

TURNING THE SERVICE QUALITY APPROACH IN A DIFFERENT DIRECTION: MEASURING THE GROUND SERVICE QUALITY PERCEPTIONS OF AIRLINES BY THE SERVQUAL METHOD

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Abstract

This study aims to measure the service quality of ground handling companies. In this study, airline companies are evaluated in the context of customers. They were asked to assess the service they received from the handling company to reflect their satisfaction and expectations. SERVQUAL scale is used to measure the perceptions and expectations regarding service quality in order to make the said evaluation. Within the scope of the study, the SERVQUAL scale is applied to station managers, station chiefs, and supervisors of airlines receiving service from any ground handling company at Istanbul Atatürk Airport and Antalya International Airport, and supervisors working in representation/supervision businesses that hold 'Group C Working License' and carry out representation/supervision activities on behalf of airlines. Considering the results of the analysis for the measurement of ground handling quality, it is seen that the difference scores in both dimensions and items are negative. This means that service quality expectations are higher than perceived service quality. Researches on the measurement of service quality in the field of air transportation are generally focused on the measurement of airline service quality. This paper explains service quality measurement is carried out in the field of ground handling, where the body of literature is more limited.

Keywords: Service Quality, SERVQUAL, Ground Handling, Airlines.

1. INTRODUCTION

Air transport is a comprehensive system that includes the aircraft in which passengers, load, and cargo will be transported, the necessary infrastructures for the realization of this service, suppliers, and many other things. For this system to function flawlessly, each component in the system must function correctly.

After the liberalization movements, the fact that the airline companies providing air transport services and the services such as ground and airport services, which are complementary services, have passed from the control of the state (partially) to the control of the private sector, we encounter three essential concepts: Customers, vendors and service quality. The smooth functioning of the system in question depends on the quality of the services offered. In this study, customers are considered as airline companies and sellers as ground companies (handling), and within the scope of the study, the quality of service provided by handling companies has been evaluated by airline companies in terms of the dimensions of service quality.

Considering the literature, although there have been many studies in the field of aviation regarding the measurement of service quality, these remained as studies in which evaluate the airline within the scope of the seller providing the service, and the quality of the service provided by the evaluated airline business (Tsaour et al., 2002; Chou et al., 2011; Hatipoğlu and Işık, 2015; Bakır and Atalık, 2018; Altınkurt and Merdivenci, 2020). In this study, as mentioned above, airline companies were evaluated in the context of customers, and they were asked to assess the service they received from the handling company in terms of reflecting both their own satisfaction and expectations. In this context, the SERVQUAL scale is used to measure the perceptions and expectations regarding service quality in order to make the said evaluation. Within the scope of the study, the SERVQUAL scale was applied to station managers, station chiefs, and supervisors of airlines receiving service from any ground handling company at Istanbul Atatürk Airport and Antalya International Airport, and

supervisors working in representation/supervision businesses that hold 'Group C Working License' and carry out representation/supervision activities on behalf of airlines. The data were collected from these people with the help of questionnaires created within the scope of the literature. In the light of the information given, answers to the following questions are sought throughout the study:

- What is the level of perception of airline companies regarding the handling service they receive?
- What are the expectations of airline companies from the handling service they receive?
- What is the difference between the handling service that airline companies receive and their expectations from this service?

2. SERVICE QUALITY

In order to explain service quality, it is useful to examine the words 'service' and 'quality' separately. As can be seen in the messages with a dominant communication aspect such as 'to serve, to serve the consumer' in the missions of most of the companies in recent years, service-oriented messages stand even in the products obtained as a result of the production of goods such as automobiles and computers, as well as businesses whose main job is service, such as banks and hotels. The fact that even the companies producing goods give service-related messages leads to complexity, and thus the fact that the concept of service is a phenomenon that cannot be easily defined and understood (Öztürk, 2013: 2). As a matter of fact, Courtis (1993: 40) emphasizes that there is complexity in the nature of the service because the outcomes of the service are not seen by the expected number of people.

When examined etymologically, service is derived from the Latin word 'servitium' and means hard-working (Uslu, 2013: 69). Service is the output of a process, and it is an abstract concept that is produced in order to obtain a benefit by humans and machines, where production and consumption coincide, which cannot be stored, which is heterogeneous (Savaş and Keskin, 2014: 2; Parasuraman, Zeithaml, & Berry, 1985: 42). According to the definition made by İslamoğlu et al. (2006: 18), service is the sum of systems, activities or benefits that solve or facilitate the solution of mostly non-physical problems arising from the lives of consumers. According to another definition, service is the activities and benefits offered for sale at a certain price to meet another person's needs and that do not require the ownership of any physical goods (Öztürk, 2013: 4).

