

IBN HALDUN UNIVERSITY
SCHOOL OF GRADUATE STUDIES
MASTER OF SCIENCE IN AIR TRANSPORT MANAGEMENT

MASTER THESIS

**SERVICE QUALITY OF FLIGHT SCHOOLS IN
TÜRKİYE FROM THE VIEWPOINT OF CADET
PILOTS**

SEMİH BEKMEZ

THESIS SUPERVISOR
ASST. PROF. SÜMEYYE KUŞAKCI

İSTANBUL, 2023

IBN HALDUN UNIVERSITY
SCHOOL OF GRADUATE STUDIES
MASTER OF SCIENCE IN AIR TRANSPORT MANAGEMENT

MASTER THESIS

**SERVICE QUALITY OF FLIGHT SCHOOLS IN
TÜRKİYE FROM THE PERSPECTIVE OF CADET
PILOTS**

by

SEMİH BEKMEZ

**A thesis submitted to the School of Graduate Studies in partial
fulfilment of the requirements for the degree of Master of Science in
Air Transport Management**

**THESIS SUPERVISOR:
ASST. PROF. SÜMEYYE KUŞAKCI**

İSTANBUL, 2023

APPROVAL PAGE

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science in Air Transport Management.

Thesis Jury Members

Title - Name Surname

Opinion

Signature

_____	_____	_____
_____	_____	_____
_____	_____	_____

This is to confirm that this thesis complies with all the standards set by the School of Graduate Studies of Ibn Haldun University.

Date of Submission

Seal/Signature

ACADEMIC HONESTY ATTESTATION

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name Surname: Semih BEKMEZ

Signature:



ÖZ

ÖĞRENCİ PİLOTLAR BAKIŞ AÇISINDAN TÜRKİYE'DEKİ UÇUŞ OKULLARININ HİZMET KALİTESİ

Bekmez, Semih

Hava Taşımacılığı Yönetimi Yüksek Lisans Programı

Öğrenci Numarası: 204038022

Open Researcher and Contributor ID (ORC-ID): 0000-0001-7087-9821

Ulusal Tez Merkezi Referans Numarası: 10570302

Tez Danışmanı: Dr. Öğr. Üyesi Sümeyye Kuşakcı

Eylül 2023, 59 Sayfa

Sivil havayolu taşımacılığı gelişimini hızla sürdürmektedir. Bu gelişimle beraber nitelikli insan kaynağı ihtiyacı ortaya çıkmıştır. Kokpit ekiplerinin havacılık eğitimine başladıkları ve kokpit istihdamının sağlandığı kurumların başında uçuş okulları gelmektedir. Her ne kadar uçuş okulları havacılık standartlarını karşılamak zorunda olsalar da hizmet kalitesi ile ilgili belirli bir standart bulunmamaktadır. Bu çalışmanın amacı, uçuş okullarının hizmet kalitesini pilot adaylarının bakış açısıyla değerlendirmek ve başka bir uçuş okulu deneyimi yaşamayan bu uçuş okullarının hizmet kalitesini değerlendirmede bir fark yaratıp yaratmadığını araştırmaktır.

Türkiye'deki uçuş okullarından mezun olan veya bu uçuş okullarında uçuş eğitimine devam eden 154 aday pilotun katılımıyla nicel araştırma gerçekleştirilmiştir. Bu kapsamda katılımcılara demografik bilgiler ve hizmet kalitesi bölümlerinden oluşan bir anket uygulanmıştır. Anket ile toplanan veriler SPSS ile analiz edilmiştir.

Uçuş okulların hizmet kalitesine göre karşılaştırması neticesinde anlamlı bir fark ortaya çıkmıştır. TAFE katılımcılarının ortalama puanları diğer uçuş okullarına göre daha yüksektir. TAFE en yüksek puana sahip olmasına rağmen, diğer uçuş okullarının puanı da ortalamanın üzerindedir. Başka bir uçuş okulu deneyimine sahip olmak genel hizmet kalitesi puanları açısından anlamlı bir fark göstermemektedir. Ancak ikinci uçuş okulu deneyimine sahip katılımcıların hizmet kalitesi somut boyutu puanı, ikinci

uçuş okulu deneyimi olmayanlara göre daha düşüktür. Somut boyut değerlendirmeleri, modern uçakları, çekici fiziksel tesisleri, ekipmanı ve çalışanları içermektedir.

Anahtar Kelimeler: Havacılık, Hizmet Kalitesi, Pilot Adayı, Uçuş Okulları.



ABSTRACT

SERVICE QUALITY OF FLIGHT SCHOOLS IN TÜRKİYE FROM THE VIEWPOINT OF CADET PILOTS

Bekmez, Semih

MSc. in Air Transport Management

Student ID: 204038022

Open Researcher and Contributor ID (ORCID): 0000-0001-7087-9821

National Thesis Center Reference Number: 10570302

Thesis/Project Supervisor: Asst. Prof. Sümeyye Kuşakcı

September 2023, 59 Pages

Civil air transportation continues to develop rapidly. With this development, the need for qualified human resources has emerged. Flight schools are at the forefront of the institutions where the crews start their aviation training and where cockpit employment is provided. Although flight schools have to meet aviation standards, there is no specific standard for service quality. This study aims to evaluate the service quality of flight schools from the cadet pilots' point of view and to investigate whether having another flight school experience makes any difference in evaluating service quality.

Quantitative research was carried out with the participation of 154 cadet pilots who graduated from flight schools or continuing flight training in these flight schools of Türkiye. In this context, a questionnaire consisting of demographic information and a service quality scale were applied to the participants. The data collected by the questionnaire were analyzed using the SPSS.

According to the comparison of flight schools, there is a significant difference. The average score of participants from TAFA is higher than that of other flight schools. Although TAFA has the highest score, other flight schools are above average. Moreover, having another flight school experience does not significantly affect the overall SERVQUAL score. The only exception is the dimension of tangibles. The

tangibles dimension includes modern aircraft, appealing physical facilities, equipment, and employees.

Keywords: Aviation, Cadet Pilot, Flight Schools, Service Quality.



ACKNOWLEDGEMENT

Foremost, I would like to thank my advisor Dr. Sümeyye Kuşakcı for her motivation and guidance.

I wish to acknowledge the support and great love of my family. Their belief kept me going on this study.

I would like to thank Abdulkerim Akyol and especially Ayhan Demir for the great help in distributing my survey. In addition, I appreciate the cadet pilots who participated in the survey.

No proper words convey my gratitude for my wife Hafize Bekmez, who blessed my life with his unwavering love, support, and patience. Her support and encouragement helped me to finish my thesis.

Semih Bekmez
İSTANBUL, 2023

TABLE OF CONTENTS

ÖZ	iv
ABSTRACT	vi
ACKNOWLEDGEMENT	viii
TABLE OF CONTENTS	ix
LIST OF TABLES	xi
LIST OF FIGURES	xii
LIST OF SYMBOLS AND ABBREVIATIONS	xiii
CHAPTER I INTRODUCTION	1
1.1. Problem Statement	1
1.2. Aim of Research.....	4
1.3. Research Questions and Hypotheses	4
1.4. Importance of Research.....	5
1.5. Framework of Research.....	5
CHAPTER II THEORETICAL BACKGROUND AND LITERATURE REVIEW	6
2.1. Civil Aviation Organizations.....	6
2.2. Flight Schools in Türkiye	8
2.3. Service Quality	12
2.4. Customer Satisfaction.....	15
2.5. Literature Review	17
CHAPTER III METHODOLOGY	20
3.1. Model of Research.....	20
3.2. Survey Instrument	21
3.3. Data Collection.....	22
3.4. Hypotheses	22
3.5. Reliability and Validity	25
3.6. Data Evaluation Process	29

3.7. Limitations.....	30
CHAPTER IV RESULTS	31
4.1. Descriptive Analysis About Participants.....	31
4.1.1. The Demographic Characteristics of Participants	31
4.1.2. Flight-Related Information of Participants.....	32
4.1.3. Detailed Distribution of Flight Schools’s Attendance.....	33
4.2. Descriptive Findings of the Service Quality	34
4.3. Comparison of the Service Quality and Demographic Characteristics	34
4.3.1. Gender Comparison of the Service Quality.....	35
4.3.2. Age Comparison of the Service Quality.....	35
4.3.3. Education Level Comparison of Service Quality	36
4.3.4. Work Experience Comparison of the Service Quality	37
4.3.5. Certificate Qualified Comparison of the Service Quality	38
4.3.6. First Flight School Comparison of the Service Quality	39
4.3.7. Attendance of Second Flight School Comparison with the Service Quality	41
CHAPTER V DISCUSSION AND CONCLUSION	42
REFERENCES	48
APPENDIXES	51
APPENDIX A	51
APPENDIX B	55
CURRICULUM VITAE.....	59

LIST OF TABLES

Table 1.1. Pilots and Training Organizations Numbers in Türkiye Between 2016-2022 ..4	
Table 2.1. Annexes and PANS..... 7	7
Table 2.2. Approved Training Organisations..... 9	9
Table 2.3. Review of Related Literature Research 18	18
Table 3.1. Explanatory Factor Analysis Results 26	26
Table 3.2. Convergent Validity and Reliability Results 28	28
Table 3.3. Correlation of Scale and Dimensions..... 28	28
Table 3.4. Skewness and Kurtosis Values 29	29
Table 4.1. Findings on Demographic Characteristics 31	31
Table 4.2. Findings on Flight-Related Information 32	32
Table 4.3. Detailed Distribution of Flight Schools 33	33
Table 4.4. Descriptive Findings of the Service Quality 34	34
Table 4.5. Gender Comparison with the Service Quality 35	35
Table 4.6. Age Comparison with the Service Quality 36	36
Table 4.7. Education Level Comparison with the Service Quality..... 36	36
Table 4.8. Work Experience Comparison with the Service Quality 37	37
Table 4.9. Certificate Qualified Comparison with the Service Quality 38	38
Table 4.10. First Flight School Comparison of the Service Quality..... 40	40
Table 4.11. Attendance of Second Flight School of the Service Quality 41	41
Table 5.1. Hypotheses Results 42	42

LIST OF FIGURES

Figure 1.1. Commercial Aviation Accidents from 1970 to 2019.....	2
Figure 1.2. Number of Student and Total Pilots in the USA Between 2016 and 2022	3
Figure 2.1. Perceived Service Quality Model	13
Figure 2.2. Determining Factors Of Perceived Service Quality	14
Figure 2.3. Comprehensive Customer Satisfaction Model	16
Figure 3.1. Model of the Research	20



LIST OF SYMBOLS AND ABBREVIATIONS

ACI	Airports Council International
AFA	Atlantic Flight Academy
ATO	Approved Training Organization
ATPL	Airline Transport Pilot Licence
AYJET	Anatolian Stars Flight Academy
CPL	Commercial Pilot Licence
EASA	The European Aviation Safety Agency
EFA	Explanatory Factor Analysis
ES	Expected Service
EU	European Union
EUROCONTROL	European Organisation for the Safety of Air Navigation
FI	Flight Instructor
FTO	Flight Training Organisation
GDCA	General Directorate of Civil Aviation
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
INTERPOL	International Police
IR	Instrument Ratings
IT	Information Technology
MPL	Multi Pilot Licence
PANs	Procedures for Air Navigation Services
PANEP	Pan-European Partners
PS	Perceived Service
SARPs	Standards and Recommended Practices
SERVQUAL	Service Quality
SERVPERF	Service Performance
TAFA	Turkish Airlines Flight Academy
THY	Turkish Airlines
TUA	Turkish Aviation Association Flight Academy

CHAPTER I

INTRODUCTION

One of the most significant industries in the world is aviation. Over the years, it has expanded quickly and integrated into every aspect of everyday life. The aviation sector has offered us a quick and efficient means of transportation for many years. Additionally, it has significantly impacted the economies of several nations worldwide. There has been a rise in demand for flight schools and pilots due to the expansion of the aviation sector.

1.1. Problem Statement

Before the covid-19 crisis, the aviation industry faced a pilot shortage; therefore, many airlines started cadet pilot programs. However, some of these programs were canceled or paused with the pandemic. Some young pilots lost their jobs and even searched for careers in different sectors, and many experienced pilots chose the early retirement offers of airline companies. On the other hand, the vaccines and actions taken by governments to lessen the impact of covid-19 are expected to help the recovery.

While having a quality system in other sectors apart from aviation is a reputation or competitive attraction factor, in aviation, the quality issue is a must (Göv, 2018). Because in aviation, safety is crucial for sustainable operation. International organizations and authorities implement and strictly regulate specific rules, limitations, and procedures under a quality system to ensure safety. Therefore, the International Air Transport Association (IATA) (2022) explicates aviation as the safest means of long-distance transportation. Thanks to the aviation quality system, in 2018, the accident rate was 1.35 per 1 million flights. The human factor is shown in Figure 1.1. plays a vital role in ensuring and sustaining this safety culture. The development of technology and integrity of automation in aviation has lessened the technical and

other causes of accidents. On the other hand, the human factor remains the most crucial cause of aviation accidents.

