



Passenger Experience and Market Segmentation in Airports: Evidence from Online Reviews

Experiência dos Passageiros e Segmentação de Mercado nos Aeroportos: Uma Análise Baseada em Avaliações Online

Ana Brochado 

Universidade Aberta; Centro de Estudos sobre a Mudança Socioeconómica e o Território, Instituto Universitário de Lisboa (ISCTE-IUL), Lisboa, Portugal, ana.brochado@uab.pt

Received: 07.05.2026; Revisions required: 08.07.2026; 03.09.2026; Accepted: 05.09.2026; Published: 05.09.2026

Abstract

This study examines passengers' perceptions of airport experiences using user-generated content and explores the potential for market segmentation by traveller type, airport experience, region, and culture. Data were gathered from 39,070 text reviews and ratings on the Skytrax platform. A mixed-methods approach was used, incorporating econometric modelling (multiple and logistic regression) to analyse traveller ratings and recommendations, alongside text mining (via Leximancer) to assess online reviews. To account for passenger heterogeneity, the models were estimated for distinct traveller groups. The text review analysis identified ten key dimensions of the airport experience: Airport Staff, Airline Services, Queuing Times, Airport Overall Experience, Terminal Signage, Airport Shopping, Terminal Cleanliness, Terminal Seating, Food & Beverages, and Wi-Fi Connectivity. The model estimates showed that Airport Staff and Queuing Times carried the greatest weight in overall ratings and recommendations. The weight of each attribute in the overall rating and in the recommendation varied across passenger segments. These findings contribute to the literature by clarifying how airport quality attributes influence passengers' recommendations and overall ratings, while highlighting heterogeneity across culturally diverse passenger segments.

Keywords: Airports, Passenger experience, Intention to recommend, Market segmentation, User-generated content.

Resumo

Este estudo analisa as percepções dos passageiros sobre a experiência aeroportuária através de conteúdos gerados pelos utilizadores e explora o potencial de segmentação de mercado com base no tipo de viajante, na experiência aeroportuária, na região e na cultura. Os dados foram recolhidos a partir de 39.070 comentários publicados na plataforma Skytrax. Foi usada uma abordagem de métodos mistos, combinando modelação econométrica com técnicas de análise de texto. Para considerar a heterogeneidade dos passageiros, os modelos foram estimados para diferentes grupos de viajantes. A análise dos comentários identificou dez dimensões-chave da experiência: *staff*, serviços das companhias aéreas, tempos de espera, experiência global, sinalização nos terminais, oferta comercial, limpeza dos terminais, lugares sentados nos terminais, alimentação e bebidas e Wi-Fi. Os resultados mostraram que o *staff* e os tempos de espera tiveram maior peso nas classificações globais e nas recomendações. O peso de cada atributo variou entre os segmentos de passageiros. Estes resultados clarificam a influência dos atributos da qualidade aeroportuária nas recomendações e classificações globais dos passageiros, destacando simultaneamente a heterogeneidade observada entre segmentos de passageiros culturalmente diversos.

Palavras-chave: Aeroportos; Experiência do passageiro; Recomendação; Segmentação de mercado; Conteúdos gerados pelo utilizador.

1. Introduction

Airports are essential to the air transport network (Barakat et al., 2021) and significantly contribute to the regional and national economy through passengers and airlines (Awad et al., 2020; Bunchongchit & Wattanacharoensil, 2021). There is a strong connection between air transportation, airports, and tourism (Kiliç & Çadirci, 2022), as airports, serving as the first and last points of contact for tourists (Arasli et al., 2023), shape their overall travel experience. From the passenger's perspective, airports are not merely transit areas but experiential spaces that combine aviation services, such as check-in and baggage handling, with non-aviation services, such as retail shopping and food and beverage options (Marques & Brochado, 2008; Lin & Chen, 2013; Gitto & Mancuso, 2017).

Airports compete for passengers and airlines. Passenger perceptions of service quality are key measures of airport performance (Wattanacharoensil et al., 2017). Previous studies have developed tools to assess airport service quality using survey data. Despite their popularity, surveys have limitations, including high costs and limited coverage (Barakat et al., 2021). Recent studies have therefore highlighted the benefits of analysing user-generated online content to capture airport passengers' experiences as an alternative to traditional survey methods (Brochado et al., 2026). Social media platforms enable passengers to spontaneously share their service quality assessments through photos, videos, texts, and ratings, which have become increasingly influential (Bunchongchit & Wattanacharoensil, 2021). Online reviews, enabled by Web 2.0, social media platforms, and smartphones, offer a reliable, accessible, and cost-effective tool for researchers and airport managers to gather customer insights (Brochado et al., 2026). Researchers have analysed the airport experience based mainly on either text reviews (Abouseada et al., 2023; Arasli et al., 2023; Bae & Chi, 2022) or online ratings (Brochado et al., 2026; Pholsook et al., 2024; Chatterjee et al., 2023). These dimensional accounts are bound to single airports or single regions, from Honolulu (Bae & Chi, 2022) and Cairo (Abouseada et al., 2023) to the Nordic countries (Arasli et al., 2023) and five



