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Service Quality in Turkish Airlines: UGC approach to quality variables analysis

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Master in International Management

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BUSINESS
SCHOOL

Department of Marketing, Strategy and Operations

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RESUMO

Esta tese tem como objetivo estudar (1) Quais as variáveis de satisfação que determinam a satisfação dos consumidores no geral, (2) Quais as variáveis que determinam a intenção de recomendação, (3) As variáveis mudam de acordo com o tipo de viajante, (4) A intenção de recomendação varia de acordo com o tipo de viajante, e (5) Quais são os temas centrais mencionados nas narrativas partilhadas online pelos passageiros.

O estudo utilizou dados recolhidos através da Plataforma online Skytrax e procedeu ao estudo quantitativo e qualitativo tanto de rankings numéricos como conteúdo textual.

Os resultados revelaram que as variáveis que determinam satisfação geral são as mesmas que incentivam intenção de recomendar, i.e., "value for money", "ground service" e "seat comfort". Ainda, as variáveis mais importantes, tendo em conta o tipo de viajante, são "value for money", "ground service" e "seat comfort" para todas as categorias exceto "solo traveller" que preferiu "wi-fi & connectivity" em alternativa ao "seat comfort". Além disso, o estudo confirma, que para os passageiros no geral, apenas "value for money", "ground service" and "seat comfort" são relevantes para potenciar a intenção de recomendação. É ainda revelado que não há correlação entre tipo de viajante e a intenção de recomendação. Por fim, a análise detetou que os temas mais importantes para os passageiros são: "flight", "Turkish Airlines", "airport", "seat", "boarding", "service", "food", "ticket", "room", "experience" and "IFE".

Esta tese pretende elevar as orientações aos gestores e escolásticos sobre como melhorar a qualidade do serviço.

Palavras-Chave: Indústria Aérea; Qualidade do Serviço; UGC; Skytrax; Satisfação do Consumidor

ABSTRACT

This paper aims to study (1) What are the variables of satisfaction that determine overall satisfaction, (2) What are the variables of satisfaction that determine intention of recommendation, (3) Do variables of satisfaction vary according to traveller type, (4) Does intention of recommendation vary according to traveller type, and (5) What are the main themes in the narratives shared online by passengers.

This dissertation was based on data collected from the online platform Skytrax and conducted a quantitative and qualitative analysis of both numerical ratings and textual content.

The study confirmed that the variables that determine overall satisfaction are the same variables that enhance intention of recommendation, i.e. value for money, ground service and seat comfort. The data revealed that the most relevant determinants for travellers segmented by type are value for money, ground service and seat comfort in all categories except for solo travellers that preferred wi-fi & connection before seat comfort. The study also confirms that, for customers overall, only value for money, ground service and seat comfort are relevant to recommend the airline. It also reveals that there is no correlation between traveller type and intention to recommend. Lastly, the analysis from passengers' comments reveals that the most important themes are flight, Turkish Airlines, airport, seat, boarding, service, food, ticket, room, experience and IFE.

The study will try to understand the main variables that passengers value as good quality and hopefully clarify practitioners and researchers on how they can improve their service.

Key words: Airline Industry; Service Quality; User Generated Content; Skytrax; Customer Satisfaction

CONTENT

TABLE AND FIGURES INDEX

CHAPTER 1: INTRODUCTION

The aviation industry is one of the most prominent sectors of activity which until the COVID-19 pandemic was continuously growing (STATISTA, 2023), registering 4.5 billion passengers transportation in 2019 (IATA, 2023). The sector was estimated to represent 3.5% of the world GDP before the devastating effects of the pandemic (ICAO, 2019). Airline services are highly valuable for people and goods transportation as airplane is the fastest transportation method existing and its market size was estimated to reach 841.4bn US Dollars in 2023 (STATISTA, 2023). The growth of the sector is remarkable leading to fierce competition, resulting in businesses to struggle in the market (Arjomandi, Hervé Dakpo, & Heinz Seufert, 2018). The deregulation of the markets, the rise of low-cost carriers and the emergence of diversified business models, such as alliances, were majorly responsible for the surviving challenges of the airline businesses (Gillen & Morrison , 2005). Airline companies compete over price and quality (OCDE, 2014). One of the strategies airline companies are using to enhance their business is to invest in marketing and service quality to leverage their competitiveness (Chung & Juinn Bing Tan, 2022). Not only that, but from a customer point of view, companies must also understand how their behaviour is changing towards purchase decision (Büyükozkan, Alpay Havle, & Feyzioğlu, 2020).

Intention of repetition and satisfaction of the customer is one of the priorities of a company when it comes to analysing the strategy of the service. In the highly competitive environment of the airline industry, businesses struggle finding the right conditions to satisfy all customers (Baker, 2013). Studying service quality dimensions not only provides a guiding framework of action for companies, but it also allows direct evaluation of what consumers consider valuable in the service. Many frameworks have been studied and used both by scholars and businesses. User generated content (UGC) constitute a type of evaluation method used by consumers which provide dependable data that businesses rely on to conclude which aspects of the service need improvement.

The most influential aspect of UGC for businesses is that if the service is well received, the consumer will recommend and therefore UGC functions as a branding method. Future users consult the available reviews to support their decision of purchase. As the information is considered trustworthy and reliable it is very effective for customer retention, intention of repetition or as a form of reassurance for new customers. On the contrary if the issue of discussion is badly reviewed it could show a negative impression of both the service and the image of the company. Companies must pay attention to their service quality as the user can easily change their product choice from reading a review.

1.1. Objectives

This study aims to understand how air travellers perceive their service experience throughout the entire flight process. As many conceptual models have been developed it is interesting to understand whether the criteria of a satisfying experience remain the same or if different travellers value distinct aspects of the service compared to each other.

By using a mixed method of quantitative and qualitative analysis the study will try to understand the main variables that passengers value as good quality and hopefully clarify practitioners and researchers on how they can improve their service.

1.2. Relevance of the present study

This thesis reviews the studies conducted around the topic of service quality, the way it has evolved in terms of feedback data collection and the importance of UGC to understand satisfaction from the customer point of view. The purpose of the present dissertation aims to extend a previous study conducted by Brochado et all. (2022), by evaluating the service quality of a specific airline company. Therefore, this study focuses on measuring which service quality attributes have more influence to determine satisfaction and which ones determine intention of recommendation. The variable of type of traveller will be tested as well to identify whether different groups value certain service attributes or if it has no influence over satisfaction with the service.

The present research reveals to be important to add one more reference to the array of studies on the evaluation of service quality by focusing on specific groups, in this case traveller type.

This study is also relevant as it adds more material to compare different models of quality measurement. As it will be developed in the literature review chapter there are many models that try to measure quality in the most complete way regarding collection of information. This thesis proposes to be one more study that assists these models in terms of information collected from customers.

1.3. Research problem

The studies carried out through the years haven’t found a model of quality assessment that is fully consensual as most of them do not cover some aspects of quality depending on factors such as the culture of the passenger or some specific attributes of quality. User generated content is a relatively new method of collection of information that proposes to collect much more information efficiently.

There are relatively fewer studies addressing the potentials of the UGC in service quality assessment. This thesis intends to evaluate the effectiveness of UGC in data collection and capability of extracting valuable information.

1.4. Research questions

The specific questions of the thesis study are as follow:

(1) What are the variables of satisfaction that determine overall satisfaction?
(2) What are the variables of satisfaction that determine intention of recommendation?
(3) Do variables of satisfaction vary according to traveller type?
(4) Does intention of recommendation vary according to traveller type?
(5) What are the main themes in the narratives shared online by passengers?

1.5. Dissertation structure

Chapter 2 includes a review of the literature on service quality in the airline flight services in general and the web reviews as a source of information from customers in specific. This review is divided into the following sections: (1) Service Quality Concept, (2) Service Quality in Airline Business and (3) User Generated Content (UGC).

Chapter 3 describes the conceptual model used to develop the thesis, i.e. the visual explanation between the concepts studied in this thesis.

Chapter 4 is the contextualization of the airline company used for this study, i.e. Turkish Airlines.

Chapter 5 focuses on the methodology which includes the research design, the data collection method and the method of analysis. This chapter explains how the online platform Skytrax works for the purpose of data collection and describes all the data used for the later analysis.

Chapter 6 presents the results of the analysis and resumes the discussion by answering the proposed questions.

Chapter 7 ends the present dissertation with conclusions and recommendations. A discussion of the results is described together with the limitations found with the study. Lastly recommendations are presented as well as some managerial implications.

The thesis is finalized with the bibliographic references and the annexes.

CHAPTER 2: LITERATURE REVIEW

2.1. Service Quality Concept

The concept of service quality has been pursued by many researchers and no decisive consensus has been reached yet. (Ramya, Kowsalya, & Dharanipriya, 2019) define service quality as the capacity of a service provider to satisfy the customer efficiently and by which it can improve the performance of the business. Lewis and Booms (1983) determined that service quality is a reflexion of corporate image and a tool to measure whether the service matches the pre-established expectations of the customer (Lewis & Booms, 1983). In fact, investigation concluded that most definitions of service quality compare expectations and perceptions of the customer regarding a service (Seth, Deshmukh, & Vrat, 2005).

Studying service quality assessment is important for businesses (Tian, et al., 2020) as several findings conclude that service quality improves competitive advantage if performance enhances customer satisfaction (Ismail, Hariri Bakri, Bin Rusli, Aqmal Bin Abu Bakar, & Habibullah, 2023).

The foundational theory about service quality probe that quality can be measured through the variable satisfaction (K. Brady & Cronin Jr., 2001). Parasuraman defines service quality as the difference between consumers' perceptions of the service offered and the expectations about such service. Expected quality is what consumers sense the service should offer, prior to any experience. Perceived quality is the consumers judgment about the service after experiencing it by comparing it to the expectation. The comparison is made using a variety of service quality attributes (Parasuraman, Zeithaml, & L Berry, 1988). Understanding customers' expectations is essential to define and deliver high quality services (Zeithaml, Parasuraman, & Berry, 1996). Using the concept of perceived service quality, researchers compare the gap between the expectations of the customer with the actual result of the service performed (Grönroos, 1984).

Scholars developed different tools to determine service quality. Measuring quality requires different approaches considering whether it's a product or a service. Service quality is difficult to measure due to its characteristics of intangibility, heterogeneity and inseparability of production and consumption (Parasuraman, Zeithaml, & Berry, 1985). Models are useful to measure what variables must be improved to approximate the perceived and expected service. Firms must ask what are the resources and activities that must be improved in order to deliver a service, considered by costumers, as of quality (Grönroos, 1984).

Early research proposes SERVQUAL model, which has received adjustments according to different authors. SERVQUAL is a framework that proposes five variables that determine quality. Reliability,

responsiveness, assurance, empathy and tangibility are characteristics that determine if the quality was according to the expectations or perceptions of the customer. (Parasuraman, Zeithaml, & Berry, 1985).

Alternatively, Grönroos proposes a two-dimension model, the functional and the technical. The technical dimension focuses on the quality evaluation of the core service that the consumer receives from the seller. The functional dimension evaluates the service delivery i.e., the components that create the experience itself (Grönroos, 1983). In more detail, technical dimension weighs five items: employees' knowledge, technical solutions, employees' technical ability, computerized systems and machine quality. The functional dimension weights seven items: internal relationship, customer contact, personal image, accessibility, attitude, behaviour and service mindedness (Ganesh & Haslinda, 2014).

As research evolved, many models based on SERVQUAL framework were developed, as it is claimed that SERVQUAL is not comprehensive enough to be adapted to different service sectors (Wu & Cheng, 2013). As a direct critique to the SERVQUAL model developed by Parasuraman, Cronin & Taylor proposed SERVPERF (Service Performance) which instead of measuring satisfaction, the model focuses solely on performance measurement (Cronin & Taylor, 1992). The model has been proved to outperform SERVQUAL but has also shown not to be efficient enough (K Jain & Gupta, 2004). On the other hand, critics to Grönroos model point out that there is no explanation on how to measure both technical and functional dimensions (Ghotbabadi, Feiz, & Baharun, 2015). Nevertheless, academia has been debating the validity of these two foundational models in different service industries. It has also been questioned what other perspectives should be added to understand service quality better.

