

**IMPACT OF ON-BOARD FACTORS ON
PASSENGER SATISFACTION: THE CASE OF
AIR-TRAVELERS TO NORTHERN CYPRUS**

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**Final International University
February 2021
Girne, TRNC**

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by

MUHAMMED CHARYYEV

A thesis submitted to the Institute of Graduate Studies in partial
fulfillment of the requirements for the Degree of Master of Business
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**FINAL INTERNATIONAL UNIVERSITY
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APPROVAL

Title: Impact of On-Board Factors
On Passenger Satisfaction: the
Case of Air-Travelers to Northern Cyprus


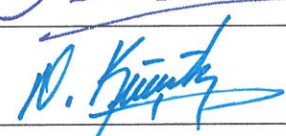

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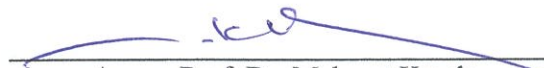
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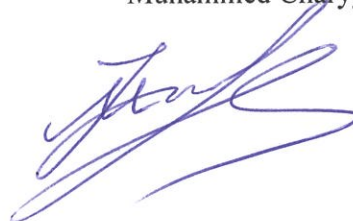
DEDICATION

As being the first Master of Business Administration graduate of Final International University, I dedicate my thesis to all current and future students and wish them patience with their progress...

ETHICAL DECLARATION

I, Muhammed Charyyev, hereby, declare that I am the sole author of this thesis and it is my original work. I declare that I have followed ethical standards in collecting and analyzing the data and accurately reported the findings in this thesis. I have also properly credited all the sources included in this work.

Muhammed Charyyev



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Last but not least, I want to thank my friend Alina Zubair for her support and confidence in success of this survey.

ABSTRACT

The financial success of airline companies and satisfaction of passengers with these companies in modern market conditions are influenced by various factors such as physical attributes of aircraft, cabin crew attributes, and flight attributes. The growth in the number of consumers and the differentiation of the market for various on-board services require airlines to find ways to ensure the success of products and services, develop them, and maintain a sustainable demand for them. Negligence of consumer perception in airline industry can result in extensive business costs, damage profitability of and lead to a bad reputation for firms. In order to combat these challenges, data was collected from 122 individuals who travelled from Turkey to Turkish Republic of Northern Cyprus (TRNC) through a self-administered survey online. In this thesis, a model of customer satisfaction is developed to measure the impact of attributes related to the aircraft, cabin crew, and flight. The results indicated on-board entertainment and cabin-crew's service quality and performance to impact satisfaction of air travelers. The study contributes to the theory by providing a model of passenger satisfaction that takes in flight services into account. Furthermore, the study contains recommendations to firms on how they can improve airlines on-board service quality compromising of physical attributes, flight attributes, and cabin crew attributes.

Keywords: flight attributes, physical attributes, cabin crew attributes, customer satisfaction

ÖZ

Havayolu şirketlerinin finansal başarısı ve bu şirketlerin yolcularının modern piyasa koşullarında memnuniyeti, uçakların fiziksel özellikleri, kabin ekibi özellikleri ve uçuş özellikleri gibi çeşitli faktörlerden etkilenir. Tüketici sayısındaki artış ve çeşitli uçuş-içi hizmetler için pazarın farklılaşması, havayollarının ürün ve hizmetlerinin başarısını sağlamak, geliştirmek ve onlar için sürdürülebilir talebi yaratmak için yollar bulmasını gerekli kılar. Havayolu hizmet sektöründe tüketici algısının ihmal edilmesi, yüksek iş maliyetleri oluşturup, şirketlerin karlılığına zarar verebilir ve firmalar için kötü bir üne yol açabilir. Bu zorluklarla mücadele etmek için, çevrimiçi anket yoluyla, Türkiye’den Kuzey Kıbrıs Türk Cumhuriyeti (KKTC)’ne havayolu ile seyahat eden 122 kişiden birincil veri toplanmıştır. Bu tezde, uçak, kabin ekibi ve uçuşla ilgili özelliklerin etkisini ölçmek amacı ile bir müşteri memnuniyeti modeli geliştirilmiştir. Sonuçlar, uçak yolcularının memnuniyetini uçuş-içi eğlence ve kabin ekibinin hizmet kalitesi ve performansının etkilediğini göstermektedir. Bu çalışmanın teoriye katkısı uçuş-içi hizmetlerinin de göz önünde bulundurulduğu yolcu memnuniyet modeli sunmasıdır. Buna ek olarak, çalışma şirketlere uçakların. Fiziksel özellikleri, uçuşun özellikleri ve uçuş görevlilerinin özelliklerini nasıl geliştirebilecekleri ile ilgili öneriler vermektedir.

Anahtar kelimeler: uçuş özellikleri, fiziksel özellikler, kabin ekibi özellikleri, müşteri memnuniyeti

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LIST OF ABBREVIATIONS

ANOVA	Analysis Of Variance
CCA	Cabin Crew Attributes
CCAp	Cabin Crew Appearance
CS	Customer Satisfaction
FA	Flight Attributes
FB	Food and Beverage
FIU	Final International University
KMO	Kaiser – Meyer – Olkin Measure
OBE	On – Board Entertainment
PA	Physical Attributes
SD	Standard Deviation
sig.	Significance Level
SPSS	Statistical Package for the Social Sciences
SQP	Service Quality and Performance
TRNC	Turkish Republic of Northern Cyprus
UN	United Nations
VIF	Variance of Inflation Factor
μ	Mean

CHAPTER 1

INTRODUCTION

In the modern world, air transportation's role as the fastest means of traveling over long distances has significantly increased its importance. Its rapid development necessitated the creation of varying aircrafts that could meet different travel purposes and provided higher comfort levels during flights. On-board and on the ground, passengers are offered various services that make the journey enjoyable, flexible and attainable to the general public.

The number of airline companies also has been increasing all around the world. Almost every country has its own national airline company, and in some countries, there are more than one. Developed countries such as the United States, the United Kingdom, Russia, Canada, and China have both private and national airlines. More than a million flights are carried out worldwide annually, and these airline companies are competing to attract consumers and maximize their services in order to get a bigger share from the pie (Song et al., 2012).

To be successful, an airline must have a reputation of being a reliable carrier and indisputable authority that can help to maintain its competitiveness and ensure the passengers about using the services of the airline. For these purposes many services are offered by the airlines. Some of these are pre-flight, in-flight or post-flight services. Pre-flight services include free check-in, seat selection and passenger's lounge and post services comprise of baggage tracking and car rentals. Many companies even provide loyalty programs that can help to save decent amounts of money for their frequent passengers (Song et al., 2012). For example, they create opportunities to use earned miles to upgrade from economy to business class, and to purchase goods and services on board.

In addition to these services, there are also on-board services which composes the scope of this study and is one of the aspects that differentiates an airline from the other. These in-flight services can be categorized into three main groups, mainly cabin crew attributes, aircraft attributes and flight attributes. All these categories have different dimensions. Attributes of cabin crew are surfaced mainly around their service quality and performance, and their appearance. Aircraft attributes describe the physical

environment on board such as knee space, seat quality and provision of comfortable equipment. Flight attributes consist of food and beverage and on-board entertainment such as watching videos and listening to music.

Northern Cyprus has been one of the popular destinations of tourism and higher education over the years. Since the travelers' choice of transportation to TRNC is limited to airlines or ferries as TRNC is located on an island, the current research is delimited to air travel for being the more convenient mode of transportation both for tourists and students who travel to the island. In this study the main aim is to explore the impact of on-board service factors of airlines such as physical attributes, flight attributes, and cabin crew attributes on passenger satisfaction.