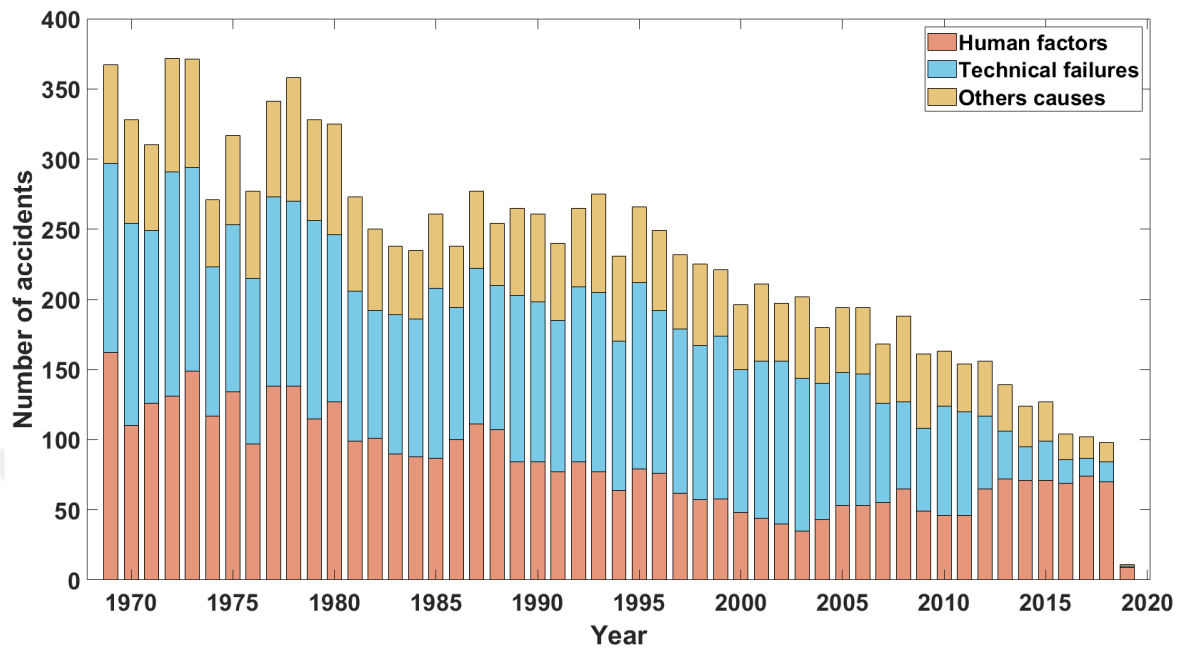


Figure 1.1. Commercial Aviation Accidents from 1970 to 2019

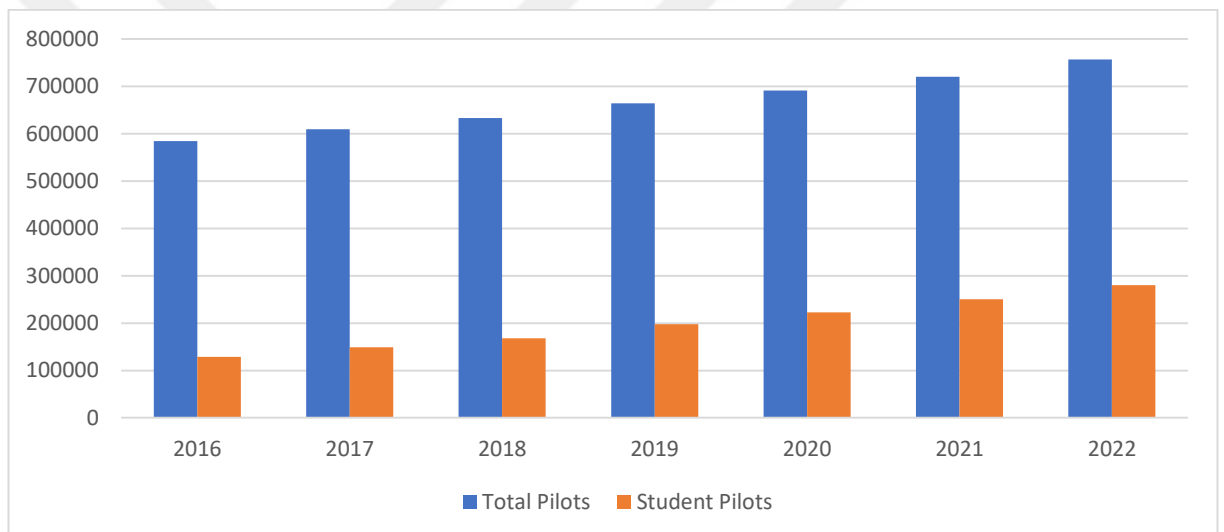
Source: (Lounis, 2020)

The aviation industry has a perfect coherence with many components, such as air traffic controllers, technical staff, ground handling services personnel, and meteorologists. Due to the nature of the business, pilots are located at the center of this ecosystem. Pilot training creates the critical phase to ensure safety and intensify the effectiveness of global aviation operations. Pilots are responsible for operating the aircraft safely and efficiently and monitoring the aviation environment. Especially under time-critical and high-pressure situations, pilots have to make accurate decisions. In order to perform their abilities best, effective training is crucial to ensure that pilots have the required knowledge and skills.

Because of these reasons, it is forecasted that more than 43,000 airplanes will be needed by 2040, and also, 4% average traffic growth annually is forecasted until 2040. Accordingly, 612 thousand other pilots are projected to be needed for the coming two decades (Boeing, 2021b, 2021a). Airbus (2021) makes similar projections to Boeing

(2021a, 2021b), such as a 3.9% annual growth of passenger traffic, 39,000 aircraft, and over 500,000 pilots needed by 2040.

Aviation showed a significant development with increasing demand. Increasing commercial airline traffic brought the need for additional pilots. The number of student pilots in the USA, shown in Figure 1.2, almost doubled in 2022 compared to 2016. The number of total pilots shows an increasing trend parallel to the number of student pilots in the USA. These statistics highlight the need for flight schools that enable the supply of student pilots. In order to mitigate the risk of accidents and incidents in aviation and contribute to the industry's overall safety, the flight schools' education quality must be above international aviation standards.



**Figure 1.2. Number of Student and Total Pilots in the USA
Between 2016 and 2022**

Source: (Federal Aviation Administration, 2023)

The existence of rules is only possible with the quality of those who implement them, which brings us to the importance of the human factor. The trained and qualified human factor, the most essential part of safety, reveals the importance of Approved Training Organizations (ATOs). As they are the only organizations where pilots can get their licenses, the importance and quantity of ATOs have increased through the years to meet the need for required pilots. Growth from 2018 to 2022 in total pilots, student pilots, and training organizations in Türkiye, shown in Table 1.1, are %38,

%67 and %40, respectively. With the growth of aviation, the service quality assessment of flight schools has become essential. Even if the ATOs inspected by legal authorities meet specific minimum requirements, service quality can differ from the student's point of view.

**Table 1.1. Pilots and Training Organizations Numbers in Türkiye
Between 2016-2022**

	2016	2017	2018	2019	2020	2021	2022
Total pilots	10321	9988	10189	11269	11840	12733	14055
Student pilots	Not explained	963	828	1431	1581	1351	1385
Training Organizations	45	49	160	171	202	202	221

Source: Compiled from annual reports of GDCA

1.2. Aim of Research

This study aims to evaluate the service quality of flight schools from the cadet pilots' point of view and to investigate whether having another flight school experience makes any difference in evaluating the service quality of these flight schools.

1.3. Research Questions and Hypotheses

In this research, these two fundamental questions will be answered:

1. Is there any difference between flight schools in Türkiye in terms of service quality?
2. Does experiencing another flight school make any difference in evaluating the service quality of the flight school?

1.4. Importance of Research

There are many studies measuring the service quality of the aviation sector, especially the service quality of airlines. However, the number of studies focusing on the service quality of flight schools is limited. Moreover, most such studies were designed so that one participant evaluates one flight school for service quality measurement. Pilots usually graduate from one flight school and do not change schools unless they have to. As a result, existing research focuses on the single experience of students. However, our study includes some cadet pilots who had to change their flight schools during the pandemic for several reasons, primarily because of company decisions. Therefore, one participant may evaluate two flight schools simultaneously. Despite the negative impacts of Covid 19, the pandemic allowed us to evaluate two different flight schools from a single person's point of view. With this respect, our study contributes to the aviation literature.

1.5. Framework of Research

The purpose of this study is to evaluate the service quality of flight schools in Türkiye from the cadet pilots' point of view. In the conceptual part of the study, civil aviation organizations, flight schools, and service quality models were examined in detail. The literature review was conducted comparatively. In the study's application part, quantitative research was carried out with the participation of 154 cadet pilots who graduated from flight schools or continuing flight training in these flight schools in Türkiye. In this context, a questionnaire containing demographic information and a service quality scale was applied to the participants. The data collected by the questionnaire were analyzed with the SPSS and Excel program. Findings were explained with detailed tables and figures in the results section. The results obtained from the study were discussed by comparing them with similar studies in the literature. In the discussion and conclusion chapter, various recommendations depending on the results have been made.

CHAPTER II

THEORETICAL BACKGROUND AND LITERATURE REVIEW

2.1. Civil Aviation Organizations

There are several organizations regulating and facilitating the management of civil aviation flawlessly. Some of these organizations, especially those related to the foundation and sustainability of flight schools, will be introduced below.

The International Civil Aviation Organization (ICAO) was founded after the Chicago Convention in 1947 and is directed by 193 countries. The organization aims to sustain proficient and administrative management in addition to researching new standards and policies for air transportation. ICAO organizes seminars, conferences, and panels. ICAO suggests new standards and practices to the governments. If governments achieve consensus, worldwide agreement on national regulations is taken into service for better and safer air operations.

On the other hand, ICAO is not an international regulator like the example of the International Police (INTERPOL). Therefore, ICAO cannot close or restrict air space and the routes. However, ICAO publishes Annexes and Procedures for Air Navigation Services (PANS), which are seen in Table 2.1, covering over 12,000 Standards and Recommended Practices (SARPs) to provide standardized air transportation (ICAO, n.d.).

Table 2.1. Annexes and PANS

Annex 1	Personnel Licensing
Annex 2	Rules of the Air
Annex 3	Meteorological Service for International Air Navigation
Annex 4	Aeronautical Charts
Annex 5	Units of Measurement to be Used in Air and Ground Operations
Annex 6	Operation of Aircraft
Annex 7	Aircraft Nationality and Registration Marks
Annex 8	Airworthiness of Aircraft
Annex 9	Facilitation
Annex 10	Aeronautical Telecommunications
Annex 11	Air Traffic Services
Annex 12	Search and Rescue
Annex 13	Aircraft Accident and Incident Investigation
Annex 14	Aerodromes
Annex 15	Aeronautical Information Services
Annex 16	Environmental Protection
Annex 17	Security: Safeguarding International Civil Aviation Against Acts of Unlawful
Annex 18	The Safe Transport of Dangerous Goods by Air
Annex 19	Safety Management
PANS-ABC	Procedures for Air Navigation Services - ICAO Abbreviations and Codes
PANS-ATM	Procedures for Air Navigation Services - Air Traffic Management
PANS-OPS	Procedures for Air Navigation Services - Aircraft Operations
PANS-TRG	Procedures for Air Navigation Services - Training
PANS-AERO	Procedures for Air Navigation Services – Aerodromes
PANS-AIM	Procedures for Air Navigation Services - Aeronautical Information Management

Source: (ICAO, 2016)

IATA, which is a trade association, was founded in Cuba in 1945. It has 290 members from 120 nations, covering 83% of total air traffic now, while it had just 57 members initially. The aim of IATA is to promote safe, economical, and secure air services. It takes actions about trade associations such as technical or legal services and tariff coordination such as fares, cargo rates, and charges. IATA defines its mission as representing, serving, and leading the airline industry. It continues to work in coordination with ICAO (IATA, n.d.).

The European Aviation Safety Agency (EASA), which belongs to the European Union (EU), is governed by European public law. It develops common safety and environmental rules and standards. It also inspects the member states on implementing these standards and ensures necessary help, training, and research. It works in coordination with national and international organizations for operational tasks. Rulemaking, inspections, training, standardization, certification, and authorization of third-country operators are among the agency's main tasks. Türkiye as a non-EASA European country is one of EASA's Pan-European Partners (PANEP). With this membership, Türkiye implements EU aviation safety rules according to the working arrangement between EASA and GDCA (EASA, 2022; EASA & GDCA, 2009).

GDCA, which was reorganized in 1987 to comply with current conditions, was founded in 1954 within the company of the Ministry of Transport. Administrative and Technical Regulations, instructions, and operations of aviation carried out in Türkiye follow the Turkish Civil Aviation Act number 2920. In order to follow developments in aviation and satisfy the sectoral necessities, Türkiye joined various organizations. Türkiye became a party to the Chicago Convention and a founding ICAO member. In addition to ICAO membership, Türkiye has a membership for the European Organisation for the Safety of Air Navigation (EUROCONTROL) and the European Civil Aviation Conference (ECAC). Türkiye also has close relations with EASA, IATA and Airports Council International (ACI).

2.2. Flight Schools in Türkiye

In order to be a pilot in Türkiye, it is required to have graduated from an Approved Training Organization that GDCA authorizes. GDCA permits the ATOs according to

Pilot License Regulation (SHY-1) and Organization Requirements for Aircrew (SHT-ORA) in compliance with European Commission regulation number 1178/2011 (GDCA, 2017b, 2017a).

