

Lost Baggage Problem in Airport Management: A Qualitative Research

Assist.Prof.Dr. Sabiha ANNAÇ GÖV (<https://orcid.org/0000-0001-7601-559X>), Gaziantep University, Turkey;
e-mail: sgov@gantep.edu.tr

Selin GÜN (<https://orcid.org/0000-0003-3061-4938>), Gaziantep University, Turkey; e-mail: nseling2307@gmail.com

Abstract

Airline transportation is a rapidly developing and highly preferred sector, but due to its wide network and appealing to millions of people, it cannot be prevented from experiencing some problems in air travel and airports. The lost baggage problem is one of them, but it is a problem that is noticed and solved especially at airports. In this study, as a primary data 6 people from various airports were interviewed and, as a secondary data relevant literature about the lost baggage problem was examined. Through the interviews, information was obtained on issues such as the lost property problem, its causes, solutions, the difficulties experienced by this problem and the conveniences provided in this case. As a conclusion it was stated that the necessary information was given to the passengers/customers and their rights were given to them (such as compensation). For solving lost baggage problem, it has been stated that technology systems (face recognition, retina and finger readers, baggage recognition, chip, navigation and telephone applications, express and automatic baggage systems, false baggage warning systems for airports, automatic scanning) can be very effective. It is expected that technological improvements will minimize the problem of lost baggage.

Keywords: Lost luggage, airport management, qualitative research, aviation management, customer/ passenger satisfaction

Jel Codes: L91, L93, M1

Havalimanı Yönetiminde Kayıp Bagaj Sorunu: Nitel Bir Araştırma

Öz

Havayolu taşımacılığı hızla gelişen ve çok tercih edilen bir sektör konumundadır ancak geniş ağı ve milyonlarca kişiye hitap etmesi nedeniyle, havayolu seyahatlerinde ve havaalanlarında birtakım problemlerin yaşanmasının da önüne geçilememektedir. Kayıp bagaj sorunu bunlardan biri olmakla birlikte, özellikle havaalanlarında fark edilip, çözüme kavuşturulması için başvuru bir sorundur. Bu çalışmada, birincil veri olarak çeşitli havalimanlarından 6 kişi ile görüşülmüş ve ikincil veri olarak kayıp bagaj sorunu ile ilgili literatür incelenmiştir. Yapılan görüşmelerle, kayıp eşya sorunu, nedenleri, çözümleri, bu sorunun yaşattığı zorluklar ve bu durumda sağlanan kolaylıklar gibi konularda bilgiler alınmıştır. Sonuç olarak yolculara/müşterilere gerekli bilgilendirmelerin yapıldığı ve haklarının (tazminat gibi) kendilerine verildiği belirtilmiştir. Kayıp bagaj sorununun çözümü için teknoloji sistemlerinin (yüz tanıma, retina ve parmak okuyucular, bagaj tanıma, çip, navigasyon ve telefon uygulamaları, ekspres ve otomatik bagaj sistemleri, havalimanları için sahte bagaj uyarı sistemleri, otomatik tarama) çok etkili olabileceği belirtilmiştir. Teknolojik gelişmelerin kayıp bagaj sorununu en aza indirmesi beklenmektedir.

Anahtar Kelimeler: Kayıp bagaj, havaalanı yönetimi, nitel araştırma, havacılık yönetimi, müşteri/ yolcu memnuniyeti

Jel Kodları: L91, L93, M1

1. Introduction

Airline transportation has got some parameters for satisfying passengers. A smiling face, fast processing, effective management, and data quality, conveying up-to-date information to passengers, and complying with standards are essential for satisfaction (Bargghi & Satı 2017).

In the airline industry, the communication between passengers and airline employees reveals the concept of service quality. This interaction; It is explained by the relationship between the services provided by the employees to increase the image of the airline company and the service perceptions of the customers. Basically, since all airlines offer similar transportation services, they need to provide better quality service compared to their competitors in order to acquire customers in the sector. While determining service quality standards, airline companies take into account competitive advantage and passenger satisfaction, and in this direction, they aim to ensure loyalty to passengers, repurchase desire, strong communication, positive word of mouth marketing, brand awareness and profit. In order to provide maximum quality by knowing the importance of passenger perception in airline service quality; has developed services such as ticket reservation and purchase, airport ground handling, boarding services, arrival services, and lost luggage. In addition, the factors that affect the service quality the most are; ticket price, security, flight times, baggage process, catering quality, comfort, check-in process and in-flight services (Civelek, 2020; 17-18).