European airports (Gitto & Mancuso, 2017), and the sets of dimensions they report differ accordingly. Passengers, however, are not homogeneous in how they evaluate airports (Harrison et al., 2015). Bunchongchit and Wattanacharoensil (2021) found that the weight of each attribute in the overall rating varies by traveller type, and Chatterjee et al. (2023) found that the determinants of satisfaction in airport lounges differ by passenger group and travel class. However, analyses of airport user-generated content continue to take the airport as the unit of analysis and to yield a single priority ranking of attributes (Brochado et al., 2026; Hsiao & Li, 2026). Whether one ranking can serve a passenger population that differs in purpose of travel, position in the journey, and cultural background remains unexamined for the airport as a whole, having been established only for a discretionary facility used by a minority of passengers, the lounge (Chatterjee et al., 2023). If a single ranking does not hold across passenger groups, it misdirects investment towards attributes that matter to some passengers and not to others.

Culture is the strongest candidate for such divergence (Radojevic et al., 2019). Stamolampros et al. (2019) found that Hofstede's dimensions predict airline ratings not only overall but across individual service aspects, and Guan et al. (2022) found that the influence of hospitality service dimensions on hotel ratings is contingent on cultural orientation, the same dimension carrying opposite effects in high- and low-scoring groups. This evidence comes, however, from services chosen in advance (Stamolampros et al., 2019; Guan et al., 2022); it has centred on the intangible aspects of service quality rather than the tangible ones (Maki et al., 2025), and it has addressed evaluative ratings rather than recommendation (Prentice & Kadan, 2019). Airports allow all three to be examined simultaneously, since passengers assess both aviation and non-aviation attributes in a single encounter (Marques & Brochado, 2008; Gitto & Mancuso, 2017) and report both a rating and a recommendation (Brochado et al., 2026).

Although previous studies have demonstrated that the importance of airport service attributes varies across passenger segments (Brochado et al., 2026) and that travellers' cultural backgrounds moderate the relative importance of service attributes in airport lounges (Chatterjee et al., 2023), these research streams leave an important issue unresolved. The airport-lounge evidence is confined to a specific component of the airport experience, while broader airport segmentation research has focused on traveller type, airport experience category and region of origin (Chatterjee et al., 2023; Brochado et al., 2026). Consequently, further research is needed to understand how passenger characteristics and cultural background shape the relative importance of service attributes across the broader airport experience and whether these differences are consistent across overall evaluation and recommendation behaviour.

The aim of this paper is twofold: first, to identify the key dimensions of the airport passenger experience based on online reviews; and second, to examine whether the impact of each dimension on overall service quality assessment and on recommendation varies by traveller profile, using airport ratings. The following research questions are addressed:

- (i) What are the main themes in positive and negative text reviews shared online by passengers about worldwide airports?
- (ii) What are the main service attributes associated with passengers' overall perceptions of airport experiences and their recommendation behaviour?
- (iii) Does the impact of the main service attributes that correlate with passengers' overall perceptions of airport experiences and their recommendation behaviour vary according to the passenger profile (traveller type, experience at the airport, region of origin, and culture)?

This paper is structured as follows: the next section discusses the concept of airport passenger experience and market segmentation in the aeronautical sector. The third section presents the materials and methods applied to collect and analyse the two types of data: online ratings and online text reviews. The fourth section presents the results of the content analysis and econometric models for both the overall sample and by passenger profile. The discussion of findings is presented next. The paper concludes with theoretical contributions, managerial implications, and avenues for future research.

2. Literature review

From the passenger's perspective, airports are not just infrastructure for air transportation; they also serve as experiential spaces that offer a range of commercial activities, such as food and beverage services and retail shopping (Lin & Chen, 2013). Accordingly, airport services can be categorised into two groups: aviation services (e.g., infrastructure for aircraft landing, standing, take-off, baggage handling, and check-in processes) and non-aviation services (e.g., business lounges, commercial activities, car parking) (Marques & Brochado, 2008; Gitto & Mancuso, 2017). Several studies have sought to identify the key dimensions of airport service quality through traveller surveys (e.g., Prentice & Kadan, 2019; Awad et al., 2020; Allen et al., 2020). For instance, Prentice and Kadan's (2019) study of Australian airports identified the following dimensions of the passenger experience: facilities, check-in, service environment, security, and ambiance. Awad et al. (2020) focused on Dubai International Airport and identified check-in, terminal conditions, employee assurance and empathy, and availability and mobility as the main dimensions of service quality. Allen et al. (2020) found that service accessibility, control operations, and terminal environment can describe service quality in Italian airports. Passengers, therefore, perceive airport service quality as a multidimensional construct (Allen et al., 2020).