A prominent chronological literature review has compiled the evolution of the academic perspectives on service quality and concluded that many authors' models were created based on the dimensions of tangibility, assurance, empathy, reliability and responsiveness but they added their own valuable dimensions as well; in addition, that service quality dimensions cannot be generalized when studying customers specific views and demands; and lastly, that service quality itself has been reshaped by both globalization and more active customer participation. Service quality studies have become a legitimate topic within marketing studies and both academic and practitioners perceive the valuable insights that can come from reaching customers' assessment on the service. Additionally, service quality has undoubtedly become a strategic element for businesses (Mukhtar, Anwar, & Ilyas, 2017).

The airline industry started from using the popular SERVQUAL model in its' attempt to better grasp into customers' requirements concluding that the model was not flexible and did not undertake the intangible characteristics of the service (Izwan Mohd Badrillah, Shuib, & Nasir, 2021).

2.2. Service Quality in the Airline Business

Considering the airline business competitive environment, managers have centred much of their strategy on customer service and quality. Studies of Service Quality in the Airline Business have essentially focused on measuring service quality dimensions, customer satisfaction and intention of repurchase, as well as customer perception of quality (Zhao, 2019). Carried out studies concluded that passengers' experiences are conditioned by very distinct factors, such as demographics, cultural differences, travel purposes and geographical location. Airline companies have been exploring performance measures using the logic behind models based on service quality dimensions i.e., by extracting customers feedback on the attributes that describe service quality (Chung & Juinn Bing Tan, 2022).

The airline industry adapted the SERVQUAL model to design the AIRQUAL framework to measure service quality specifically for this industry. The AIRQUAL model was developed by Bari (2001) and includes five dimensions, airline tangibles, terminal tangibles, personnel, empathy and image. The airline tangibles refer to the airplane interior, the in-flight food and beverages, the cleanliness of the plane's toiles, the seat comfort and the quality of the air-conditioning. Terminal tangibles relates to airport toilets, availability of shops at the airport, parking space availability, assigned areas for smokers and comfort of the waiting halls. Airline personnel include items such as employees' attitude, knowledge, experience, level of education, personal care of employees towards everyone and dutifulness of employees. As for the empathy dimension, it addresses aspects like punctuality of the departures and arrivals, transportation between city and airport. The last and fifth dimension image covers items such as availability of low-price ticket offerings, consistency of ticket prices and image of the brand (Izwan Mohd Badrillah, Shuib, & Nasir, 2021). Other authors may add several other dimensions to fill in the model and try to improve it, even though it has been proved to be an inflexible one because the five basic dimensions vary according to cultural clusters (Nedunchezhian & Thirunavukkarasu, 2018).

Brochado, Rita, Oliveira & Oliveira (2019) compiled numerous proposals of service quality dimensions that have been developed through the years, as many authors attempted to find the most adequate measuring model of service quality. As presented in this study 'IATA defines the important dimensions of service quality as reservation seating capacity, ticketing, check-in processes, inflight services, baggage handling and post-flight services. Gilbert and Wong (2003) consider reliability, assurance, facilities, employees, flight patterns, customisation and responsiveness. Park et al (2005) use inflight services, reliability and customer service and convenience and accessibility. Other researchers consider air safety, baggage handling, on-time arrivals and departures, employee courtesy,

airplane cleanliness, amenities, flight schedules and alternate flight arrangements for passengers who miss flights (Gursoy et al., 2005; Pakdil and Aydın, 2007; Chau and Kao, 2009). Alternatively, safety, frequency, punctuality, penalties for ticket changes, cabin services and inflight comfort are considered by Chen and Chang, 2005; Liou and Tzeng, 2007; Liou et al., 2011; Martin et al., 2011. More recent studies have developed quality dimensions focusing on inflight service by using the items employees, facilities, flight schedule and information, supporting services and physical environment (Li et all, 2017)' (Brochado, Rita, Oliveira, & Oliveira, 2019). Other studies also propose dimensions focusing on web platform improvement, pricing, airport service during/after flights, flight schedules and routes (Tsafarakis, Kokotas, & Pantouvakis, 2018).

The International Air Transport Association (IATA), the trade association that supports airlines in aviation activities and legal matters, developed the AIRSAT benchmarking survey, using more than 80 key performance indicators (KPIs) to assess the passenger satisfaction during the entire experience. IATA has also conceived the Global Passenger Survey (GPS) which is carried out annually and provides in-depth information about preferences, behaviours of the passengers and service quality (IATA, 2023).

The APEX Five Star and APEX Four Star Airline Awards, formerly APEX Official Airline Ratings™, is an airline evaluating method based on certified passengers feedback provided by APEX, a non-profit and one of the world's largest associations for international airlines, in partnership with TripIt, world's highest-rated travel-organizing app, from SAP Concur (APEX, 2023).

As much as the research is extensive, accord has not yet been reached and models are in continuous development until today. The scholar field argues that subjective perception surveys and objective criteria measurement techniques, as SERVQUAL and the models above described, are disadvantageous. Data collection is time consuming, sample size is limited, research scope is limited, and social desirability is biased (Lu, Mitra, Wang, Wang, & Xu, 2022). Briefly, academia might not be unanimous regarding what are the absolute attributes for understanding service quality, but all studies agree that they are not developed enough and capable of conducting fully accurate analysis.

Studies suggest that alternative approaches based on digital sources are substituting the traditional methods of data collection. Instead of post-service surveys, usually happening onboard or at the departure gates, managers and the research community can rely on free data available in online platforms. It is information that is immediately available and updated in real time. It is argued that the best way of extracting and evaluating information about customers experience is by combining both traditional methods with new digital analytical tools (Badanik, Remenysegova, & Kazda, 2023).

2.3. User Generated Content

To complement traditional marketing methods, practitioners have invested their marketing resources in digital tools for information collection, such as user generated content (UGC). Studies of service quality are using UGC as data source, highlighting their advantages and results. Due to the technological development customers have become more and more engaged in sharing their experience, perception of service and evaluation of the services through online platforms.

The information sharing is an interactive process between previous users and future consumers (Rasool & Pathania, 2021). Studies prove that word of mouth are one of the contributing factors for the development of the expected service envisioned by the customer (Baker, 2013). In the past, marketing worked as a one-way communication process. Consumers had a perception of the service according to what companies displayed as necessary information. Web 2.0 and word of mouth changed the way consumers interact with the service and their purchase intention by providing free and detailed information. Future consumers can then compare options and have a better perception of service quality (Ukpabi & Karjaluoto, 2018).

UGC can be text writings, pictures, ratings (Shadiyar, Ban, & Kim, 2020) and can be found in social media and online platforms such as Twitter, Facebook, Instagram, YouTube, TripAdvisor, personal blogs and forums. It is also stated that potential buyers tend to consult other users reviews before purchasing, thus influencing their decision. From a customer point of view, research identify UGC as information, opinions or knowledge about the service or product that future customers consult as a form of reducing perceived risk (Ban & Hak-Seon , 2019). Airline services can only be experienced after consumption, hence travellers rely on the experience of others (Ukpabi & Karjaluoto, 2018). It is a crucial tool to build brand image and attract new customers (Donthu, Kumar, Pandey, Pandey, & Mishra, 2021).

Several studies conclude that consulting and using UGC provide substantial other advantages for firms as they are a source of business growth, help improve performance, help better understanding customer experience and it is considered trustworthy data. Moreover, UGC offers a budget and time efficient system to collect such information. It becomes imperial for businesses and marketing to use UGC as a tool for both recommendation and quality improvement, especially compared to traditional methods.

Quality improvement studies on UGC are mostly related to weather UGC either acts as a recommendation or as a risk alert. Customers who experienced a satisfactory service will recommend it and enhance better chances of purchase intention from readers (Hosany & Prayag, 2013). However, some studies claim that analysis of UGC can have some downsides. UGC is publicly accessible and is an interactive process, generating almost unlimited amount of data and making it hard to analyse and fully use the information obtained (Lee & Yu, 2018).

Another relevant aspect about UGC is that emotions are tied to be important parameters to determine satisfaction or dissatisfaction and UGC analysis captures this information more efficiently than traditional methods. Yet combining unstructured online reviews with information collected from traditional surveys is defended to be the optimal method (Rasool & Pathania, 2021).

2.4. User Generated Content using Skytrax

Skytrax is an online platform that displays airline quality related information about more than 490 airline companies. It is a leading independent customer website where reviews related to airline, airports and air travel are conducted. It runs the World Airline Survey and is the leading rating organization of international air transportation. The survey consists mainly of questions about all phases of the travel experience by using five items of service quality measurement. The content includes ratings regarding four categories: (1) airlines, (2) airports, (3) lounges and (4) airplane seats. Each category holds 7 to 8 items to rate. The rating is made in a 5-star scale system and is complemented by an extra overall rating on a 1-10 scale basis (Lacic, Kowald, & Lex, 2016). Additionally, the website allows customers to provide textual feedback on the quality dimensions of value for money, ground service, seat comfort, cabin staff service, food & beverages, inflight entertainment and cabin wi-fi & connectivity. The users who write a review are subdivided in categories according to their profile, namely Business, Family, Couple or Solo (Skytrax, 2023). The variables are quantitative in nature and the rating can only be given after a textual review is done (Bogicevica, Yang, Bujisic, & Bilgihan, 2017). At the end of the review the user can also fill in a checkbox answering the question of whether they would recommend the airline to another person (Lacic, Kowald, & Lex, 2016). which means Skytrax combines both a traditional method of data collection and takes advantage of the contribution of customer reviews to extract further information.

Rasool & Pathania (2022) used a mixed method of logistics regression and sentiment analysis to understand the causal relationship between consumer judgment of the service quality and their online recommendations. By evaluating the Skytrax attributes of seat comfort, cabin service, food & beverages, infotainment and ground service, from the Business and Economy class, the study concluded that satisfied consumers tend to repurchase and recommend to others.

Wattanacharoensil & Bunchongchit (2021), focused in analysing the perception of service quality in airports by traveller type, i.e., Solo leisure, Couple Leisure, Family Leisure and Business, considering that Leisure travellers vs. Business travellers have distinct expectations towards the usage of the airport. By analysing first overall satisfaction and then satisfaction by passenger type, the study contributed to reveal distinctions in interests of different segments. In summary, couple leisure

travellers and business travellers have higher expectations towards airport services while families and solo travellers are less critical (Wattanacharoensil & Bunchongchit, 2021).

Another study conducts sentiment analysis and co-occurrence analysis to classify users reviews and identify the major concerns regarding service quality. The study notes the relation between satisfaction and flight delays. It turns out that most passengers have a bad experience of the service after a flight delay compared to travellers who flew on schedule and experienced the same service after the flight (Song, Guo, & Zhuang, 2020).

More recently other authors studied the intention of recommendation in the post-COVID-19 period, by connecting the behaviour with the variables of emotions. The study reveals the direct relation between positive emotions as causing positive recommendation and negative emotions as feeding critics or not providing recommendation at all. The study also concluded that some attributes are more relevant than others to generate recommendation. Higher quality of the food, comfort of the seats and the in-flight entertainment are the most relevant attributes to guarantee satisfaction with the service and therefore enhance recommendation intentions (Wang, Zheng, Tang, & Luo, 2023).

Lastly, to name yet another study to identify the determinants of service quality perceptions Brochado et all (2022) explores the Chinese Airlines market, concluding that the attributes that enhance satisfaction and recommendation vary according to different types of travellers i.e. solo leisure, couple leisure, family leisure and business (Brochado, Duarte, & Mengyuan, 2022).

Table 1: Studies of service quality attributes using Skytrax data.