The concept of quality is a concept that changes according to society, culture, and even the person in relation to the expectations of the customers (www.karcert.com). Parasuraman et al. (1985: 41) highlight that quality is difficult to understand and indistinguishable concept, just like the concept of service. However, if a definition is to be made; the quality can be defined as the whole of the characteristics of an asset (product, service, process, organization, system, etc.) that indicate the degree to which it meets the defined and expected requirements (ISO 9000, 2015). Parasuraman et al. (1985: 40) express the concept of perceived quality, and Grönroos (2007: 73) also states that quality is 'what customers perceive'.

When it is desired to define these two concepts, which are explained independently of each other, as a whole, it is possible to define 'Service Quality' as the ability of an enterprise to meet or exceed the expectations of its customers to whom it serves (Öztürk, 1996). Considering that the perception of quality may change according to society, culture, and person, it is possible to state that a similar situation will be seen in service quality. Because, at the point of meeting the customer expectation, which we use while defining the service quality, it would be appropriate to say that the expectations will also change according to the person. For this reason, it can be said that people's perceptions are an essential factor that determines service quality, as in quality. Therefore, service quality is the result of comparing customers' expectations with their perceptions of performance when they receive the service (Savaş and Keskin, 2014: 3).

Although there are differences of opinion among the authors on service quality dimensions, they are characterized as complementary elements rather than contradictory statements (İslamoğlu et al., 2006: 143). Grönroos (2007: 73-74), one of these authors, examines the dimensions of service quality under two fundamental questions (what and how) and examines the technical quality of the output under the question of what and the functional quality of the process under the question of how, and states that these two dimensions

would affect the image of the company and therefore its quality. Parasuraman et al. (1985: 47) examined the service quality dimensions under ten headings.

They can be briefly explained as follows (Parasuraman et al., 1985: 47; Öztürk, 2013: 186-187; İslamoğlu et al., 145):

- Reliability: It covers the consistency and reliability of the performance. In other words, the company should do the service right the first time and keep its promise (such as finishing the job on the promised date).
- Responsiveness and Eagerness: It includes the readiness and willingness of employees to provide the service.
- Competence: It is the state of having the necessary knowledge and skills to provide the service.
- Accessibility: The service should be easy to access and approachable. It includes situations such as the facilities being in a suitable location and easy access through communication tools such as telephone and internet.
- Courtesy: It includes the politeness, respect, and friendly attitude of the service personnel in communication.
- Communication: It is the situation where employees can speak in their language (maybe in different languages) so that customers can understand and express themselves.
- Credibility (reputation): It includes honesty, credibility, confidence, and caring for customers' needs in a heartfelt manner.
- Security: The state of being free from danger, risk, or doubt. It covers elements such as financial security, physical security, and hesitancy.
- Recognizing / Knowing the Customer: It includes learning about customer needs, wishes, and needs, getting to know regular customers, and providing personal attention.
- Physical (tangible) Assets: They are physical proofs of the service. It covers situations such as physical facilities, appearance of personnel, attire, and new and technological equipment used during service provision.

2.1. Measurement of Service Quality

The measurement of service quality provides businesses with a strategic advantage in order to know their position in the market and increase their competitive power (Savaş and Keskin, 2014: 3). Despite the mentioned advantages, the measurement of service quality is more complicated than the measurement of product (good) quality, because services appear as intangible, heterogeneous and processes where production and consumption processes coincide (Parasuraman et al., 1985: 42).

There are many models for measuring service quality, but the SERVQUAL model developed by Parasuraman et al. (1985; 1991), which is used to calculate expected and perceived service quality and to determine the difference, is among the most common (Pekkaya and Smart, 2013).

Service quality is a function of perceptions and expectations. This function is formulated as follows (cited by Seth, Deshmukh, and Vrat, Yıldız & Erdil, 2013: 90).

$$SQ: \sum_j^k (P_{ij} - E_{ij})$$

SQ: Total Service Quality (k number of features)

P_{ij}: Performance Perception (according to the j attribute of i stimulus)

E_{ij}: Service quality expectation for feature j (of stimulus i)

3. PREVIOUS STUDIES

Many studies in the air transport industry try to measure service quality with different methods. Some of these are given below:

Aksoy et al. (2003) conducted a survey on passengers traveling on 4 flight lines departing from Istanbul to measure their service quality perceptions and made a comparison between passengers traveling with domestic and foreign carriers and groups under different dimensions. Research findings show that there are differences between passengers traveling on the same flight line but with different airlines in terms of demographic characteristics, behavioral characteristics, and perception of airline service dimensions.