Recent studies have emphasised the advantages of using user-generated content in airport service quality research (Wattanacharoensil et al., 2017; Brochado et al., 2026). Online reviews, including text narratives and ratings, have gained increasing importance as a source of insights into passenger experience (Gitto & Mancuso, 2017). Various studies have analysed data from social media platforms such as Twitter (e.g., Barakat et al., 2021), text reviews (Abouseada et al., 2023), and online ratings (Pholsook et al., 2024; Brochado et al., 2026) from Skytrax, as well as from mixed sources. Wattanacharoensil et al. (2017), through content analysis of Skytrax data, revealed that the airport passenger experience can be categorised into two dimensions: the functional service scale/process of service delivery and the consumption experience, which includes hedonic and aesthetic elements. Gitto and Mancuso's (2017) content analysis of reviews from five European airports revealed that passengers focused primarily on non-aviation services (70% of the sentences), particularly food, beverages, and shopping, while aviation services such as check-in, baggage claim, and lounges/seating were also mentioned. Barakat et al. (2021), through a content analysis of tweets, found that the airport service quality experience can be described by 23 themes, which are organised into dimensions such as access, check-in, passport control, wayfinding, facilities, airport environment, arrival, people, and waiting. Kiliç and Çadirci (2022) analysed text reviews from 10 airports. They identified the main dimensions of the airport experience, including baggage claim, immigration process, access gates, airport procedures, leisure activities, employee service, transfer/transit amenities, passport control, and servicescape. Bae and Chi (2022) found that key themes at Honolulu International Airport included airport signage, flights, baggage, arrivals, departures, check-in, security, and queues.

Brochado et al. (2026) employed the Importance-Performance Analysis on worldwide airport ratings to identify priority attributes for intervention. Hsiao and Li (2026) analysed text reviews to identify the service quality and sustainability dimensions (social and environmental) and prioritised service attributes for the case of Taoyuan International Airport, considering their correlations with the overall rating. Table 1 presents a selection of studies on the use of social media in research on the airport service experience.

Table 1 - User-Generated Contents in Airport Research

Reference	Research Context	User-generated contents	Data analysis
Hsiao and Li (2026)	102 hub airports; n=14327; Skytrax	Text reviews; Ratings	Topic modelling and semantic analysis
Brochado et al. (2026)	Worldwide airports; n=15138; Skytrax	Ratings	Artificial Neural Networks
Pholsook et al. (2024)	10 Airports South Asia; n=1016 (passengers); Skytrax	Ratings	Multiple regression analysis, Bayesian networks, Neural Networks
Abouseada et al. (2023)	Cairo International airport; n=400; Skytrax, Tripadvisor	Text reviews	Content Analysis; Text Mining
Chatterjee et al. (2023)	202 Airports; 786 Lounges; n=2261; Skytrax	Ratings	Regression Analysis
Arasli et al. (2023)	Nordic airports; n=704; Skytrax	Text reviews	Content Analysis
Bae and Chi (2022)	6 Airports, n=1341 Skytrax	Text Reviews	Content Analysis (Leximancer, Nivo)
Bakır et al. (2022)	50 European airports; n=1463; Skytrax	Ratings	Multiple Regression Analysis; Necessary Condition Analysis
Kiliç and Çadirci (2022)	10 airports; n=1224; Skytrax	Text reviews	Sentiment Analysis; Topic Modelling
Barakat et al. (2021)	4 airports, n=83681 tweets; Twitter	Text Reviews	Content Analysis
Bunchongchit and Wattanacharoensil (2021)	Worldwide airports, n=7538; Skytrax	Ratings, Text Reviews	Sentiment Analysis, PLS-SEM
Martin-Domingo et al. (2019)	London Heathrow airport, n=4392 tweets; Twitter	Text reviews	Sentiment Analysis
Wattanacharoensil et al. (2017)	15 airports; n=647; Skytrax	Text Reviews	Content Analysis
Gitto and Mancuso (2017)	4 European Airports; Skytrax	Text Reviews	Content Analysis

Source: own elaboration.