Autor	Research Context	User Generated Content	Variables of study	Data Analysis
(Song, Guo, & Zhuang, 2020)	24 175 reviews; 16 airlines	User reviews;	Overall traveller	Lexicon Sentiment Analysis; Co-occurrence analysis
(Wattanacharoensil & Bunchongchit, 2021)	7358 reviews;	Overall ratings; Review headers and review comments	Solo Leisure; Family Leisure; Couple Leisure; Business	Sentiment analysis, Lemmatization; Partial least square
(Rasool & Pathania, 2022)	3634 reviews and ratings; 3 airlines	Numerical ratings; text reviews	Economy class; Business class	Logistic regression; Sentiment analysis
(Brochado, Duarte, & Mengyuan, 2022)	2035 reviews; 4 airlines	Qualitative and quantitative reviews	Solo Leisure; Family Leisure; Couple Leisure; Business	Regression Analysis; Leximancer system;
(Wang, Zheng, Tang, & Luo, 2023)	6798 reviews; 100 airlines	Textual review; Numerical ratings	Overall traveller;	Logistic Regression;

Source: Table created by the author of the dissertation

Most of the studies within UGC focus on what are the most efficient methods of analysis of the data, as UGC provides enormous amount of information. The results of the studies reveal which are the most influential service quality attributes that contribute for customer satisfaction. Other studies reveal the real impact of UGC regarding brand reputation as word of mouth or reviews reflect rather

straightforwardly the positive or negative impression towards the service (Rasool & Pathania, 2022). In that way, most studies conducted using UGC as data source, conclude that UGC can indeed give an effective contribution to understand customer satisfaction. Limitations in the use of UGC for service quality studies are identified such as difficulty in finding the demographics of the online reviews (see (Kwon, Ban, Jun, & Kim, 2021) and (Kipkorir, Sven, & Rosário, 2023)). Therefore, there is a positive relationship between combining service quality attributes and UGC. UGC in-depth results reveal additional data that may help understanding better what attributes are more relevant (Bogicevica, Yang, Bujisic, & Bilgihan, 2017).

Differentiating travellers is useful for airline managers because attributes or service quality dimensions may vary according to the type of passenger, as their expectations about the service and experience are distinct (Wattanacharoensil & Bunchongchit, 2021). Chatterjee proposes that service quality dimensions vary depending on the air travel service type i.e., low cost or full-service airlines and type of travel (Chatterjee, 2019).

The aim of this study is to use UGC to determine whether service quality dimensions vary according to traveller type and hopefully contribute to the amount of research that intends to predict satisfaction in different traveller segments. Specifically, this study will cover the following topics:

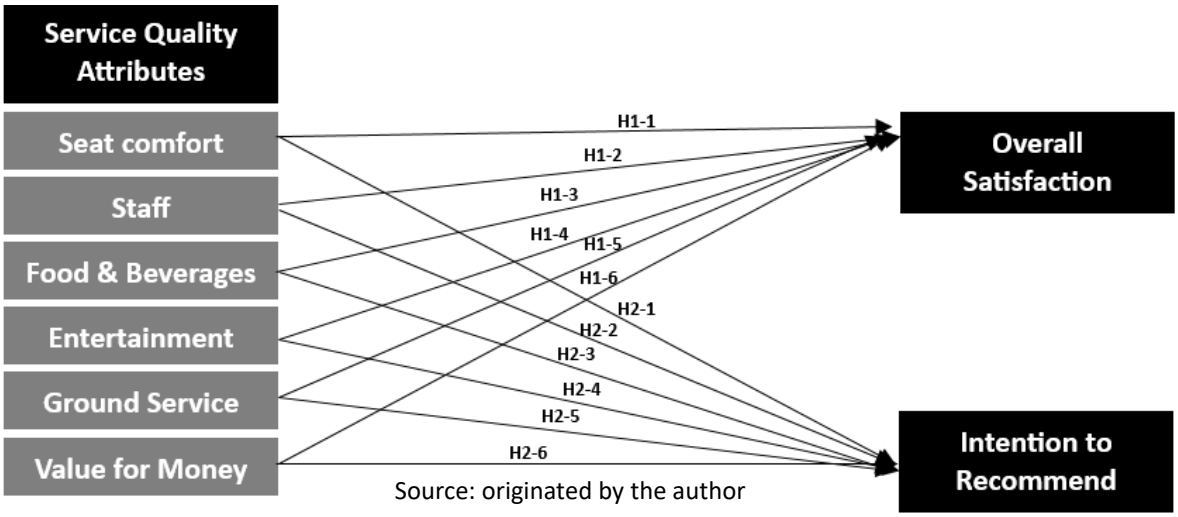
(1) What are the variables of satisfaction that determine overall satisfaction?
(2) What are the variables of satisfaction that determine intention of recommendation?
(3) Do variables of satisfaction vary according to traveller type?
(4) Does intention of recommendation vary according to traveller type?
(5) What are the main themes in the narratives shared online by passengers?

CHAPTER 3: CONCEPTUAL MODEL AND RESEARCH PREPOSITIONS

The present dissertation is structured under the line that service quality attributes determine the perception of quality and that higher ratings of the individual attributes lead to positive feedback of the service (satisfaction). Satisfaction on the other hand enhances better chances of intention of recommendation by passengers. One of the goals of this dissertation is to understand to which extent different types of travellers perceive quality in different ways compared to each other and therefore how the different groups determine satisfaction and intention to recommend.

The dissertation follows the same line of thought of prior studies (see Brochado et. All 2022) as it seeks to summate to existing research on the impact of the traveller types in determining satisfaction. Findings on this particular field can help businesses predict better the interests of each traveller group and perhaps adjust the service offer as best as possible to meet their interests. Similarly, another study previously conducted has proposed a model of research relating the different service attributes and the satisfaction and intention to recommend. (Ban & Hak-Seon , 2019) found out positive correlation between the variables of study. The present study will try to confirm the predisposition of the variables in the same way.

Figure 1:Conceptual Model of the quantitative research.



Source: originated by the author

The conceptual model proposed for the quantitative analysis of the satisfaction variables related to their influence on overall satisfaction and intention of recommendation resulted in the formulation of the following hypotheses:

Hypothesis 1-1. Seat comfort positively influences the **customer satisfaction** of the airline.

Hypothesis 1-2. Staff positively influences the **customer satisfaction** of the airline.

Hypothesis 1-3. F&B positively influences the **customer satisfaction** of the airline.

Hypothesis 1-4. Entertainment positively influences the **customer satisfaction** of the airline.

Hypothesis 1-5. Ground service positively influences the **customer satisfaction** of the airline.

Hypothesis 1-6. Value for money positively influences the **customer satisfaction** of the airline.

Hypothesis 2-1. Seat comfort positively influences the **recommendation** of the airline.

Hypothesis 2-2. Staff positively influences the **recommendation** of the airline.

Hypothesis 2-3. F&B positively influences the **recommendation** of the airline.

Hypothesis 2-4. Entertainment positively influences the **recommendation** of the airline.

Hypothesis 2-5. Ground service positively influences the **recommendation** of the airline.

Hypothesis 2-6. Value for money positively influences the **recommendation** of the airline.

The model proposes addressing the H1-1 to H1-6 in the first part of the quantitative analysis through the linear regression test. The research of H2-1 to H2-6 will be conducted in the second part of the quantitative analysis through the logistics regression test.

CHAPTER 4: CONTEXTUALIZATION

The aviation industry in Turkey is dominated by the Turkish Airlines company, together with its subsidiaries, which is also the flag carrier. Istanbul Airport is the largest hub in Europe. In the span of 20 years the number of passengers grew 589% from 10.4 million to 71.8 million, the number of aircraft increased 506% from 65 to 394, the number of destinations increased 232% from 103 to 342 and the annual revenue increased 1005% from USD 1.7 billion to USD 18.4 billion (Turkish Airlines, 2023).

Turkish Airlines' recovery, in face of the pandemics, was outstanding and surpassed the forecasts. A few representative figures of this growth are that Turkish Airlines already surpassed the 2019 passenger capacity by 25%; also, for the last 13 years Turkish Airlines registered the highest market growth among all airline companies in the world with 1.7% growth, as counted in 2010 with 0.6% and today registers 2.7%. It is still the 7th company with the largest market share. After the pandemics the market share recovered at a pace of 3x the value of 2019 and inclusively surpassed the rate from 1.8% to 2.7% (Turkish Airlines, Annual Report 2022, 2022).

In 2022, Turkish Airlines was rewarded with several awards as a result of its service approach. It won the Best Airline in Europe, the World's Best Business Class Catering, the Best Airline in Southern Europe, all by Skytrax World Airline Awards 2022, 2022 - Europe's Best Food and Beverage Service by APEX Passenger Choice Awards, Airline of the Year for Sustainability Innovation by CAPA – Centre for Aviation, the Silver Medal by EcoVadis Sustainability Rating 2023 and the Most Sustainable Flag Carrier Airline by World Finance 2023 (Turkish Airlines, Annual Report 2022, 2022).

According to its annual report, Turkish Airlines relates the reasons for such growth records due product diversity, the creation of special campaigns for different traveller segments, innovation in facilitation in travel processes for corporate customers, improvement of the mobile application and website and the coordination with organizations of programs and campaigns to incentive tourism.

This dissertation will go into the Turkish Airlines company to conduct data analysis. The type of passenger in analysis refers to the categories used by Skytrax namely, Solo Travellers, Couple Travellers, Family Travellers and Business Travellers.

CHAPTER 5: METHODOLOGY

5.1. Research Design

The study combined a quantitative and qualitative analysis. The quantitative analysis aims to answer the first four research questions and it was conducted through a statistic analysis of dependent and independent variables using the software SPSS. The secondary data used for the further study was collected from the information available in the Skytrax online platform. First descriptive analysis was run to analyse source data. Then comparison and relation of variables were determined. One way ANOVA test was run to determine the satisfaction with the service according to traveller type. After, a Crosstab analysis was run to relate the intention of recommendation with the traveller type. Following, a multiple linear regression and logistics regression was applied to confirm the validity of the hypothesis.

The multiple linear regression answers the questions (1) “What are the variables of satisfaction that determine overall satisfaction?” and (3) “Do variables of satisfaction vary according to traveller type?”. The test was complemented with a Pearson correlation matrix and the calculation of the VIF value to guarantee the validity of the variables.

Next a logistics regression was conducted to answer the question (2) “What are the variables of satisfaction that determine intention of recommendation?” and (4) “Does intention of recommendation vary according to traveller type?”.

The second part of the study was a qualitative analysis using the software Leximancer and it aims to answer the last research question proposed (5) “What are the main themes in the narratives shared online by passengers?”. The software elaborated a conceptual map using the most mentioned concepts in the narratives of the customers who wrote reviews. Samples of the written reviews were also included in the analysis to give a better illustration of the perception of each customer individually.

5.2. Data Collection

Both analyses used an excel data base built from the survey available in the web platform Skytrax. The data were extracted from the website using Python software. The data sample originally consisted of 2249 entries, both qualitative (open answer textual data) and quantitative (numerical ratings) feedback (Annex 2). However, 462 entries accused missing values of the traveller type. As this variable is far too relevant for the research only 1787 entries were considered for further analysis. During the logistics regression analysis many cases were unselected, so the number of entries narrows even further and

go as following, 295 entries for solo traveller, 134 entries for couple traveller, 139 entries for family traveller and 151 entries for business traveller and 719 entries for overall satisfaction. The selected airline text reviews are in English. The service is overall rated from 1 to 10, indicating their intention to recommend by using a dual option of “Recommended” or “Not Recommended”. They also rate the service, on a scale ranged between 1 to 5, based on seven selected attributes – (1) seat comfort, (2) cabin staff service, (3) food and beverages, (4) in-flight entertainment, (5) ground service, (6) wi-fi & connectivity and (7) value for money. The collected information also includes the passengers’ country of origin and the travelling type, namely solo leisure, couple leisure, family leisure and business. The reviews were written by passengers from 104 countries. Grouping the passengers by traveller type, figures follow as Solo leisure (39.9%), Couple leisure (20.4%), Family leisure (20.9%) and Business (19.3%).

