
Physical Facilities	0.038	0.067
Price	0.059	0.126
Overall Satisfaction and Trust	0.457	0.004
Communication	0.005	0.022
Perception of the Institution	0.006	0.035
Informational	0.189	0.143
Employee Satisfaction	0.000	0.000

Factors and the hypotheses with significant differences between public and private hospitals are addressed in detail below. A significant difference between the assessments of participants on public hospitals was found in terms of the reliability factor, and the hypothesis 7 was rejected ($p=0.021$, $p<0.05$). The "Tukey test" was used to determine the sub-group that causes this difference, and a significant difference was found between the groups of nurses and patients (Table 13). This result is validated by patients (3.67) that consider the institutions were more reliable, compared to nurses (3.61). (Table 10). A significant difference between the assessments of participants on private hospitals was found in terms of the cost factor (Table 14), and the hypothesis 10 was rejected ($p=0.021$, $p<0.05$). The "Tamhane's Test" was used to determine the sub-group that cause this difference, and a significant difference was found between the groups of physicians and patients (Table 13). Physicians' (3.84) consideration that the institutions are appropriate in terms of cost, compared to patients (3.31), confirms this result. (Table 11).

A significant difference between the assessments of participants on public hospitals was found in terms of the physical facilities factor (Table 14), and the hypothesis 11 was rejected ($p=0.042$, $p<0.05$). The "Tamhane's Test" was used to determine the sub-group that cause this difference, and a significant difference was found between the groups of nurses and patients (Table 13). This result is validated by patients (3.67) that consider the institutions more adequate, compared to nurses' assessments (3.46), in terms of physical facilities (Table 10).

Table 14: ANOVA Analysis

Factors	Respondents			
	Public		**Private**	
	F Value	**P Value**	**F Value**	**P Value**
Staff Competencies	1.094	0.351	0.669	0.572
Technology	2.254	0.081	0.353	0.787
Investments	1.429	0.233	0.950	0.417
Reliability	3.259	**0.021**	0.958	0.413
Cost	0.234	0.873	3.298	**0.021**
Physical Facilities	2.740	**0.042**	0.031	0.993
Price	0.951	0.415	0.574	0.632
Overall Satisfaction and Trust	3.259	**0.021**	0.958	0.413
Communication	0.499	0.683	0.853	0.466
Perception of the Institution	1.379	0.248	1.591	0.192
Informational	2.172	0.090	1.179	0.318
Employee Satisfaction	0.828	0.479	5.692	**0.001**

A significant difference between the assessments of participants on public hospitals was found in terms of the overall satisfaction factor (Table 14), and the hypothesis 15 was rejected ($p=0.021$, $p<0.05$). The "Tukey test" was used to determine the sub-group that causes this difference, and a significant difference was found between the groups of nurses and patients (Table 13). This result is validated by patients (3.81) that consider the institutions more adequate, compared to nurses' assessments (3.54), in terms of overall satisfaction and reliability (Table 10).

A significant difference between the assessments of participants on private hospitals was found in terms of the employee satisfaction factor (Table 14), and the hypothesis 24 was rejected ($p=0.001$, $p<0.05$). The "Tamhane's Test" was used to determine the sub-group that cause this difference, and a significant difference was found between the groups of patients, doctors and administrative staff (Table 13). This result is validated by doctors (3.96) that consider the institutions better, compared to patients (3.34) and nurses (3.74), in terms of employee satisfaction (Table 11).

5. Result and Recommendations

The service quality and behaviors of healthcare workers are among the major concerns for patients admitted to healthcare institutions. For example, a study conducted by Kumaraswamy (2012) has emphasized the effect of surgical operations and behaviors of physicians in the preferences of public and private institutions, and studies by Kane et al. (2007), and Needleman and Charmilles (2009) have also emphasized the effect of nurses on quality of service. Within the scope of this study, participants stated that the staff competencies factor in private hospitals (3.91) is better than of public hospitals (3.66). According to the type of participants, it was observed that doctors in both public and private institutions had more positive views.

Since the health services are among the primary needs, they require continuous investment in order to keep pace with the ever-evolving era. For example, it was emphasized in studies by Öztürk et al. (2015), Altay (2008), and Bayın (2014) that investment decisions are indispensable for all businesses. In this study, participants stated that the investments in private hospitals (3.44) are slightly better compared to public hospitals (3.42). According to type of participants, it was observed that the administrative staff (3.53) in public institutions, and physicians in private institutions (3.71) had more positive views. It can be said that keeping up with today's technology if of importance among these investments. Studies by Wanjau et al. (2012), De Blasio and Walker (2009), Omachonu and Einspruch (2010), Tan and Ong (2002) and Burney et al. (2010) have emphasized that technology has a significant impact on the quality service. Within the scope of this study, participants were observed to deem private hospitals (3.75) technologically more adequate than public hospitals (3.62). In terms of type of participants, it was determined that the administrative staff (3.77) in public institutions, and physicians (3.81) in private institutions had more positive views.