There are two types of institutions: ATO, namely relevant universities under the Council of Higher Education, and flight schools under the Ministry of National Education (Atasoy, 2015). However, they seem like two separate institutions; both are authorized and inspected by GDCA. Approved Training Organisations in Türkiye are listed below in Table 2.2.

Table 2.2. Approved Training Organisations

No	Company Name	Authorization No	Training Course Approval
1	Touristic Air Transportation	TR.ATO.001	Type Ratings
2	THY Flight Academy	TR.ATO.002	ATPL
3	Vizyon Aviation Industry and Trade	TR.ATO.003	ATPL
4	ULS Airlines Cargo Transportation Inc.	TR.ATO.007	Type Ratings
5	Tailwind Airlines	TR.ATO.008	Type Ratings
6	Davut Aviation and Training School	TR.ATO.010	ATPL
7	TUSAŞ Turkish Aviation Industry	TR.ATO.011	Helicopter Ratings
8	Atlantic Flight School	TR.ATO.012	ATPL
9	Southeast Aviation Operations Inc.	TR.ATO.014	ATPL
10	Kaan Aviation Industry and Trade Inc.	TR.ATO.015	Helicopter Ratings
11	TUA Gökçen Aviation Economic Enterprise.	TR.ATO.016	Helicopter Ratings
12	Girne University	TR.ATO.018	PPL (University)
13	ACT Airlines	TR.ATO.019	Type Ratings
14	OKAN University	TR.ATO.020	PPL (University)
15	ER-AH Aviation Trade.	TR.ATO.022	ATPL
16	IFTC Flight Training Services and Trade	TR.ATO.023	Type Ratings
17	Girne Amerikan University	TR.ATO.024	PPL (University)
18	TUA Flight Academy	TR.ATO.025	ATPL
19	True Course Group Aviation	TR.ATO.026	ATPL
20	THY Turkish Airlines.	TR.ATO.027	Type Ratings
21	Sun Express Aviation	TR.ATO.028	Type Ratings
22	MNG Airlines and Transportation	TR.ATO.029	Type Ratings

Table 2.2. (cont.)

23	AYJET Anatolian Stars Air Transport and Flight Training Services	TR.ATO.030	ATPL
24	Özyeğin University.	TR.ATO.031	PPL (University)
25	Pegasus Air Transportation	TR.ATO.032	Type Ratings
26	Onur Airlines	TR.ATO.033	Type Ratings
27	Samsun University Faculty Of Aeronautics And Space Sciences	TR.ATO.034	ATPL (University)
28	Turkish Aeronautical Association University	TR.ATO.036	PPL (University)
29	ATU Flight Academy	TR.ATO.038	PPL (University)
30	Eskişehir Teknik University Faculty of Aeronautics and Astronautics	TR.ATO.039	ATPL (University)
31	TUA General Presidency Glider ATO	TR.ATO.040	Glider Ratings
32	Kapadokya Kaya Ballooning	TR.ATO.042	Balloon Ratings
33	Göktürk Ballooning	TR.ATO.043	Balloon Ratings
34	Antalya Science University	TR.ATO.044	PPL (University)
35	Bahçeşehir University	TR.ATO.045	PPL (University)
36	Istanbul Rumeli University	TR.ATO.046	PPL (University)
37	Plus Istanbul Flight Academy	TR.ATO.047	ATPL
38	UTEK Space Aviation Technology Education	TR.ATO.048	ATPL
39	Gendarmerie Aviation School	TR.ATO.049	Helicopter Ratings
40	Gulf Helicopters Company	TR.ATO.051	Helicopter Ratings
41	Kapadokya University.	TR.ATO.052	Balloon Ratings
42	Fenix Aviation	TR.ATO.053	ATPL
43	KTO Karatay University	TR.ATO.054	PPL (University)
44	Capital Stars Aviation	TR.ATO.055	PPL
45	MEHA Aviation	TR.ATO.056	Balloon Ratings
46	IHK Aviation Industry and Trade	TR.ATO.057	ATPL
47	KTO Karatay University Aviation and Education Economic Enterprise	TR.ATO.058	PPL (University)
48	Red Star Aviation	TR.ATO.059	Helicopter Ratings
49	Nişantaşı University.	TR.ATO.060	PPL (University)
50	Istanbul Aydın University.	TR.ATO.061	PPL (University)
51	Skyline Aerospace and Defense Industry Trade	TR.ATO.062	Helicopter Ratings

Source: (DGCA, 2021)

When Table 2.2 is examined in detail, according to licenses that organizations give, four groups are obtained:

- i. 10 ATOs that can give Type Ratings (for pilots who have ATPL),
- ii. 12 ATOs that can give other pilot licenses such as helicopters, balloons, and gliders,
- iii. 14 ATOs that can give PPL, which is only a phase of ATPL,
- iv. 15 ATOs that can give ATPL that form the core of this study.

Although some ATOs give Multi Pilot Licence (MPL) courses, student pilots usually choose either an integrated ATPL course or a modular ATPL course from an ATO. The modular ATPL course consists of 6 phases: private pilot license, night ratings, instrument ratings, multi-engine training, commercial pilot license, pilot in command flight, and 14 ATP theory lessons. The integrated course should cover at least 750 hours of theory lessons and 195 hours of flight training. In addition, it has some other limitations, such as 115 hours of 195 hours of flight training should be instrument rating flight (GDCA, 2019).

Standard pilot training in Türkiye implemented internationally has four steps:

- i. Theoretical ground courses that are given at ATOs,
- ii. Those who are successful in these courses are tested in GDCA exam centers,
- iii. Those who are successful in the tests start practical flight training,
- iv. Those who are successful in practical training by ATO are tested by GDCA (Hüseyniklioğlu, 2021).

After completion of these steps, successful candidates get their licences.

Another issue about ATOs is by which criteria to choose among them. The number of flight instructors, the experience of flight instructors, the number of students per flight instructor, the climate of flight school, fleet size and age, maintenance issues, separate runways, and air-traffic are the topics that affect the productivity of organization (Atasoy, 2015). Moreover, topics such as price, duration of the training, facilities,

previous graduates, guarantee of joining an airline, quality and quantity of simulators, accident history etc., should be checked before starting a flight course.

2.3. Service Quality

There are 19 service quality models classified under two categories:

Category 1: Gap model/Service Quality (SERVQUAL) based. Those models directly use a gap model or are developed using SERVQUAL items and measurements.

Category 2: Other models differentiated from SERVQUAL models, such as Information Technology (IT) models.

It is difficult to say which is the best model because none satisfies all requirements (Seth, Deshmukh, & Vrat, 2005). Therefore, we will look deeper into gap model/SERVQUAL-based models in this study.

Gronroos (1984) brought the first service quality model seen in Figure 2.1 with its simplest form. The comparison between expected and perceived service quality consists of the service quality. Service received by the customer has two dimensions: technical, which is the answer to 'what,' and functional, which is the answer to 'how.' For example, taking a loan from a bank is the technical part, but the interaction and attitude of the bank clerk are the functional part. In addition, the company's image built up by technical and functional quality of services is the outcome of how customers perceive the company. In conclusion, firms must close the perceived and expected service gap to achieve customer satisfaction (Gronroos, 1984).

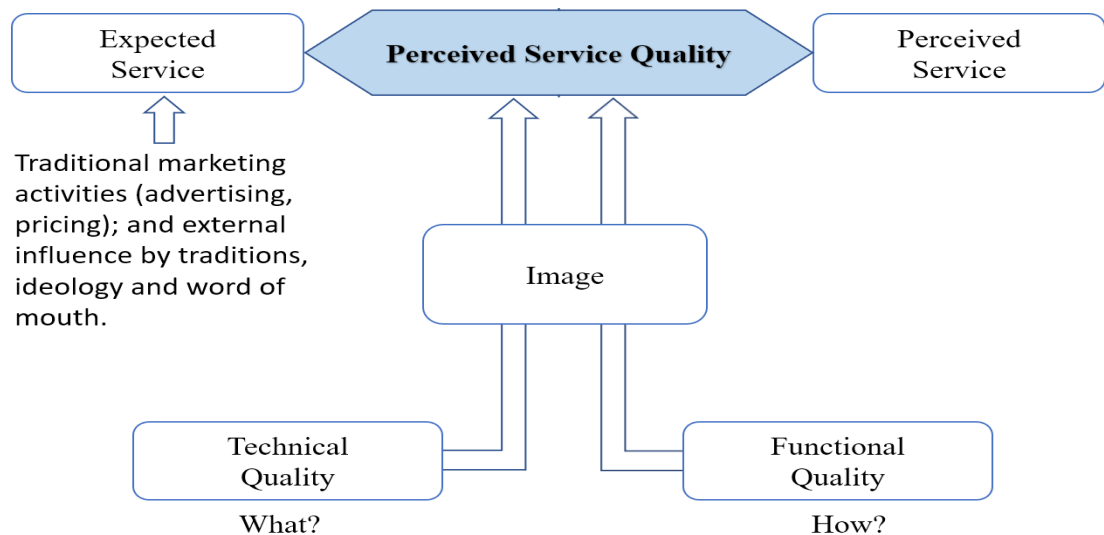


Figure 2.1. Perceived Service Quality Model

Source: (Gronroos, 1984)

Parasuraman et al.(1985) stated that services have three characteristics: heterogeneity, intangibility, and inseparability, unlike goods. In this context, they put a new concept of service quality model based on the Gronroos (1984) model. Similarly, they supported the disparity between expected and perceived services but enhanced the model (Figure 2) by adding gap theory and dimensions. They also suggested that ten dimensions are the key topics consumers use to evaluate the perception and expectation of services. In addition, five gaps in this theory are cited below:

Gap 1: Diversity between consumer existed expectations and executive perceptions.

Gap 2: Diversity between service specifications and executive perceptions.

Gap 3: Diversity between service delivery and specifications.

Gap 4: Diversity between external communications and service delivery.

Gap 5: The sum of remaining gaps gives gap 5, the disparity between perceived service (PS) and expected service (ES). If the ES is bigger than the PS, it means low satisfactory; if the ES is equal to the PS, it means satisfactory; if the ES is smaller than the PS it means high satisfactory (Parasuraman et al., 1985).

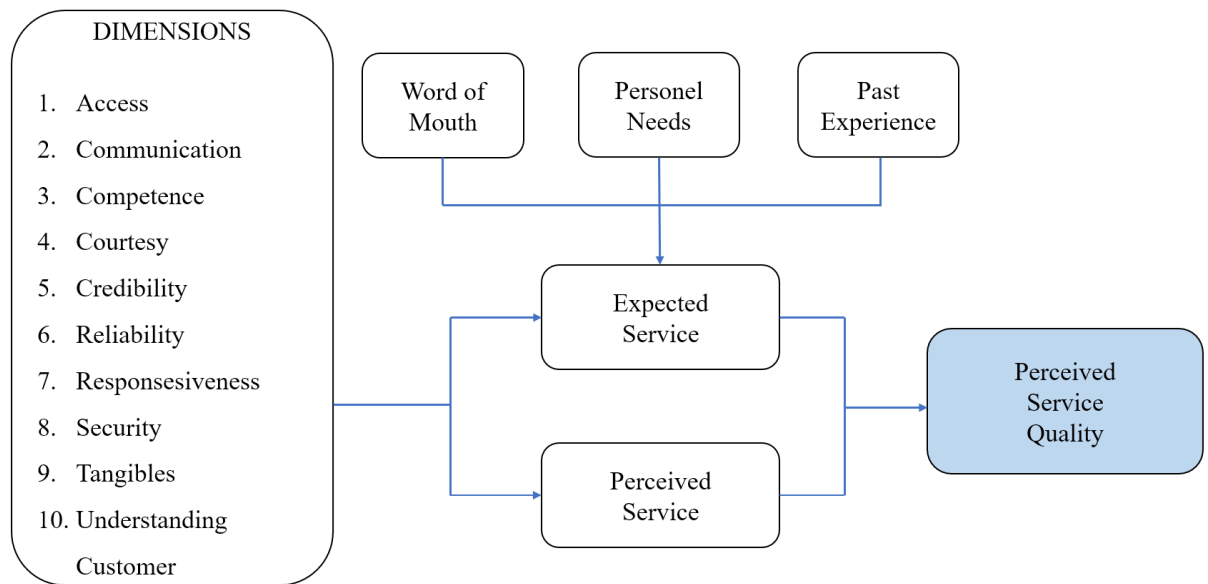


Figure 2.2. Determining Factors of Perceived Service Quality

Source: (Parasuraman et al., 1985)

After implementing some analyses, such as factor analyses and checking alpha values, the well-known SERVQUAL concept emerged. Five distinct dimensions of SERVQUAL consist of three original dimensions and two dimensions that represent the remaining seven dimensions of the initial model. Those dimensions are tangibles, reliability, responsiveness, assurance, and empathy.

- Tangibles include physical features, personnel outlook, tools, and service representation.
- Reliability necessitates unfailingly, accurately, and timely performing the promised service. In addition, keeping records correct is related to the reliability dimension.
- Responsiveness concerns the willingness to aid customers in providing timely service.
- Assurance means good manners, understanding of staff, and their ability to motivate confidence.
- Empathy: Caring and personalized service that the company supplies to its customers(Parasuraman, Zeithaml, & Berry, 1988).