In their research, Okumuş and Asil (2007) examine whether passengers' expectations of air travel differ according to their satisfaction levels. The socio-demographic divisions of the two groups and the perceptions and expectations of the passengers were compared between the groups. As a result of the analysis, the factors that affect the satisfaction of the native group are physical factors and empathy factors, in order of importance. The factors that have an impact on the satisfaction of the foreign group, from the most important to the least, are reliable personnel, prompt service, knowing/understanding the customer, and credibility.

Ataman et al. (2011) carry out the measurement of service quality in the business airline passenger market. Findings obtained from the research they conducted with the SERVQUAL method show that Turkish Airlines, the carrier of business passengers, is very close to meeting the expectations. When SERVQUAL scores are evaluated on the basis of dimensions, it is revealed that the dimension of service quality that Turkish Airlines is closest to meeting the passengers' expectations is the dimension of physical characteristics.

Celikkol et al. (2012) conducted a survey on passengers traveling from Istanbul Sabiha Gökçen Airport to determine customer preference and satisfaction levels for domestic passengers and the factors that cause customers' preferences and satisfaction. These factors are respectively illustrated as reliability and good service, expertise and flexibility, advantage, and convenience, safety and quality, and comfort and variety.

Yıldız and Erdil (2013) comparatively measure service quality in the airline passenger transport industry. Based on the view that measuring the service quality correctly affects the correct service delivery, the data that forms the basis of this research are collected by face-to-face survey method. Afterwards, exploratory factor analysis is performed, and two models that are stated to measure service quality are compared. The findings of the study reveal that the weighted SERVPERF scale explains the perceived service quality more than the weighted SERVQUAL scale.

In the studies mentioned above, it is seen that the SERVPERF and SERVQUAL scales are mainly used. However, the methods are not limited to these. In recent years, studies with multi-criteria decision-making methods have also been encountered. For instance, Bakır and Atalık (2018) with ENTROPI and ARAS methods, Altinkurt and Merdivenci with AHP-based ARAS method, and Tsaur et al. (2002) with fuzzy methods conduct researches to measure airline service quality.

Considering the studies on the service quality of ground handling services, Choi et al. (2019) conducted a case study on improving the quality of airport ground handling services in the context of South Korea. In their research, Wang and Pham (2020) use cluster analysis, ANOVA, and Scheffé post hoc models as a complementary institutional benchmark to provide service performance insights and assess service potential and identify underserved areas. Bahar (2020) measures the ground service quality perceptions of airline employees. As a result of the research, it is revealed that the tangibles-reliability and empathy dimensions of the service quality perceptions of the airline employees have a significant effect on customer satisfaction. In addition, it is found that the dimensions of assurance, empathy, and responsiveness have effects on customer loyalty.

When the studies are assessed as a whole, it is seen that the researches on the measurement of service quality in the field of air transportation are generally focused on the measurement of airline service quality. For this reason, in this study, service quality measurement is carried out in the field of ground handling, where the body of literature is more limited.

4. METHODOLOGY

When the relationship between ground handling companies and airline companies is examined, it is seen that it has a similar structure to the relationship between service providers and customers. In this context, it is aimed to measure how the quality of the service provided by the ground handling companies, which are the service providers, is perceived by the airline companies or representation/supervision companies that are in the position of customers. In addition, the differences between the quality of ground services perceived by the airline companies and the expected ground services quality are compared.