In their study, Rhoades and Waguespack (2008) investigated the quality values of the services of airline companies operating in the airline industry in the USA in the last two decades. In the study, Air Travel Consumer Report data was used. The criteria evaluated in this report are; customer complaints, flight problems, ticketing, returns, fees, customer service, advertising, just-in-time performance, denied boarding and lost baggage. It was concluded that the criteria in the report were met positively by the customer, in other words, the fact that the customers did not experience any negativities increased the quality level of the airline business (Altınkurt & Merdivenci, 2020, 50-51). Suzuki et al. (2001) in the study aims to determine the factors for customer satisfaction, 'full-time departure performance', 'effective baggage procedures' and 'quick check-in and boarding processes' and 'a high standard catering service' It was concluded that they are the most effective factors in providing customer satisfaction (Korkmaz, et al., 2015: 253). While each business tries to create certain opportunities by offering differentiated travel conditions and price levels, they also need to solve many problems that affect consumers' choices. In the 2017 Airline Quality Report presented by Bowen and Headley, the characteristics and complaints that are effective for airline performance and important to passengers include on-time departure of the aircraft, excess seat sales, delay, cancellation, deviation from the schedule, etc. solution of delayed, lost or damaged baggage as well as problems such as is also located. Quick and effective solution to such problems is of great importance in consumer preference (Canöz, 2018; 199-200).

In the light of all this information, we explain how important the service quality at airports and airlines is and how it affects many factors. Sita, the technology provider for global baggage control, says the number of lost luggage fell from 46.9 million in 2007 to 24.8 million last year. Moreover, the number of passengers doubled during this period. At this point, we emphasize that lost baggage services are an important problem both for airlines and airports and for passengers, and the importance of providing solutions for solutions. When it comes to luggage, the first definition that comes to mind is the possible items that may be needed during travel in a suitcase. However, in national and international standards, items of different qualities such as suitcases or suitcases, as well as some medical products, baby carriages, wheelchairs, are included in the luggage category. Baggage service quality is the prevention of problems that may occur during the acceptance and delivery of passenger baggage and solving the problems that occur to ensure customer satisfaction. Although there is no additional information in the literature on baggage service quality we can say the following in addition to the above information: high and error-free baggage service performance, reducing costs by minimizing errors, providing checks where necessary, showing the necessary attention to the passenger and presenting their rights can ensure passenger satisfaction.

Millions of suitcases continue to disappear every year (BBC,2020). Are airlines taking adequate steps to prevent this? Waiting empty-handed in the baggage belt after other passengers have packed their luggage and left is one of the most devastating feelings. Millions of passengers experience this feeling every year. So why do suitcases disappear? Why is the aviation industry using the latest technologies so lagging behind in luggage?

With this study, the problem of lost luggage will be examined and how it was solved will be revealed.

2. Literature Review

It is known that there are many definitions and explanations about service quality in the literature. The concept of quality, on the other hand, is explained as measuring and meeting the needs, wishes and expectations of customers and ensuring satisfaction in this direction. In addition to all these, some studies have been carried out to measure service quality. It has been determined that Park (2007) has conducted a number of studies for the aviation sector based on three airlines operating internationally with a full-service provision in Korea (Korean Airlines and Asiana Airlines) and Australia (Qantas). In their study, when they measured the factors that passengers pay attention to most during airline selection; reliability, reservation service, in-flight services, personnel behavior, airport service, flight availability, price, customer satisfaction, perceived value, airline image and general service quality dimensions are mentioned. Abdullah et al. (2012) conducted interviews with 500 passengers at Kuala Lumpur International Airport using the structural equation model and aimed to measure the service quality of airline operators with the SERPERF scale. In this study, they determined that the service implementation determined by the airline companies affects the service quality. They listed three elements in the form of physical features, equipment and

appearance of personnel in airlines and explained that they increased the quality of airline service in particular. Teirnan et al. (2008) investigated the effect of airline alliances on the service quality of the main carriers in America and Europe with the F-Test they used. Evaluated criteria for the USA; on-time performance, over sales, lost baggage, and customer complaints. The criteria for the European Air Transport Association are; flight cancellations, punctuality (just in time departure and landing), and lost baggage statistics. According to the results of the research, it has been concluded that there are only minor differences in the service quality of the airline companies serving in international alliances on an annual basis, but there is no big difference in general.