1.1 Problem Statement

Any small issue regarding services could lead to the success or failure of an organization. That is why it is crucial to understand more about services and how it leads to customer satisfaction. The existing literature focuses on in-flight service's impact on service quality or focuses on customer satisfaction from aspects such as the service performance without looking at it in a unified manner. Furthermore, previous studies look at satisfaction by focusing on customers' perceptions and expectations without specifically focusing on various aspects of in-flight services. Prior research use the impact of in-flight service quality on customer satisfaction compared to pre-flight service quality, looking at different time frames such as pre- and post-flight services provided. Certain aspects have been ignored and not explained in full content, which created a gap in the literature that requires further studying through a different model that looks at cabin crew, aircraft, and flight attributes together in a unified way.

1.2 Purpose of the Study

The study aims to further understand the impact of on-board services through physical attributes, flight attributes, and cabin crew attributes on passenger satisfaction with airline companies using a conceptual model. This thesis also aims to offer air transportation businesses recommendations to help companies develop better-suited strategies to satisfy passengers.

1.3 Significance of the Study

This study's relevance is determined by the need to systematize, and improve the quality of service at aviation enterprises. Even though, many scholars dealt with issues of quality, performance and satisfaction in the service sector and contributed to both theory and practice, it should be noted that although the breadth and complexity of past research is enormous, the findings are fragmented because each study included different aspects of services and a different context. Accordingly, providing high-quality services in the field of transporting passengers are still not well understood.

1.4 Research Questions

In order to contribute to the understanding of passenger satisfaction with airline companies, the following research questions are formulized:

1. How the quality of on-board services impacts passenger satisfaction?
2. What is the impact of flight attributes on passenger satisfaction with airline companies?
3. What is the impact of cabin crew attributes on passenger satisfaction with airline companies?
4. What is the impact of physical attributes on passenger satisfaction with airline companies?

1.5 Assumptions

The following assumptions are made regarding this study:

1. The respondents will fully understand the questions they are asked.
2. The respondents of the survey will provide honest and thoughtful answers.
3. Data analysis will provide clear vision regarding passenger satisfaction levels with airline companies and will help develop on-board service quality.

1.6 Limitations

The main limitation of the thesis is the access issues to a larger sample. The thesis aimed to reach 1000 respondents due to high frequency of air traveling to North Cyprus, for tourism or education mainly. However, due to the restrictions caused by COVID-19 pandemic precautions, the number of air traveler experienced an unexpected, sudden, and sharp decline. Added to the flight restrictions, quarantine requirement

policies for inbound travelers to North Cyprus created limitations on accessing a larger population sample.

Another limitation is that the majority of respondents are students. This is because favorable conditions were created for students arriving to Northern Cyprus such as not being charged for quarantine, accommodation, and meals. Tourists on the other hand, were charged the full cost of the quarantine, resulting in the continuation of decline in number of inbound travelers.

In addition, some of the travelers with the possibility of access do not speak English and they could not participate in the survey.

Thus, the data could only be collected from 139 questionnaires, which also decreased due to data cleaning.

1.7 Definition of Key Terminology

Cabin crew attributes have two dimensions namely service quality and performance, and appearance.

Cabin crew service quality is the ability of an airline company to meet or exceed customer expectations (Tseng & Chiu, 2008).

Cabin crew performance is the front-line employee's ability in creating and delivering services to customers (Kim, Kim & Hyun, 2015).

Cabin crew appearance is employee's features and attire (Kim, Kim & Hyun, 2015).

Physical attribute is the physical environment, space, ambient conditions, interior and equipment of the aircraft (Tseng & Chiu, 2008; Kim, Kim & Hyun, 2015).

Flight attributes have two dimensions: food and beverage services and on board entertainment.

Food and beverages are the internal (taste, freshness) and external (presentation, style) of the meals on-board (Kim, Kim & Hyun, 2015)

On-board entertainment include the user-friendly, customer-to-technology interactive programs, books, movies, wireless facilities provided to travelers (Kim, Kim & Hyun, 2015).

Customer satisfaction is the persons feeling of pleasure and excitement during the travel (Han, Hyun & Kim, 2014).

CHAPTER 2

LITERATURE REVIEW

The airline industry is one of the most fast-growing sectors in the 21 century. Increased integration of world economies and communities has popularized the usage rates of this mode of transportation for education, business, tourism, and import-export purposes. Due to the increased number of and new airports, and air travel becoming increasingly affordable, one aspect is exact: a rivalry is on the rise, and competition has been intensifying in the aviation sector (Tseng & Chiu, 2008). However, evidence prevails that as necessary it is for a business to be profitable and goal oriented, this industry needs to understand the views of the growing passengers to be successful and remain competitive in the marketplace. Aviation companies need to focus on factors affecting customer satisfaction and continuous development, not just the easily copied prices or financial performances. To help companies accomplish their desired competitive outcomes, perceived worth, loyalty, and confidence are the center of attention (Song et al., 2012; Chiu et al., 2012). If customer satisfaction achieves a certain level customer loyalty increases and customer is likely to repeat their purchase of the product or service (Oliva et al., 1992).

Maintaining customer satisfaction and retention, and improving service efficiency has proved to be the secret of market success over many years (Nejati et al., 2009). Customers now tend to seek more sophisticated and higher efficiency levels provided by firms compared to the competition (Han et al., 2011). In line with exceptional growth of competition, the emphasis is placed on the service organizations and their roles to satisfy customers and increase loyalty (Oliver 1999). Bitner (1990) stated that customer satisfaction is only achieved when the actual customer experience exceeds or meets the required expectation levels.

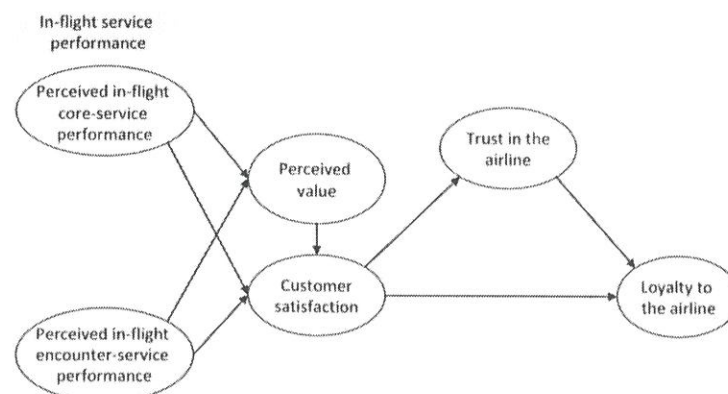
Over the years, extensive research has also been carried out in consumer behavior literature to analyze the determinants of satisfaction and loyalty and the forces that rule these phenomena. Studies of researchers such as Kim and Han (2008) found that offering outstanding value and satisfying customer experiences and expectations is a significant way to boost satisfaction and loyalty.

For airlines, these core services include the atmosphere, cleanliness, food and beverages, entertainment facilities, and necessary niceties and performance experiences such as mutual intelligence, extra scrutiny and providers' skills available on-board (Han et al., 2011; Alamdari, 1999; Hartline & Jones 1996).

Services are inseparable, intangible and heterogeneous of their production. In order to measure service quality firms need to look into customer perceptions. Parasuraman et al., (1985) defined service quality into 10 different dimensions such as communication, competence, courtesy, tangibility, credibility, security, responsiveness, reliability, knowing and understanding the customer. Airline companies need to provide quality services and products to sustain customer satisfaction and expectations. As mentioned earlier, the firms' competitive advantage is dependent on their ability to meet the desired expectations, and quality on-board services received when individuals are traveling. As shown in the Figure1, Han, Hyun, and Kim's (2014) research mentioned the impact of in-flight service performances that can influence customer's perceived values, satisfaction levels, and the trust in the airline, encompassing the concept of loyalty of passengers. In their study, they assessed the impact of these factors on Korean and Chinese customers, and the results indicated that in-flight service aspects had a significant effect on traveler's loyalty, provided that loyalty is one of the primary targets of companies and they should increase customer comfort and confidence to achieve potent impacts and meet service results.