Two surveys of 22 items are suggested with this SERVQUAL model. One is for collecting information about expectations and the other is for collecting information

about perceived quality. Differentiations between these two surveys define satisfaction. Applicability and adaptation to any sector and supplementation to face any research have made this model prevail (Parasuraman et al., 1988).

Cronin & Taylor (1992) criticized the studies of Parasuraman et al. (1988) for not measuring service quality as an attitude. In addition, they criticized the SERVQUAL model, focusing on the purchasing intentions rather than total service quality. They suggested only a performance model called SERVPERF instead of the SERVQUAL model. This model disregards the expectation section and uses only the performance section. With this new model, 44 items of SERVQUAL were reduced to 22 items. SERVPERF model was used as a baseline in this study.

2.4. Customer Satisfaction

The discrepancy between service perception and expectation in the SERVQUAL model affects satisfaction level. For instance, closing the gap between service perceptions and performance can increase service quality and, as a result, customer happiness (Parasuraman et al., 1985, 1988)

The best return on investment in customer satisfaction and loyalty will come from allocating resources in the right proportions across the three factors seen in Figure 2.3. For instance, the firm's primary focus should typically be on core service quality (doing it right the first time). Perceived value (ensuring clients get their money's worth) should come next. Finally, how the service is provided, or relational quality, should also be considered. Remarkably, the greater the importance of perceived value to overall happiness and loyalty and switching, the more impact price adjustments may have on future intentions. Satisfaction and future intentions are directly influenced by value and quality. For instance, the more significant the potential price increases when core quality increases, the more significant core quality is concerning perceived value considered (Mcdougall & Levesque, 2000).

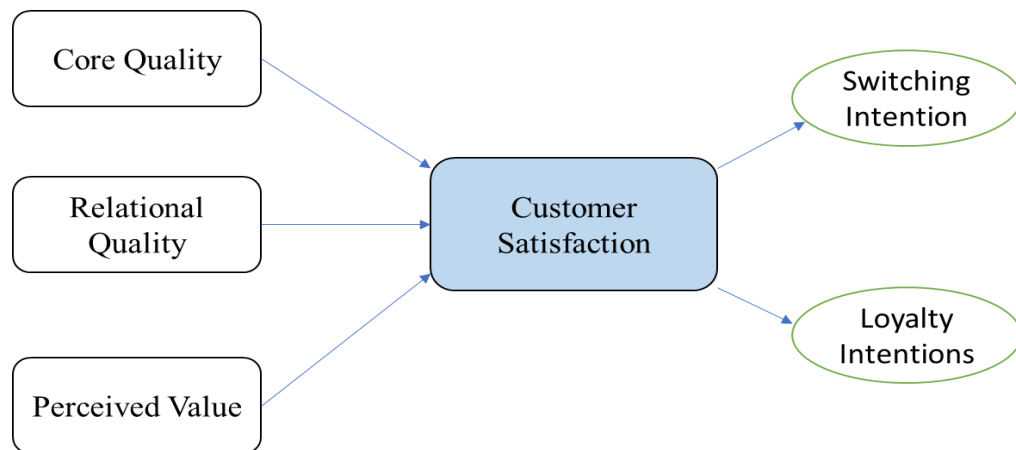


Figure 2.3. Comprehensive Customer Satisfaction Model

Source: (Mcdougall & Levesque, 2000)

Customer satisfaction is affected by service quality, but only to a certain extent, as the two ideas are different, and their connection is tangential. In addition to service quality, pricing, brand, corporate reputation, and customer experience all influence consumer happiness. (Qadeer, 2013).

For several reasons, customer satisfaction is different from quality. To gauge their level of satisfaction with a product, consumers must first use it. On the other hand, quality can be sensed even in the absence of actual consumption. Second, it is well known that value, defined as the ratio of perceived quality to price or benefits to costs, is a crucial factor in determining consumer satisfaction. As a result, while the quality of a service or good is not typically thought of as being influenced by price, customer satisfaction depends on pricing. Third, quality is defined in terms of how a customer perceives a good or service currently, whereas customer satisfaction is based on all previous experiences, as well as all projected future experiences (Anderson, Fornell, & Lehmann, 1994; Peter Herson, Nitecki, Altman, & Nitecki, n.d.).

As previously stated, there are two fundamental perspectives on customer satisfaction. One of them says that regardless of whether they are transactional or cumulative, service quality is a factor in determining customer satisfaction. Other viewpoints, however, claim that satisfaction and service quality are two entities that are positively associated. Since service quality is evaluated over a long period, it is a prerequisite for

customer happiness. According to both perspectives, quality significantly affects consumer satisfaction.

2.5. Literature Review

The final section of this chapter is designed to discuss the relevant studies available in the literature in depth.

Schwab (2004) evaluated the student satisfaction of two flight schools contracted with Indiana State University. All 66 students of the program participated in the survey. Results demonstrated that the quality of service provided by those flight schools seems acceptable. Even if the quality of service seems adequate, some topics, such as poor maintenance, delays, denials of training, and lack of openness to improvement, were advised to be enhanced.

Aguilar (2004) investigated whether there is a connection between flight school service quality and student pilot retention. Two survey groups participated in this study: 30 student pilots who achieved the training and 30 student pilots who ended their training. Results demonstrated that the link between the service quality of flight schools and the retention of student pilots is powerful. He also underlined that the flight training industry should try to satisfy customers while maintaining the high standards of aviation authorities.

Radigan (2011) studied the quality difference between accredited and non-accredited aviation institutions. 510 students from 22 institutions participated in the research. Results showed that the perception of students from accredited programs in terms of quality was substantially more significant than that of students from non-accredited programs. The researcher recommended it for non-accredited programs to consider seeking accreditation.

Kendibilir (2017) studied the satisfaction grade of 100 students who attended a flight training organization for their flight training in Türkiye. It was found out in this research that student satisfaction level is high. However, some corrective actions were advised to increase student satisfaction.

In her doctoral thesis, Jin (2019) studied the factors that affected students' school choices in the USA. The results showed that training quality, training cost, safety records of the program, reputation of certified flight instructors, and accessibility to possibilities for flying were the top 5 critical factors that affected student pilots' school choice decision-making process.

Tuncer and Kızgın (2021) studied a very similar topic to Jin (2019), examining the criteria affecting students' flight school choice. 168 pilots and pilot candidates participated in the research. Results demonstrated that content of training, flight instructors, aircraft, and time of education are the leading factors affecting pilot candidates' flight school choice.

Table 2.3. Review of Related Literature Research

Researchers	Research Topic	Additional Information	Results
Schwab (2004)	Service quality of flight schools	Survey with 66 students	Service quality is adequate, but some improvements are advised.
Aguilar (2004)	Service quality' impact on student pilot retention.	Survey with 60 students. (30 completed and 30 terminated)	There is a robust probability that SERVQUAL is a factor in the pilot retention.
Radigan (2011)	Quality comparison between accredited and non-accredited aviation institutions	Survey with 510 students from 22 institutions.	The quality of accredited institutions is significantly higher.
Kendibilir (2017)	Satisfaction of student pilots	Survey with 100 student pilots from a FTO.	The level of student satisfaction is high.

Table 2.3. (cont.)

Jin (2019)	Examination of factors that affect student pilots' school choice.	Survey with 201 students	Training cost and quality, safety records, FIs' reputation, and flying availability are the most critical factors.
Tuncer & Kızgın (2021)	Determination of criteria affecting pilot 'candidates' flight school choice.	Survey with 168 pilot and pilot candidates	Content of training, flight instructors, aircraft, and time of education are the leading factors.

Table 2.3 is prepared to show a summary of related studies. The table lists the researchers, topics, survey sample, and outcome of the studies. Upon reviewing the research, it becomes clear that the quality of schools is generally high. However, for better quality, some improvements are advised.

CHAPTER III

METHODOLOGY

It will be determined whether there are differences in the quality of service offered by several flight schools in Turkey and whether one's opinion of a flight school can be assessed differently after attending another one. The methodologies and techniques employed in the study will be discussed in this chapter. Firstly, survey instrument, data collection process and hypotheses will be provided. Then reliability and validity tests with explanatory factor analysis will be discussed. Finally, data evaluation process and limitations will be mentioned.

3.1. Model of Research

In our study, the service quality of flight schools will be evaluated according to the service quality model of Cronin and Taylor (1992). The Model shown in Figure 3.1 was created after implementing factor analysis to the service quality model with five dimensions. In this model, irrelevant questions were eliminated, and the dimensions of responsiveness, assurance, and empathy were integrated under the support dimension.

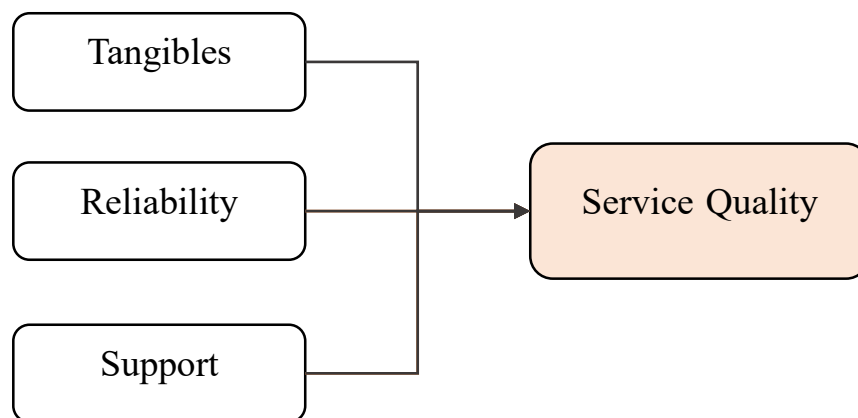


Figure 3.1. Model of the research

3.2. Survey Instrument

The survey was based on the SERVQUAL format, but minor changes were made to adopt it in aviation. In the demographics section, gender, age, city, work experience before the program, and flight certificate possessed, the first flight school and the second flight school were asked. In the second part, a total of 26 questions were asked, including 22 SERVQUAL and four additional questions.

The 22-item Service Quality concept was created by Parasuraman (1988) and developed by Cronin and Taylor (1992). In our study, this 22-item SERVQUAL instrument was utilized. All questions started with or included the “flight school” phrase, and “customer” expressions in questions were replaced with “cadet pilots.” For the first question, the “equipment” expression was developed as “equipment and aircraft.” In the fourth question, “materials” were explained in parenthesis as lesson guides, learning aids, or promotional pamphlets. The fifteenth question, “you can feel safe in your transactions with XYZ’s employees,” was changed to “the flight school makes cadet pilots feel safe with the school's employees, aircraft, and equipment it operates.” The twenty-second question, “for the operating hours convenient to all customers,” was replaced with “understanding the specific needs of cadet pilots.”

Moreover, for the topics of training methods, flight instructors, and comparison with other flight schools, four additional questions listed below were added at the end of SERVQUAL questions:

- The Flight School has stated training objectives clearly.
- The Flight School has instructors who tell me how I will be evaluated before a flight and summarize major points after each flight.
- I would advise my friends and acquaintances to complete flight training at the Flight School.
- I feel that my experience at The Second Flight School is better than the first one.

To make the comparison straightforward and time-saving, participants who have two flight school experiences gave two answers to the same questions, including first and second flight school experiences. In order to determine the level of agreement, 26 questions were asked to cadet pilots based on a five-point Likert scale. On the Likert scale, "1" shows Strongly Disagree, and "5" shows Strongly Agree.

3.3. Data Collection

Quantitative methods were used in this study. This study chose six foremost ATOs operating in Türkiye regarding capacity and ability to give ATP licenses from ab initio. Moreover, a linkage among these ATOs is that some cadet pilots had experienced two of these ATOs. Since the total number of cadet pilots in flight schools was not specified, in order to reach the maximum possible sample, the survey (Appendix A) was transformed into a Google Forms format, and an online link was created. The link was shared with the Supervisor of Trainee Relations at Turkish Airlines (THY) and sent out to the cadet pilots of THY via the electronic mail system. Answers were collected between January 2022 and February 2023. 154 participants made 249 flight school evaluations, including 59 with one single flight school evaluation and 95 with two flight school evaluations.

3.4. Hypotheses

Five fundamental hypotheses were established following our belief that certain characteristics of participants will influence the research. In the first hypothesis, it was investigated whether gender would make a difference. The participants' average ages ranged widely, and in the second hypothesis, it was determined whether or not this range of ages would matter. The majority of participants held bachelor's degrees. However, some possessed associate degrees, while others held degrees greater than a bachelor's. In the third hypothesis, it was looked at whether this circumstance makes a difference. While some of the participants had applied for their first jobs, the majority of them had previous work experience. In the fourth hypothesis, it was examined whether work experience and duration would make a difference. The cadet pilots who participated in the study had different levels of training and pilot certificates. For instance, some cadet pilots began training with student pilot certificates and completed

it with commercial pilot licenses. The significance of this was questioned in hypothesis 5.

Two main groups of cadet pilots participated in this study: those with a second flight school experience and those with only one flight school experience. In this regard, the comparison of flight schools was investigated in the sixth hypothesis, and whether the second flight school experience would change this comparison was examined in the seventh hypothesis. Finally, because the model of the research has three sub-dimensions, tangibles, reliability, and support, sub-hypotheses were added to the main hypotheses accordingly.

The main hypotheses with their sub-hypotheses are listed below:

H1: Gender significantly impacts flight school's service quality evaluation of cadet pilots.