5.3. Data Analysis

The quantitative analysis was conducted using multiple linear regression to evaluate the relationship between overall satisfaction and service quality attributes and using logistics regression to evaluate the relationship between the six variables of satisfaction and the intention to recommend the service to other customers. In both tests the results were also analysed segmenting the cases by traveller type. The quantitative analysis follows the structure proposed in a previous similar study (see Brochado et. all, 2022). Previous studies corroborate the use of the service quality attributes by Skytrax as valid variables and conduct conclusions regarding the influence of them over the satisfaction of passengers (see Brochado et. all, 2022). “Overall rating” (rate from 1-10) was the selected dependent variable while the independent variables selected were the Skytrax default service quality attributes (rate from 1-5) of seat comfort, ground service, cabin staff service, food and beverages, inflight entertainment, wi-fi & connectivity and value for money. The test was run both for overall customers and then by segmentation of traveller type (i.e. solo leisure traveller, couple leisure traveller, family leisure traveller and business traveller).

During the logistic regression analysis “Intention to recommend” was selected as the dependent variable (binary variable: “Yes” to recommend and “No” to not recommend). The independent variables were the service quality attributes from Skytrax (i.e. seat comfort, ground service, cabin staff service, food and beverages, inflight entertainment and value for money). The test considers the coefficients results for each service attribute individually, expressing if travellers recommend the service based on a single service attribute, and by traveller type (i.e. if the intention to recommend changes based on the type of traveller).

As for the qualitative analysis, content analysis was conducted through Leximancer to recognise the main narratives of the passengers towards service quality attributes. Leximancer functions include identification of main concepts and then present in which ways concepts are interrelated. The software then presents the results in a conceptual map format.

CHAPTER 6: RESULTS AND ANALYSIS

6.1. Descriptive Results

The quantitative analysis started with a descriptive analysis of the dependent and independent variables. Table 2 summarizes the average ratings of each variable. The highest independent variable rated, on a scale from 1 to 5 is "Inflight entertainment" (3.12) while the lowest rated is "Ground service" (2.26). The dependent variable "Overall Rating" average, on a scale from 1 to 10, is 4.07.

Table 2: Descriptive Statistics of the dependent and independent variables.

Variable	N	Minimum	Maximum	Mean	SD
Seat Comfort (1-5)	1645	1	5	2,84	1,362
Cabin Staff Service (1-5)	1642	1	5	2,97	1,517
Food & Beverages (1-5)	1543	1	5	3,11	1,485
Inflight Entertainment (1-5)	1412	1	5	3,12	1,416
Ground Service (1-5)	1685	1	5	2,26	1,516
Wi-fi & Connectivity (1-5)	739	1	5	2,28	1,520
Value For Money (1-5)	1787	1	5	2,59	1,588
Overall Rating (1-10)	1787	1	10	4,07	3,337

Source: Table created by the author of the dissertation

Grouping the passengers by traveller type, around 40% are Solo travellers (39.3%) while the remaining categories are almost equally distributed, Business (19.3%), Couple Leisure (20.4%) and Family Leisure (20.9%).

Table 3: Descriptive Statistics by Traveller Type.

Variable	Frequency	%
Business	345	19.3
Couple Leisure	365	20.4
Family Leisure	374	20.9
Solo Leisure	703	39.3
Total	1787	100

Source: Table created by the author of the dissertation

As for the recommendation patterns, Table 4 resumes in total the passenger's intention of recommendation. Overall, the majority of the passengers presents no intention to recommend Turkish Airlines (65.2%).

Table 4: Descriptive Statistics of Overall Intention to Recommend.

Variable	Frequency	%
Yes	1165	65.2
No	622	34.8
Total	1787	100

Source: Table created by the author of the dissertation

The Table 5 summarizes the results of the non-parametric test One Way ANOVA and reveals that the overall satisfaction varies according to traveller type. The couple leisure category showed the highest value (4.32) while the family leisure showed the lowest value (3.37). As for the six service variables the results are in conformity with the overall satisfaction in the category of family leisure as they present the lowest rate in all six service attributes. In all categories, the rate for each service attribute is lower than its respective overall rating. The business traveller presents the highest rates in the categories of seat comfort (2.89), cabin staff service (3.06) and wi-fi & connectivity (2.68). After comes the solo leisure with highest rates in seat comfort (2.89), ground service (2.36) and value for money (2.69). Finally, the couple leisure rates the highest in food & beverages (3.19) and inflight entertainment (3.26). As for each service quality attribute the one that seems to have highest performance is inflight entertainment for is the only variable the rates higher than 3 for all the traveller types.

Table 5: Descriptive Data of Satisfaction Rating by Traveller Type.

Variables	Solo		Couple		Family		Business	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Seat Comfort	**2.89**	1.36	2.86	1.36	**2.65**	1.34	**2.89**	1.36
Cabin Staff Service	3.01	1.53	3.03	1.49	**2.74**	1.54	**3.06**	1.46
Food & Beverage	3.18	1.52	**3.19**	1.44	**2.83**	1.5	3.18	1.4
Inflight entertainment	3.12	1.41	**3.26**	1.38	**3.01**	1.47	3.08	1.40
Ground Service	**2.36**	1.57	2.31	1.53	**2.04**	1.45	2.24	1.44
Wi-fi & Connectivity	2.19	1.49	2.27	1.54	**2.04**	1.42	**2.68**	1.60
Value for money	**2.69**	1.63	2.74	1.61	**2.31**	1.54	2.55	1.48
Overall	4.23	3.43	**4.32**	3.42	**3.37**	3.17	4.23	3.14

Source: Table created by the author of the dissertation

Following, the Table 6 describes the data returned by a Cross Tabulation analysis and it represents the percentage of intention to recommendation according to traveller type. In total, 34.5% of the passengers intends to recommend the airline company to others. Comparing the categories, the couple leisure traveller is the group most likely to recommend (38.9%), while the group with least intention is the family leisure (24.1%). Comparing Table 5 and 6 there seems to be a convergence of results. The couple leisure category represents the group with higher overall satisfaction (4.32) and the higher

intention to recommend (38.9%). On the other side of the spectrum the family leisure category is the group with lower overall satisfaction (3.37) and intention to recommend (24.1%).

Table 6: Descriptive Data for Intention of Recommendation by Traveller Type.

Variable		Solo		Couple		Family		Business		Total	
		N	%	N	%	N	%	N	%	N	%
Recommend	No	438	62.3	223	61.1	284	75.9	220	64.8	1165	65.2
	Yes	265	37.7	142	**38.9**	90	**24.1**	125	36.2	622	**34.8**

Source: Table created by the author of the dissertation

6.2. Determinants of Overall Satisfaction

This section presents the results of a multiple linear regression to answer the question (1) “What are the variables of satisfaction that determine overall satisfaction?” and the question (3) “Do variables of satisfaction vary according to traveller type?”. The regression was carried out to investigate the relationship between the service attributes ratings and the satisfaction according to traveller type.

The results in the Table 7 show that every service attribute, excepting Inflight and entertainment, is positively correlated with the overall satisfaction. Value for money is the variable that most influences the overall satisfaction (coefficient of relation = 1.074), while the inflight entertainment seems to have a negative impact (coefficient of relation = -0.050). The hypotheses H1-1, H1-5 and H1-6 are thus supported by the test conducted.

As per traveller type, the variables have similar response of impact to overall satisfaction. This means that all service attributes, but the inflight entertainment, have a positive impact on overall satisfaction when split by traveller type. Value for money proves that it is the variable with the most impact in all traveller types. Followed by second place Ground service and Seat comfort in third place, these variables also impact all the traveller types positive perception of overall service. Solo travellers are the only category that chooses Wi-fi & connectivity before seat comfort. Food & beverages causes a bad impression in the category of Business traveller but not on the remaining travellers. In order to confirm the independence of the variables a Pearson correlation matrix was conducted. The hypothesis H1-7b is partially validated.

Together with the values of the regression coefficients the variance inflation factor (VIF) was analysed to guarantee the independent variables show no correlation and therefore the regression can be correctly interpreted. All variables present a value up to 5 which means it is safe to admit no correlation between variables.

Table 7: Coefficients of the multiple linear regression for the overall satisfaction.

	Solo Leisure			Couple Leisure			Family Leisure			Business			Overall*		
	B	Sig.	VIF	B	Sig.	VIF	B	Sig.	VIF	B	Sig.	VIF	B	Sig.	VIF
Overall rating is the dependent variable															
Seat comfort	0.210	0.018	2.936	0.270	0.034	4.016	0.250	0.068	2.599	0.316	0.020	3.093	0.257	<0.001	2.970
Cabin staff service	0.132	0.129	3.705	0.194	0.09	3.575	0.102	0.499	4.327	0.168	0.143	2.559	0.139	0.011	3.350
Food & Beverages	0.175	0.046	3.824	0.016	0.907	5.059	0.089	0.522	3.643	-0.034	0.791	3.195	0.097	0.086	3.616
Inflight entertainment	**-0.036**	0.665	2.959	**0.081**	0.524	4.142	**-0.188**	0.153	3.050	**-0.049**	0.692	2.993	**-0.050**	0.344	2.952
Ground service	0.668	<0.001	2.581	0.484	<0.001	2.844	0.905	<0.001	3.045	0.363	<0.001	1.918	0.585	<0.001	2.432
Wi-fi & Connectivity	0.230	0.001	2.190	0.165	0.118	2.979	0.172	0.151	2.267	0.211	0.057	2.635	0.191	<0.001	2.274
Value for money	**0.961**	<0.001	4.379	**1.080**	<0.001	4.377	**0.924**	<0.001	3.766	**1.211**	<0.001	3.856	**1.074**	<0.001	3.881
Adj. R^2	0.870			0.903			0.826			0.833			0.863		
F	282.864			178.375			94.680			107.909			646.155		

Source: Table created by the author of the dissertation

6.3. Determinants of Intention of Recommendation

This section presents the results of the analysis that aims to answer the question (2) “What are the variables of satisfaction that determine intention of recommendation?” and the question (4) “Does intention of recommendation vary according to traveller type?”. The table 8 resumes the results of the logistics regression which was carried out by analysing the traveller’s probability of recommending the airline company according to the service quality attributes and the traveller type. The hypothesis H2-1 to H2-6 were tested out through the logistics regression. The p value (sig.) of each service attribute is higher than 1 for all categories except seat comfort, ground service and value for money. This implies that only value for money, ground service and seat comfort are relevant to recommend the airline to other customers when observing customers overall. Therefore, only the hypotheses H2-1, H2-5 and H2-6 were supported by the test. It is also possible to conclude that the traveller type does not influence the intention to recommend as all traveller types indicate a level of significance higher than 1 which denotes that there is no correlation between the type of traveller and the intention to recommend. Therefore, the hypothesis H2-7b is not validated.

Table 8: Logistics Regression Coefficients for Intention to Recommend the airline service.