Figure 1

Han, Hyun and Kim (2014) model of In-flight service performance and airline loyalty

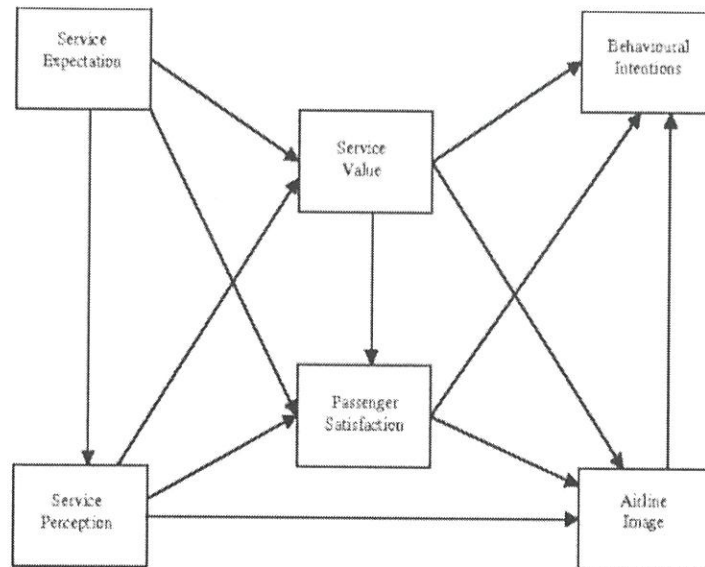


Previous research indicated service quality is perceived by customer to be an essential aspect of service and retailing businesses (Grönroos, 1984). For controlling and sustaining the quality of services provided in airline companies, it is necessary to meet the satisfaction level of customer and try to increase their loyalty (Ostrowski et al., 1993). Research conducted by Gilbert and Wong (2003) measured airline services and customer perceptions of people traveling taking assurance, flight patterns, reliability, responsiveness, employees, facilities, and customization into account. Their study indicated that passenger's service expectations vary depending on their demographics and travel purposes. Their findings suggested that companies should generate secure travel, timely services, reactive schedules, and contribute to customer satisfaction to increase customer interaction.

Though numerous research are currently ongoing on service quality, aviation companies struggle to retain satisfied customers and maintain a competitive edge in the market. Park et al. (2004) explained in-flight services as the most significant aspect of satisfaction by composing a theoretical model in their research. As shown in Figure 2, to understand Korean tourists' decision mechanism bearing on service expectations, service perception, value, satisfaction, airline image, and behavioral intentions, their study's outcomes showed that airline reputation, customer loyalty, and perceived value significantly affect an individual's decision-making abilities. Chiou and Chen (2010) likewise analyzed individuals' behavioral concepts and established a relationship between service quality and air travelers' satisfaction to their behavior, passenger contentment, and particular airline firm's status.

Figure 2

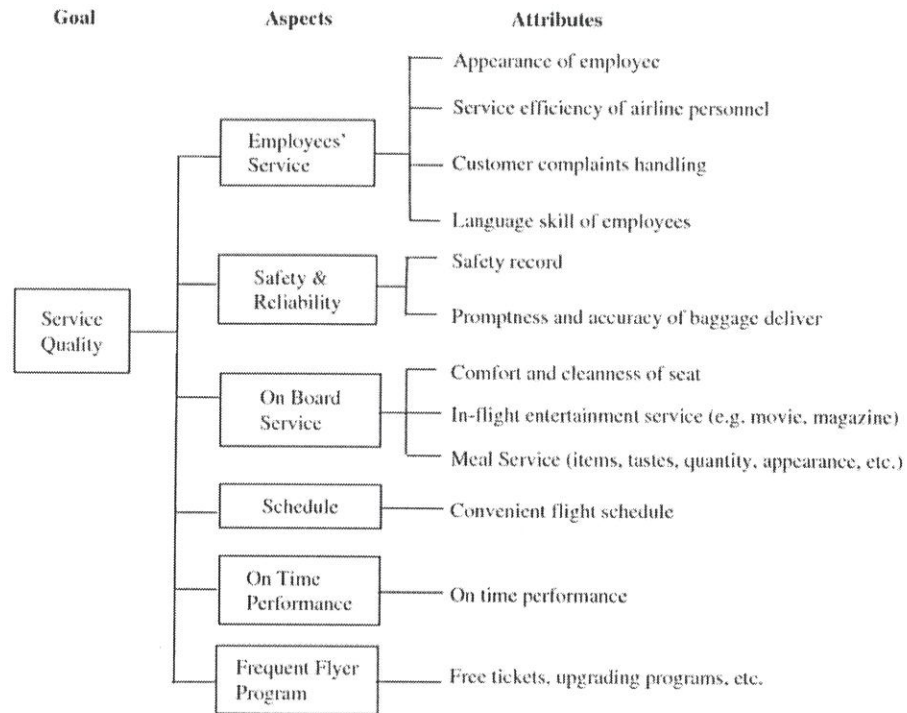
Park et al., (2004) model of passenger's behavioural intentions



Dimensions of airline services include services of staff members (e.g., appearances, skills), efficiency and safety, on-board services (e.g., on-board entertainment, food, and beverages, cleanliness), up-to-the-minute performances, programs of flyers, and flight schedules as displayed in Figure 3 (Liou & Tzeng, 2007). Adopting the fuzzy integral and gray relationship analysis, Ju-Long (1982) revealed service quality as a broad customer perception, and controlling flight attributes can be a crucial aspect to attract, satisfy and improve business products and services.

Figure 3

Liou & Tzeng (2007) model of service quality aspects and attributes

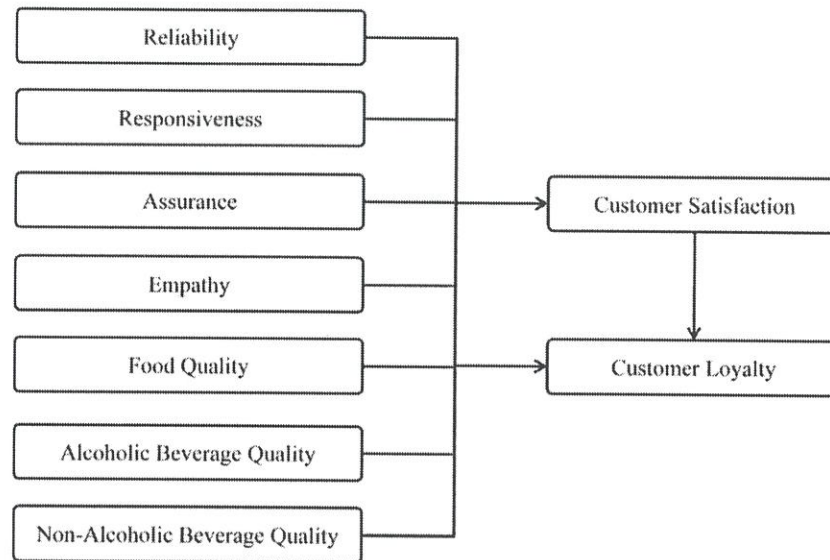


Airline services are composed of defined and versatile properties such as the physical attributes and intangible service (seating and luggage capacity, aircraft preservation, the model of aircraft, and meals on-board) (Chang et al., 2003). Some studies have also concentrated on knee space having a high association with seat and rider comfort (Kremser et al., 2012). An & Noh's (2009) research made on-board service efficacy inevitable, concentrating on flight attributes such as food and beverage services, which take most communication time on-board, to boost passenger retention and loyalty. Figure 4 represents the study model by An and Noh (2009), developed on variables such as reliability, responsiveness to customer needs, quality assurance, empathy to passenger expectations, quality of the food, alcoholic beverage quality, and non-alcoholic beverage quality to interpret changes in customer satisfaction and loyalty of prestige and economy class travelers. Quality of services, the satisfaction attained, and loyalty status differs depending on the seat class of air travel. Customers differ in their demographics and social statuses, and companies need to overcome these individual differences. Coherently, substantial research supported the argument of

customer perceptions and perceived services impinge directly on customer retention (Park et al., 2006; Saha & Theingi, 2009). Any delay in the perceived quality of services can skeptically influence customers (Butcher & Kayani, 2007).