H1(a): Gender significantly impacts the tangibles dimension of service quality evaluation of cadet pilots.

H1(b): Gender significantly impacts the reliability dimension of service quality evaluation of cadet pilots.

H1(c): Gender significantly impacts the support dimension of service quality evaluation of cadet pilots.

H2: Age significantly impacts the flight school's service quality evaluation of cadet pilots.

H2(a): Age significantly impacts the tangibles dimension of service quality evaluation of cadet pilots.

H2(b): Age significantly impacts the reliability dimension of service quality evaluation of cadet pilots.

H2(c): Age significantly impacts the support dimension of service quality evaluation of cadet pilots.

H3: Education level significantly impacts the flight school's service quality evaluation of cadet pilots.

H3(a): Education level significantly impacts the tangibles dimension of service quality evaluation of cadet pilots.

H3(b): Education level significantly impacts the reliability dimension of service quality evaluation of cadet pilots.

H3(c): Education level significantly impacts the support dimension of service quality evaluation of cadet pilots.

H4: Work experience significantly impacts the flight school's service quality evaluation of cadet pilots.

H4(a): Work experience significantly impacts the tangibles dimension of service quality evaluation of cadet pilots.

H4(b): Work experience significantly impacts the reliability dimension of service quality evaluation of cadet pilots.

H4(c): Work experience significantly impacts the support dimension of service quality evaluation of cadet pilots.

H5: The qualified certificate significantly impacts the flight school's service quality evaluation of cadet pilots.

H5(a): The qualified certificate significantly impacts the tangibles dimension of service quality evaluation of cadet pilots.

H5(b): The qualified certificate significantly impacts the reliability dimension of service quality evaluation of cadet pilots.

H5(c): The qualified certificate significantly impacts the support dimension of service quality evaluation of cadet pilots.

H6: Based on cadet pilots' evaluation, there is a significant difference in the service quality between flight schools.

H6(a): Based on cadet pilots' evaluation, there is a significant difference in the service quality tangible dimension between flight schools.

H6(b): Based on cadet pilots' evaluation, there is a significant difference in the service quality reliability dimension between flight schools.

H6(c): Based on cadet pilots' evaluation, there is a significant difference in the service quality support dimension between flight schools.

H7: Based on cadet pilots' evaluation, there is a significant difference in service quality according to the attendance of a second flight school.

H7(a): Based on cadet pilots' evaluation, there is a significant difference in the service quality tangible dimension according to the attendance of a second flight school.

H7(b): Based on cadet pilots' evaluation, there is a significant difference in the service quality reliability dimension according to the attendance of a second flight school.

H7(c): Based on cadet pilots' evaluation, there is a significant difference in the service quality support dimension according to the attendance of a second flight school.

3.5. Reliability and Validity

According to George & Mallery Paul (2003), the value of Cronbach's alpha for social sciences should be as follows: higher than .9 - excellent; higher than .8 - good; higher than .7 - acceptable; higher than .6 - questionable; higher than .5 - poor and lower than .5 – unacceptable.

Explanatory factor analysis (EFA) transforms groups into new variables by dividing a considerable number of variables into a certain number of groups, maximizing the relationship between variables, and minimizing the relationship between groups (Karagöz, 2021).

The direct oblimin rotation was used in factor analysis. The results of the KMO and Barlett sphericity test should be evaluated as a prerequisite of the analysis. The fact

that the KMO value is close to 1 and greater than 0.5 indicates that the sample size is sufficient. The fact that the Barlett sphericity test is significant ($p < 0.05$) means that factor analysis can be performed. Factor loadings of each item must be at least above 0.5, and there must be at least .10 factor loading between the items loaded on two factors. The explained variance is recommended to be 30% in one-dimensional scales and 50% in multidimensional scales for social sciences (Gürbüz & Şahin, 2016).

Table 3.1 displays the findings of the EFA study performed to establish the reliability of the SERVQUAL scale.

As a result of the analysis, it is seen that the KMO value is .958, and the Barlett sphericity test result ($X^2=3043,681$; $p < .001$) is significant. With these results, it was decided that the sample was sufficient and EFA could be performed. Scale items explain 73.96% of the total variance. The first factor explains 63.72% of the total variance, the second factor 5.70%, and the third factor 4.54%. Each item on the scale has factor loads over 0.5, considered the lowest factor load. The scale has been determined to have 21 items and a three-factor structure. After the explanatory analysis results, responsiveness, assurance, and empathy dimensions of SERVQUAL were combined under the name of support and used as factor three. Questions 6, 9, 10, and 13 were extracted, as seen in Table 3.1.

Table 3.1. Explanatory Factor Analysis Results

Scale Items	Tangibles	Reliability	Support
1	.795		
2	.816		
3	.590		
4	.616		
5		.765	
7		.582	
8		.932	
11			.615

Table 3.1. (cont.)

12			.868
14			.652
15			.707
16			.891
17			.714
18			.834
19			.809
20			.876
21			.903
22			.922
23			.654
24			.581
25			.837
Variance Explained	63.72	5.70	4.54
Total Variance Explained	73.96		
KMO Test	.958		
Bartlett's Test of Sphericity	$X^2=3043,681$; $p<.001$		

The mean value of variance (AVE) was calculated for convergent validity. Fornell and Larcker (1981) stated that the mean-variance value should be higher than 0.50. Cronbach Alpha coefficient is generally used for reliability analysis. The Cronbach Alpha coefficient should be at least 0.7 (Altunışık, Coşkun, Bayraktaroğlu, & Yıldırım, 2012). As a result of the reliability analysis, the scale and its sub-dimensions showed a high reliability. In addition to the Cronbach Alpha coefficient, the composite reliability (CR) coefficient was also calculated. According to Nunnally and Berstein (1994), the CR value should be above 0.7. The results of the analysis to determine the convergent validity and reliability level of the SERVQUAL scale are shown in Table 3.2.

Table 3.2. Convergent Validity and Reliability Results

Convergent Validity and Reliability	Servqual (21 Items)	Factor 1 (4 Items)	Factor 2 (3 Items)	Factor 3 (14 Items)
Average Value of Variance (AVE)	.592	.506	.598	.615
Composite Reliability (CR)	.949	.801	.702	.872
Cronbach's Alpha	.964	.834	.854	.963

According to Fornell and Larcker (1981), considering that the mean-variance value should be above 0.50, the scale and sub-dimensions have sufficient convergent validity. Considering that according to Nunnally and Berstein (1994), the CR value should be above 0.7, the scale and its sub-dimensions have a sufficient level of composite reliability. Considering that according to Altunışık (2012), the Cronbach Alpha coefficient is desired to be above 0.7, it is seen that the CoSEFLT scale and its sub-dimensions have high reliability in both applications.

According to the Pearson correlation analysis conducted to determine the relationship between the scale and its sub-dimensions, as shown in Table 3.3, the scale and its sub-dimensions have a positive and strong association.

Table 3.3. Correlation of Scale and Dimensions

Scale and Dimensions	Servqual (21 Items)	Factor 1 (4 Items)	Factor 2 (3 Items)	Factor 3 (14 Items)
	r	r	r	r
Servqual Scale	1.00	.814*	.790*	.973*
Tangibles		1.00	.612*	.710*
Reliability			1.00	.706
Support				1.00

*p<0,01

3.6. Data Evaluation Process

In order to analyze the data collected for this study, the package program of IBM SPSS 26 was used. In the study in which 154 people participated, the answers of 2 participants were excluded because they contained outliers, and the study was continued with 152 people.

It was determined that the data belonging to the SERVQUAL scale have a normal distribution by controlling the skewness and kurtosis values, as shown in Table 3.4. Parametric analysis methods were used to test the hypotheses, taking into account the normal distribution.

Table 3.4. Skewness and Kurtosis Values

Scale and Dimensions	Skewness	Kurtosis
Servqual Scale	-0.286	-0.030
Tangibles	-0.515	0.355
Reliability	-0.063	-0.190
Support	-0.412	-0.050

Explanatory factor analysis was performed to examine the scale's reliability. In addition, convergent validity was examined. In order to test its reliability, Cronbach's alpha coefficient and composite validity were examined.

In order to discover general information about the individuals, frequency analysis was carried out. A descriptive analysis was carried out to have a general understanding of the SERVQUAL scale. To determine whether the SERVQUAL score of the participants differed based on demographic variables, ANOVA and T-Test analysis were used. While creating the research report, a 95% confidence interval ($p < .05$) was used for the significance level.

3.7. Limitations

Some limitations were evident in this study. First of all, our main target was cadet pilots of THY in this study. Cadet programs have basics such as a job guarantee after graduation, accommodation, and fixed price. Under normal conditions, student pilots consider job entry statistics after graduation and the price of flight schools. However, these cases were ignored due to the nature of the program. Secondly, pandemic conditions might have some effects on the research. Because of the pandemic, schools were closed until an uncertain time. Finally, the sample size is relatively small because of the workload and reluctance of cadet pilots to participate in this academic research.



CHAPTER IV

RESULTS

4.1. Descriptive Analysis About Participants

Descriptive analyses for the participants were discussed under two headings: demographic characteristics and flight-related information.

4.1.1. The Demographic Characteristics of Participants

Table 4.1 displays the demographic characteristics of participating cadet pilots.

Table 4.1. Findings on Demographic Characteristics

Variables	Groups	Frequencies	Percents
Gender	Female	19	12.5
	Male	133	87.5
Age	18-23	13	8.6
	24-29	45	29.6
	30 and Above	94	61.8
Education Level	Associate Degree	11	7.2
	Bachelor's Degree	109	71.7
	Master's or PhD Degree	32	21.1
City	Ankara	22	14.5
	Istanbul	82	53.9
	Aydın	25	16.4
	Others	23	15.2

12.5% of the participants are female, and 87.5% are male. Of the participants, 8.6% are between the ages of 18-23, 29.6% are between the ages of 24-29, and 61.8% are above 30 years old.

7.2% of the participants have associate degrees, 71.7% have bachelor's degrees, and 21.1% have master's or PhD degrees. Of the participants, 14.5% are from Ankara, 53.9% are from Istanbul, 16.4% are from Aydın, and 15.2% are from other cities.

4.1.2. Flight-Related Information of Participants

The results of the analysis conducted to determine the flight-related information of participants are shown in Table 4.2.

Table 4.2. Findings on Flight-Related Information

Variables	Groups	Frequencies	Percents
Work experience	No Work Experience	34	22,4
	3 Years and Below	23	15.1
	4-7 Years	29	19.1
	8 Years and Above	66	43.4
Certificate Qualified	Student	53	34.8
	Private and Instrument	39	25.7
	Commercial	60	39.5
First Flight School	TAFA	29	19.1
	AFA	25	16.4
	AYJET	33	21.7
	ERAH	24	15.8
	TUA	19	11.8
	Others	23	15.1
Second Flight School	Attended	93	61.2
	Not Attended	59	38.8

Of the participants, 22.4% have no work experience, 15.1% have work experience of 3 years and below, 19.1% have work experience between 4-7 years, and 43.4% have work experience of 8 years and above. 34.8% of the participants have student certificates qualified, 25.7% have private and instrument certificates qualified, and 39.5% have commercial certificates qualified. Of the participants, 19.1% attended TAFE, 16.4% attended AFA, 21.7% attended AYJET, 15.8% attended ERAH, 11.8% attended TUA, and 15.1% attended other flight schools. 61.2% of the participants attended a second flight school, and 38.8% of the participants did not have a second flight school experience. All participants attended TAFE as a second flight school.

4.1.3. Detailed Distribution of Flight Schools's Attendance

Information about the participants' allocation of flight schools in detail is provided in Table 4.3.

Table 4.3. Detailed Distribution of Flight Schools

Only One Flight School Experience			Two Flight Schools Experience		
Name of the Flight School	Frequencies	Percent	Name of the Flight School	Frequencies	Percent
AFA	7	11.9	AFA	18	19.4
AYJET	7	11.9	AYJET	26	28.0
ERAH	8	13.6	ERAH	16	17.2
TUA	0	0.0	TUA	18	19.4
OTHERS	8	13.6	OTHERS	15	16.1
TAFE	29	49.2	TAFE	0	0.0
TOTAL	59	100	TOTAL	93	100

59 of the participants had only attended one flight school, which implies they graduated from the same institution. Of these 59 individuals, 11.9% received their degrees from AFA, 11.9% from AYJET, 13.6% from ERAH, 13.6% from OTHERS, and 49.2% from TAFE. Nobody graduated from TUA.

93 of the participants had experienced two flight schools. They all began their flight training outside of TAFE but completed it there. The 93 participants' initial flight school experience is distributed as follows: 19.4% from AFA, 28% from AYJET, 17.2% from ERAH, 19.4% from TUA, and 16.1% from other flight schools. Those who begin and complete their education at TAFE are counted as zeros here because they have attended only one school and are counted in the previous column.

4.2. Descriptive Findings of the Service Quality

Table 4.4. shows the analysis findings performed to ascertain the features of the responses provided for the scale and dimensions used in the study.