In the study conducted by Ostrowski (1993) in the literature on the evaluation of airline service quality, it has been revealed that the perception of high service quality ensures the formation and maintenance of loyal customers in airline companies. At this point, providing positive experiences to their customers by airline companies will create a positive image and increase customer preferences. In the study by Rhoades, Waguespack and Treudt (1998), total quality; According to the number of delayed flights, total customer complaints (flight problems, ticket fare, boarding, payment, advertising, customer service complaints and other complaints) and total lost baggage reports. Many other studies in the literature stated that high service quality also increases customer loyalty. Ruyter et al. (1998) found positive relationships between perceived service quality and repurchase intention, recommending to others, and preferring the same service provider over other better alternatives. According to the study conducted by Bloemer J., Ruyter K., and Wetzels M. (1998), which examined the relationship between perceived service quality and customer loyalty, it was determined that there was a direct relationship between word of mouth, purchase intention, price sensitivity, and complaint behavior and service quality (Kazançoğlu, 2011: 137).

Post-flight services, which is a process that includes the completion of the flight and disembarkation of the passenger, includes various services such as baggage claim service, orientation service and programs for frequent flyers, transportation. Luggage delivered by passengers during pre-flight procedures to be retrieved after the flight is recorded in the baggage system. However, sometimes passengers have problems with their luggage and cannot match their luggage. At this point, lost baggage services are the services provided to passengers in case of problems such as loss, delay, or damage during the delivery of their baggage at the arrivals terminal. There may be malfunctions in the baggage due to reasons such as the personnel loading the wrong plane, passengers owning the wrong baggage, environmental factors and security. In this direction, service quality is of great importance and companies aiming to make customer satisfaction permanent should continue their services after the flight. Post-flight services are a strategic force to engage customers and gain new customers. The quality of post-flight services provided by airlines, such as frequent flyer programs, baggage delivery to passengers, and lost baggage, positively affect the perception of passenger satisfaction (Civelek, 2020; 42). Customer satisfaction in airline companies is directly related to the quality of service offered to customers. Repeat buying behavior, recommending to others, etc. It is known that customers with such tendencies are satisfied with the business. These trends increase the brand value and profit for the airlines and ensure the continuity of the business (Korkmaz, et al., 2015: 250).

Air transport, which is constantly changing and developing with technological developments, has been one of the most dynamic areas of transport law since ancient times. The fact that it is preferred frequently has necessitated many legal regulations in order to eliminate the problems between the passengers and the carrier. It has become important to bring some regulations on the civil aspects of air transport. The Warsaw Convention, which is the first regulation regarding private international law in civil aviation, and the "Montreal Convention", which is the Convention on the Unification of Certain Rules Regarding International Carriage by Air, including some deficiencies and updates in this contract, explained the relevant rules. The Montreal Convention, which came into force on November 4, 2003, provided a regulation on civil aviation that regulates the responsibility of the carrier in cases of death, injury or delay of the passenger in international transport, and in cases of delay, damage or loss of cargo or baggage (Gölcüklü, 2020: 321). Again, according to article 18 paragraph 1 of the Warsaw Convention, "If the event causing the damage occurred during air transport, the carrier shall be liable for the damage resulting from the destruction or loss or damage of checked baggage or goods." Therefore, the period between the carrier's receipt of the baggage and its delivery to the passenger has a maintenance and surveillance obligation. This period, in paragraph 2 of the same article, "will cover the period during which air transport, baggage or goods are under the protection of the carrier at an airport or in an aircraft or in case of landing outside an airport." described as. The carrier shall be liable for the damage suffered by both chargeable and non-chargeable baggage during this period (Montreal Convention article 17 paragraph 2, paragraph 3.).' (Avcı, 2018: 495). Again, according to the Warsaw Convention, the carrier is liable for damage caused by damage and loss of checked baggage or cargo, as well as for damage caused by the delay during the carriage of passengers, baggage or goods by air (VK art.19). The carrier is responsible for the defect. According to Article 20 of the Warsaw Convention, the Carrier is relieved of this liability when he can prove that he and his employees have taken all measures to prevent damage and that there is an impossibility. If the carrier proves that the damage caused by the negligence or carelessness of the injured person, the liability of the carrier may be reduced or completely eliminated by the court. Liability claims must be filed within two years of the aircraft arriving or due to arrive at its destination. Failure to file the case within the two-year period is one of the factors that cause the carrier's liability to disappear. In registered baggage and cargo transportation, the notification of damage or delay must be made immediately based on the delivery date of the goods. In case of delay in baggage or cargo, the notification must be made within twenty-one days at the latest. If the period is not taken into account, no lawsuit can be filed against the carrier (Göktepe, 2016: 219).