Figure 4

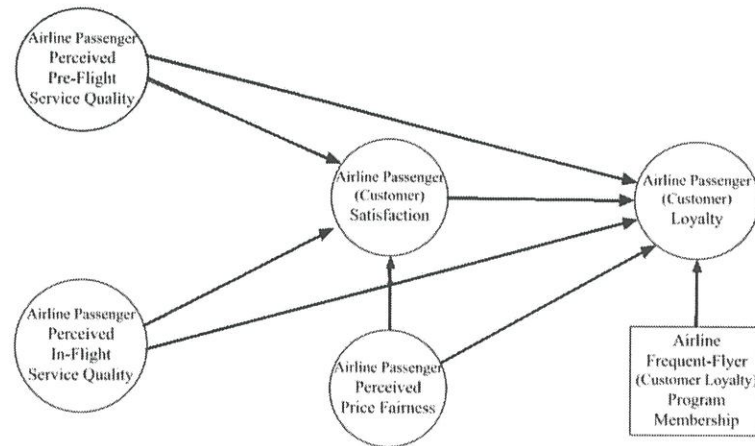
An and Noh (2009) model of customer satisfaction and loyalty



A similar research was carried out by Etemad et al. (2016) which demonstrated the effects of perceived pre-flight and in-flight quality services such as telephone, satellites, and internet communication services on customer satisfaction and loyalty. As illustrated in Figure 5, pre-flight and in-flight services are unique aspects of air transportation and have a favorable explicit impact on satisfaction and a two-way effect on customer loyalty.

Figure 5

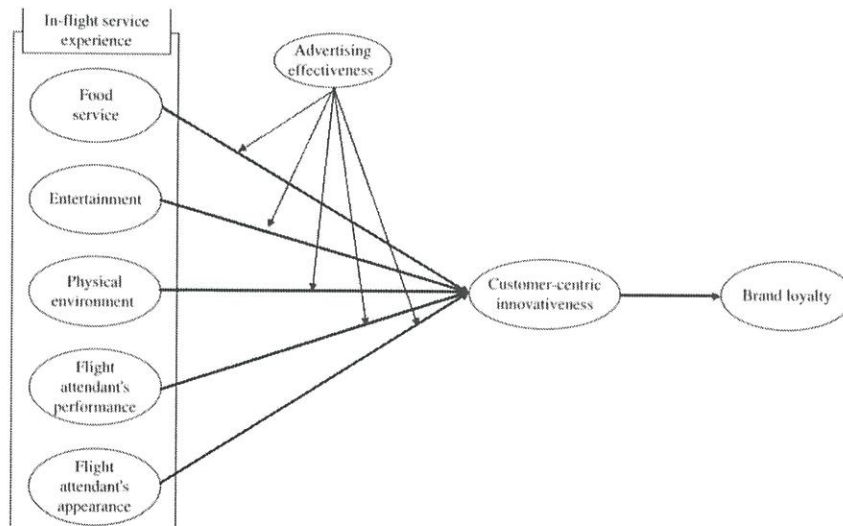
Etemad et al., (2016) model of airline passenger loyalty



Kim, Kim, and Hyun (2015), using structural equation modeling, measured the effects of in-flight dimensions on customer-centric innovativeness and loyalty of US first-class passengers. As displayed in Figure 6, the dimensions comprised of food services, entertainment facilities on-board, the physical environment during travels, last but not least, the flight attendants' performance and appearance. In-flight factors are found to positively affect innovations and loyalty levels. In conjunction, promotional activities are observed to moderate individual facilities on future creativity prospects, such as food and attendants appearances. These findings powerfully illustrate customer-centric creativity is a good predictor of brand satisfaction in first-class travelers. Park (2007) uncovered that specific resources such as natural surroundings of air travel and food and beverages are associated with an increased total value of the services and enhanced commitment among first-class and economy customers.

Figure 6

Kim, Kim and Hyun (2015) model of brand loyalty



Many other articles highlighted various aspects of in-flight factors that can enhance brand image of airlines, improve customer experiences, influence positive consumer perceptions and impression formation such as internal and external food characteristics (Ryu et al., 2012), customized entertainment facilities (Park et al., 2004), up to the standard cabin facilities, and physical environment (Chen & Chang, 2005; Aksoy, Atilgan & Akinci, 2003; Bitner 1992), the performance of on-board staff (Nameghi & Ariffin, 2013) and physical appearances of the employees (Magnini et al., 2013; Chaiken 1979).

These studies' findings signify the importance of the quality of services and on board flight attributes on customer satisfaction and retaining passenger loyalty. However, significant gaps were identified in the respective studies. Direct effects of physical attributes, cabin crew attributes, specifically the quality and appearances of employees, and on-board flight attributes such as food and beverage services and on-board entertainment facilities were not addressed in a unified manner. The factors have a significant effect on customer satisfaction, enabling firms to achieve higher customer retention and market share. Based on these arguments, the following hypotheses are proposed:

H1: Physical attributes of an aircraft have a significant relationship with passenger satisfaction with air travel.

H2a: Service quality and performance of cabin crew have a significant relationship with passenger satisfaction of air travelers.

H2b: Appearance of cabin crew have a significant relationship with passenger satisfaction of air travelers.

H3a: Food and beverage services of flights have a significant relationship with passenger satisfaction of air travelers.

H3b: On-board entertainment services of flights have a significant relationship with passenger satisfaction of air travelers.

CHAPTER 3

METHODS

This thesis used a quantitative method to collect and analyze data. In this section, research methodology is explained in detail.

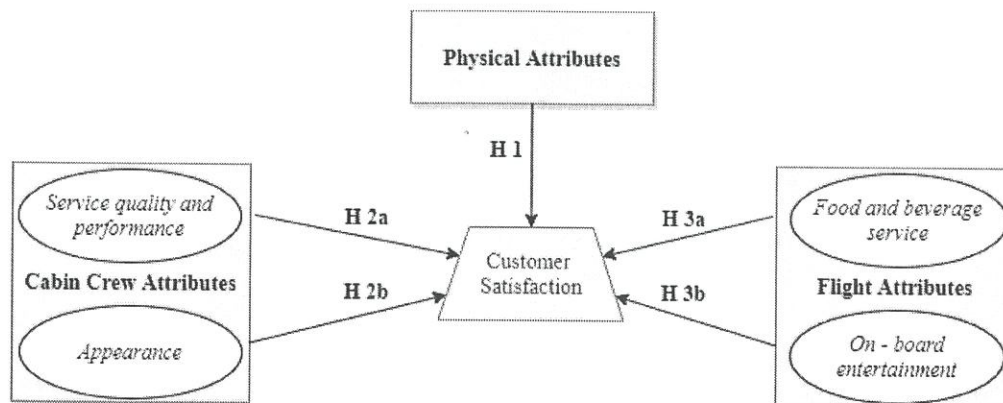
3.1 Research Design and Proposed Model

The quantitative research design was used to measure the relationship between independent variables of flight attributes, physical attributes, and cabin crew attributes on the dependent variable of customer satisfaction. An explanatory research approach was chosen and a survey was used with a questionnaire consisting of 40 items, with which collecting data was economical for the target population. The current study was conducted online and on SurveyMonkey.com, a platform where the researcher can force an answer to specified questions to progress on the survey. All of the items on the scale were forced for a response. Therefore, there was no missing data on the data set. No concerns were found for the accuracy during transformation of the collected data in terms of human error. This research is cross-sectional and investigated data collected between September and December 2020.