Table 4.4. Descriptive Findings of the Service Quality

Scale and Dimensions	$\bar{X} \pm Sd.$	Min-Maks.	Skewness	Kurtosis	Cronbach's Alpha	Items
Service Quality	3.73 ± 0.63	1.76 - 5.00	-0.286	-0.030	.964	21
Tangibles	3.91 ± 0.63	1.75 - 5.00	-0.515	0.355	.834	4
Reliability	3.50 ± 0.74	1.67 - 5.00	-0.063	-0.190	.854	3
Support	3.72 ± 0.70	1.57 - 5.00	-0.412	-0.050	.963	14

The service quality scale and its three dimensions are scored between a scale of 1 to 5. It can be noticed that the overall average service quality score of the participants is 3.73. Tangibles, reliability, and support sub-dimensions have the average score of 3.91, 3.50, and 3.72 from the participants, respectively.

4.3. Comparison of the Service Quality and Demographic Characteristics

In this research, the outcomes of the analysis made to find out whether the service quality differs based on demographic characteristics are discussed under this title.

4.3.1. Gender Comparison of the Service Quality

The findings of the analysis performed to test whether the service quality differs according to the gender of the cadet pilots are shown in Table 4.5.

Table 4.5. Gender Comparison with the Service Quality

Scale and Dimensions	Female (n=19)		Male (n=133)		t	p
	\bar{X}	Ss	\bar{X}	Ss		
Service Quality	3.64	0.69	3.74	0.62	-0.634	.527
Tangibles	3.84	0.77	3.92	0.61	-0.502	.616
Reliability	3.19	0.76	3.54	0.73	-1.945	.054
Support	3.68	0.76	3.72	0.69	-0.235	.815

* p<.05

According to the participants' gender, there is no statistically significant discrepancy in the service quality ($t=-0,634$; $p>.05$). In terms of tangibles, there is no statistically significant difference between male and female participants ($t=-0,502$; $p>.05$). The participants' gender does not appear to have any statistically significant effects on reliability ($t=-1,945$; $p>.05$). Based on participant gender, support does not demonstrate a statistically significant difference ($t=-,571$; $p>.05$).

4.3.2. Age Comparison of the Service Quality

The findings of the analysis that was carried out to test whether the service quality differs according to the age of the cadet pilots participating in the survey are shown in Table 4.6.

Table 4.6. Age Comparison with the Service Quality

Scale and Dimensions	18-23 (n=13)		24-29 (n=45)		30 and Above (n=94)		F	p
	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss		
Service Quality	3.56	0.60	3.84	0.66	3.70	0.61	1.182	.310
Tangibles	3.80	0.52	3.94	0.66	3.91	0.63	0.268	.765
Reliability	3.28	0.97	3.66	0.71	3.45	0.71	1.862	.159
Support	3.55	0.65	3.84	0.73	3.68	0.69	1.164	.315

* p<.05

The service quality does not show a statistically significant difference according to the age of the participants (F=1.182; p>.05). The age of the participants has no statistically significant distinction on tangibles (F=0.268; p>.05), reliability (F=1.862; p>.05), and support (F=1.164; p>.05).

4.3.3. Education Level Comparison of Service Quality

The findings of the analysis performed to test whether the Service Quality differs according to the education level of the participants are shown in Table 4.7.

Table 4.7. Education Level Comparison with the Service Quality

Scale and Dimensions	Associate (n=11)		Bachelor's (n=109)		Master or PhD (n=32)		F	p
	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss		
Service Quality	3.56	0.61	3.77	0.64	3.66	0.59	0.846	.431
Tangibles	3.82	0.48	3.95	0.63	3.82	0.66	0.613	.543
Reliability	3.27	0.96	3.52	0.73	3.51	0.69	0.559	.573
Support	3.54	0.68	3.77	0.71	3.60	0.66	1.112	.332

* p<.05

According to the participants' educational backgrounds, there is no statistically significant variation in the service quality (F=0.846; p>.05). In terms of tangibles,

there is no statistically significant difference between the participants from different educational levels ($F=0.613$; $p>.05$). The degree of education of the individuals has no statistically significant impact on reliability ($F=0.559$; $p>.05$). Support does not exhibit a statistically significant difference based on the participants' educational attainment ($F=1.112$; $p>.05$).

4.3.4. Work Experience Comparison of the Service Quality

Table 4.8. presents the findings of the analysis performed to determine whether service quality varies based on the participants' job experience.

Table 4.8. Work Experience Comparison with the Service Quality

Scale and Dimensions	No Work Experience (n=34)		3 Years and Below (n=23)		4-7 Years (n=29)		8 Years and Above (n=66)		F	p
	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss		
Service Quality	3.89	0.64	3.77	0.77	3.55	0.57	3.72	0.58	1.545	.205
Tangibles	3.99	0.63	3.91	0.56	3.86	0.74	3.89	0.61	0.295	.829
Reliability	3.66	0.84	3.63	0.78	3.22	0.61	3.49	0.69	2.221	.088
Support	3.90	0.66	3.75	0.90	3.53	0.62	3.69	0.66	1.538	.207

* $p<.05$

According to the participants' work experience, there is no statistically significant variation in service quality ($F=1.545$; $p>.05$). Based on the work experience of participants, tangibles do not demonstrate a statistically significant difference ($F=0.295$; $p>.05$). Reliability does not show a statistically significant difference according to the work experience of the participants ($F=2.221$; $p>.05$). According to the participants' work experience, support does not demonstrate a difference of statistical importance ($F=1.538$; $p>.05$).

4.3.5. Certificate Qualified Comparison of the Service Quality

The outcomes of the analysis implemented to decide whether the Service Quality differs according to the certificate qualified of the participants are shown in Table 4.9.

Table 4.9. Certificate Qualified Comparison with the Service Quality

Scale and Dimentions	1-Student (n=53)		2-Private and Instrument (n=39)		3-Commercial (n=60)		F	p	Tukey Test
	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss			
Service Quality	3.91	0.61	3.65	0.64	3.62	0.61	3.591	.030*	1>3
Tangibles	4.14	0.59	3.80	0.61	3.78	0.62	5.819	.004*	1>2,3
Reliability	3.56	0.84	3.44	0.77	3.48	0.62	0.293	.746	
Support	3.90	0.69	3.65	0.69	3.61	0.69	2.818	.063	

* $p < .05$

The service quality shows a statistically significant difference according to the certificate qualified of the participants ($F=3.591$; $p < .05$). According to the Tukey test, the service quality average score of the participants having student certificate qualified ($=3.91$) is higher than participants having commercial certificate qualified.

The Tangibles dimension shows a statistically significant difference according to the certificate qualified of the participants ($F=5.819$; $p < .05$). The individuals who qualified for a student certificate had a higher tangibles average score ($=4.14$) than the other participants, according to the Tukey test.

Reliability does not reveal a statistically significant difference according to the participants' certificate qualifications ($F=0.293$; $p > .05$). Besides, the support dimension does not show a statistically significant difference according to the certificate qualified of the participants ($F=2.818$; $p > .05$).

4.3.6. First Flight School Comparison of the Service Quality

Table 4.10. displays the findings of the analysis performed to determine if the participants' first flight school had an impact on the service quality evaluation.

The service quality shows a statistically significant difference according to the first flight school of the participants ($F=3.696$; $p<.05$). According to the Tukey test, the service quality average score of the participants from TAFA ($\bar{x}=4.15$) is higher than participants from other flight schools.

The Tangibles dimension exhibits a statistically significant variation depending on the participants' initial flight school. ($F=5.673$; $p<.05$). According to the Tukey test, the tangibles average score of the participants from TAFA ($\bar{x}=4.37$) is higher than participants from other flight schools.

Support shows a statistically significant difference according to the first flight school of the participants ($F=3.196$; $p<.05$). The Tukey test shows that participants from TAFA had a higher support average score ($\bar{x}=4.16$) than participants from AYJET, AFA, and other flight schools.

Reliability does not show a statistically significant difference according to the first flight school of the participants ($F=1.774$; $p>.05$).

Table 4.10. First Flight School Comparison of the Service Quality

Scale and Dimensions	1-TAFA (n=29)		2-AFA (n=25)		3-AYJET (n=33)		4-ERAH (n=24)		5-TUA (n=18)		6-Others (n=23)		F	p	Tukey Test
	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss			
Service Quality	4.15	0.46	3.71	0.57	3.62	0.62	3.69	0.75	3.59	0.52	3.53	0.64	3.696	.004*	1>3,5,6
Tangibles	4.37	0.44	3.84	0.53	3.80	0.60	3.97	0.64	3.52	0.57	3.79	0.72	5.673	.001*	1>2,3,5,6
Reliability	3.80	0.75	3.39	0.67	3.54	0.63	3.48	0.85	3.45	0.59	3.23	0.86	1.774	.122	
Support	4.16	0.56	3.69	0.72	3.59	0.67	3.65	0.56	3.51	0.65	3.72	0.70	3.196	.009*	1>3,6

* p<.05

4.3.7. Attendance of Second Flight School Comparison with the Service Quality

The results of the analysis carried out to test whether the service quality evaluation of cadet pilots differs according to the attendance of a second flight school are shown in Table 4.11.

Table 4.11. Attendance of Second Flight School of the Service Quality

Scale and Dimensions	First Flight Schools (n=93)		Second Flight School (n=93)		t	p
	\bar{X}	Ss	\bar{X}	Ss		
Service Quality	3,63	0,68	3,77	0,75	-1.340	.182
Tangibles	3,53	0,83	4,10	0,64	-5.179	.001*
Reliability	3,52	0,79	3,54	0,82	-0.242	.809
Support	3,68	0,69	3,73	0,83	-0.390	.697

* p<.05

The tangibles dimension shows a statistically significant difference according to the participants who have two flight school experiences ($t=-5.179$; $p<.05$). The tangibles mean score of the second flight school which represents TAFA ($\bar{x}=4.10$) of the participants attending both flight schools is higher than the tangibles mean score of the first flight schools ($\bar{x}=3.53$).

The service quality ($t=-1.340$), reliability ($t=-0.242$), and support ($t=-0.390$) dimensions do not show a difference of statistical significance according to the participants who have attended two flight schools ($p>.05$).

CHAPTER V

DISCUSSION AND CONCLUSION

In this study, the service quality of flight schools was evaluated from the cadet pilots' point of view. 154 cadet pilots made 249 evaluations on the service quality of flight schools. In our study, besides evaluating the service quality of flight schools, it was also investigated whether experiencing a second flight school has an effect on the service quality evaluation.

Table 5.1 lists the hypotheses of the investigation, along with the outcomes of their acceptance and rejection. The findings were discussed and compared with those of other researchers in the next part of the study.

Table 5.1. Hypotheses Results

Hypotheses	Results
H1: Gender significantly impacts flight school's service quality evaluation of cadet pilots	Reject
H1(a): Gender significantly impacts the tangibles dimension of service quality evaluation of cadet pilots	Reject
H1(b): Gender significantly impacts the reliability dimension of service quality evaluation of cadet pilots.	Reject
H1(c): Gender significantly impacts the support dimension of service quality evaluation of cadet pilots	Reject
H2: Age significantly impacts the flight school's service quality evaluation of cadet pilots	Reject
H2(a): Age significantly impacts the tangibles dimension of service quality evaluation of cadet pilots.	Reject

Table 5.1. (cont.)

H2(b): Age significantly impacts the reliability dimension of service quality evaluation of cadet pilots	Reject
H2(c): Age significantly impacts the support dimension of service quality evaluation of cadet pilots	Reject
H3: Education level significantly impacts the flight school's service quality evaluation of cadet pilots.	Reject
H3(a): Education level significantly impacts the tangibles dimension of service quality evaluation of cadet pilots	Reject
H3(b): Education level significantly impacts the reliability dimension of service quality evaluation of cadet pilots	Reject
H3(c): Education level significantly impacts the support dimension of service quality evaluation of cadet pilots	Reject
H4: Work experience significantly impacts the flight school's service quality evaluation of cadet pilots	Reject
H4(a): Work experience significantly impacts the tangibles dimension of service quality evaluation of cadet pilots	Reject
H4(b): Work experience significantly impacts the reliability dimension of service quality evaluation of cadet pilots	Reject
H4(c): Work experience significantly impacts the support dimension of service quality evaluation of cadet pilots	Reject
H5: The qualified certificate significantly impacts the flight school's service quality evaluation of cadet pilots	Accept
H5(a): The qualified certificate significantly impacts the tangibles dimension of service quality evaluation of cadet pilots	Accept
H5(b): The qualified certificate significantly impacts the reliability dimension of service quality evaluation of cadet pilots	Reject
H5(c): The qualified certificate significantly impacts the support dimension of service quality evaluation of cadet pilots	Reject
H6: Based on cadet pilots' evaluation, there is a significant difference in the service quality between flight schools	Accept

Table 5.1. (cont.)

H6(a): Based on cadet pilots' evaluation, there is a significant difference in the service quality tangible dimension between flight schools.	Accept
H6(b): Based on cadet pilots' evaluation, there is a significant difference in the service quality reliability dimension between flight schools.	Reject
H6(c): Based on cadet pilots' evaluation, there is a significant difference in the service quality support dimension between flight schools.	Accept
H7: Based on cadet pilots' evaluation, there is a significant difference in service quality according to the attendance of a second flight school	Reject
H7(a): Based on cadet pilots' evaluation, there is a significant difference in the service quality tangible dimension according to the attendance of a second flight school	Accept
H7(b): Based on cadet pilots' evaluation, there is a significant difference in the service quality reliability dimension according to the attendance of a second flight school	Reject
H7(c): Based on cadet pilots' evaluation, there is a significant difference in the service quality support dimension according to the attendance of a second flight school	Reject

Service quality does not differ by gender. That shows the existence of an objective evaluation that the service quality evaluation of both male and female cadet pilots are the same and do not differ depending on gender. However, because women participants make up 12.5% of all participants, equal to 1/8 rate, this may lead to inaccurate interpretation. CAPA (2023) indicates that compared to a 15% growth for all airline pilots, the number of female pilots in the USA increased by 71% between 2002 and 2022. In the near future, it is expected to reach more accurate evaluations with the increasing female pilot numbers in Türkiye.