All operational steps such as renewed ticket systems with current studies, baggage handling services, flight and route determination management, airport network, security control etc. have been observed and reviewed. Reservation types have been analyzed down to the agency and passenger detail level, and an information infrastructure has been created that can be analyzed. It has implemented the integration of reservation, ticket and check-in by determining passenger satisfaction levels with survey and feedback methods (Türkay, & Artar, 2021; 88).

3. Methodology

Among the qualitative research methods used in the study, the most frequently used interview technique was used to collect data about the environment, process, and perceptions, such as interview, observation, and examination of written materials. The interview technique was preferred because it is very effective in revealing people's perspectives and subjective experiences as well as conveying people's feelings, thoughts and perceptions, and it is thought to provide the most appropriate information for the study. It was aimed to increase the validity and reliability of the research by supporting this interview process with the information obtained from observation and written documents (Yıldırım and Şimşek, 2008: 40-41). The study, it was aimed to reach the basis of the problem of lost baggage in airport management and to reach primary information from the people working in this field. For this purpose, it was desired to reach more realistic information by making use of the experiences, emotional states and solution suggestions of the employees who experienced the events and situations themselves. In this context, the questions asked to the speakers in the study are as follows:

- Could you introduce your position? What kind of work do you do in this position and what difficulties do you face?
- What is the lost baggage problem and what causes it?
- What are the procedures and facilities provided in case passengers lose their baggage?
- How is the reaction/motivation of the passengers in these situations and does this affect the future decisions of the passengers?
- Are there any companies that you cooperate with regarding lost baggage, and if so, how is their support?
- How can passengers track their lost baggage or get information about it?
- If the lost baggage is not found, how to make up for it or how to deliver it when it is found?
- What is the search time for lost baggage / can it be timed out and what to do in this case?
- Does the way the problems are solved provide enough satisfaction?
- What are the innovative behaviors about lost baggage and are technological developments beneficial in this sense?
- Is it possible to compensate for the loss of baggage, if possible, how is the cost determined?
- What are the solutions and suggestions that will ease the difficult situations in your profession?

In addition to the secondary data (IATA rules, News, studies from literature) we obtained about lost baggage, with 4 participants from Elazığ Airport passenger and ground services personnel (1st, 2nd, 3rd, 4th participants) and from Ankara Esenboğa Airport with an airline's lost property representative (5th participant) and Istanbul Sabiha Gökçen Airport, with the interview we made with an airline's lost property officer (6th participant), it was aimed to reach the current information about the lost luggage problem, the first-hand speeches and opinions of the authorized persons. At the same time, it was desired to obtain information about the problem of lost baggage and to suggest solutions. In this context, the questions we presented and the demographic characteristics of the participants will be explained below. Analyses of

obtained data was conducted by content analyses technic. According to the technic, data is scanned and some codes are got from the text. The answers and information obtained will be explained and evaluated in the findings section.

4. Findings

In the study, together with the information obtained from the literature for the past and the future, supportive and original information was obtained from the interviews with authorized persons.

4.1. Findings From Interviews

The data in the self-introduction part of the participants are as follows:

Table 1. Demographic Characteristics of the Participants

Participant c.	Age	Education	Seniority	City	Position
P1	36	Undergraduate	10	Elazığ	Ground Service
P2	42	Associate Deg	13	Elazığ	Ground Service
P3	24	Associate Deg	3	Elazığ	Ground Service
P4	25	Associate Deg	3,5	Elazığ	Ground Service
P5	26	Associate Deg	6	Ankara	Ground Service
P6	25	Undergraduate	3	İst.Sabiha Gökçen	Ground Service

After the self-introduction part, the first question asked was 'Can you introduce the position you are in? The answers to the question “What kind of work do you do in this position and what difficulties do you encounter?” are as follows:

Table 2. Position features and challenges encountered

Prt.	Position	Position Features	Challenges Encountered
P1	Ground Handling and Lost & Found	Check-in, boarding, arrival, lost and damaged luggage	Anger and fuss
P2	Lost & Found	Lost and damaged luggage	Dissatisfaction
P3	Ground Handling and Lost & Found	Check-in procedures lost and damaged luggage	Complaint / reproach
P4	Ground Handling and Lost & Found	Check-in, arrival, lost and damaged luggage	Dissatisfaction and blame
P5	Lost & Found	Lost and damaged luggage	Sadness
P6	Lost & Found	Lost and damaged luggage	Density

Secondly, the question 'What is the problem of lost baggage and what causes it?'