	Overall Satisfaction

	B (Log coefficient)	Exp (B)	Sig.	-
Intention to Recommend is the dependent variable				
Seat comfort	0.807	2.241	**<0.001**	
Cabin staff service	0.553	1.738	0.009	
Food & Beverages	-0.024	0.977	0.913	
Inflight entertainment	0.289	1.335	0.171	
Ground service	0.858	**2.359**	**<0.001**	
Wi-fi & Connectivity	0.268	1.307	0.109	
Value for money	1.541	**4.669**	**<0.001**	
Solo Traveller	0.451	1.569	0.009	
Couple Traveller	0.800	2.225	0.226	
Family Traveller	-1.570	0.208	0.022	
Business	*	*	0.387	
Cox & Snell R^2				0.644

Source: Table created by the author of the dissertation

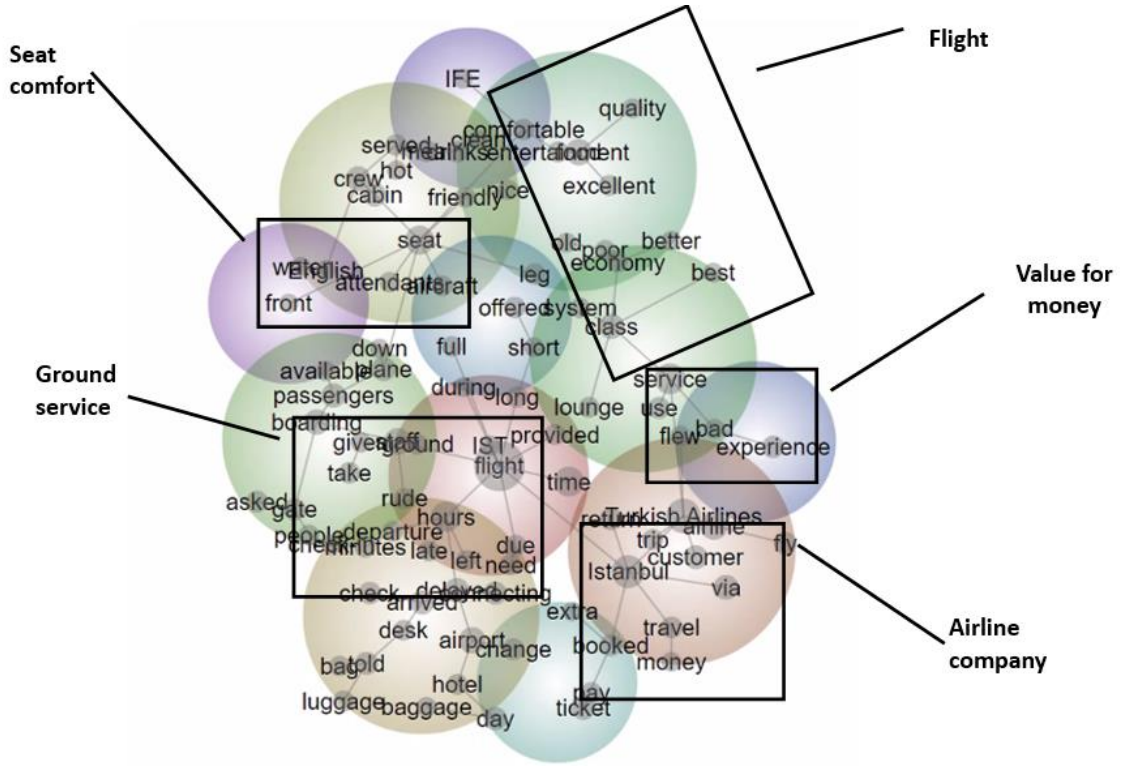
*Not enough data to conduct analysis

6.4. Content of Analysis of Passengers Reviews

The following section focuses on the qualitative analysis of the textual content extracted from the reviews of the airline users. The analysis was conducted using the software Leximancer and the results are presented through the Figure 2.

This part of the analysis intends to answer the question (5) “What are the main themes in the narratives shared online by passengers?”.

Figure 2: Conceptual Map of Customers' Reviews Overall



The Figure 2 shows the words of the most relevant themes and respective concepts collected from the textual reviews. The green concepts represent the most relevant themes and concepts while red and purple denotes the least relevant themes and concepts. There are 5 themed groups and within each of the groups, the themes are presented by number of counts, i.e. how many times the word is mentioned in comments. Therefore, words with more counts represent greater importance and according to major groups distribution follows as “Ground service” [including flight, airport and boarding], “Airline company” [including Turkish Airlines and ticket], “Seat Comfort” [including seat and leg room], “Value for money” [including service and experience] and “Flight” [including subcategory of food and IFE].

6.4.1. The theme of “flight”

This theme is composed of the concepts of flight (4183), hours (1375), time (1434), staff (995), long (374), due (310), need (351), provided (330), rude (318) and IST (Istanbul Airport) (257). This is the theme with most relevance and most mentioned by passengers. The theme refers to flight delays and the way the staff handled unexpected situations. Many customers emphasise the impoliteness of the staff while handling them. Another aspect that most customers complained about were the consistently delayed flights.

> “Our flight from YYZ to IST was delayed twice at the 11th hour due to the incoming flight from IST coming in late and this was not communicated clearly by the ground the staff as passengers had queued up twice, before being told of the delays. Our flights out of IST and KUL were both on-time, with boarding completed quite swiftly.”
>
> (**Nationality:** Canada, **Type of Traveller:** Family Traveller, **Overall Rating:** 7, **Intention to Recommend:** Yes)
>
> “Only option to IST direct. They need to improve ground staff and boarding skills and attitudes otherwise I would perhaps recommend.”
>
> (Belgium, -, 4, Yes)
>
> “We were also charged $20 a person (11 of us) for Turkish visas even though we were only there for a night and due to no fault of our own. The Hotel was adequate for the night but again we found the staff rude and inefficient.”
>
> (UK, Family Traveller, 1, No)

6.4.2. The theme of “Turkish airlines”

The theme includes the concepts of Turkish Airlines (2208), Istanbul (1731), airline (1318), via (830), customer (707), fly (724), return (495), travel (517), trip (299) and money (196). The theme denotes that most customers regret choosing Turkish airlines brand due to general disappointment with the encounter. The theme pertains that customers consider that the price of the ticket is not worth for the brand.

> “We are cancelling both my husband and my ticket although we will lose money just so we will not have to fly with this airline. We are even cancelling our Istanbul trip as I cannot stand traveling with these people or dealing with them anymore.”
>
> (Canada, Couple Traveller, 1, No)

> “Houston to Mumbai via Istanbul return, flying Turkish Airlines for the first time. The outbound trip to India was smooth.”
>
> (USA, Couple traveller, 1, No)

> “Plan on spending a lot more money and flying another airline because Turkish Airlines will not assist you and they will keep your money. The "customer service" is a joke - they read from scripts and keep repeating the same paragraph - almost like robots.”
>
> (USA, Business, 1, No)

6.4.3. The theme of “airport”

The theme includes the concepts of airport (1014), delay (675), arrival (619), connecting (479), check (505), minutes (400), luggage (430), late (285), hotel (317), desk (266), bag (309), departure (227) and baggage (198). The theme alludes to the experience the customers had while transiting the airport. Many complain about the delays and waiting times.

> “By 11 am the hotel told them to check out. She left hotel and took taxi back to the airport.
> When I arrived to Ankara airport my luggage did not appeared on the belt and I then consulted to lost luggage desk. The guy working there told me that he can see my luggage is in Istanbul and they will send it to my address tomorrow. he even told me that they have received an email for my luggage already.”
>
> (USA, Solo Traveller, 1, No)

"That was only the beginning, due to late departure from Tel Aviv, we arrived late to Istanbul just to see our connecting flight push out of the gate (15 minutes earlier to take off time), we went to the Turkish Airlines desk, who told us we need to go to the transfer desk. When we got to the transfer desk, the clerk told us that we have been rebooked to a flight at 04:10, which meat that we had 9 hours wait. when I asked if they will give us a hotel room till the flight, we were informed that only if the delay is over 10 hours do they supply a hotel room."

(Israel, Couple Traveller, 2, No)

"Transit at IST should have been 6 hours but due to the delay we had a 1 hour transfer so a rush to the departure gate. Flight to LHR arrived a half hour early but checked in baggage was left in IST."

(UK, -, 5, Yes)

6.4.4. The theme of "seat"

The theme includes the concepts of seat (1417), crew (791), cabin (569), meal (502), served (398), drinks (349), friendly (325), attendants (270), English, hot (317) and water (152). The theme refers to the experience they had during the flight in terms of attendance of the staff. Most customers were happy with the performance.

"Cabin Crew was very friendly and they could speak fluent English. For the dinner you can choose between two hot meals."

(Switzerland, Solo Traveller, 10, Yes)

"Completely tasteless meals served by flight attendants that did not smile at all and did not understand English. The cabins of the long sectors IST- BKK and SIN-IST were also quite dirty."

(Austria, -, 3, No)

"Very young and pleasant cabin crew. Meals: overall two hot meals - tasty and well-presented."

(Italy, -, 9, Yes)

"The crew spoke good English (1 stewardess spoke French) the seat pitch is comfortable (at least 10 cms / 4 " more than AF) the food is fair both in quantity and in quality with a hot meal and a choice of drinks including wine and alcohol. A much better service than their French competitor with bus-type cabin and no IFE."

(France, - ,9, Yes)

6.4.5. The theme of “boarding”

The theme includes the concepts of boarding (834), plane (710), passengers (700), gate (422), asked (477), take (422), people (345), given (245), check-in (203), available (196) and down (149). The theme describes the experience of the travellers during the boarding phase. Most of the customers did not enjoy the service from the staff and felt little support.

“At boarding time we were escorted to the gate and given immediate boarding. Before take-off given menus and was asked to complete my breakfast choices.”

(Turkey, Solo Traveller, 9, Yes)

“When I complained they said don't worry, jut pick it up when you get to Istanbul. We arrived Istanbul and someone from Turkish Airlines was announcing to us that passengers transiting to Abuja should go to the boarding gate immediately - we complained that we were not given boarding pass in Heathrow and the guy said go upstairs.”

(Nigeria, Family Traveller, 2, No)

“They do not have any sense of logic or consideration for the elderly, children or women, and as an example it suffices to say that they got people down about sixty stair steps on their feet and we took a bus to another terminal far away to take another plane that was not scheduled to be boarded and that caused a delay of more than an hour and a half without any prior notice or apology to the passengers. The seats are very tight and no leg space.”

(Canada, Solo Traveller, 1, No)

6.4.6. The theme of “service”

The theme includes the concepts of service (1624), class (840), use (489), lounge (334), economy (311), system (289), flew (247) and best (205). The theme suggests that the customers that flew in comfort class and used class services were very satisfied. Customers who flew in economy class were not satisfied with the service.

“I flew Comfort Class from IST to JFK. I've always been impressed with the service on economy class Turkish Airlines so I spent the upgrade for Comfort.”

(USA, Solo Traveller, 9, Yes)

"Return leg used the fast check in, best I have ever used, private entry for C class to the lounge with exclusive security and passport control. Lounge is fabulous but always busy."

(Belgium, Solo Traveller, 7, Yes)

"They were unwilling to help arrange accommodation that evening, even though this situation was the fault of Turkish Airlines. And despite the stressful situation, they did not let me use the business class lounge to at least figure out my situation or eat dinner."

(USA, Solo Traveller, 1, No)

6.4.7. The theme of "ticket"

The theme includes the concepts of ticket (833), day (627), change (446), booked (439), pay (287) and extra (164). The theme reveals that most customers complained about non refunded services despite the fact they paid extra in case there was need for change. Overall, the customers did not recommend the service based on this category.

"When I booked my ticket online I have choosen to pay the most expensive rate to get a flexible ticket for which I could change the date and re-issue the ticket for free. (At least that's what was written)."

(Thailand, Business Traveller, 1, No)

"I bought 3 tickets for me and my kids and the day before the travel I changed the date of the ticket, and paid extra 50 pounds. I got the confirmation email from Turkish Airlines."

(UK, Family Travellers, 1, No)

"So they said they can not refund if is not the same amount, and to change online is 96$ even the fare is same price they are not cooperating to change without the fees charges. They not giving you any option, or you cancel and you lose 150$ or you pay 96$ for booking the correct date departure."

(United Arab Emirates, Solo Traveller, 2, No)

6.4.8. The theme of “leg room”

The theme includes the concept of front (135), offered (430), leg (376), aircraft (325), full (275), during (185) and short (169). This theme portraits the experience of the customer regarding how comfortable he was in his seat and the quality of the aircraft itself. Most of the customers were unhappy with the little space the seat had for leg movement and how the front seat occupied too much of their space. Overall, some customers recommended the service despite the disappointment based on this category.

“The actual movies and TV shows were the same regardless of the hardware and so it was easy to overlook the hardware troubles. There is decent legroom although you start to feel a little claustrophobic once the person in front of you reclines back.”

(USA, Family Traveller, 9, Yes)

“However, the actual layout differed. Seats 23D, E, F were right in front of 24D, E, F, and there was no extra legroom.”

(Singapore, Solo Traveller, 3, No)

“I enjoyed this flight very much and full marks to Turkish Airlines offering a good business class product on a short haul flight. If they decided to add WiFi on all aircraft, it might really annoy the competition.”

(UK, Solo Traveller, 9, Yes)

“It seems that TK offering from/to SAW not the same product as from/to IST and that the SAW TK fleet are old compared to the fleet based in IST, shortly not the same product.”