Although there was a wide age range among the participants, there was no discernible difference in the service quality evaluation according to the age of the participants. Moreover, in the analysis made according to participants' education level and work experience, no difference was found.

Although the participants' educational backgrounds and job histories vary, they all underwent a protracted and challenging qualification procedure involving many steps to become pilots. This process, combined with work experience and education outside of the aviation sector, may explain why there is no discernible difference.

There is a significant difference according to the certificate qualified of the participants. The average score of participants with a student certificate is higher than that of participants with other licenses. One of the reason for this may be related to the training duration: As the time spent in training increases, the level of satisfaction decreases with the additional stress that comes with having more responsibility. Initially student pilots fly with an instructor. This provides a positive effect against factors that may extend the training period, such as weather. As with an instructor, dispetch limitations are higher. Finally, the excitement of having just learned the principles of flights may be a reason for the high service quality scores.

There is a sizable disparity across flight schools, according to the analysis. The average service quality, tangibles, and support scores of participants from TAFE are higher than other flight schools. The fact that TAFE is a THY subsidiary company and the graduates will work for THY with a sense of belonging may be why the service quality is higher than other flight schools. Although the overall service quality score of TAFE is 4.15, the score of other schools is also above 3.5. Results that are better than average indicate that the flight schools adhere to the aviation requirements.

Regarding the outcomes of two flight schools experience, this implies that students who start at one of these five institutions (AFA, AYJET, TUA, ERAH, and OTHERS) and graduate from TAFE. Contrary to previous results, experiencing a second-flight school does not significantly affect overall service quality and support scores. However, the tangible dimension of service quality score for those who experience a second-flight school is higher than first-flight school scores, supporting the previous results.

The results explain that TAFE is the best for the individual service quality scores. However, when one experiences both flight schools (one first flight school and TAFE), the only difference comes from the tangible dimension of service quality but overall.

Tangible dimension questions include contemporary-looking equipment and planes, visually stunning physical amenities and materials, and presentable and well-groomed employees. The fact that the maintenance tasks at TAFB are carried out by the proven Turkish Technic may have played a significant role in this outcome. Therefore, in order to reduce the gap, flight schools should concentrate on this physical features.

Another topic is the reliability dimension score. Even if all the scores seem over average, all flight schools have the lowest scores from this dimension. The reliability dimension questions are related to time. For instance, “when the flight school said they would do something, by or at a given time, they follow through at the appointed time.” When assessing this dimension, the post-covid effects should also be taken into account. As pandemics compelled flight schools to halt their training, which severely impacted trainee pilots' contentment. Hence, flight schools must fulfill their commitments to raise reliability scores, paying close attention to punctuality specifically. Flight schools should look for ways to expedite the training process without sacrificing quality in addition to upholding their promises.

Kendibilir (2017) discovered overall satisfaction on the same axis as our study. However, he discovered severe dissatisfaction in planning the flight lessons, resulting in flight lessons being completed longer and the entire training period being seriously prolonged.

According to Schwab's (2004) research, the flight school program is generally competent. However, there are a few areas that need improvement, including the maintenance of the aircraft and training delays or rejections.

Jin (2019) puts forward that, in contrast to our findings, the sociability feature will raise the caliber of services. For instance, flight schools might offer a variety of school activities to improve the social life of trainees, such as celebrating milestones, the first solo flight, passing the check-rides, and other milestones. These suggested activities could improve the social climate at flight school, give existing trainees a sense of belonging, and raise their satisfaction with their educational experiences.

In his study comparing accredited and non-accredited schools, Radigan (2011) provides findings that align with our scores, showing that the facilities and equipment variable for both programs has the lowest mean scores recorded. Therefore, it is essential to keep an eye on aircraft scheduling to ensure they are accessible to satisfy student demands.

This study was conducted specifically for the cadet pilots trained within the Turkish Airlines Cadet program. Since this program provides a job guarantee and accommodation and prices are covered according to the contract, such issues were excluded from the service quality evaluation. It should not be forgotten that such factors play a crucial role in the flight school selection process.

It has been established that customer satisfaction and service quality are critical factors in sustaining overall performance. The results of this study led to some recommendations for the managers of flight schools. First, they should stick to their obligations, paying great attention to timeliness in particular. In addition to keeping their commitments, they should seek ways to speed up the training process without compromising quality. Secondly, updating the physical facilities, equipment, and aircraft is necessary. Lastly, the importance of maintenance tasks, a fundamental component of aviation, should be given the respect they deserve.

If repeated, surveys on service quality evaluation may be conducted regularly, and service quality may be improved by paying attention to the recurring disparities. More thorough information can be obtained by expanding the survey application sample size to include every cadet pilot.

Quantitative studies like ours can be enhanced with qualitative questions, giving more detailed explanations for further research. Our study focused on the cadet pilot programs for the aviation industry. Another issue related to our topic for next studies can be comparing satisfaction between cadet and non-cadet pilot programs or comparing flight schools and university flight programs.

REFERENCES

- Aguilar, G. (2004). Service quality and its link to student pilot retention in general aviation flight training: a pilot study.
- Airbus. (2021). Airbus foresees demand for 39,000 new passenger & freighter aircraft by 2040 [Press release]. Retrieved from <https://www.airbus.com/en/newsroom/press-releases/2021-11-airbus-foresees-demand-for-39000-new-passenger-freighter-aircraft>
- Altunışık, R., Coşkun, R., Bayraktaroğlu, S., & Yıldırım, E. (2012). *Sosyal Bilimlerde Araştırma Yöntemleri* (7th ed.). Istanbul: Sakarya .
- Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer Satisfaction, Market Share, and Profitability: Findings From Sweden. In *Journal of Marketing* (Vol. 58).
- Atasoy, E. V. (2015). Examining the factors affecting productivity of a flight training organization (Master of Science Thesis). Anadolu University Graduate School of Sciences, Eskişehir.
- Boeing. (2021a). Commercial market outlook 2021-2040. Retrieved from https://www.boeing.com/resources/boeingdotcom/market/assets/downloads/CMO%202021%20Report_13Sept21.pdf
- Boeing. (2021b). Pilot and technician outlook 2021-2040. Retrieved from https://www.boeing.com/resources/boeingdotcom/market/assets/downloads/BMO_2021_Report_PTO_R4_091321AQ-A.PDF
- CAPA. (2023, July 28). Women airline pilots: numbers are growing, but still a pitiful percentage.
- Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing*, 56, 55–68. <https://doi.org/10.1177/002224299205600304>
- DGCA. (2021, November 29). Approved Training Organizations .
- EASA. (2022). The agency. Retrieved March 14, 2022, from <https://www.easa.europa.eu/the-agency/the-agency>
- EASA, & GDCA. Working arrangement between European Aviation Safety Agency and the Turkish Directorate General of Civil Aviation. , (2009).
- Federal Aviation Administration. (2023). Annual Statistics. Retrieved May 29, 2023, from https://www.faa.gov/data_research/aviation_data_statistics/civil_airmen_statistics

- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39–50.
- GDCA. Organisation requirements for aircrew (SHT-ORA). , (2017).
- GDCA. Pilot licence regulation (SHY-1). , (2017).
- GDCA. Rules for flight crew licencing (SHT-FCL). , (2019).
- George, D., & Mallery Paul. (2003). *SPSS for Windows step by step: A simple guide and reference fourth edition (11.0 update)*. Boston: Allyn & Bacon.
- Göv, S. A. (2018). Quality system in aviation industry. *Kahramanmaraş Şütçü İmam University Social Sciences Journal*, 15(2), 391–406. Retrieved from <https://dergipark.org.tr/en/pub/ksusbd/issue/40204/414220>
- Gronroos, C. (1984). A Service Quality Model and its Marketing Implications. *European Journal of Marketing*, 18(4), 36–44. <https://doi.org/10.1108/EUM0000000004784>
- Gürbüz, S., & Şahin, F. (2016). *Sosyal Bilimlerde Araştırma Yöntemleri*. Ankara: Seçkin Yayıncılık.
- Hüseyinklioğlu, A. O. (2021). The impact of the aviation industry on sustainable competition in pilot training. *Journal of Aviation Research*, 3(2), 150–172. <https://doi.org/10.51785/jar.903139>
- IATA. (2022). Aviation safety. Retrieved March 31, 2022, from <https://www.iata.org/en/youandiata/travelers/aviation-safety/>
- IATA. (n.d.). About us. Retrieved March 14, 2022, from <https://www.iata.org/en/about/>
- ICAO. (2016). Outlook on ICAO provisions: Annex and PANS. Retrieved from <https://www.icao.int/safety/Documents/Forms/AllItems.aspx>
- ICAO. (n.d.). About ICAO. Retrieved March 14, 2022, from <https://www.icao.int/about-icao>
- Jin, J. (2019). An examination of student pilot school choice factors for flight schools in California (Doctora Thesis). Alliant International University, San Diego.
- Karagöz, Y. (2021). *Bilimsel Araştırma Yöntemleri (3rd ed.)*. Ankara: Atlas Akademik Basım Yayın.
- Kendibilir, M. (2017). Sivil havacılıkta uçuş eğitiminde öğrenci memnuniyeti: AFA örneği. İstanbul Gelişim Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul.

- Lounis, C. (2020). Monitor the monitoring : Pilot assistance through gaze tracking and visual scanning analysis (PhD Thesis). University of Toulouse, Toulouse,.
- Mcdougall, G. H. g., & Levesque, T. (2000). Customer satisfaction with services: putting perceived value into the equation. *Journal of Services Marketing*, 14(5), 392–410. <https://doi.org/10.1108/08876040010340937>
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed.). New York: McGrawhill Press.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49, 41–50.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-Item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.
- Peter Hernon, by, Nitecki, D. A., Altman, E., & Nitecki, D. (n.d.). *Service Quality and Customer Satisfaction: An Assessment and Future Directions*.
- Qadeer, S. (2013). *Service Quality & Customer Satisfaction A case study in Banking Sector*. Faculty of Education and Economic Studies, Gavle.
- Radigan, J. A. (2011). The Impact of specialized accreditation on program quality: Aviation students' perspectives. *The Collegiate Aviation Review International*, 29(2), 58–77. <https://doi.org/https://doi.org/10.22488/okstate.18.100423>
- Schwab, G. L. (2004). Evaluation of student satisfaction with flight training schools. *International Journal of Applied Aviation Studies*, 4(2), 181–202.
- Seth, N., Deshmukh, S. G., & Vrat, P. (2005). Service quality models: A review. *International Journal of Quality and Reliability Management*, 22(9), 913–949. <https://doi.org/10.1108/02656710510625211>
- Tuncer, B., & Kızgım, Y. (2021). Determination of factors affecting pilot candidates' flight school selection behavior. *Journal of Aviation*, 5(2), 170–180. <https://doi.org/10.30518/jav.988025>

APPENDIXES

APPENDIX A

Survey of The Service Quality of The Flight Schools

The aim of this master thesis study is to assess service quality of flight schools located in Türkiye. Information collected from the survey will be used only for academic purposes and will not be shared with the third parties.

This Survey will take 15 minutes to complete. First section includes questions about demographics information. Second section has questions about your flight school(s) experiences.

Your participation in this research study is voluntary. Thank you for your time and crucial contribution to the results.

Yours Sincerely.

1. Demographics and Other Related Backgrounds

Gender?	Male/Female
Age?	18-23 24-29 30+
City?	
Work experience?	1-3 years / 4-7 years / 8+ years/ I do not have work experience
flight certificate qualified	Student / Private / Instrument / Commercial
The First Flight School	TAFA / AFA / AYJET / ERAH / TUA / OTHER

The Second Flight School	TAFA / AFA / AYJET / ERAH / TUA / OTHER / I have not attended another flight school
--------------------------	---

2. The Service Quality of the Flight Schools Attended

Answer the questions about your flight school experience.

"1" indicates Strongly Disagree and "5" indicates Strongly Agree.