P1's reply can be given as a quotation example. "Lost baggage problem can be caused by mistakes caused by personnel or passengers during check-in, confusions caused by similarity of baggage, customs control, forgetting, etc. It is a problem experienced during travel with factors." (P1).

In response to the question, the participants stated that it was a travel problem and explained the reasons for its occurrence as follows:

Table 3. Causes of lost baggage

Factors in lost baggage problem	Participant Code
Error due to passengers and personnel	P1, P2, P3, P3, P4, P5
Similarity	P1
Customs/security checks	P1, P2
Oblivion	P1
Confusion	P1, P2, P5
Overload/operational situations	P6, P5, P4, P2
Environmental factors	P3

In response to the question, "What are the procedures and facilities provided in case passengers lose their luggage?"

Participant 2 replied the question as "In the event that passengers lose their baggage, first of all, information about the baggage, such as color and shape, is obtained from the passenger, and then a report is prepared by obtaining information about the flight and, if any, transfer flights. The officers at the opposite terminal are informed and if there is confusion, it is tried to communicate with the second person who experienced this situation. The passenger is given an emergency kit by some airlines and if the luggage is not found, the passenger rights are offered to the passenger." (P2).

The category of answers to the question is as follows:

Table 4. Lost luggage procedure and facilities

Procedures and Facilities	Participant Code
The report is kept.	P1, P2, P3, P4, P5, P6
Passenger rights are offered.	P1, P6, P3, P5
Checks are made.	P2, P3, P4
Reported to the authorities.	P1, P2, P4
Contact information is given/received.	P2, P3, P6
Emergency kit (according to airline) is available.	P1, P4
The source of the problem is investigated.	P2, P3

In response to the question, "How is the reaction/motivation of the passengers in these situations, and does this affect the future decisions of the passengers?"

P3 replies as "In this case, passengers can often be excited and angry, but taking control of the situation and showing interest provides confidence and motivation. Of course, there are not always negative applications. There are also passengers who are extremely pleased and thank you and say that they want to visit us on their next trip, and this makes us happy." (P3).

P4 replies as "Passengers who applied first are in a panic and unhappy, and sometimes we are faced with questions such as why did you lose my luggage, and we share that of course, it happened against our will. Later, when the necessary attention is provided and the situation is followed, our passengers leave satisfied even if there is sometimes no luggage, and of course, it also affects their preferences." (P4)

Like as the first, second, third and fourth speakers stated that the passengers applied in a negative way, but if the situation was controlled and the passengers were given confidence and attention. They stated that passengers can be satisfied and positively affect their future flight decisions. However, the answers given are as follows:

Table 5. Reactions of passengers in a lost luggage situation

Participant Code	Passenger Status	Motivation	Passenger Reactions	Future Flight Decision
P1	Low		High, tense	(Positive) Effects.
P2	Low		Unstable	(Positive) Effects.
P3	Low		Anger, excitement	(Positive) Effects.
P4	Low		Panic, unhappy	(Positive) Effects.
P5	Low		Sad, angry	(Positive) Effects.
P6	Low		Anger, aggressive	(Positive) Effects.

The answers are given to the question, "Are there any companies that you cooperate with regarding lost baggage, and if so, how is their support?" are as follows:

P4 replies as "I believe lost and found is a great collaboration. It requires a strong communication network, which already exists, and everyone always has support, especially the airlines we cooperate with." (P4).

Table 6. Collaborativeness of airline companies

P. Code	Are There Collaborative Companies?	Support Types of Companies
P1	Yes	Positive
P2	Yes	Positive
P3	Yes	Positive
P4	Yes	Positive
P5	Yes	Positive
P6	Yes	Positive

In response to the question, "How do passengers track their lost luggage or how can they get information about it?", the first, second and third speakers stated that tracking can be done through websites and contact numbers. The fourth speaker mentioned that if the passenger has the baggage tracking number, they can track it with it and stated that they can access the internal number, the fifth participant stated that they can access and track with their contact numbers and the sixth participant through the call center and website. Based on all these, we know that data such as baggage tracking numbers can be used to track lost baggage

and get information on this subject, contact information, extension number and call center numbers and web pages are used.

As a reply to the question, P6 says: “Each passenger is given a courtesy report and a call center number; The normal AHL report and apology letter are shared. The letter contains the call center number and the link to the website. The passenger can follow the situation by calling 24/7.” (P6).