In-flight services are taken mostly based on Kim, Kim and Hyun (2015) model of brand loyalty such as the food and beverage services, entertainment, environment, performance and appearances. To measure the customer satisfaction, Han Hyun and Kim (2014) model of In-flight service performance and airline loyalty. Moreover, with some adaptations, cabin crew performance scale was drawn from Etemad et al., (2016) as shown in the model of airline passenger loyalty. Based on the existing literature discussed in the previous sections, 5 hypotheses were proposed. Figure 7 shows the proposed conceptual model for this study.

Figure 7

Proposed Conceptual Model



3.2 Population and Sampling

Based on the proposed research model, a sample of 1000 people traveling to Northern Cyprus using airlines belonging to Turkey were aimed to be surveyed to determine passenger satisfaction through on-board services. However, due to the restrictions regarding COVID – 19, 139 people could be accessed to be surveyed and 122 of them composes of the final sample A convenience sampling technique was used ($\alpha=0.1$) due to the limitations regarding researcher's access to air travelers with the chosen sampling criteria.

3.3 Instruments and Procedures of Data Collection

In this study primary data was collected using a self-administrated questionnaire with scale items drawn from various studies. Physical and Cabin Crew Attributes scales were adapted from the study of Tseng and Chiu, (2008). Etemad-Sajadi et al., (2016) and Kim, Kim & Hyun, (2015)'s scale items have been used to measure service quality, performance factor, and appearance factor. Flight Attributes scale was adapted from the study of Kim, Kim & Hyun (2015) and was further used to test food and beverage, and on-board variables. Customer Satisfaction scale was adapted from the study of Han, Hyun & Kim (2014). A five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5) and "not available" was used in the study. Table 1 shows the constructs and scale items.

Table 1*Constructs and scale items*

Constructs	Item code	Item
Physical Attributes (PA)	pa1	Aircraft of this airline clean and has pleasant interior.
	pa2	This airline has a good cabin equipment conditions.
	pa3	Seats of this airline's aircraft are very comfortable and relaxing (seats recline flat).
	pa4	The electrical devices provided in aircraft of this airline function well (reading lights, call buttons, and power ports).
	pa5	The air quality of this airline's cabin is appropriate.
	pa6	The temperature during the flight of this airline's aircraft is comfortable.
Cabin Crew Attributes Service quality and performance (SQP)	cca1	This airline's cabin announcements clear and precise.
	cca2	This airline's cabin safety demonstration is always important.
	cca3	This airline's cabin crew is proactive.
	cca4	This airline's cabin crew is courteous, polite and respectful.
	cca5	This airline's cabin crew has ability to handle customer complaints.
	cca6	This airline's cabin crew has ability to handle unexpected situations, consistently and dependably.
	cca7	This airline's cabin crew is willing and able to provide service in a timely manner.
	cca8	This airline's cabin crew always does inspection of passenger's seat belt.
	cca9	This airline's flight attendants have the required knowledge to answer my questions.

Table 1 (continued)*Constructs and scale items*

Cabin Crew Appearance (CCAp)	cca10	This airline's flight attendants have my best interests in mind.
	cca11	This airline's flight attendants promptly respond to my requests.
	cca12	This airline company always provides additional (baggage claim, connecting flight) information by on-board staff.
	cca13	This airline's flight attendants are visually attractive.
	cca14	This airline's flight attendants are physically attractive.
	cca15	This airline's flight attendants are handsome/pretty.
Flight Attributes Food and beverage service (FB)	cca16	The appearance/uniform of on-board staffs of this airline company is always appropriate.
	fa1	This airline's on-board food is nutritional balanced.
	fa2	This airline's on-board meal and drinks are accordingly and properly temperatured.
	fa3	This airline has sufficient amount of food.
	fa4	This airline has a variety of non-alcoholic drinks.
	fa5	This airline has a liquor selection diversity.
	fa6	The food served in this airline is tasty.
	fa7	The food served in this airline is fresh.
	fa8	The quality of food ingredients is good.
	fa9	The food presentation on the tray is attractive.
	fa10	The silverware and tableware are esthetically appealing in this airline.
On - board entertainment (OBE)	fa11	The food portion is sufficient in this airline.
	fa12	There are various on-board reading materials (books, newspapers, and magazines) provided in this airline company.

Table 1 (continued)*Constructs and scale items*

Customer satisfaction (CS)	fa13	There are various on-board programs (movies, television programs, and games) provided in this airline company.
	fa14	There is various on-board music (classical, jazz, popular music) provided in this airline company.
	fa15	The aircraft of this airline company has up-to-date on-board entertainment equipment (wide screens).
	cs1	Overall, I am satisfied with my experience when using this airline company.
	cs2	Overall, compared to other airlines, I am satisfied with this airline company.
	cs3	My decision to use this airline company was a wise one.

3.4 Data Analysis Procedures

Data analyses were carried out using Statistical Package for Social Sciences software (SPSS). An assessment was based on the findings of the physical environment's impact, service quality, performance, appearance, food and beverage service, on-board entertainment on satisfaction, and offers new ideas to in-flight service quality for particular airlines. Regression analysis was used to determine the impact of the independent variables on customer satisfaction. Exploratory factor analysis was used to ensure the proposed dimensions of the constructs and whether the scales can be reduced into meaningful dimension for physical attributes, cabin crew attributes, flight attributes constructs. In order to have a quality research, reliability analysis was used to check the internal consistency of the scales used.

CHAPTER 4

DATA ANALYSIS RESULTS

4.1 Assessment of Normality

The normality of a data set's distribution is calculated by looking at the descriptive about the respondents' distribution. The data variables were not normally distributed because of asymmetries, discreteness, and boundedness of the data except food and beverage services of flight attributes as shown in Table 2. The possible reason behind this assumption could be due to the pandemic situation and limited data, which only represents a subset of the whole population.

Table 2

Test of Normality

Variables (n=122)	Kolmogorov-Smirnov ^a		Shapiro-Wilk	
	Statistic	Sig.	Statistic	Sig.
Physical Attributes	0.181	.000	0.920	.000
Food and Beverage	0.060	.200*	0.974	.017
Service, Quality and Performance	0.130	.000	0.901	.000
Customer Satisfaction	0.094	.010	0.954	.000
Cabin Crew Appearance	0.135	.000	0.920	.000
On – Board Entertainment	0.109	.000	0.933	.000

Skewness and Kurtosis indicate the shape of the distribution of a data set. Skewness represents the symmetry of a dataset's distribution while Kurtosis represents the height or elevation or flatness of the data compared to a normal distribution (Groeneveld & Meeden, 1984). Skewness and Kurtosis value of 0 indicates normal distribution. The table 3 shows Skewness (.735 to -1.356) and Kurtosis (2.474 to -.826) values. Majority of the variables were found to be negatively skewed and platykurtic.