Health care providers are one of the areas characterized with immense safety problems. For example, in a study by Aikins et al. (2014) it was emphasized that the reliability factor is one of the most important factors that affect the preference of private and public hospitals, and a study by Kumaraswamy (2012) has emphasized that the support facilities is one of the most important factors that affect the service quality. In this study, it was observed that the level of qualification in private hospitals (3.85) is better than of public hospitals (3.67) according to the participants. In terms of type of participants, it was determined that the administrative staff (3.68) in public institutions, and doctors (4.03) in private institutions had more positive views.

One of the points considered important both by patients and healthcare professionals is the level of communication in the institution. And, studies by Madula (2013), Vermeir et al. (2015), Prilutski (2010), and Rosenstein and O'Daniel (2008) have emphasized that the communication factor is a significant factor in healthcare services. In this study, participants stated that they observed a better level of communication in private hospitals (3.57) compared to public hospitals (3.31). In terms of type of participants, it was determined that nurses (3.38) in public institutions, and doctors (3.74) in private institutions had more positive views towards the communication factor.

Today, seeing patients as customers has brought the human-centered approach in health care providers. For example, studies by Şahin and İğde (2014), and Papatya et al. (2012) stress that human-oriented approach needs to be adopted to create a lasting value. In this study, the level of satisfaction in public hospitals (3.67) was lower than the private hospitals (3.85) according to the participants. According to the type of participants, it was observed that doctors (4.03) in private institutions, and patients (3.81) in public institutions had higher level of satisfaction. And another remarkable matter of the hospitals is their physical facilities. For example, studies by Ross & Venkatesh (2015), Mosadeghrad (2014), and McKee and Healy (2000) have emphasized that the physical structure, and environmental factors have an important role in the improvement of service quality. And, in this study it was found that the physical structures of public hospitals (3.58) and private hospitals (3.57) were assessed almost the same. According to type of participants, it was observed that the administrative staff (3.59) in public institutions, and physicians (3.60) in private institutions had more positive views.

As a result, it was determined that public hospitals fall behind the private hospitals in terms of the staff competencies, technology, investments, reliability, cost, price, overall satisfaction and trust, communication, informational, and employee satisfaction factors, whereas, they were found to be better in the physical facilities, and perception of the institution factors. In this regard, some suggestions for public hospitals and private hospitals were made. Accordingly, it is necessary to employ competent healthcare professionals, expert in their fields, in public hospitals. The fact that most of the employees in public institutions are recruited through assignments, and the public institutions are unable to choose their own staff may pose a challenge for the public institutions, but these institutions can overcome this problem with a comprehensive training program. Investments in public institutions should be increased and incentives should be provided. Technology is the primary investment among them. Institutions that aim to modernize and compete with other health care providers should be able to follow technological developments. The environment of trust between health professionals and between health professionals and patients in public institutions should be further strengthened, and it should be ensured that the employees of the health institutions and patients admitted to that institution feel safe. The existing physical facilities of private hospitals should be made better. In order to increase employee satisfaction in public institutions, the human resources department of the institution needs to work in a more active manner. The institutional perception of private hospitals should be reflected in the best possible way to both employees and patients, and it should be ensured that these individuals adopt the perception. For this, necessary publicity can be made within the legal limits. The mechanisms used for informing patients in public institutions should be more actively used. Finally, the competition between public and private hospitals should be increased in order to increase the quality of service and reduce the costs down to acceptable levels.