1	The Flight School has modern looking aircraft and equipment	1	2	3	4	5
2	The Flight School has physical facilities that are visually appealing	1	2	3	4	5
3	The Flight School has employees which are neat, well-groomed and professional appearing	1	2	3	4	5
4	The Flight School has materials (such as lesson guides, learning aids or promotional pamphlets) which are visually appealing	1	2	3	4	5
5	When The Flight School promised to do something, by or at a certain time, they do so	1	2	3	4	5
6	When The flight School has a student with a problem, they showed a sincere interest in solving it	1	2	3	4	5
7	The Flight School performs their services right the first time	1	2	3	4	5
8	The Flight School provides the service at the time they promise to do so	1	2	3	4	5
9	The Flight School insists on error free records	1	2	3	4	5
10	The Flight School has employees that tell cadet pilots exactly when services will (or would) be performed	1	2	3	4	5
11	The Flight School has employees who give prompt service to cadet pilots	1	2	3	4	5
12	The Flight School has employees are always willing to help its cadet pilots	1	2	3	4	5
13	The Flight School has employees which are never too busy to respond to cadet pilots requests	1	2	3	4	5
14	The Flight School has employees that instills confidence in you	1	2	3	4	5
15	The Flight School makes cadet pilots feel safe with the schools employees, aircraft and equipment it operates	1	2	3	4	5
16	The Flight School has employees that are consistently courteous with cadet pilots	1	2	3	4	5

17	The Flight School has employees that have the knowledge to answer cadet pilots questions	1	2	3	4	5
18	The Flight School gives cadet pilots individual attention	1	2	3	4	5
19	The Flight School has operating hours convenient to all their cadet pilots	1	2	3	4	5
20	The Flight School has employees who give the cadet pilot personal attention	1	2	3	4	5
21	The Flight School has their cadet pilots best interest at heart	1	2	3	4	5
22	The Flight School understands the specific needs of their cadet pilots	1	2	3	4	5
23	The Flight School has stated training objectives clearly	1	2	3	4	5
24	The Flight School has instructors who tell me how I will be evaluated before a flight and summarizes major points after each flight	1	2	3	4	5
25	I would advise my friends and acquaintances to complete their flight training at the Flight School	1	2	3	4	5

3. The Service Quality of the Second Flight Schools Attended

Answer the questions about your flight school experience.

"1" indicates Strongly Disagree and "5" indicates Strongly Agree.

1	The Flight School has modern looking aircraft and equipment	1	2	3	4	5
2	The Flight School has physical facilities that are visually appealing	1	2	3	4	5
3	The Flight School has employees which are neat, well-groomed and professional appearing	1	2	3	4	5
4	The Flight School has materials (such as lesson guides, learning aids or promotional pamphlets) which are visually appealing	1	2	3	4	5
5	When The Flight School promised to do something, by or at a certain time, they do so	1	2	3	4	5
6	When The flight School has a student with a problem, they showed a sincere interest in solving it	1	2	3	4	5
7	The Flight School performs their services right the first time	1	2	3	4	5
8	The Flight School provides the service at the time they promise to do so	1	2	3	4	5
9	The Flight School insists on error free records	1	2	3	4	5
10	The Flight School has employees that tell cadet pilots exactly when services will (or would) be performed	1	2	3	4	5

11	The Flight School has employees who give prompt service to cadet pilots	1	2	3	4	5
12	The Flight School has employees are always willing to help its cadet pilots	1	2	3	4	5
13	The Flight School has employees which are never too busy to respond to cadet pilots requests	1	2	3	4	5
14	The Flight School has employees that instills confidence in you	1	2	3	4	5
15	The Flight School makes cadet pilots feel safe with the schools employees, aircraft and equipment it operates	1	2	3	4	5
16	The Flight School has employees that are consistently courteous with cadet pilots	1	2	3	4	5
17	The Flight School has employees that have the knowledge to answer cadet pilots questions	1	2	3	4	5
18	The Flight School gives cadet pilots individual attention	1	2	3	4	5
19	The Flight School has operating hours convenient to all their cadet pilots	1	2	3	4	5
20	The Flight School has employees who give the cadet pilot personal attention	1	2	3	4	5
21	The Flight School has their cadet pilots best interest at heart	1	2	3	4	5
22	The Flight School understands the specific needs of their cadet pilots	1	2	3	4	5
23	The Flight School has stated training objectives clearly	1	2	3	4	5
24	The Flight School has instructors who tell me how I will be evaluated before a flight and summarizes major points after each flight	1	2	3	4	5
25	I would advise my friends and acquaintances to complete their flight training at the Flight School	1	2	3	4	5
26	I feel that my experience at The Second Flight School is better than the first one	1	2	3	4	5

APPENDIX B

Uçuş Okulu Hizmet Kalitesi (Türkçe Versiyon)

Bu yüksek lisans tez çalışmasının amacı, Türkiye'de bulunan uçuş okullarının hizmet kalitesini değerlendirmektir. Anketten elde edilecek bilgiler sadece akademik amaçla kullanılacak olup, üçüncü kişilerle paylaşılmayacaktır.

Bu Anketin tamamlanması 15 dakika sürecektir. İlk bölüm demografik bilgilerle ilgili soruları içermektedir. İkinci bölümde uçuş okul(lar)ınızın deneyimleri ile ilgili sorular yer almaktadır.

Bu araştırma çalışmasına katılımınız isteğe bağlıdır. Zaman ayırdığınız ve sonuçlara önemli katkılarınız için teşekkür ederiz.

Saygılarımla.

1. Demografik ve İlgili Bilgiler

Cinsiyet?	Erkek/Kadın
Yaş?	18-23 24-29 30+
Şehir?	
İş Tecrübesi?	1-3 yıl / 4-7 yıl / 8+ yıl / İş tecrübem yok
Uçuş Lisansı	Öğrenci / Özel / Alet / Ticari
İlk Uçuş Okulu	TAFA / AFA / AYJET / ERAH / TUA / DİĞER
İkinci Uçuş Okulu	TAFA / AFA / AYJET / ERAH / TUA / DİĞER / İkinci Uçuş Okulu Tecrübem Yok

2. Uçuş Okulu Hizmet Kalitesi

Uçuş okulu deneyiminizle ilgili soruları yanıtlayın.

"1" Kesinlikle Katılmıyorum ve "5" Kesinlikle Katılıyorum anlamına gelir.

1	Uçuş Okulu, modern görünümlü uçak ve ekipmanlara sahiptir.	1	2	3	4	5
2	Uçuş Okulu, görsel olarak çekici olan fiziksel tesislere sahiptir.	1	2	3	4	5
3	Uçuş Okulu temiz, bakımlı ve profesyonel görünen çalışanlara sahiptir.	1	2	3	4	5
4	Uçuş Okulu, görsel olarak düzgün olan materyallere (ders kılavuzları, öğrenme yardımcıları veya tanıtım broşürleri gibi) sahiptir.	1	2	3	4	5
5	Uçuş Okulu, belirli bir zamanda bir şey yapmaya söz verdiğinde, bunu gerçekleştirir.	1	2	3	4	5
6	Uçuş Okulu, sorunu olan bir öğrencisi olduğunda sorunu çözmek için samimi bir ilgi gösterir.	1	2	3	4	5
7	Uçuş Okulu hizmetlerini hızlı ve doğru olarak gerçekleştirir	1	2	3	4	5
8	Uçuş Okulu, doğru hizmeti söz verdiği zamanda sağlar.	1	2	3	4	5
9	Uçuş Okulu hatasız kayıt tutar.	1	2	3	4	5
10	Uçuş Okulu, Öğrenci pilotlara hizmetlerin tam olarak ne zaman gerçekleştirileceğini söyleyen çalışanlara sahiptir.	1	2	3	4	5
11	Uçuş Okulu, öğrenci pilotlara hızlı hizmet veren çalışanlara sahiptir.	1	2	3	4	5
12	Uçuş Okulu, öğrenci pilotlarına her zaman yardım etmeye istekli çalışanlara sahiptir.	1	2	3	4	5
13	Uçuş Okulu, öğrenci pilotların isteklerine cevap veremeyecek kadar meşgul olmayan çalışanlara sahiptir.	1	2	3	4	5
14	Uçuş Okulu, güven aşıl原因 çalışanlara sahiptir.	1	2	3	4	5
15	Uçuş Okulu, okul çalışanları, işlettiği uçak ve ekipmanlarla öğrenci pilotların kendilerini güvende hissetmelerini sağlar.	1	2	3	4	5
16	Uçuş Okulu, öğrenci pilotlara karşı sürekli olarak nazik davranan çalışanlara sahiptir.	1	2	3	4	5
17	Uçuş Okulu çalışanları, öğrenci pilotların sorularını yanıtlayacak deneyim ve bilgiye sahiptir.	1	2	3	4	5
18	Uçuş Okulu, öğrenci pilotlara bireysel ilgi gösterir	1	2	3	4	5
19	Uçuş Okulu, tüm öğrenci pilotları için uygun çalışma saatlerine sahiptir.	1	2	3	4	5
20	Uçuş Okulu, öğrenci pilota kişisel ilgi gösteren çalışanlara sahiptir.	1	2	3	4	5
21	Uçuş Okulu, öğrencilerin ihtiyaçları ile candan ilgilenmektedir	1	2	3	4	5

22	Uçuş Okulu, öğrencilerin özel istek ve ihtiyaçlarını anlamaktadır	1	2	3	4	5
23	Uçuş Okulu, eğitim hedeflerini açıkça belirtmiştir.	1	2	3	4	5
24	Uçuş Okulu'nda bana uçuştan önce nasıl değerlendirileceğimi söyleyen ve her uçuştan sonra önemli noktaları özetleyen eğitmenler vardır.	1	2	3	4	5
25	Arkadaşıma ve tanıdıklarına uçuş eğitimlerini bu uçuş okulunda tamamlamalarını tavsiye ederim.	1	2	3	4	5

3. İkinci Uçuş Okulu Hizmet Kalitesi

Uçuş okulu deneyiminizle ilgili soruları yanıtlayın.

"1" Kesinlikle Katılmıyorum ve "5" Kesinlikle Katılıyorum anlamına gelir.

1	Uçuş Okulu, modern görünümlü uçak ve ekipmanlara sahiptir.	1	2	3	4	5
2	Uçuş Okulu, görsel olarak çekici olan fiziksel tesislere sahiptir.	1	2	3	4	5
3	Uçuş Okulu temiz, bakımlı ve profesyonel görünen çalışanlara sahiptir.	1	2	3	4	5
4	Uçuş Okulu, görsel olarak düzgün olan materyallere (ders kılavuzları, öğrenme yardımcıları veya tanıtım broşürleri gibi) sahiptir.	1	2	3	4	5
5	Uçuş Okulu, belirli bir zamanda bir şey yapmaya söz verdiğinde, bunu gerçekleştirir.	1	2	3	4	5
6	Uçuş Okulu, sorunu olan bir öğrencisi olduğunda sorunu çözmek için samimi bir ilgi gösterir.	1	2	3	4	5
7	Uçuş Okulu hizmetlerini hızlı ve doğru olarak gerçekleştirir	1	2	3	4	5
8	Uçuş Okulu, doğru hizmeti söz verdiği zamanda sağlar.	1	2	3	4	5
9	Uçuş Okulu hatasız kayıt tutar.	1	2	3	4	5
10	Uçuş Okulu, Öğrenci pilotlara hizmetlerin tam olarak ne zaman gerçekleştirileceğini söyleyen çalışanlara sahiptir.	1	2	3	4	5
11	Uçuş Okulu, öğrenci pilotlara hızlı hizmet veren çalışanlara sahiptir.	1	2	3	4	5
12	Uçuş Okulu, öğrenci pilotlarına her zaman yardım etmeye istekli çalışanlara sahiptir.	1	2	3	4	5
13	Uçuş Okulu, öğrenci pilotların isteklerine cevap veremeyecek kadar meşgul olmayan çalışanlara sahiptir.	1	2	3	4	5
14	Uçuş Okulu, güven aşıl原因 çalışanlara sahiptir.	1	2	3	4	5

15	Uçuş Okulu, okul çalışanları, işlettiği uçak ve ekipmanlarla öğrenci pilotların kendilerini güvende hissetmelerini sağlar.	1	2	3	4	5
16	Uçuş Okulu, öğrenci pilotlara karşı sürekli olarak nazik davranan çalışanlara sahiptir.	1	2	3	4	5
17	Uçuş Okulu çalışanları, öğrenci pilotların sorularını yanıtlayacak deneyim ve bilgiye sahiptir.	1	2	3	4	5
18	Uçuş Okulu, öğrenci pilotlara bireysel ilgi gösterir	1	2	3	4	5
19	Uçuş Okulu, tüm öğrenci pilotları için uygun çalışma saatlerine sahiptir.	1	2	3	4	5
20	Uçuş Okulu, öğrenci pilota kişisel ilgi gösteren çalışanlara sahiptir.	1	2	3	4	5
21	Uçuş Okulu, öğrencilerin ihtiyaçları ile candan ilgilenmektedir	1	2	3	4	5
22	Uçuş Okulu, öğrencilerin özel istek ve ihtiyaçlarını anlamaktadır	1	2	3	4	5
23	Uçuş Okulu, eğitim hedeflerini açıkça belirtmiştir.	1	2	3	4	5
24	Uçuş Okulu'nda bana uçuştan önce nasıl değerlendirileceğimi söyleyen ve her uçuştan sonra önemli noktaları özetleyen eğitmenler vardır.	1	2	3	4	5
25	Arkadaşlarıma ve tanıdıklarına uçuş eğitimlerini bu uçuş okulunda tamamlamalarını tavsiye ederim.	1	2	3	4	5
26	İkinci uçuş okulundaki deneyiminin, ilkinden daha iyi olduğunu hissediyorum.	1	2	3	4	5

CURRICULUM VITAE

Personal Information:

Name - Surname: Semih BEKMEZ

Education:

2007 - 2011 Turkish Military Academy

2020 - 2023 MSc in Air Transportation, Ibn Haldun University, Türkiye

Experience:

2018 - Turkish Airlines

2011 - 2018 General Command of Gendarmerie