Table 3*Descriptive summary*

Variables (n=122, $\mu=.000$)	Std.						
	Minimum	Maximum	Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Std. Error
Physical Attributes	-2.61631	1.37356	.99776146	-.668	.219	-.370	.435
Food and Beverage	-2.48096	1.65005	.95353826	-.449	.219	-.127	.435
Service, Quality and Performance	-3.47556	1.48339	.95824192	-1.356	.219	2.474	.435
Customer Satisfaction	-1.28816	2.38213	.96151284	.646	.219	-.375	.435
Cabin Crew Appearance	-1.70501	2.67819	.93941560	.735	.219	.510	.435
On – Board Entertainment	-1.99768	1.36085	.95231290	-.599	.219	-.826	.435

4.2 Preliminary Data Analysis

Preliminary data analysis is conducted to indicate amount of respondents. Missing item were removed according to the study's purpose, the number of respondents was dropped to 122. Among the 17 participants who were removed from the sample, two of them were eliminated because they flew to Larnaca airport in South Cyprus, seven were under 18 years old, and eight people were removed as outliers, based on Cook's Distance calculations (Cook, 1977).

Table 4 shows that 79 out of 122 survey participants are male, making up 65,8% of the study sample. The age of the participants is distributed as follows: 47,5% are from 21 to 30 years old, 41% are between 18 to 20 years old. The vast majority of respondents are students (81,1%), living mainly in the territory of Kyrenia (83,6%).

Over the past year, majority of the surveyed people have travelled to TRNC once (61,5%), or 2 to 5 times (32,8%). As it indicated in table 4, 64,8% of travelers have purchased a ticket for over 750TL. It would be expedient to point out that people flew in most cases by Turkish Airlines (73%) and the share of Pegasus Airlines in air transportation was 27%.

The majority's travel purpose was education (71,3%) accordingly with students being the main participants. The rest is divided between tourism (11,5%) and business (13,1%). But there were others who came for reasons such as visiting relatives (4,1%).

The statistics show that people with a minimum income of up to 2900 TL make up 47,5% of the sample and ranked to be the highest income category. The other two categories of income, 2900-3800 TL and 3800-7500 TL, are almost equally divided and make up 18% and 21,3% of respondents, respectively.

Table 4

Sample demographics

Gender	Frequency	Percent
Male	79	64,8
Female	43	35,2
Age	Frequency	Percent
18 - 20	50	41,0
21 - 30	58	47,5
31 - 40	10	8,2
41 - 50	2	1,6
Over 51	2	1,6
City of residence	Frequency	Percent
Nicosia	12	9,8
Kyrenia	102	83,6
Famagusta	7	5,7
Lefke	1	0,8

Table 4 (continued)*Sample demographics*

Occupation	Frequency	Percent
Student	99	81,1
Workforce	23	18,9
Travel frequency for the last 12 months	Frequency	Percent
once in year	75	61,5
2- 5 times in a year	40	32,8
Once or more in a month	7	5,7
The last travel purpose	Frequency	Percent
Education	87	71,3
Tourism	14	11,5
Business	16	13,1
Other	5	4,1
The last travel ticket price	Frequency	Percent
Up 150 TRY	6	4,9
Up to 300 TRY	17	13,9
Up to 450 TRY	8	6,6
Up to 600 TRY	12	9,8
Over 750 TRY	79	64,8
Average monthly income	Frequency	Percent
Up to 2900 TRY	58	47,5
2900 - 3800 TRY	22	18,0
3800 - 7500 TRY	26	21,3
7500 – 15000 TRY	9	7,4
Over 15000 TRY	7	5,7
Name of the last airline company you travelled by	Frequency	Percent
Turkish Airlines	89	73,0
Pegasus Airlines	33	27,0

4. 3 Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) was conducted to determine if the proposed dimension of the constructs used in the study are in accordance with the analysis of the respondents.

The table 5 shows that the Kaiser – Meyer - Olkin value is .927, exceeding the recommended value of .60 (Kaiser 1970; 1974) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance ($p < \alpha = 0.1$). Therefore, the data is considered appropriate for factor analysis.

Table 5

KMO and Bartlett's Test of Sphericity.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.927
Approx. Chi-Square		3296.349
Bartlett's Test of Sphericity	df	561
	Sig.	.000

Table 6 presents that the items are gathered under 6 factors and they explain 70,589% of the total variance.

Table 6

Exploratory Factor Analysis

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	16.461	48.416	48.416	10.004	29.424	29.424
2	2.655	7.808	56.224	6.684	19.658	49.083
3	1.458	4.289	60.513	2.278	6.699	55.782
4	1.418	4.171	64.684	1.192	3.505	59.286
5	1.052	3.095	67.780	1.121	3.298	62.585
6	0.955	2.810	70.589	0.717	2.108	64.693

Table 6 (continued)*Exploratory Factor Analysis*

7	0.868	2.553	73.143
8	0.780	2.294	75.437
9	0.662	1.947	77.384
10	0.644	1.895	79.279
11	0.609	1.790	81.070
12	0.564	1.657	82.727
13	0.539	1.585	84.312
14	0.502	1.475	85.787
15	0.478	1.406	87.193
16	0.450	1.323	88.516
17	0.403	1.185	89.70
18	0.378	1.111	90.812
19	0.335	0.985	91.797
20	0.327	0.962	92.759
21	0.311	0.914	93.673
22	0.286	0.842	94.515
23	0.241	0.710	95.225
24	0.225	0.662	95.887
25	0.210	0.618	96.505
26	0.194	0.571	97.076
27	0.184	0.54	97.616
28	0.165	0.485	98.101
29	0.149	0.438	98.538

Table 7 shows the factor loading of each of the variables in this study. According to the data, 12 items loaded on service quality and performance, 8 items loaded on food and beverage, 4 items loaded on each on-board entertainment and cabin crew appearance, and 3 items loaded on each physical attributes and customer satisfaction.

Table 7*Factor loadings*

Items	Factors					
	Physical Attributes	Food and Beverage	Service quality and Performance	Customer Satisfaction	Cabin Crew Appear ance	On-board Entertain ment
pa2	0.908					
pa5	0.432					
pa1	0.372					
fa6		0.778				
fa8		0.768				
fa1		0.618				
fa3		0.610				
fa7		0.537				
fa2		0.507				
fa11		0.404				
fa4		0.333				
cca3			0.711			
cca8			0.684			
cca11			0.644			
cca1			0.637			
cca4			0.629			
cca2			0.618			
cca9			0.595			
cca7			0.594			
cca5			0.560			
cca10			0.481			
cca12			0.412			
cca6			0.406			

Table 7 (continued)*Factor loadings*

cs2	-0.826	
cs1	-0.775	
cs3	-0.751	
cca15		-0.778
cca14		-0.660
cca16		-0.584
cca13		-0.548
fa13		0.867
fa14		0.814
fa15		0.506
fa12		0.474

4. 4 Reliability

The reliability of a scale indicates how free it is from random error with an aspect of internal consistency (Shannon 1993). In order to have internal consistency, the relative Chronbach's alpha level of measurement scales should be over .70 (Cronbach, 1951). Table 8 shows that the scales used in the study have good internal consistency, with Cronbach's alpha values reported as follows: .931 for service quality, performance factor of cabin crew attributes, .887 for appearance factor of cabin crew attributes, .865 for physical attributes, .916 for food and beverage factor of flight attributes, .872 for on-board entertainment of flight attributes, and .934 for customer satisfaction. Accordingly, it can be reported that all scales of the study have internal consistency.

Table 8*Reliability*

Dimensions	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Service quality, performance	.931	.932	12

Table 8 (continued)*Reliability*

Cabin crew appearance	.887	.886	4
Physical attributes	.865	.865	3
Food and beverage	.916	.917	8
On – board entertainment	.872	.872	4
Customer satisfaction	.934	.934	3

4. 5 Regression

Regression analysis is a collection of statistical methods for evaluating the relationships between one or more independent variables and the dependent variable (Amick et al., 1974). Regression analysis was performed to investigate the proposed model and test the hypotheses for relationship significance between physical attributes, flight attributes, cabin crew attributes on passenger satisfaction of air travelers.