TABLE 1 - EXPECTED AND PERCEIVED SERVICE QUALITY ITEMS

Item Code	Expected Service Quality Items	Item Code	Perceived Service Quality Items
E1	The ground handling company must have the latest technology in the ground equipment used.	P1	The ground handling company has ground equipment using the latest technology.
E2	The ground handling company's offices, check-in counter arrangements, and gate arrangements should be visually appealing.	P2	The ground handling company's offices, check-in counter arrangements, and gate arrangements are visually appealing.
E3	The employees of the Ground Handling company should pay attention to their clothing.	P3	The employees of the Ground Handling company pay attention to their clothing.
E4	Informative materials (signboards, brochures, etc.) accompanying the service of the Ground Handling company should be sufficient.	P4	Informative materials (signboards, brochures, etc.) accompanying the service of the Ground Handling company are sufficient.
E5	Ground Handling company personnel should act sincerely for a solution when passengers have a problem.	P5	Ground Handling company personnel act sincerely for a solution when passengers have a problem.
E6	The Ground Handling company should perform the service entirely and accurately the first time.	P6	The Ground Handling company performs the service entirely and accurately the first time.
E7	The Ground Handling company should always perform the service at the promised time.	P7	The Ground Handling company always performs the service at the promised time.
E8	The Ground Handling company should keep accurate records of the service provided.	P8	The Ground Handling company keeps accurate records of the service provided without errors.
E9	Ground Handling company employees should tell the airline when exactly the service will be performed.	P9	Ground Handling company employees tell the airline company exactly when the service will be performed.
E10	It should be served quickly by Ground Handling company employees.	P10	Ground Handling company employees provide fast service.
E11	Ground Handling company personnel must be willing to assist passengers and show the necessary attention.	P11	Ground Handling company staff are willing to assist passengers and show the necessary interest.
E12	Ground Handling company employees must respond to the airline's requests in a timely manner.	P12	Ground Handling company employees respond to the requests of the airline company in a timely manner.
E13	The behavior of the ground handling company personnel should create a sense of trust in the airline business.	P13	The behavior of the ground handling company personnel creates a sense of trust in the airline business.
E14	The service provided by the Ground Handling company should create a sense of trust in the airline.	P14	The service offered by the Ground Handling company creates a sense of trust in the airline business.
E15	Ground Handling company employees should be courteous and respectful to airline staff.	P15	Ground Handling company employees are courteous and respectful to airline staff.
E16	Ground Handling staff must have sufficient knowledge and expertise to answer airline inquiries.	P16	Ground Handling company personnel have sufficient knowledge and expertise to answer the airline's questions.
E17	The Ground Handling company must have suitable working hours for the airline operator.	P17	The Ground Handling company has convenient working hours for the airline business.
E18	The Ground Handling company should have employees who take care of airline businesses.	P18	Ground Handling company has employees who take care of airline companies.
E19	The ground handling company must understand the airline's wishes and needs.	P19	The ground handling company is good at understanding the airline's wishes and needs.

The SERVQUAL scale for measuring service quality has been used by changing it. The SERVQUAL scale is developed to evaluate the service quality perceptions of customers in service businesses. (Parasuraman, Zeithaml, & Berry, 1988). Furthermore, the SERVQUAL scale provides an advantage in explaining the gap by comparing customer expectations and perception of service quality. When it comes to service, the concept of quality covers comparing customer expectations and perceptions (service performance) (Parasuraman, Zeithaml, & Berry, 1985). Within the scope of the research, the SERVQUAL scale, which initially consists of 22 items, is modified by taking into account the ground handling companies and is used by reducing it to 19 items. Since the service features have different structures in different sectors, the service quality measurement tool should be used by changing it. For instance, Barabino, Deiana, and Tilocca (2012); Devi Juwaheer (2004); Engelland, Workman, and Singh (2000); Kumar, Tat Kee, and Charles (2010); Reidenbach and Sandifer-Smallwood (1990); Yoon and Suh (2004) are some of the studies in which the SERVQUAL scale is used by changing it in line with different service characteristics.

In order to evaluate the service received from ground handling companies within the scope of the research, an online survey form was sent to 300 employees of airline companies and representation/supervision companies by e-mail. Responses were received from 78 people, and all responses were valid. The return rate of the surveys is 26%. The questionnaire form consists of 42 items and three main parts. In the first part, data from four demographic variables are collected, namely, the company where the survey participants work, the ground handling company where the service is received, the position where the participants work, and the participants' work experiences. In the second and third sections, there are 19 items regarding the quality of ground handling services. In the second part, there are questions about the expected ground handling quality, and in the third part, there are questions about the perceived ground services quality. Although the items in the second and third sections are the same, the way the questions are asked varies. In the form of asking questions regarding the expected service quality, the customer is asked to evaluate what should be in line with the relevant item. In the questions about the perceived service quality, the way of asking the questions is changed in order to evaluate the performance of the service received by the customer. All questions regarding service quality expectations and perceptions in the second and third sections of the questionnaire were asked using a 5-point Likert-type scale. The Likert type scale was coded as 5-Strongly agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly disagree. The forms of questioning for the expected and perceived service quality of the 19 items used in the study and their variable codes are given in Table 1.

As a result of the questionnaire study, 78 valid questionnaires were collected. The sample size of 78 people is below 200, which is required for explanatory factor analysis, according to MacCallum et al. (1999). This is why parametric statistics are used to measure service quality. The following hypotheses were tested during the analysis and evaluation phase:

H₁: There is a difference between the expected ground handling quality and the perceived ground handling quality on the basis of ground handling quality items.

H₂: There is a difference between the expected ground handling quality and the perceived ground handling quality on the basis of ground handling quality dimensions.