(Turkey, Business Traveller, 6, Yes)

6.4.9. The theme of “food”

This theme includes the concepts of food (1104), comfortable (385), entertainment (345), excellent (303), nice (263), poor (217), old (222), quality (213), better (202). The theme mentions that the experience regarding food vary for different customers. Some have a positive review and others don’t. Based on this theme most of the customers recommended the service overall.

“Food was good and plentiful, entertainment on the A330 was of poor quality - both the screen and the sound were a bit snowy.”

(UK, Couple Travellers, 8, Yes)

"The entertainment selection was good movies could have had a better selection but the music was fantastic. From the overall comfort and food quality I was able to sleep for 5 hours on a 9.5 hour night trip."

(USA, -, 9, Yes)

"Nothing at all apart from dinner after takeoff and breakfast before landing. Food quality was pretty poor."

(Italy, -, 2, No)

"Paid for Business Class, aircraft was old and in poor repair. Seats were poor design and not comfortable."

(USA, Business Traveller, 1, No)

6.4.10. The theme of "experience"

The theme includes the concepts of experience (613) and bad (231). The theme reflects that most of the customers had a bad experience generally. Some customers complained about food options, some about flight delays or staff impoliteness. Overall, the customers did not recommend the service based on this theme.

"I am really not difficult, but I found this very bad, especially how Turkish Airlines now deals with my complaint. I wrote them a letter about my experience with their company and how badly everything went."

(Netherlands, Couple Traveller, 1, No)

"Attempted to fly from Istanbul to Bangkok on Nov 29th but flight was delayed 5.5 hrs. No explanations given. No compensation despite delays. On-board entertainment was not properly working at my seat. Was too tired anyway. Pretty bad experience. Return flight was better (on time at least)."

(France, -, 2, No)

"Travelling from Prague to Skopje through Istanbul and back. A319 + A320 provided very small room for legs. Cabin staff were not very pleased with my answer about missing pork meals. Sorry Turkish

if you want to be "world- class" no favouring of any customers is a natural thing. Very bad experience at all."

(Czech Republic, -, 2, No)

6.4.11. The theme of "IFE"

The theme includes the concepts of IFE (213) and clean (173). The theme indicates the perceptions regarding the inflight entertainment service availability and general conditions of the aircraft such as the cleanliness. Most of the customers were happy with the entertainment options. Some customers found the space unclean while others met great conditions. Overall, the customers recommended the service. For the ones who did not recommend it was inconclusive whether the reason was solely the dissatisfaction with the cleanness.

"The plane was very clean with personal IFE and power outlets. The flight was punctual."

(Germany, Solo Traveller, 10, Yes)

"At the airport, we were met by pleasant personnel. From the positive - comfortable seat, clean interior, good ground personnel, excellent IFE."

(Russian Federation, Family Travellers, 7, Yes)

"The aircraft was clean an well kept, IFE (if available) excellent with a number of non-mainstream movie and audio selections. Food is great, and while some attendants could be a little more polite, this is no big issue."

(Denmark, Business Traveller, 8, Yes)

"Toilets were very dirty, you can see they weren't clean properly."

(USA, Solo Traveller, 1, No)

"Seats were okay and I had adequate legroom. Toilets were clean."

(Australia, Solo Traveller, 8, Yes)

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

7.1. Discussion of Results

The analysis of the data was split in two steps. The quantitative analysis answered the questions (1) “What are the variables of satisfaction that determine overall satisfaction?” and (3) “Do variables of satisfaction vary according to traveller type?”.

First, the non-parametric test One Way ANOVA was conducted to understand if the overall satisfaction varies according to traveller type. After, a Multiple Linear regression was conducted to confirm the hypothesis. The test reveals that the variables that determine overall satisfaction are value for money, ground service and seat comfort. It also reveals which variables had the most influence over overall satisfaction considering the traveller type. The data revealed that the most relevant determinants are value for money, ground service and seat comfort in all categories except for solo travellers that preferred wi-fi & connection before seat comfort. The conceptual model is then partially confirmed as H1-1, H1-5 and H1-6 are confirmed to be truth. In this way it is possible to conclude that the variables of satisfaction vary according to traveller type as the solo traveller prioritized wi-fi & connection over seat comfort. The linear regression results show a difference from the study of (Brochado, Duarte, & Mengyuan, 2022), that concludes that all the variables determine overall satisfaction. Interestingly, the results differ from the study of (Ban & Hak-Seon , 2019) which validate that all variables except entertainment hold importance to determine satisfaction.

However, both the present study and (Brochado, Duarte, & Mengyuan, Passengers’ Perceptions of Chinese Airlines’ Service Quality: A Mixed Methods Analysis of User-generated Content, 2022) confirm that value for money is the variable with the most influence. The conclusion is also aligned with the results of similar studies namely, Ban and Kim (2019) and Shadiyar et al. (2020), confirming that value for money is the most important service attribute in all models. Additionally, the same study of Brochado et. all (2022) concluded that all attributes are important to solo, couple and family travellers (Brochado, Duarte, & Mengyuan, 2022). While the present study pertains that only 3 variables are important to each of the segments.

The quantitative analysis continued with a logistics regression to address the questions (2) “What are the variables of satisfaction that determine intention of recommendation?” and (4) “Does intention of recommendation vary according to traveller type?”.

First, Table 6 suggests that the intention to recommend varies by percentage according to traveller type. Additionally, it is possible to relate the results of both findings (see Table 5 and 6) as there seems to be a common pattern between overall recommendation and intention of repetition. The couple

leisure category represents the group with higher overall satisfaction (4.32) and the higher intention to recommend (38.9%). Likewise, the family leisure category is the group with lower overall satisfaction (3.37) and intention to recommend (24.1%).

The Logistic regression test contraries the results based on the cross-table analysis (Table 6). The regression revealed that, for customers overall, only value for money, ground service and seat comfort are relevant to recommend the airline. It also reveals that there is no correlation between traveller type and intention to recommend. This seems to be new information to add to the existing literature as there wasn't found any scientific reference testifying in favour or against the conclusion.

However, some of the service quality attributes enhance recommendation from customers overall. Satisfaction with specific quality attributes, in this case value for money, ground service and seat comfort, instead lead to intention to recommend. These conclusions confirm the validity of the hypotheses H2-1, H2-5 and H2-6 proposed in the conceptual model. The logistics regression results also differ from the study of (Brochado, Duarte, & Mengyuan, 2022) and (Ban & Hak-Seon , 2019), as in their study all variables except inflight entertainment affect intention to recommend.

The next step of the analysis consisted of the qualitative analysis of the narratives of passengers using the software Leximancer to find out if (5) "What are the main themes in the narratives shared online by passengers?".

The findings of the study present eleven main themes that travellers consider important in their flight experience. The themes were divided into five major groups. According to the number of counts of each theme within the groups the most relevant group is ground service. Followed by Airline Company, seat comfort, value for money and flight. As per themes the most mentioned by the customers are flight, Turkish Airlines, airport, seat, boarding, service, food, ticket, room, experience and IFE.

The Leximancer results suggest that passengers place high importance in aspects of luggage handling, flight delays, customer service efficiency during check-in and politeness of the staff when analysing themes included in the ground service category. In the Airline Company category customers are focused on aspects such as the relation between the price paid and the name of the brand. The category of seat comfort shows how much passengers value the comfort during the flight, the space available for legs and the way staff serves the passenger during the flight. In the category of Value for money passengers relate the feeling of worthiness on spending more money in upgraded services and in better experiences during the entire flight process such as access to lounge for example. Lastly, the category of flight describes the aspects that make the in-flight experience appealing such as the entertainment availability, the food options and the cleanliness of the space. Song et all (2020) study focus on the weight flight delays hold on passengers' perception of service. The present study confirms the same results regarding flight delays. The results are also consistent with (Brochado, Duarte, &

Mengyuan, 2022) that confirm “recommendation, core service, seat comfort, food and beverages, ground service, value for money, and in-flight entertainment” as the most significant themes mentioned by travellers.

The categories that were identified are closely aligned with the six categories of quality used by Skytrax. Only changing the Airline company and Flight category.

7.2. Limitations and Recommendations

This study was limited by the amount of data that was recent. The majority of the comments are prior to the year 2022. The company is currently increasing its service level and the business is growing. However, most of the comments pointed out dissatisfaction with the service. It would be a new study opportunity to re-evaluate the satisfaction with Turkish Airlines and compare it with the current study, in order to see the relationship between satisfaction and the growth of the performance of the company. It would also be an interesting scientific pursuit to relate the themes collected in the qualitative analysis, with traveller types. The present study only retrieved themes from overall travellers.

Contributions to the scholar field were added through the study of a specific company, Turkish Airlines, increasing the number of case studies that resort to analysis through user generated data sustaining the eligibility of this source of information. The research extended the previous work of Brochado et all (2022) by showing the influence of traveller segmentation has when considering the main variables that determine service quality and intention to recommend. The current existing material using Leximancer software is scarce, hence the present study adds more content on that specific front. Furthermore, this study reinforces the conclusion that using Skytrax data is useful for credible data analysis as other studies have confirmed as well, see (Song, Guo, & Zhuang, 2020) or (Wattanacharoensil & Bunchongchit, 2021) for example.

This study has some management implications for Turkish airlines. Managers should take in consideration the themes of “value for money”, “ground service” and “seat comfort” when thinking of improvement of the service, considering quantitative results. Then, the Leximancer results deepens the need to consider the three variables even more as staff attending performance was generally not appreciated by most of the travellers. Most of the customers did also not perceive the price they paid as appropriate considering the brand and the final service experienced.

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ANNEXES

Annex 1: Passenger's country of origin

Country

		N	%	Valid %	Cumulative %
Valid	Afghanistan	1	0,1	0,1	0,1
	Albania	1	0,1	0,1	0,1
	Angola	1	0,1	0,1	0,2
	Argentina	1	0,1	0,1	0,2
	Australia	47	2,6	2,6	2,9
	Austria	13	0,7	0,7	3,6
	Azerbaijan	2	0,1	0,1	3,7
	Bahrain	9	0,5	0,5	4,2
	Bangladesh	5	0,3	0,3	4,5
	Belarus	1	0,1	0,1	4,5
	Belgium	27	1,5	1,5	6,0
	Brazil	7	0,4	0,4	6,4
	Brunei	2	0,1	0,1	6,5
	Bulgaria	2	0,1	0,1	6,7
	Canada	115	6,4	6,4	13,1
	changed	1	0,1	0,1	13,2
	China	1	0,1	0,1	13,2
	Colombia	2	0,1	0,1	13,3
	Côte d'Ivoire	1	0,1	0,1	13,4
	Croatia	1	0,1	0,1	13,4
	Czech Republic	15	0,8	0,8	14,3
	Democratic Republic of the Congo	1	0,1	0,1	14,3
	Denmark	14	0,8	0,8	15,1
	Ecuador	2	0,1	0,1	15,2
	Egypt	7	0,4	0,4	15,6
	Estonia	1	0,1	0,1	15,7
	Ethiopia	1	0,1	0,1	15,7
	Finland	7	0,4	0,4	16,1
	France	28	1,6	1,6	17,7
	Georgia	1	0,1	0,1	17,7
	Germany	74	4,1	4,1	21,9
	Ghana	3	0,2	0,2	22,0
	Greece	19	1,1	1,1	23,1
	Guatemala	1	0,1	0,1	23,2
	Hong Kong	14	0,8	0,8	24,0
	Hungary	4	0,2	0,2	24,2
	India	21	1,2	1,2	25,3
	Indonesia	13	0,7	0,7	26,1
	Iran	7	0,4	0,4	26,5
	Iraq	1	0,1	0,1	26,5
	Ireland	19	1,1	1,1	27,6