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Appendixes

Appendix 1 – Hospital-Related Assessments

Assessments		Public	Private	Public and Private	Min.	Max.	Public		Private		Public and Private	
		n	N	n			Ave.	SD.	Ave.	SD.	Ave.	SD.
Item 1	Physical facilities that are used in this hospital are adequate.	699	296	995	1	5	3.61	1.22	3.53	1.15	3.59	1.20
Item 2	The toilets in this hospital are extremely clean and well maintained.	699	296	995	1	5	3.39	1.15	3.68	1.08	3.48	1.21
Item 3	The rooms at this hospital are extremely clean and well maintained.	699	296	995	1	5	3.63	1.17	3.76	1.05	3.67	1.14
Item 4	In this hospital the foods are fresh and tasty.	699	296	995	1	5	3.18	1.22	3.39	1.20	3.25	1.22
Item 5	The rooms at this hospital are extremely quiet.	699	296	995	1	5	3.47	1.19	3.53	1.15	3.49	1.18
Item 6	There are appropriate parking areas in this hospital.	699	296	995	1	5	3.81	1.23	2.84	1.40	3.52	1.36
Item 7	The hospital pays attention to hygiene.	699	296	995	1	5	3.70	1.15	3.79	1.06	3.72	1.13
Item 8	Warning signs and boards in this hospital are arranged in a clear and understandable format.	699	296	995	1	5	3.81	1.21	4.00	1.03	3.87	1.16
Item 9	In this hospital, all patient records are kept accurately.	699	296	995	1	5	3.66	1.15	3.90	0.96	3.73	1.10
Item 10	In this hospital, the administrative processes are carried out correctly.	699	296	995	1	5	3.44	1.21	3.82	1.01	3.55	1.17
Item 11	Patient relations at this hospital are carried out in the correct manner.	699	296	995	1	5	3.53	1.19	3.81	1.00	3.61	3.73
Item 12	The discharge procedures of discharged patients are carried out extremely quickly in this hospital.	699	296	995	1	5	3.64	1.13	3.95	0.97	3.73	1.09
Item 13	The admission procedures of patients are carried out extremely quickly in this hospital.	699	296	995	1	5	3.65	1.18	3.96	0.98	3.74	1.13
Item 14	Ambulance services are adequate.	699	296	995	1	5	3.58	1.08	3.81	0.94	3.65	1.05
Item 15	The security services in the hospital are adequate.	699	296	995	1	5	3.56	1.17	3.63	1.14	3.58	1.16
Item 16	Medications are administered accurately and timely.	699	296	995	1	5	3.79	1.08	4.01	0.96	3.85	1.05
Item 17	The supply of blood is performed on time.	699	296	995	1	5	3.76	1.05	3.90	0.93	3.80	1.01
Item 18	In this hospital, the health services are provided in an accurate manner.	699	296	995	1	5	3.77	1.14	4.03	0.93	3.85	1.09
Item 19	Clinics have adequate technology.	699	296	995	1	5	3.60	1.20	3.65	1.05	3.62	1.16
Item 20	Devices used in laboratories are adequate technologically.	699	296	995	1	5	3.61	1.13	3.78	1.03	3.66	1.10
Item 21	Imaging (radiology) devices are adequate technologically.	699	296	995	1	5	3.65	1.11	3.78	1.04	3.69	1.09
Item 22	Patient monitoring systems are technologically adequate.	699	296	995	1	5	3.64	1.15	3.86	0.98	3.71	1.10
Item 23	Medication monitoring systems are technologically adequate.	699	296	995	1	5	3.65	1.15	3.79	1.02	3.69	1.11
Item 24	Automatic kit analyzers are adequate.	699	296	995	1	5	3.47	1.02	3.58	0.98	3.50	1.01
Item	Automatic prescription system is	699	296	995	1	5	3.72	1.05	3.90	0.94	3.77	1.02