A total of 5 main dimensions are determined in order to evaluate the perceived service quality in the SERVQUAL scale. These dimensions are tangibles, reliability, responsiveness, assurance, and empathy. Since the factor analysis to determine the dimensions of the items in the questionnaire could not be made due to the insufficient sample size, the item-factor association was made based on expert opinions. In this context, the opinions of four academicians working in the field of service quality in aviation and two experts working in airline companies were taken. The factor structure and factor internal reliability based on the consensus of the experts are given in Table 2.

The internal consistency value (Cronbach Alpha- α) is 0.972 in all of the 19-item scales used in the study. Furthermore, factor internal consistency is calculated by considering the items within each factor based on the factor structure. The relevant values are given in Table 2. When interpreting the Cronbach Alpha coefficient used in the evaluation of the Likert-type scale in terms of reliability, $\alpha \geq 0.9$ excellent, $\alpha \geq 0.8$ good, $\alpha \geq 0.7$ acceptable, $\alpha \geq 0.6$ suspicious, $\alpha \geq 0.5$ bad, $0.5 \geq \alpha$ means poor scale reliability (Gliem & Gliem, 2003). When

the 19-item scale is examined, it is seen that the reliability of the scale is at an excellent level. In addition, when the reliability levels of the factors are examined, it is seen that the assurance factor is excellent, and the other four factors are at a good level.

TABLE 2. FACTOR STRUCTURE AND INTERNAL CONSISTENCY VALUES

Factor	Items (Service Quality Perception)	Factor Internal Consistency (Cronbach Alpha-α)
Tangibles	P1	0,88
	P2	
	P3	
	P4	
Reliability	P5	0,89
	P6	
	P7	
	P8	
Responsiveness	P9	0,87
	P10	
	P11	
	P12	
Assurance	P13	0,90
	P14	
	P15	
	P16	
Empathy	P17	0,82
	P18	
	P19	

One of the strongest advantages of addressing service quality with the SERVQUAL scale is to reveal the difference between customers' expectations and perceptions on the basis of dimensions. Within the scope of the hypotheses discussed in the research, these differences based on item and size are calculated, and the situation at the critical point where the airline company and the ground handling company in the service process are in contact. The formula used to calculate the item-based service quality perception is given below.

$$HK_i = \frac{\sum_{j=1}^n (B_j - A_j)}{n} \quad (4.1)$$

- i: Substance index
- j: Participant index
- n: Total number of participants
- HK_i: i. item's service quality perception score
- B_j: j. participant's service quality expectation score
- A_j: j. participant's service quality perception score

While calculating dimension-based service quality perception scores, the arithmetic averages of the items under each service quality dimension are computed as indicated in the equation below.

$$HKB_k = \frac{\sum_{i=1}^m (HK_i)}{m} \quad (4.2)$$

- k: Service quality dimension index
- i: Substance index
- m: Total number of items under the relevant service quality dimension
- HKB_k: k. dimension's service quality perception score
- HK_i: i. item's service quality perception score

5. RESEARCH FINDINGS

78 participants took part in the study conducted to evaluate the quality of ground services received by airline companies or representation/supervision employees. No personal information of the survey participants was requested in terms of confidentiality. Demographic data collected from the participants are included in four variables: the company where the participant works, the ground handling company where the service is provided, the position where the participant works, and the participant's work experience. Comparisons between service-provider and customer companies in service quality are not included. This information is used only to present how many of the participants work in which businesses. Table 3 shows the demographic information of the participants.

TABLE 3. DEMOGRAPHIC INFORMATION OF PARTICIPANTS

Evaluating Firm							
	Gözen	SunExpress	AtlasGlobal	Pegasus	Handling	Others	Total
Frekans	17	4	7	8	9	33	78
%	21,8	5,1	9	10,3	11,5	42,3	100
Name of Airports							
	IST	SAW	AYT	Others		Total	
Frekans	27	29	9	13		78	
%	34,6	37,2	11,5	16,7		100	
Work Experience							
	-3 Years	3-6 Years	7-10 Years	11-15 Years	+15 Years	Total	
Frekans	16	14	16	17	15	78	
%	20,5	17,9	20,5	21,8	19,2	100	
Evaluated Handling Companies							
	Çelebi	Havaş	TGS	PGS	Others	Total	
Frekans	23	18	15	9	13	78	
%	29,5	23,1	19,2	11,5	16,7	100	
Position							
	Supervisor	OPS/OPS Chef/Manager	OCC	Manager	Specialist	Others	Total
Frekans	23	23	8	8	5	11	78
%	29,5	29,4	10,3	10,3	6,4	14,1	100