	Israel	11	0,6	0,6	28,2
	Italy	30	1,7	1,7	29,9
	Japan	5	0,3	0,3	30,2
	Jordan	2	0,1	0,1	30,3
	Kazakhstan	3	0,2	0,2	30,4
	Kenya	3	0,2	0,2	30,6
	Kuwait	7	0,4	0,4	31,0
	Kyrgyzstan	1	0,1	0,1	31,1
	Latvia	1	0,1	0,1	31,1
	Lebanon	7	0,4	0,4	31,5
	Lithuania	2	0,1	0,1	31,6
	Luxembourg	2	0,1	0,1	31,7
	Macedonia	1	0,1	0,1	31,8
	Malaysia	26	1,5	1,5	33,2
	Malta	5	0,3	0,3	33,5
	Mauritius	1	0,1	0,1	33,6
	Mexico	3	0,2	0,2	33,7
	Moldova	2	0,1	0,1	33,9
	Mongolia	1	0,1	0,1	33,9
	Montenegro	1	0,1	0,1	34,0
	Morocco	1	0,1	0,1	34,0
	Nepal	3	0,2	0,2	34,2
	Netherlands	53	3,0	3,0	37,2
	Netherlands Antilles	2	0,1	0,1	37,3
	New Zealand	1	0,1	0,1	37,3
	Nicaragua	1	0,1	0,1	37,4
	Nigeria	8	0,4	0,4	37,8
	Norway	9	0,5	0,5	38,3
	Oman	2	0,1	0,1	38,4
	Pakistan	6	0,3	0,3	38,8
	Palestinian Territories	3	0,2	0,2	38,9
	Panama	3	0,2	0,2	39,1
	Philippines	12	0,7	0,7	39,8
	Poland	7	0,4	0,4	40,2
	Portugal	12	0,7	0,7	40,9
	Puerto Rico	1	0,1	0,1	40,9
	Qatar	9	0,5	0,5	41,4
	Romania	13	0,7	0,7	42,1
	Russian Federation	18	1,0	1,0	43,1
	Saudi Arabia	13	0,7	0,7	43,9
	Serbia	5	0,3	0,3	44,2
	Singapore	32	1,8	1,8	45,9
	Slovakia	5	0,3	0,3	46,2
	Slovenia	6	0,3	0,3	46,6

	South Africa	17	1,0	1,0	47,5
	South Korea	5	0,3	0,3	47,8
	Spain	24	1,3	1,3	49,1
	Sri Lanka	1	0,1	0,1	49,2
	Swaziland	1	0,1	0,1	49,2
	Sweden	10	0,6	0,6	49,8
	Switzerland	28	1,6	1,6	51,4
	Taiwan	9	0,5	0,5	51,9
	Tajikistan	1	0,1	0,1	51,9
	Tanzania	1	0,1	0,1	52,0
	Thailand	21	1,2	1,2	53,2
	Turkey	91	5,1	5,1	58,3
	Turkmenistan	1	0,1	0,1	58,3
	Ukraine	12	0,7	0,7	59,0
	United Arab Emirates	28	1,6	1,6	60,5
	United Kingdom	283	15,8	15,8	76,4
	United States	415	23,2	23,2	99,6
	Venezuela	1	0,1	0,1	99,7
	Vietnam	6	0,3	0,3	100,0
	Total	1787	100,0	100,0	

Annex 2: Skytrax Database Variables for Turkish Airlines

Airline name	Review date	Rating (1-10)	Name	Country	Review	Aircraft	Type Of Traveller	Seat Type	Route	Date Flow
Turkish Airlines	24/12/2022	3	M Agar	United States	1. My original flight wa		Couple Leisure	Business Class	San Francisco to Mumbai via Istanbul	01/12/20
Turkish Airlines	03/12/2022	2	Arthur van Eerden	Germany	Booked FRA-IST-NBO.	A321/A330/B777	Solo Leisure	Economy Class	Frankfurt to Nairobi via Istanbul	01/11/20
Turkish Airlines	30/11/2022	1	A Keane	United Kingdom	Terrible experience. St		Solo Leisure	Economy Class	Istanbul to London	01/11/20
Turkish Airlines	30/11/2022	1	L Sharnova	United States	The customer service i		Couple Leisure	Economy Class	Boston to Bishkek via Istanbul	01/09/20

Seat Comfort (1-5)	Cabin Staff Service (1-5)	Food & Beverages (1-5)	Inflight Entertainment (1-5)	Ground Service (1-5)	Wifi & Connectivity (1-5)	Value For Money (1-5)	Recommende
4	4	4	4	2	4	2	no
2	2	1	2	1		2	no
1	1	2	4	2	1	2	no
1	1	3	2	1	1	1	no

Annex 3: Cross tabulation for Intention to recommend according to traveller type

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
*R_2 * TT_2*	1787	100,0%	0	0,0%	1787	100,0%

R_2 * TT_2 Crosstabulation							
			TT_2				Total
			1,00	2,00	3,00	4,00	
R_2	,00	Count	438	223	284	220	1165
		% within R_2	37,6%	19,1%	24,4%	18,9%	100,0%
		% within TT_2	62,3%	61,1%	75,9%	63,8%	65,2%
	1,00	Count	265	142	90	125	622
		% within R_2	42,6%	22,8%	14,5%	20,1%	100,0%
		% within TT_2	37,7%	38,9%	24,1%	36,2%	34,8%
	Total	Count	703	365	374	345	1787
		% within R_2	39,3%	20,4%	20,9%	19,3%	100,0%
		% within TT_2	100,0%	100,0%	100,0%	100,0%	100,0%

Annex 4: One Way ANOVA test for satisfaction by traveller type

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Seat Comfort (1-5)	Between Groups	14,820	3	4,940	2,673	0,046
	Within Groups	3032,843	1641	1,848		
	Total	3047,663	1644			
Cabin Staff Service (1-5)	Between Groups	22,914	3	7,638	3,335	0,019
	Within Groups	3751,683	1638	2,290		
	Total	3774,597	1641			
Food & Beverages (1-5)	Between Groups	31,138	3	10,379	4,739	0,003
	Within Groups	3370,570	1539	2,190		
	Total	3401,708	1542			
Inflight Entertainment (1-5)	Between Groups	9,963	3	3,321	1,658	0,174
	Within Groups	2820,328	1408	2,003		
	Total	2830,291	1411			
Ground Service (1-5)	Between Groups	24,526	3	8,175	3,574	0,014
	Within Groups	3845,139	1681	2,287		
	Total	3869,665	1684			
Wifi & Connectivity (1-5)	Between Groups	35,636	3	11,879	5,228	0,001
	Within Groups	1670,050	735	2,272		
	Total	1705,686	738			
Value For Money (1-5)	Between Groups	46,242	3	15,414	6,167	0,000
	Within Groups	4456,620	1783	2,500		
	Total	4502,862	1786			
Rating (1-10)	Between Groups	235,242	3	78,414	7,112	0,000
	Within Groups	19658,429	1783	11,025		
	Total	19893,671	1786			

Descriptives									
						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Seat Comfort (1-5)	1,00	640	2,89	1,367	0,054	2,79	3,00	1	5
	2,00	344	2,86	1,360	0,073	2,72	3,01	1	5
	3,00	336	2,65	1,341	0,073	2,51	2,80	1	5
	4,00	325	2,89	1,362	0,076	2,74	3,04	1	5
	Total	1645	2,84	1,362	0,034	2,77	2,90	1	5
Cabin Staff Service (1-5)	1,00	641	3,01	1,533	0,061	2,90	3,13	1	5
	2,00	344	3,03	1,494	0,081	2,87	3,19	1	5
	3,00	334	2,74	1,541	0,084	2,57	2,91	1	5
	4,00	323	3,06	1,465	0,081	2,90	3,22	1	5
	Total	1642	2,97	1,517	0,037	2,90	3,04	1	5
Food & Beverages (1-5)	1,00	599	3,18	1,525	0,062	3,06	3,30	1	5
	2,00	321	3,19	1,442	0,080	3,03	3,35	1	5
	3,00	315	2,83	1,500	0,085	2,66	2,99	1	5
	4,00	308	3,18	1,408	0,080	3,02	3,33	1	5
	Total	1543	3,11	1,485	0,038	3,03	3,18	1	5
Inflight Entertainment (1-5)	1,00	547	3,12	1,413	0,060	3,00	3,24	1	5
	2,00	298	3,26	1,382	0,080	3,10	3,42	1	5
	3,00	284	3,01	1,466	0,087	2,84	3,18	1	5
	4,00	283	3,08	1,402	0,083	2,92	3,25	1	5
	Total	1412	3,12	1,416	0,038	3,05	3,20	1	5
Ground Service (1-5)	1,00	659	2,36	1,567	0,061	2,24	2,48	1	5
	2,00	351	2,31	1,534	0,082	2,15	2,47	1	5
	3,00	344	2,04	1,453	0,078	1,88	2,19	1	5
	4,00	331	2,24	1,437	0,079	2,08	2,39	1	5
	Total	1685	2,26	1,516	0,037	2,19	2,33	1	5
Wifi & Connectivity (1-5)	1,00	305	2,19	1,489	0,085	2,02	2,35	1	5
	2,00	137	2,27	1,536	0,131	2,01	2,53	1	5
	3,00	142	2,04	1,416	0,119	1,80	2,27	1	5
	4,00	155	2,68	1,595	0,128	2,42	2,93	1	5
	Total	739	2,28	1,520	0,056	2,17	2,39	1	5
Value For Money (1-5)	1,00	703	2,69	1,634	0,062	2,57	2,82	1	5
	2,00	365	2,74	1,609	0,084	2,57	2,91	1	5
	3,00	374	2,31	1,539	0,080	2,15	2,46	1	5
	4,00	345	2,55	1,482	0,080	2,39	2,70	1	5
	Total	1787	2,59	1,588	0,038	2,52	2,67	1	5
Rating (1-10)	1,00	703	4,23	3,429	0,129	3,98	4,48	1	10
	2,00	365	4,32	3,422	0,179	3,97	4,67	1	10
	3,00	374	3,37	3,174	0,164	3,04	3,69	1	10
	4,00	345	4,23	3,138	0,169	3,90	4,56	1	10
	Total	1787	4,07	3,337	0,079	3,91	4,22	1	10

Annex 5: Pearce correlation matrix for multiple linear regression

		Rating (1-10)	R_2	TT_2	Comfort (1-5)	Cabin Staff Service (1-5)	Beverages (1-5)	Entertainment (1-5)	Ground Service (1-5)	Connectivity (1-5)	Value For Money (1-5)
R_2	Pearson Correlation	,896**									
	Sig. (2-tailed)	0,000									
	N	1787									
TT_2	Pearson Correlation	-0,038	-,052*								
	Sig. (2-tailed)	0,106	0,029								
	N	1787	1787								
Seat Comfort (1-5)	Pearson Correlation	,741**	,677**	-0,024							
	Sig. (2-tailed)	0,000	0,000	0,326							
	N	1645	1645	1645							
Cabin Staff Service (1-5)	Pearson Correlation	,760**	,700**	-0,016	,708**						
	Sig. (2-tailed)	0,000	0,000	0,517	0,000						
	N	1642	1642	1642	1641						
Food & Beverages (1-5)	Pearson Correlation	,738**	,669**	-0,034	,673**	,765**					
	Sig. (2-tailed)	0,000	0,000	0,188	0,000	0,000					
	N	1543	1543	1543	1542	1542					
Inflight Entertainment (1-5)	Pearson Correlation	,647**	,574**	-0,023	,667**	,641**	,666**				
	Sig. (2-tailed)	0,000	0,000	0,384	0,000	0,000	0,000				
	N	1412	1412	1412	1412	1412	1400				
Ground Service (1-5)	Pearson Correlation	,820**	,744**	-,053*	,624**	,640**	,594**	,546**			
	Sig. (2-tailed)	0,000	0,000	0,029	0,000	0,000	0,000	0,000			
	N	1685	1685	1685	1643	1640	1541	1410			
Wifi & Connectivity (1-5)	Pearson Correlation	,693**	,649**	,088*	,660**	,620**	,633**	,667**	,592**		
	Sig. (2-tailed)	0,000	0,000	0,016	0,000	0,000	0,000	0,000	0,000		
	N	739	739	739	737	737	734	721	738		
Value For Money (1-5)	Pearson Correlation	,899**	,829**	-,064**	,719**	,744**	,732**	,651**	,759**	,658**	
	Sig. (2-tailed)	0,000	0,000	0,007	0,000	0,000	0,000	0,000	0,000	0,000	
	N	1787	1787	1787	1645	1642	1543	1412	1685	739	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Annex 6: ANOVA test of multiple linear regression by traveller type