The answers are categorized as follows:

Table 7. Lost Baggage Tracking Format

Lost Baggage Tracking Format	Participant Code
Web site	P1, P6
Contact Number	P1, P2, P3, P4, P5, P6
Baggage Tracking Number	P2, P3
Airline Officials	P2, P3

To the question "How to make up for lost baggage if it is not found or how to deliver it when it is found?", some quotations are as follows:

"The baggage is found within a maximum of five days. office, and if there is no luggage, we direct our passengers to whichever airline they bought a ticket from." (P1)

"If there is no lost baggage, the airlines have contracted insurance and the passenger's information such as the number of goods, color, which store he bought is entered into the system and sent to the insurance. The airline's insurance covers the lost belongings of the passengers, but products such as food and beverages are not covered." (P2)

“When the lost luggage is found, if the airline or ground management or personnel is defective, we carry out the delivery. If there is a situation caused by the passenger's own fault, we keep the luggage waiting and inform, but we still help in difficult situations. If the lost baggage is not found, the airlines consider it within the scope of insurance.” (P3)

While the fifth and sixth speakers explained that the airline has been searching for baggage for 21 days, it is sent by cargo, and if it is not found, the head office or insurance is contacted. Based on all these, it was concluded that the lost luggage, especially those caused by personnel errors, are delivered to the address by cargo delivery, can be delivered from the airport, lost luggage is searched for 5-7 days at the terminals and then dropped to the head office, where it is searched for 21 days and then directed to the insurance.

To the question 'What is the time to search for lost baggage/can it be timed out and what to do in this case?' a quotation is as follows:

“With the report opened in the system for 5 days, the luggage is searched at all stations and at the end of 5 days, the information is sent to the system. If it is not found again after 21 days, the airline directs the passenger to the insurance company to receive compensation.” (P5)

Based on the answers given to the eighth question it was determined that lost baggage was searched within 5 to 7 days at stations, 21 days at the headquarters, and remained as data for 1 year and only courtesy and We conclude that reports intended for assistance may be time-barred.

In response to the ninth question, "Does the solution of the problems provide enough satisfaction?", all participants answered, "usually yes".

“Sometimes it does not provide satisfaction, but in general, we can say yes. It is a pleasure for the passengers to be interested and addressed in the face of this problematic situation.” (P2).

In the third, fourth and fifth answers, we learn that it is difficult to satisfy the passenger and that satisfaction is not provided despite efforts from time to time. From this point of view, we can say that customer satisfaction in lost property is a difficult and demanding job and overall satisfaction is achieved.

In response to the question "What are the innovative behaviors in lost baggage and are technological developments useful in this sense?" all the participants stated that it was beneficial.

Participant 6 says: “Of course it is used. Passengers can take pictures of their baggage, or we can see the images if a transaction has been made in the express baggage application. In this way, we can communicate faster.” (P6)

According to the participants’ replies, the innovative behaviors can be categorized as follows:

Table 8. Innovative behaviors for lost luggage problem

Innovative Behaviors	Participant Code
Internet and websites	P1, P2
Speed/ fast flight network	P2, P3
Databases	P4
Automatic/express baggage systems	P5, P6

The question, "Is it possible to compensate for the loss of baggage?" asked and some findings are as follow:

“Airlines cover the losses. If the baggage is damaged and cannot be repaired, new baggage is given, and if repair is possible, we direct it to the contracted repairman. Likewise, when we report on lost baggage, we ask for information such as when the baggage was received, its price, and whether it has insurance. Costs are determined on average accordingly.” (P1).

In response to the question, all the participants answered that the damage was assessed and covered by the airlines' headquarters, authorities and insurance, and the fifth speaker replied that the possible price may

vary depending on the airline. From this point of view, we conclude that the loss of luggage is compensated in monetary terms according to the average price determined by the airline authorities and insurance.

Twelfthly, the answers are given by the speakers to the question “What are the solutions and suggestions that will ease the difficult situations in your profession?” and the relevant table are as follows:

“Our advice to passengers is not to leave their expensive, valuable or personal belongings (eg sensitive and important documents and items such as mobile phones, laptop computers, diplomas, passports, etc.) in their luggage.”(P1).

“Especially in recent years, applications such as check-in and baggage information to be sent to the passenger online have been getting much better. Especially the stickers we give as paper prevent luggage loss. Of course, the attention of passengers and personnel is still very important.” (P4).