21.8% of the survey participants Gözen Aviation Services, 20.5% Turkish Airlines, 16.7% Pegasus, 9.0% Atlas Global, 5.1% Sun Express, 2.6% cargo airlines, and 24.4% work in other airlines or representation/supervision companies. The ground handling companies that survey participants receive service from are as follows: 29.5% Çelebi Ground Handling, 23.1% Havaş Ground Handling, 19.2% TGS Ground Handling, 11.5% Pegasus Ground Handling, and 16.7% receive services from other ground handling companies. 34.6% of the people who participated in the survey work at Istanbul Airport (AHL), 37.2% at Sabiha Gökçen Airport, and 11.5% at Antalya Station. When the distribution of experience of the participants is examined, there is a distribution close to each other. Among these, the ratio of people with 11-15 years of experience is 21.8%. When the positions of the participants are examined, it is seen that the group with the highest participation is the supervisors, with 29.5%.

The questions in the second and third parts of the questionnaire should be evaluated together. The questions in the second part reveal the service quality expectations in terms of airline companies, and those in the third part indicate the service quality perceived by the airline companies in terms of the ground services they have received. Comparisons of item-based service quality perception and expectation are given in Table 4.

TABLE 4. ITEM-BASED SERVICE QUALITY PERCEPTION AND EXPECTATION COMPARISONS

Point (A _i -B _i)	Groups	N	\bar{x}	S	SE	t-test			Cohen's d
						t	df	p	
-0,72	P1	78	3,32	1,28421	0,1454	4,27	77	,000	0,61
	E1	78	4,04	1,06225	0,1203				
-0,56	P2	78	3,51	1,07804	0,1221	4,529	77	,000	0,54
	E2	78	4,08	1,04159	0,1179				
-0,56	P3	78	3,76	1,05911	0,1199	4,578	77	,000	0,52
	E3	78	4,32	1,08704	0,1231				
-0,69	P4	78	3,47	1,11337	0,1261	5,056	77	,000	0,64
	E4	78	4,17	1,07409	0,1216				
-0,96	P5	78	3,40	1,2097	0,1370	6,191	77	,000	0,83
	E5	78	4,36	1,09277	0,1237				
-0,67	P6	78	3,55	1,02751	0,1163	4,853	77	,000	0,63
	E6	78	4,22	1,10074	0,1246				
-0,78	P7	78	3,49	1,11359	0,1261	5,173	77	,000	0,69
	E7	78	4,27	1,13587	0,1286				
-0,91	P8	78	3,50	1,17053	0,1325	6,275	77	,000	0,80
	E8	78	4,41	1,09824	0,1244				
-0,76	P9	78	3,44	1,1118	0,1259	5,215	77	,000	0,68
	E9	78	4,19	1,09376	0,1238				
-0,63	P10	78	3,46	1,14747	0,1299	5,016	77	,000	0,56
	E10	78	4,09	1,11874	0,1267				
-1,01	P11	78	3,44	1,15758	0,1311	6,346	77	,000	0,90
	E11	78	4,45	1,08887	0,1233				
-0,72	P12	78	3,59	1,19996	0,1359	5,409	77	,000	0,61
	E12	78	4,31	1,14311	0,1294				
-0,86	P13	78	3,46	1,10127	0,1247	5,637	77	,000	0,79
	E13	78	4,32	1,08704	0,1231				
-0,78	P14	78	3,55	1,10074	0,1246	5,906	77	,000	0,71
	E14	78	4,33	1,10096	0,1247				
-0,40	P15	78	3,85	1,17415	0,1330	2,876	77	,000	0,35
	E15	78	4,24	1,08336	0,1227				
-1,01	P16	78	3,33	1,15844	0,1312	6,806	77	,000	0,91
	E16	78	4,35	1,09101	0,1235				
-0,78	P17	78	3,44	1,35407	0,1533	4,382	77	,000	0,62
	E17	78	4,22	1,16939	0,1324				
-0,74	P18	78	3,47	1,19223	0,1350	4,788	77	,000	0,64
	E18	78	4,22	1,16939	0,1324				
-0,62	P19	78	3,59	1,08635	0,1230	4,806	77	,000	0,57
	E19	78	4,21	1,0734	0,1215				

It is stated in the methodology section that 19 items in the SERVQUAL scale are used to measure the expected and perceived service quality. The same 19 items were asked using different expressions in both sections. The differences between service quality expectations and perceptions are also calculated and included in the "Point" column. The order of the item pairs to be used in interpreting these differences is given in Table 5.