25	adequate.											
Item 26	Outpatient clinics have adequate technological equipment.	699	296	995	1	5	3.62	1.11	3.73	0.99	3.66	1.08
Item 27	Operating rooms have adequate technological equipment.	699	296	995	1	5	3.64	1.04	3.65	1.01	3.64	1.03
Item 28	Doctors' offices have technologically adequate equipment.	699	296	995	1	5	3.62	1.09	3.76	0.95	3.66	1.05
Item 29	The hospital's IT infrastructure is adequate.	699	296	995	1	5	3.50	1.11	3.63	1.01	3.54	1.09
Item 30	The hospital has an adequate Internet access.	699	296	995	1	5	3.25	1.28	3.36	1.24	3.28	1.27
Item 31	The hospital staff are competent in the Information Technology.	699	296	995	1	5	3.39	1.15	3.54	1.06	3.43	1.12
Item 32	Patients are also contacted through e-mail or SMS (text messaging).	699	296	995	1	5	3.23	1.30	3.48	1.13	3.30	1.26
Item 33	The hospital's web site is adequate.	699	296	995	1	5	3.33	1.28	3.56	1.10	3.40	1.23
Item 34	The telephone appointment system is working effectively.	699	296	995	1	5	3.36	1.34	3.91	1.12	3.52	1.30
Item 35	Health services in this hospital are presented in the finest manner.	699	296	995	1	5	3.64	1.21	3.80	1.08	3.69	1.18
Item 36	I would recommend this hospital to others.	699	296	995	1	5	3.72	1.24	3.80	1.17	3.74	1.22
Item 37	I am satisfied with the quality of service in this hospital.	699	296	995	1	5	3.65	1.22	3.81	1.08	3.70	1.18
Item 38	I have the confidence to this hospital.	699	296	995	1	5	3.64	1.23	3.76	1.14	3.68	1.20
Item 39	I trust the doctors in this hospital.	699	296	995	1	5	3.70	1.20	4.03	1.05	3.80	1.17
Item 40	I trust the nurses in this hospital.	699	296	995	1	5	3.70	1.19	3.94	1.04	3.77	1.16
Item 41	I trust this hospital.	699	296	995	1	5	3.69	1.20	3.92	1.08	3.75	1.17
Item 42	This hospital fulfills the responsibilities promised to the patient.	699	296	995	1	5	3.67	1.15	3.81	1.12	3.71	1.14
Item 43	This hospital pays attention to the privacy of patients.	699	296	995	1	5	3.77	1.20	3.98	1.08	3.83	1.17
Item 44	I think, the cost of the service provided in this hospital is high.	699	296	995	1	5	2.93	1.28	2.92	1.40	2.93	1.31
Item 45	No extra cost incurs to the patient in this hospital.	699	296	995	1	5	3.42	1.18	3.35	1.27	3.40	1.21
Item 46	The staff have adequate knowledge about the costs in this hospital.	699	296	995	1	5	3.35	1.10	3.51	1.11	3.40	1.10
Item 47	Health services in this hospital are offered at affordable rates.	699	296	995	1	5	3.54	1.07	3.51	1.23	3.53	1.12
Item 48	Medication supplies in this hospital are purchased at affordable rates.	699	296	995	1	5	3.56	1.05	3.57	1.20	3.56	1.10
Item 49	Medical supplies in this hospital are purchased at affordable rates.	699	296	995	1	5	3.51	1.08	3.59	1.18	3.53	1.11
Item 50	The consumables in this hospital are purchased at affordable rates.	699	296	995	1	5	3.47	1.04	3.47	1.20	3.47	1.09
Item 51	I think, the quality of the service provided in this hospital is high compared to its price.	699	296	995	1	5	3.21	1.16	3.20	1.33	3.20	1.21
Item 52	The quality of hospitality services is high compared to its price in this hospital.	699	296	995	1	5	3.09	1.13	3.09	1.34	3.09	1.19
Item 53	The quality of outpatient clinic services is high compared to their prices in this hospital.	699	296	995	1	5	3.19	1.14	3.10	1.34	3.16	1.20