In regression models, multicollinearity is characterized as the existence of high intercorrelations between two or more independent variables (Amick et al., 1974). It can be identified by examining the Variance Inflation Factor (VIF) and Tolerance values through linear regression. A variable that has a Tolerance value higher than .10 and VIF value below 10 indicates there is no concern for multicollinearity, as seen in Table 9.

Table 9*Collinearity Analysis*

	95.0% Confidence					Collinearity Statistics	
	Interval for B		Correlations				
	Lower bound	upper bound	Zero-order	Partial	Part	Tolerance	VIF
Constant	-.132	.132					
Physical Attributes	-.273	.064	-.444	-.113	-.086	.626	1.598
Food and Beverage	-.276	.134	-.510	-.063	-.048	.460	2.174

Table 9 (continued)*Collinearity Analysis*

Service Quality,							
Performance	-.370	.027	-.488	-.157	-.120	.489	2.047
Cabin Crew							
Appearance	-.044	.302	.405	.136	.103	.666	1.501
On – Board							
Entertainment	-.571	-.193	-.574	-.348	-.279	.543	1.841

Table 10 shows R^2 value which indicates that the constructs of the model explain 46,6% of the variance in customer satisfaction scale such as physical attributes, food and beverage, service quality and performance, appearance, on – board entertainment.

Table 10*Regression Analysis*

Multiple R	R^2	Adjusted R^2	Standard error
.660	.466	.412	.738

The analysis of variance (ANOVA) test indicates that the model has significant relationship between variables and passenger satisfaction ($n = 122$, Sig. = .000).

Table 11*Analysis of variance (ANOVA)*

	Sum of square	DF	Mean square	F	Sig.
Regression	48.754	5	9.751	17,922	.000
Residual	63.111	116	0.544		
Total	111.865	121			

Physical attributes (Sig. = .221, $p > .1$, SD = .9978), cabin crew attributes appearance factor (Sig. = .0143, $p > .1$, SD = .9394), food and beverage factor of flight attributes (Sig. = .0495, $p > .1$, SD = .9535) do not have significant relationship with passenger satisfaction of air travelers as shown in table 12 of coefficients. The only dimensions reaching statistical significance are on – board entertainment factor of flight

attributes scale (Sig. = .000, $p < .05$, SD = .9523) with the strongest inverse unique contribution to explaining the customer satisfaction variable (Beta = (-.378)) and cabin crew attributes service quality, performance factor (Sig. = .089, $p < .1$, SD = .9582) with inverse unique contribution to the customer satisfaction (Beta = (-.171)).

Customer Satisfaction = $3.39E-17 - .104 \times \text{Physical Attributes} - .071 \times \text{Food and Beverage} - .0172 \times \text{Service quality and Performance} + .129 \times \text{Cabin crew Appearance} - .382 \times \text{On-board Entertainment}$.

Table 12

Coefficients

	Unstandardized		Standardized			
	Coefficients		Coefficients			
	B	Std. error	Beta	t	Sig.	
Constant	3.39E-17	.067		.000	1.000	
Physical Attributes (PA)	-.104	.085	-.108	-1.23	.221	
Food and Beverage						
(FB)	-.071	.104	-.07	-.685	.495	
Service Quality,						
Performance (SQP)	-.172	.100	-.171	-1.714	.089	
Cabin Crew Appearance						
(CCAp)	.129	.087	.126	1.476	.143	
On – Board						
Entertainment (OBE)	-.382	.096	-.378	-3.999	.000	

Based upon the regression analysis the hypotheses: Service quality and performance of cabin crew have a significant relationship with passenger satisfaction of air travelers, and on-board entertainment services of flights have a significant relationship with passenger satisfaction of air travelers are accepted. Whereas, hypotheses: physical attributes of an aircraft have a significant relationship with passenger satisfaction with air travel, appearance of cabin crew have a significant relationship with passenger satisfaction of air travelers and food and beverage services

of flights have a significant relationship with passenger satisfaction of air travelers were rejected as shown in table 13.

Table 13

Results of the proposed hypotheses

Hypotheses	Results
H1: Physical attributes of an aircraft have a significant relationship with passenger satisfaction with air travel.	Rejected
H2a: Service quality and performance of cabin crew have a significant relationship with passenger satisfaction of air travelers.	Accepted
H2b: Appearance of cabin crew have a significant relationship with passenger satisfaction of air travelers.	Rejected
H3a: Food and beverage services of flights have a significant relationship with passenger satisfaction of air travelers.	Rejected
H3b: On-board entertainment services of flights have a significant relationship with passenger satisfaction of air travelers.	Accepted

CHAPTER 5

CONCLUSION AND IMPLICATIONS

The study results contradict the claims of Han, Hyun, and Kim (2014) and Liou and Tzeng (2007) that in-flight service performances positively influence passenger satisfaction of air travelers. This study presented negative (inverse) significance between on-board entertainment factors of flight attributes and cabin crew service quality performance factor with passenger satisfaction of Northern Cyprus air travelers. The inverse relationship of these variables to satisfaction can be explained and interpreted in many different ways. Businesses are profit-oriented, and every extra service they provide increases business costs. For airline companies, these costs are mostly drawn from the ticket prices. That is why the business class is always more expensive than the economy because of its services and facilities. Customers are price conscious and always try to save their dollar costs. Individual price sensitivity can provide one explanation for this reverse effect. Another explanation might be COVID-19 pandemic situation. Due to increasing COVID-19 precautions, social distancing and wearing masks became the individual's primary concern. Individuals might have intentionally preferred fewer meals and contact during this short flight.

Moreover, the short distance between the two destinations might make people less concerned about service quality and performance; for example, they can have a better meal in a fancy restaurant on arrival rather than a snack on board. Furthermore, because data collection was limited due to the pandemic and affected results that could have been obtained otherwise, people were more physiologically stable and physically present without fear of participating in the study. However, similar studies (Kim, Kim, and Hyun, 2015) positively impacted such in-flight service qualities as food, entertainment, physical environment, flight attendants' performance on perceived customer values, and satisfaction accelerate trust loyalty in airline companies. The results of this study do not fit with the theory that high levels of services such as conveying information to passengers, hospitable and friendly atmosphere contribute to individuals' psychological comfort (Namegati & Ariffin, 2013). This study revealed that the worldwide pandemic situation created fear and forced people to stay indoors, delay traveling plans to stay secured from the virus.

In line with the hypotheses, on-board entertainment was one of the primary and essential parts of airline transportation services. Even if the flight's duration from the farthest point in Turkey, from Istanbul to Northern Cyprus, takes 1 to 1.5 hours, passengers still like to pass their time enjoyably. Therefore, airlines must pay great attention to the organization of leisure during flights. Occasionally, the magazine found in the front seats' back pocket is not enough to keep travelers occupied and entertained. It can be considered reasonable and imperative to provide additional entertainment facilities during the flight to keep passengers satisfied. These facilities can include audio or video entertainment, TV, games, and books. Part of these on-board facilities should be customized according to traveler's needs and wants build on existing evidence of Park et al., (2004) and Kim, Kim, and Hyun (2015) study.

It is advisable for the airline companies to regularly conduct customer reviews and collect feedback to examine passengers' needs as it is the part of the process that leads from passenger satisfaction to passenger loyalty, as stated in studies of Etemad et al., (2016); Kim et al., (2015) and An & Noh (2009).

While previous research has focused on the relationship between in-flight food service and customer satisfaction, as food service mostly comprises external (presentation style) and internal (food quality) factors (Ryu et al., 2012), the results demonstrate that the air travelers of Northern Cyprus did not consider flight attributes food and beverage as an essential factor. The hypothesis test of the food and beverage factor did not support significance in relationship with passenger satisfaction. To better understand if the pandemic's consequences were the reason for these results, it is suggested to do the analysis again in stable economic conditions.