TABLE 5. RANKING OF ITEM PAIRS BY DIFFERENCE SCORE

Order	Item Pair	Point
1	P15-E15	-0,40
2	P2-E2	-0,56
3	P3-E3	-0,56
4	P19-E19	-0,62
5	P10-E10	-0,63
6	P6-E6	-0,67
7	P4-E4	-0,69
8	P1-E1	-0,72
9	P12-E12	-0,72
10	P18-E18	-0,74
11	P9-E9	-0,76
12	P7-E7	-0,78
13	P14-E14	-0,78
14	P17-E17	-0,78
15	P13-E13	-0,86
16	P8-E8	-0,91
17	P5-E5	-0,96
18	P11-E11	-1,01
19	P16-E16	-1,01

When service quality is considered a concept, it is seen that it is shaped together by the perceptions and expectations of the customer. In this context, while evaluating the quality of ground handling services, the perception and expectation of the responsible service buyer on the part of the airline have been specified. The scores in Table 4 and Table 5 are the difference between the service quality perception and expectation of the airline company representative.

It is examined whether the differences between the perception and expectation levels of the items used to measure the quality of ground handling services are statistically significant. A t-test is conducted to look at the significance of the difference between the averages of each item's service quality perception and expectation groups. The compliance of the data of 38 variables, both service quality expectation and service quality perception, with the normal distribution is examined. The kurtosis and skewness z values for all variables are between ± 1.96 , and the data is assumed to be normally distributed (George & Mallery, 2010). Separate comparisons are made for a total of 19 item pairs. The results of the analysis in Table 4 include the service quality perception expectation level averages (\bar{x}), standard deviations, standard errors, paired groups t-test outputs, and effect size values (Cohen's d) of the tests performed. As a result of the analysis, it is seen that the differences between service quality perception and expectation level for 19 items are statistically significant ($p < 0.001$). For the H1 hypothesis, the alternative view is accepted, and "There is a difference between the expected ground handling quality and the perceived ground handling quality on the basis of ground handling quality items." The statement is valid.

In general, when the differences between the service quality perception and expectation in the score column are examined, it is seen that all of them are negative. In this context, it can be said that all of the differences mentioned are significant, and the perception of ground handling quality in all items is below customer expectations. In addition, beyond the significance of these differences, the magnitude of the effect of this difference is also interpreted. For this, Cohen's d effect size values are calculated. The effect size allows us to infer whether the difference is significant and whether it is crucial in practice. In other words, in cases where the difference between the means of the two groups is substantial, the difference may not have a considerable effect in terms of practice. In the interpretation of this value, $0.2 \leq d < 0.5$ is considered a small effect, $0.5 \leq d < 0.8$ as a medium effect, and $0.8 \leq d$ as a large effect (Cohen, 2013). Comparisons with an effect size of 0.8 and

above are items 5, 8, 11, and 16. It is seen that the perception of service quality for these items is quite below the expectations, and the difference has a more significant effect on the perception of service quality than the other items.

When the service quality perception scores of the airline companies are examined, it is seen that the most satisfactory issue is the courtesy and respectfulness of the ground handling operators (P15-E15). In the second place, there is the perception of quality vis-à-vis the visual attraction (P2-E2) of the work offices of the ground handling company, check-in counter arrangements, and the gate arrangements. In the third place, the ground handling company pays attention to the clothing of its employees (P3-E3).

Considering the service quality perception scores of the airline companies, the most minor expected issue is that the ground handling staff have sufficient knowledge and expertise to answer the questions of the airline companies (P16-E16). In the second place, from the last, the willingness of the ground handling personnel to assist the passengers and show the necessary interest (P11-E11) takes place. In the third place from the last, the ground handling operator's acting sincerely for a solution when the passengers have a problem (P5-E5) appears. These items express the subjects with the lowest perception of service quality. Moreover, since the scores of all the items are negative, these difference scores are interpreted in more detail by looking at the effect sizes. As can be seen, the items with the largest effect sizes are the items with the lowest perception of service quality.

After examining the item-based service quality perceptions, the difference scores for the five main dimensions in the SERVQUAL scale are calculated. A dimension-based comparison of service quality perception and expectation is given in Table 6. The related table contains descriptive statistics of the dimensions, including service quality perception and expectation level averages (\bar{x}), standard deviations, and standard errors. Furthermore, as with the items affecting the quality of ground handling services, the outputs of the paired groups t-test and the effect size values (Cohen's d) of the tests are also included.