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,930[a]	0,864	0,863	1,239

a. Predictors: (Constant), Value For Money (1-5), Wifi & Connectivity (1-5), Inflight Entertainment (1-5), Ground Service (1-5), Cabin Staff Service (1-5), Seat Comfort (1-5), Food & Beverages (1-5)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6942,639	7	991,806	646,155	<,001[b]
	Residual	1091,339	711	1,535		
	Total	8033,978	718			

a. Dependent Variable: Rating (1-10)

b. Predictors: (Constant), Value For Money (1-5), Wifi & Connectivity (1-5), Inflight Entertainment (1-5), Ground Service (1-5), Cabin Staff Service (1-5), Seat Comfort (1-5), Food & Beverages (1-5)

Model Summary

Model	R TT_2 = 1,00 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	,935[a]	0,873	0,870	1,216

a. Predictors: (Constant), Value For Money (1-5), Wifi & Connectivity (1-5), Inflight Entertainment (1-5), Ground Service (1-5), Seat Comfort (1-5), Cabin Staff Service (1-5), Food & Beverages (1-5)

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2927,856	7	418,265	282,864	<,001[c]
	Residual	424,381	287	1,479		
	Total	3352,237	294			

a. Dependent Variable: Rating (1-10)

b. Selecting only cases for which TT_2 = 1,00
Note: 1,00 = Solo Leisure
c. Predictors: (Constant), Value For Money (1-5), Wifi & Connectivity (1-5), Inflight Entertainment (1-5), Ground Service (1-5), Seat Comfort (1-5), Cabin Staff Service (1-5), Food & Beverages (1-5)

Model Summary

Model	R TT_2 = 2,00 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	,953[a]	0,908	0,903	1,071

a. Predictors: (Constant), Value For Money (1-5), Wifi & Connectivity (1-5), Cabin Staff Service (1-5), Ground Service (1-5), Inflight Entertainment (1-5), Seat Comfort (1-5), Food & Beverages (1-5)

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1432,789	7	204,684	178,375	<,001[c]
	Residual	144,584	126	1,147		
	Total	1577,373	133			

a. Dependent Variable: Rating (1-10)

b. Selecting only cases for which TT_2 = 2,00
Note: 2,00= Couple Leisure
c. Predictors: (Constant), Value For Money (1-5), Wifi & Connectivity (1-5), Cabin Staff Service (1-5), Ground Service (1-5), Inflight Entertainment (1-5), Seat Comfort (1-5), Food & Beverages (1-5)

Model Summary

Model	R TT_2 = 3,00 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	,914[a]	0,835	0,826	1,327

a. Predictors: (Constant), Value For Money (1-5), Wifi & Connectivity (1-5), Seat Comfort (1-5), Food & Beverages (1-5), Ground Service (1-5), Inflight Entertainment (1-5), Cabin Staff Service (1-5)

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1166,604	7	166,658	94,680	<,001[c]
	Residual	230,590	131	1,760		
	Total	1397,194	138			

a. Dependent Variable: Rating (1-10)

b. Selecting only cases for which TT_2 = 3,00
Note: 3,00= Family Leisure
c. Predictors: (Constant), Value For Money (1-5), Wifi & Connectivity (1-5), Seat Comfort (1-5), Food & Beverages (1-5), Ground Service (1-5), Inflight Entertainment (1-5), Cabin Staff Service (1-5)

Model Summary

Model	R TT_2 = 4,00 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	,917[a]	0,841	0,833	1,324

a. Predictors: (Constant), Value For Money (1-5), Ground Service (1-5), Inflight Entertainment (1-5), Cabin Staff Service (1-5), Wifi & Connectivity (1-5), Seat Comfort (1-5), Food & Beverages (1-5)

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1324,054	7	189,151	107,909	<,001[c]
	Residual	250,661	143	1,753		
	Total	1574,715	150			

a. Dependent Variable: Rating (1-10)

b. Selecting only cases for which TT_2 = 4,00
Note: 4,00= Business
c. Predictors: (Constant), Value For Money (1-5), Ground Service (1-5), Inflight Entertainment (1-5), Cabin Staff Service (1-5), Wifi & Connectivity (1-5), Seat Comfort (1-5), Food & Beverages (1-5)

Annex 7: Coefficients of multiple linear regression by traveller type

Coefficients[a,b,c]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1,718	,169		-10,158	<,001		
	Seat Comfort (1-5)	,210	,088	,086	2,382	,018	,341	2,936
	Cabin Staff Service (1-5)	,132	,087	,061	1,521	,129	,270	3,705
	Food & Beverages (1-5)	,175	,087	,083	2,009	,046	,261	3,824
	Inflight Entertainment (1-5)	-,036	,082	-,016	-,434	,665	,338	2,959
	Ground Service (1-5)	,668	,079	,287	8,491	<,001	,387	2,581
	Wifi & Connectivity (1-5)	,230	,070	,102	3,273	,001	,457	2,190
	Value For Money (1-5)	,961	,095	,445	10,115	<,001	,228	4,379

a. Dependent Variable: Rating (1-10)

b. Selecting only cases for which TT_2 = 1,00

c. 1,00=Solo Leisure

Coefficients[a,b,c]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1,662	,221		-7,510	<,001		
	Seat Comfort (1-5)	,270	,126	,116	2,148	,034	,249	4,016
	Cabin Staff Service (1-5)	,194	,114	,087	1,707	,090	,280	3,575
	Food & Beverages (1-5)	,016	,138	,007	,117	,907	,198	5,059
	Inflight Entertainment (1-5)	,081	,127	,035	,639	,524	,241	4,142
	Ground Service (1-5)	,484	,103	,213	4,683	<,001	,352	2,844
	Wifi & Connectivity (1-5)	,165	,105	,073	1,575	,118	,336	2,979
	Value For Money (1-5)	1,080	,117	,521	9,225	<,001	,228	4,377

a. Dependent Variable: Rating (1-10)

b. Selecting only cases for which TT_2 = 2,00

c. 2,00=Couple Leisure

Coefficients[a,b,c]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1,588	,259		-6,142	<,001		
	Seat Comfort (1-5)	,250	,136	,105	1,841	,068	,385	2,599
	Cabin Staff Service (1-5)	,102	,150	,050	,677	,499	,231	4,327
	Food & Beverages (1-5)	,089	,139	,043	,642	,522	,275	3,643
	Inflight Entertainment (1-5)	-,188	,131	-,089	-1,436	,153	,328	3,050
	Ground Service (1-5)	,905	,144	,389	6,288	<,001	,328	3,045
	Wifi & Connectivity (1-5)	,172	,119	,077	1,443	,151	,441	2,267
	Value For Money (1-5)	,924	,146	,436	6,324	<,001	,266	3,766

a. Dependent Variable: Rating (1-10)

b. Selecting only cases for which TT_2 = 3,00

c. 3,00=Family Leisure

Coefficients[a,b,c]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1,385	,273		-5,077	<,001		
	Seat Comfort (1-5)	,316	,134	,138	2,358	,020	,323	3,093
	Cabin Staff Service (1-5)	,168	,114	,079	1,474	,143	,391	2,559
	Food & Beverages (1-5)	-,034	,129	-,016	-,265	,791	,313	3,195
	Inflight Entertainment (1-5)	-,049	,123	-,023	-,396	,692	,334	2,993
	Ground Service (1-5)	,363	,103	,164	3,541	<,001	,521	1,918
	Wifi & Connectivity (1-5)	,211	,110	,104	1,921	,057	,379	2,635
	Value For Money (1-5)	1,233	,139	,582	8,880	<,001	,259	3,856

a. Dependent Variable: Rating (1-10)

b. Selecting only cases for which TT_2 = 4,00

c. 4,00=Business

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1,642	,110		-14,976	<,001		
	Seat Comfort (1-5)	,257	,057	,107	4,508	<,001	,337	2,970
	Cabin Staff Service (1-5)	,139	,054	,065	2,559	,011	,298	3,350
	Food & Beverages (1-5)	,097	,056	,045	1,720	,086	,277	3,616
	Inflight Entertainment (1-5)	-,050	,053	-,022	-,946	,344	,339	2,952
	Ground Service (1-5)	,585	,050	,253	11,759	<,001	,411	2,432
	Wifi & Connectivity (1-5)	,191	,046	,087	4,183	<,001	,440	2,274
	Value For Money (1-5)	1,074	,058	,503	18,481	<,001	,258	3,881

a. Dependent Variable: Rating (1-10)

Annex 8: Linear Regression Collinearity Diagnosis (VIF)

Coeficientes[a]

Modelo		Coeficientes não padronizados		Coeficientes padronizados	t	Sig.	Estatísticas de colinearidade	
		B	Erro Erro	Beta			Tolerância	VIF
1	(Constante)	-1,642	,110		-14,976	<,001		
	Seat Comfort (1-5)	,257	,057	,107	4,508	<,001	,337	2,97(
	Cabin Staff Service (1-5)	,139	,054	,065	2,559	,011	,298	3,35(
	Food & Beverages (1-5)	,097	,056	,045	1,720	,086	,277	3,61(
	Inflight Entertainment (1-5)	-,050	,053	-,022	-,946	,344	,339	2,95
	Ground Service (1-5)	,585	,050	,253	11,759	<,001	,411	2,43
	Wifi & Connectivity (1-5)	,191	,046	,087	4,183	<,001	,440	2,27
	Value For Money (1-5)	1,074	,058	,503	18,481	<,001	,258	3,88

a. Variável Dependente: Rating (1-10)

Annex 9: Logistics Regression Omnibus Coefficients

Testes de Omnibus do Modelo de Coeficientes

		Qui-quadrado	df	Sig.
Etapa 1	Etapa	728,243	7	<,001
	Bloco	728,243	7	<,001
	Modelo	728,243	7	<,001

Annex 10: Logistics Regression Model Summary

Resumo de processamento do caso

Casos não ponderados[a]		N	Porcentagem
Casos selecionados	Incluído na análise	719	100,0
	Casos omissos	0	,0
	Total	719	100,0
Casos não selecionados		0	,0
Total		719	100,0

a. Se a ponderação estiver em vigor, veja a tabela de classificação para o número total de casos.

Resumo do modelo

Etapa	Verossimilhança de log -2	R quadrado Cox & Snell	R quadrado Nagelkerke
1	180,459[a]	,637	,888

a. Estimação finalizada no número de iteração 8 porque as estimativas de parâmetro mudaram foram alteradas para menos de ,001.

Annex 11: Logistics Regression Variables in Equation

Variáveis na equação

		B	S.E.	Wald	df	Sig.	Exp(B)
Etapa 1[a]	Seat Comfort (1-5)	,807	,236	11,647	1	<,001	2,241
	Cabin Staff Service (1-5)	,553	,212	6,805	1	,009	1,738
	Food & Beverages (1-5)	-,024	,216	,012	1	,913	,977
	Inflight Entertainment (1-5)	,289	,211	1,876	1	,171	1,335
	Ground Service (1-5)	,858	,178	23,144	1	<,001	2,359
	Wifi & Connectivity (1-5)	,268	,167	2,567	1	,109	1,307
	Value For Money (1-5)	1,541	,245	39,409	1	<,001	4,669
	Type Of Traveller			11,641	3	,009	
	Type Of Traveller(1)	,800	,660	1,468	1	,226	2,225
	Type Of Traveller(2)	-1,570	,687	5,218	1	,022	,208
	Type Of Traveller(3)	,451	,521	,747	1	,387	1,569
	Constante	-13,640	1,473	85,757	1	<,001	,000

a. Variável(is) inserida(s) no passo 1: Type Of Traveller.

Type of traveller = Business; Type of traveller (1) = Couple; Type of traveller (2) = Family; Type of traveller (3) = Solo.