Item 54	I think, the quality of the surgeries in this hospital is high compared to their price.	699	296	995	1	5	3.14	1.15	3.25	1.30	3.17	1.20
Item 55	I think, the quality of the laboratory services in this hospital is high compared to their price.	699	296	995	1	5	3.14	1.17	3.20	1.28	3.16	1.20
Item 56	I think, the quality of the imaging (radiology) services in this hospital is high compared to their price.	699	296	995	1	5	3.18	1.13	3.17	1.32	3.18	1.19
Item 57	Hospital charges in this hospital are set accurately.	699	296	995	1	5	3.49	1.09	3.42	1.26	3.47	1.14
Item 58	In general, this hospital is more successful compared to other hospitals in its area.	699	296	995	1	5	3.67	1.20	3.52	1.12	3.62	1.18
Item 59	This hospital is more profitable compared to other hospitals in its area.	699	296	995	1	5	3.55	1.14	3.44	1.12	3.52	1.13
Item 60	This hospital is more innovative compared to other hospitals in its area.	699	296	995	1	5	3.68	1.21	3.47	1.17	3.62	1.20
Item 61	This hospital offers high quality service compared to other hospitals in its area.	699	296	995	1	5	3.66	1.24	3.52	1.17	3.62	1.22
Item 62	This hospital invests more to its employees compared to other hospitals in its area.	699	296	995	1	5	3.25	1.26	3.22	1.26	3.24	1.26
Item 63	I'm satisfied with my institution.	699	296	995	1	5	3.44	1.20	3.55	1.18	3.48	1.19
Item 64	I'm satisfied with the wages in my institution.	699	296	995	1	5	3.08	1.31	3.25	1.34	3.13	1.32
Item 65	I'm satisfied with the working environment of my institution.	699	296	995	1	5	3.42	1.22	3.61	1.14	3.48	1.20
Item 66	I think my institution cares for me.	699	296	995	1	5	3.23	1.27	3.49	1.23	3.31	1.26
Item 67	Medical tests and examinations (X-rays, etc.) are easily performed.	699	296	995	1	5	3.69	1.14	3.82	1.01	3.73	1.09
Item 68	The facilities are adequate for hospital attendants.	699	296	995	1	5	3.58	1.17	3.72	1.07	3.62	1.14
Item 69	I think the health care services are offered in accordance with ethical principles.	699	296	995	1	5	3.80	1.09	3.84	1.01	3.81	1.07
Item 70	Patients have no difficulty in reaching physicians and nurses.	699	296	995	1	5	3.65	1.22	3.88	1.09	3.72	1.19
Item 71	There is an adequate emergency response team for emergencies.	699	296	995	1	5	3.75	1.14	3.85	1.07	3.78	1.12
Item 72	Professional knowledge and experience of the physicians are adequate.	699	296	995	1	5	3.72	1.12	4.05	0.96	3.82	1.09
Item 73	The professional knowledge and experience of nurses is adequate.	699	296	995	1	5	3.62	1.17	3.90	1.03	3.70	1.14
Item 74	Professional knowledge and experience of auxiliary health personnel is adequate.	699	296	995	1	5	3.60	1.12	3.85	0.99	3.67	1.09
Item 75	There is an adequate level of cooperation and teamwork between physicians and nurses in the hospital.	699	296	995	1	5	3.59	1.17	3.94	1.00	3.70	1.13
Item 76	There is an adequate level of cooperation and coordination between physicians.	699	296	995	1	5	3.61	1.14	3.90	1.04	3.69	1.12
Item 77	Physicians listen patient's complaints carefully to the patiently.	699	296	995	1	5	3.65	1.20	3.98	1.08	3.75	1.18
Item	Nurses perform their duties in a	699	296	995	1	5	3.64	1.21	3.92	1.10	3.72	1.19

78	polite and attentive manner.											
Item 79	Patients are able to find a competent addressee for their complaints.	699	296	995	1	5	3.61	1.24	3.91	1.09	3.70	1.20
Item 80	Physicians examine patients in a careful and thoughtful manner.	699	296	995	1	5	3.73	1.16	4.03	1.02	3.82	1.13
Item 81	Patients are able to receive clear answers to their questions asked to physicians.	699	296	995	1	5	3.73	1.20	4.01	1.05	3.81	1.16
Item 82	Information is given about patient rights and responsibilities.	699	296	995	1	5	3.52	1.24	3.55	1.18	3.53	1.22
Item 83	Patient's relatives are adequately informed about the condition of the patient.	699	296	995	1	5	3.63	1.18	3.76	1.10	3.67	1.16
Item 84	The patient complaints are measured and feedback is given to the patient.	699	296	995	1	5	3.57	1.19	3.69	1.17	3.61	1.19
Item 85	All employees of this hospital do anything possible to help patients.	699	296	995	1	5	3.61	1.20	3.81	1.08	3.67	1.17
Item 86	Information related the treatment process are given to the patient in an accurate and timely manner in this hospital.	699	296	995	1	5	3.66	1.15	3.85	1.07	3.72	1.13
Item 87	Necessary investments about buildings and equipment are made in this hospital.	699	296	995	1	5	3.56	1.11	3.38	1.21	3.51	1.14
Item 88	Necessary investments about personnel are made in this hospital.	699	296	995	1	5	3.30	1.15	3.34	1.20	3.31	1.16
Item 89	Necessary investments about technology are made in this hospital.	699	296	995	1	5	3.51	1.13	3.49	1.15	3.50	1.14
Item 90	Necessary investments in terms of service quality are made in this hospital.	699	296	995	1	5	3.51	1.12	3.51	1.15	3.51	1.13
Item 91	This hospital uses its own assets (buildings, equipment, etc.) efficiently.	699	296	995	1	5	3.53	1.14	3.52	1.16	3.53	1.15
Item 92	HR is used efficiently in this hospital.	699	296	995	1	5	3.36	1.08	3.46	1.12	3.39	1.09
Item 93	This hospital's financial resources are used efficiently.	699	296	995	1	5	3.35	1.10	3.45	1.12	3.38	1.10
Item 94	Idle capacity is not available in this hospital.	699	296	995	1	5	3.27	1.08	3.40	1.17	3.31	1.11