TABLE 6. DIMENSION-BASED SERVICE QUALITY PERCEPTION AND EXPECTATION COMPARISONS

Point ($A_i - B_i$)	Groups	N	\bar{x}	S	SE	t-test			Cohen's
						t	df	p	
-0,6346	Tangibles (Expectation)	78	4,1506	,95375	,10799	5,666	77	,000	0,65
	Tangibles (Perception)	78	3,5160	,97812	,11075				
-0,7137	Empathy (Expectation)	78	4,2137	1,06495	,12058	5,460	77	,000	0,67
	Empathy (Perception)	78	3,5000	1,04412	,11822				
-0,7628	Assurance (Expectation)	78	4,3109	1,04150	,11793	6,098	77	,000	0,74
	Assurance (Perception)	78	3,5481	,99435	,11259				
-0,7788	Responsiveness (Expectation)	78	4,2596	1,03701	,11742	6,733	77	,000	0,77
	Responsiveness (Perception)	78	3,4808	,97599	,11051				
-0,8301	Reliability (Expectation)	78	4,3141	1,04403	,11821	6,647	77	,000	0,82
	Reliability (Perception)	78	3,4840	,97812	,11075				

The service quality dimensions in Table 6 are given from smallest to largest according to the difference scores. The dimension with the highest perception of service quality is tangibles. This dimension is followed by empathy, assurance, responsiveness, and reliability. On the other hand, all of the scores calculated due to the comparison of the perception and expectation groups are negative. This situation naturally shows that the

perception of service quality remains below customer expectations in all service quality dimensions, as is the case with item-based analyzes. The t-test is conducted to see if the difference between the levels of expectation and perception in the dimensions affecting service quality is significant. As a result of the analysis, it is seen that the differences for all five dimensions are statistically significant ($p < 0.001$). For the H2 hypothesis, the alternative hypothesis is accepted, and "There is a difference between the expected ground handling quality and the perceived ground handling quality on the basis of ground handling quality dimensions." The statement is valid.

When the effect sizes are examined, the effect sizes increase with the negative increase in the difference between service quality perception and expectation. This shows that the more the perception of service quality is below customer expectations, the more negative impact it will have on service quality.

6. CONCLUSION AND DISCUSSIONS

Considering the basic features of the service, such as intangibility, simultaneous production and consumption, and heterogeneity, the evaluation of quality in the service production process is a very difficult issue. The concept of quality in services that are intangible and tailor-made for the final product also depends on the subjective point of view of the consumer. The SERVQUAL scale is used to analyze the perception of ground handling quality received by airline companies in order to address these situations as much as possible. One of the strongest aspects of this scale is that it acts by comparing the service quality expectations of customers and their perceptions after receiving the service. In this way, the effect of subjectivity is overcome.

Considering the analysis results for the measurement of ground handling quality, it is seen that the difference scores in both dimensions and items are negative. This means that service quality expectations are higher than perceived service quality. Looking at the questions in the questionnaire, the questions about expectations are always asked to express the ideal situation. This situation, frequently encountered in similar studies, shows that customers tend to have high expectations when evaluating service quality. The scores for the perception of service quality are generally below expectations.

The services offered by the ground handling operators directly affect the service offered by the airline company to its passengers. For this reason, representatives of airline companies are in search of high-quality ground handling processes. The increase in the quality expectations of the passengers for the service they will receive from the airline company every day increases the pressure for the services to be received from the ground handling companies to be of high quality. Airline companies need to improve the quality of ground services they receive in order to provide quality service to their passengers in the intensely competitive environment they are in.

According to the representatives of airline companies, the dimension with the highest perception of ground handling quality is tangibles. This dimension includes the technology of the equipment used by the ground handling company, the visual attractiveness of the work offices, check-in counter arrangements and gate arrangements, the care given to the clothing of the employees, and the materials intended to inform the passengers. Regarding the perception of ground handling quality, the tangibles dimension is followed by empathy, assurance, and responsiveness, respectively. The last dimension is reliability. The items under the reliability dimension are that the ground handling operators act sincerely towards the solution of passenger problems, perform the service entirely and correctly the first time, perform the service in the promised time, and keep the records of the service provided without errors. Ground handling companies need to make improvements in the services they offer. In this way, they can commit to providing a higher quality service to airline companies.

Airline companies need to get quality products and services from their suppliers and stakeholders to provide better quality service. The contribution of all the players involved in the process is important in order to provide a quality flight service to the passengers. One of the essential players in the airway service delivery process is ground handling companies. In future studies, solution proposals can be developed to increase the service quality offered by ground handling companies. In addition, it is thought that studies that take into account other stages in the airline supply chain and help determine the critical steps that affect the service quality perception of the final passenger will contribute to the field.

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