Table 9. Solutions and suggestions for lost luggage problem according to participants

Solution and suggestions	Participant Code
Valuables not being put in the trunk	P1, P2
Making notifications	P2, P3, P5, P6
Baggage check	P3, P4, P5
Technological developments	P3, P4

In addition to all this, the fourth speaker emphasized the importance of passenger and staff attention, the fifth speaker pointed out that the incidents should be resolved immediately, and the sixth speaker mentioned that the prolongation of aircraft grand times could be effective.

4.2. Solutions For the Lost Luggage Problem

In the light of all this information and interviews, BBC News article titled "Why do airlines still lose 25 million suitcases every year?" contains supporting information and suggestions on the subject:

“The aviation industry says they track passengers' luggage using cutting-edge technologies and are getting better every year in case of luggage loss. Investments in baggage tracking technologies pay off, according to Sita. For example, Delta Airlines of the USA places an RFID (radio frequency identification) chip on the barcodes it puts on the luggage. In this way, the luggage belts at the airport automatically scan and recognize the luggage passing over them. In this way, lost luggage can be detected more easily from a central control unit. "We put these chips in the 150 million suitcases we carry each year," says Delta executive Gareth Joyce. Delta says that thanks to this, it carries 99.9 percent of the luggage perfectly. There are other companies that use RFID (radio frequency identification) chips or have their luggage-handling employees use mobile barcode readers.” (BBC,2020).

So why do 25 million suitcases continue to disappear each year?

According to aviation IT provider Sita, half of the lost luggage is lost due to problems with connecting flights. Luggage may not be brought to the second flight due to the delay of the first flight. A significant number of suitcases are also lost due to passengers or luggage carriers picking up the wrong luggage. Another factor affecting the loss of baggage may be the complexity of the baggage handling system. In some airports, airlines' own employees carry luggage, while in others, subcontractors working for more than one airline undertake this task. The International Air Transport Association (IATA) has been collecting data on lost luggage since 1989. Although the barcode system has been around since the 1950s, it also happens that at some small airports barcodes are not scanned regularly. Technology company Zebra, for example, recently distributed 230 mobile computers to 14 Greek airports, enabling them to use barcode scanning systems. Some airports don't even use simple barcode scanning systems.(BBC,2020).

IATA issued a regulation last year requiring airlines and airports to better track our luggage. Now the presence of luggage is checked again at several stages of the journey. Among these points, there is the moment of loading on the plane and the moment of distribution at the airport. Last month, IATA decided to support the use of RFID (radio frequency identification) chips in the entire industry. According to the association, this step will save the industry \$3 billion despite the cost of technology investment. Trying to find lost luggage and deliver them to unhappy travelers takes a lot of time and money (Davies,2019).

According to Andrew Price of IATA "The luggage part of the industry is seen as a boring area, but there are very interesting investments and technologies in this area." For example, Delta uses artificial intelligence to uncover the system's weaknesses and factors such as problem airports or suitcase types. Some airlines allow passengers to view the location of their luggage via mobile phone apps. Carrying 16 million passengers each year, Siberia-based S7 Airline says half of its passengers track their luggage this way. According to Sita, Europe is by far the continent where luggage is most unsuccessfully distributed. On the continent, 7.29 suitcases are lost per thousand passengers each year. This rate is 2.85% in North America and 1.77% in Asia." (BBC,2020).

According to Sita Instead of relying on airlines, you can track your luggage yourself. When you place small tracking devices sold by brands such as LugLoc, Trakdot, Tile and Smart Unit in your suitcase, you can detect where your luggage is from anywhere in the world, thanks to your mobile phone application (SITA,2020)

It is very important for businesses to provide compensation as much as the loss of their customers in terms of creating customer satisfaction. Likewise, in case of a lost baggage problem, presenting a lost baggage quality to the customer does not provide sufficient customer satisfaction. In addition to presenting new baggage as a gift to the customer, the financial loss caused by the loss of personal belongings in the baggage can also be met in monetary terms at the same rate. The efforts of the airline companies to ensure the satisfaction of the customers who encounter the problem of lost baggage are very important. Because the problem of lost luggage is more important than the problem of damaged luggage. Therefore, at this point, airline companies should spend much more effort on customers who have lost baggage problems than

customer satisfaction they try to provide in damaged baggage problems. As a matter of fact, efforts such as giving special discounts to these people on certain flights will be efforts to satisfy the customer and to forget the bad experience. However, what should not be forgotten here is that the situation should not always progress through compensation, and businesses should be able to learn what can be done to get to the source of the problem and not recur (Soylu, & Kitapçı, 2020;36-37).