It is presumed that the model has a moderation or mediation effect and suggests looking at the relationship between each dimension such as physical environment, on-board hospitality, entertainment, and passenger's satisfaction separately under normal conditions. An extension on the subject should be built to understand potential customers better and identify the airline company's impact on satisfaction level.

Undoubtedly, the level of service that exists today will not be considered satisfactory tomorrow. Turkish Airlines and Pegasus Airlines, as one of the leading airlines in Turkey, must regularly learn customer opinions to better understand their

preferences by updating their products and services throughout their entire service chain. Thus, the on-board service concept includes the aircraft fleet, flight safety, and service quality. It would be appropriate to say that if these factors are tested separately, they might produce significant results on air traveler's satisfaction levels.

For any company, a lack of advanced technology is a major competitive disadvantage. Turkey's leading airlines, currently the only ones flying to Northern Cyprus, such as Turkish Airlines and Pegasus Airlines, have the potential to remain competitive in the global market under certain conditions. Modern aviation equipment, level of services that meet modern requirements, latest technologies, including information technologies, and an insight into customer's perceptions are essential to succeed and lead the market. All these are possible under the control of modern marketing and management tools. Companies furthermore need to study passenger experiences' complexity on-board to understand their varying satisfaction levels and make room for innovations and extensions to their facilities to catch customer attention and increase customer satisfaction.

Future research can be carried out to examine the reasons for the inverse relationship between on-board factors and passenger satisfaction of air travelers identified in this study.

As the current study was done during the lockdown and pandemic situation, it is preferable to do it again once the economic conditions of world get stabilized. Moreover, researchers can find new and convenient ways to access travelers in quarantine conditions.

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APPENDIX A: SURVEY QUESTIONNAIRE

You are invited to participate in a survey devoted to the study of impact of on - board factors on passenger satisfaction through the case of air - travelers to Northern Cyprus.

This research composed by Muhammed Charyyev, MBA student of Final International University and supervised by Assist. Prof. Dr. Kevser Taşel Jurkoviç.

Your survey responses will be strictly confidential and data from this research will be used only for academic purposes.

The survey's duration is approximately 7 minutes and participation is voluntary. By starting the survey, you are accepting to give consent for evaluation of your responses. If you feel any concern of discomfort, you are free to withdraw from the survey at any time. In such a case, the use of the information you provide will only be possible with your consent.

Your sincere, thoughtful answers are kindly requested.

Thank you in advance for your participation.

Muhammed Charyyev

Gender:

1. Male;
2. Female.

Age: _____ years old.

City of Residence: _____

Occupation: _____

Travel frequency for the last 12 months:

1. Never;
2. Once in year;
3. 2- 5 times in a year;
4. Once or more in a month;
5. Once a week;

The last travel purpose:

1. Tourism;
2. Education;

3. Business;
4. Medical treatment;
5. Emergency;
6. Other.

The last travel ticket price:

1. Up 150 TRY;
2. Up to 300 TRY;
3. Up to 450 TRY;
4. Up to 600 TRY;
5. Over 750 TRY.

Average monthly income:

1. Up to 2900 TRY;
2. 2900 - 3800 TRY;
3. 3800 - 7500 TRY;
4. 7500 – 15000 TRY;
5. Over 15000 TRY.

Name of the last airline company you travelled by: _____

To what extent do you agree with the following sentences regarding cabin crew attributes:

Ø – was not available (*Strongly disagree* ① ② ③ ④ ⑤ *Strongly agree*)

1. This airline's cabin announcements clear and precise Ø ① ② ③ ④ ⑤
2. This airline's cabin safety demonstration is always important Ø ① ② ③ ④ ⑤
3. This airline's cabin crew is proactive Ø ① ② ③ ④ ⑤
4. This airline's cabin crew is courteous, polite and respectful Ø ① ② ③ ④ ⑤
5. This airline's cabin crew has ability to handle customer complaints
Ø ① ② ③ ④ ⑤
6. This airline's cabin crew has ability to handle unexpected situations, consistently and dependably Ø ① ② ③ ④ ⑤
7. This airline's cabin crew is willing and able to provide service in a timely manner Ø ① ② ③ ④ ⑤
8. This airline's cabin crew always does inspection of passenger's seat belt

- Ø ① ② ③ ④ ⑤
9. This airline's flight attendants have the required knowledge to answer my questions Ø ① ② ③ ④ ⑤
10. This airline's flight attendants have my best interests in mind Ø ① ② ③ ④ ⑤
11. This airline's flight attendants promptly respond to my requests Ø ① ② ③ ④ ⑤
12. This airline company always provides additional (baggage claim, connecting flight) information by on-board staff Ø ① ② ③ ④ ⑤
13. This airline's flight attendants are visually attractive Ø ① ② ③ ④ ⑤
14. This airline's flight attendants are physically attractive Ø ① ② ③ ④ ⑤
15. This airline's flight attendants are handsome/pretty Ø ① ② ③ ④ ⑤
16. The appearance/uniform of on-board staffs of this airline company is always appropriate Ø ① ② ③ ④ ⑤

To what extent do you agree with the following sentences regarding physical attributes of aircraft:

- Ø – was not available (*Strongly disagree* ① ② ③ ④ ⑤ *Strongly agree*)
17. Aircraft of this airline is clean and has pleasant interior Ø ① ② ③ ④ ⑤
18. This airline has a good cabin equipment conditions Ø ① ② ③ ④ ⑤
19. Seats of this airline's aircraft are very comfortable and relaxing (seats recline flat) Ø ① ② ③ ④ ⑤
20. The electrical devices provided in aircraft of this airline function well (reading lights, call buttons, and power ports) Ø ① ② ③ ④ ⑤
21. The air quality of this airline's cabin is appropriate Ø ① ② ③ ④ ⑤
22. The temperature during the flight of this airline's aircraft is comfortable Ø ① ② ③ ④ ⑤

To what extent do you agree with the following sentences regarding flight attributes:

- Ø – was not available (*Strongly disagree* ① ② ③ ④ ⑤ *Strongly agree*)
23. This airline's on-board food is nutritional balanced Ø ① ② ③ ④ ⑤
24. This airline's on-board meal and drinks are accordingly and properly temperature Ø ① ② ③ ④ ⑤

25. This airline has sufficient amount of food Ø ①②③④⑤
26. This airline has a variety of non-alcoholic drinks Ø ①②③④⑤
27. This airline has a liquor selection diversity Ø ①②③④⑤
28. The food served in this airline is tasty Ø ①②③④⑤
29. The food served in this airline is fresh Ø ①②③④⑤
30. The quality of food ingredients is good Ø ①②③④⑤
31. The food presentation on the tray is attractive Ø ①②③④⑤
32. The silverware and tableware are aesthetically appealing in this airline
Ø ①②③④⑤
33. The food portion is sufficient in this airline Ø ①②③④⑤
34. There are various on-board reading materials (books, newspapers, and
magazines) provided in this airline company Ø ①②③④⑤
35. There are various on-board programs (movies, television programs, and games)
provided in this airline company Ø ①②③④⑤
36. There is various on-board music (e.g. classical, jazz, popular music) provided in
this airline company Ø ①②③④⑤
37. The aircraft of this airline company has up-to-date on-board entertainment
equipment (wide screens) Ø ①②③④⑤

**To what extent do you agree with the following sentences regarding
cassenger satisfaction:**

- Ø – was not available (*Strongly disagree* ① ② ③ ④ ⑤ *Strongly agree*)
38. Overall, I am satisfied with my experience when using this airline company
Ø ①②③④⑤
39. Overall, compared to other airlines, I am satisfied with this airline company
Ø ①②③④⑤
40. My decision to use this airline company was a wise one Ø ①②③④⑤