The applications that we may encounter at airports with this digital transformation in the coming years are as follows: Predictive analysis, artificial intelligence control, machine design, cloud technologies, big data space, blockchain technologies, internet of things (IoT) and RFID (radio frequency identification) technology. Today, a few of these applications are in the implementation phase at some airports. Beacons, which are activated by robots and smartphones, can instantly deliver detailed information on the needs of the passenger or can design a special service suitable for private individual information accessed via biometric recognition and decryption system. For example, information on strategic directions, flight notifications or commercial advertisements and incentives are instantly sent to the mobile phone from the passenger's current location. An area dominated by virtual realities and biometric system security scans will provide both satisfaction and speed and time savings to the passengers. These systems, which can meet the needs of passengers, can also provide a service tailored to personal tastes, increase comfort and provide commercial advantages and opportunities by minimizing airport costs. Applications of large databases in the aviation industry; air traffic optimization, cost reduction, revenue-expenditure management, customer satisfaction, complete control of costs, providing a travel opportunity suitable for passenger tastes and airport performance are extremely important (Türkay, & Artar, 2021; 91). For example, with the RFID (radio frequency identification) baggage recognition system developed, an RFID (radio frequency identification) tag must be attached to each baggage belonging to the passenger. The unique ID on the label, unique to the label, and the passenger's information are processed into the software. When the flight is completed, the transfer of the passenger's baggage information to the reader control box at the delivery point is provided by the database and it is connected to the database with the WIFI module in the control box. A control circuit has been developed in order to understand which passenger the baggage incoming to the delivery system belongs to and to show it on the smart screen. In this way, the RFID tag reads the tag on the baggage while the baggage arriving after the flight is transferred to the delivery point and provides a solution to baggage losses (Süzen, & Taşdelen, 2018; 17-19).

5. Conclusion

As in many businesses, it is very important to provide customer satisfaction, increase customer loyalty and even gain new customers in the airline transportation industry, both in terms of providing competitive advantage and gaining prestige and brand value. Based on the information taken as reference in the study and previous studies, we explain that the problem of lost luggage has a great place among the factors affecting customer satisfaction in airlines and airports. Although innovations, regulations and compensations are made in line with the opportunities provided by the developing technology, factors such as high-speed globalization, increasing flight network, speed and connecting flights, unfortunately, make these measures and regulations insufficient. This unfavorable situation makes the customers unhappy,

increases the workload of the personnel, and causes great financial losses to both the customers and the airline companies.

In this study, which is based on all these, in the interviews made with 6 authorized persons from 3 different airports, what is the problem of lost property? Why does it occur? What should we do? What to do in possible situations and adverse situations? What are the measures and precautions taken? What is the impact of technology and ideas on the future? In this way, it was aimed to inform the passengers and to offer solutions to the issue. The problem of lost baggage can be caused by passenger error, personnel error, delays in connecting flights, overload aircraft situations, customs, security, etc. situations and operational reasons. Along with the answers given, it was concluded that the first application was made here to the solution that the problem of lost luggage usually occurs at airports. It was stated that the necessary information was given to the passengers/customers and their rights were given to them (such as compensation).

In this sense, it has been stated that technology provides advantages such as communication, photo recording, acceleration, etc. However, it is known that technology can be very effective in the future while emphasizing the importance of passenger information and airline measures in line with the information in the study and the answers received from the personnel in reducing these losses. In this sense, face recognition systems, retina and finger readers, baggage recognition systems, chip systems, telephone applications, navigation applications, Express and automatic baggage systems, false baggage warning systems for airports, orientation and loading systems, automatic scanning and information systems, improved camera registration systems, etc. It is expected that developed or under development programs and software, some of which are currently under implementation, will minimize the problem of lost baggage and even make it a thing of the past. At this point, the results of the study in the direction of minimizing and even eliminating this problem, which seems to be a small problem or detail, but causes high costs and even a competitive disadvantage, with the ever-evolving power of technology and artificial intelligence being used more effectively in airlines and even more in airports.

As an example of the systems used in airports today; ground services management, resource management, ticket-passenger matching, controlling the process of operations, tracking passenger progress, virtual tower, passenger-baggage matching, flight information screen layout, safety management system, automatic check in and baggage loading and tracking systems, finger scar and retina recognition systems, can be shown for solutions of lost luggage.

By its very nature, qualitative research uncovers a grounded fact about the subject. The limitation of this study is that it cannot be generalized to the population. This study may be the basis for quantitative studies. If this subject is studied in a quantitative format in the future, it will help to reveal one more dimension of passenger satisfaction.

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