Research has also focused on identifying the key variables that drive passenger satisfaction. Prentice and Kadan's (2019) study of passengers at Australian airports found that only airport facilities and the service environment (servicescape) significantly contributed to overall passenger satisfaction. Using survey data, Awad et al. (2020) identified check-in, employee assurance and empathy, and service availability as the most important factors influencing overall satisfaction. Arasli et al. (2023) identified several key themes in the passenger experience at Nordic airports based on text reviews, including staff, screening, immigration, lounges, luggage, gates, restaurants, terminals, and shops. Pholsook et al. (2024), using both parametric and non-parametric methods, found that queuing time and staff courtesy are the strongest drivers of overall online ratings. Chatterjee et al. (2023) showed that, for airport lounges, catering and washroom facilities have the greatest impact on overall satisfaction. Bae and Chi's (2022) study revealed that the words frequently used by satisfied passengers (e.g., staff, terminal, clean, time, immigration, free) differed from those used by unsatisfied passengers (e.g., security check, flight, line, and staff) in their text reviews.

The literature on service quality highlights that positive perceptions of service quality are linked to favourable behavioural intentions, such as intentions to reuse the service and positive word-of-mouth. In contrast, negative perceptions are associated with behaviours like switching to other services and negative word-of-mouth (Prentice & Kadan, 2019). In their study, Prentice and Kadan (2019) identified facilities and servicescape as the two key dimensions influencing passengers' intention to revisit an airport. Arasli et al. (2023) found that satisfied passengers most frequently mentioned lounges, shops, restaurants, customs, and food in their web reviews, whereas dissatisfied passengers often cited screening, staff, signage, luggage, and check-in. Chatterjee et al. (2023) revealed that in airport lounges, comfort and staff were the variables with the strongest impact on recommendation intentions.

Hsiao and Li (2026) argue that the correlation between service quality dimensions and overall ratings enables the prioritisation of areas for intervention in airports. The authors concluded that staff assistance and attitude, arrival and immigration procedures, and layout and facility management are strongly associated with airport ratings. As regards virtual reality tourism, Kokash (2026) concluded that service quality dimensions impact satisfaction, enjoyment and travel intentions. Positive service quality perceptions are associated with favourable behavioural intentions, including reuse and positive word of mouth (Prentice & Kadan, 2019; Lourenço, Madeira & Santos, 2025), yet the attributes that account for an evaluative rating need not be those that account for a recommendation. Chatterjee et al. (2023) found that catering and washroom facilities carried the greatest weight for satisfaction with airport lounges, while comfort and staff carried the greatest weight for recommendation intentions. Each hypothesis is therefore formulated for both outcomes, allowing the two to be compared.

The relationships between airport service attributes, overall evaluation, and recommendation behaviour can be explained through service quality theory and Expectancy-Disconfirmation Theory. Service quality is multidimensional and reflects customers' evaluations of different aspects of service performance (Parasuraman et al., 1988; Robertson et al., 2024), an approach also applied to airport service quality (Prentice & Kadan, 2019; Hsiao & Li, 2026). Expectancy-Disconfirmation Theory further suggests that satisfaction depends on the extent to which perceived service performance meets or exceeds expectations (Oliver, 1980; Bakir et al., 2022; Garcia et al., 2025; Hsiao & Li, 2026), with favourable evaluations contributing to recommendation behaviour (Chatterjee et al., 2023; Robertson et al., 2024). Accordingly, positive evaluations of the eight airport service attributes examined in this study are expected to enhance both overall airport evaluation and recommendation.

Based on the literature review, this paper proposes the following hypotheses regarding airport service quality attributes and their relationship with overall passenger experience and recommendation behaviour:

- **H1:** Queuing times have a positive impact on (a) passengers' overall perceptions of service experience and (b) recommendation behaviour.
- **H2:** Terminal cleanliness has a positive impact on (a) passengers' overall perceptions of service experience and (b) recommendation behaviour.
- **H3:** Terminal seating has a positive impact on (a) overall satisfaction and (b) recommendation behaviour.
- **H4:** Terminal signage has a positive impact on (a) passengers' overall perceptions of service experience and (b) recommendation behaviour.
- **H5:** Food & beverage options have a positive impact on (a) passengers' overall perceptions of service experience and (b) recommendation behaviour.
- **H6:** Airport shopping has a positive impact on (a) passengers' overall perceptions of service experience and (b) recommendation behaviour.
- **H7:** Wi-Fi connectivity has a positive impact on (a) passengers' overall perceptions of service experience and (b) recommendation behaviour.
- **H8:** Airport staff has a positive impact on (a) passengers' overall perceptions of service experience and (b) recommendation behaviour.



Previous studies in travel literature (e.g., Brochado et al., 2019) argue that passengers are heterogeneous, and the impact of service quality dimensions on satisfaction may differ across passenger groups. Therefore, regression models should be run for each market segment. In the context of airports, Harrison et al. (2015) proposed a segmentation of airport passengers into four categories based on time sensitivity and passenger engagement: airport enthusiasts, efficient enthusiasts, time fillers, and efficiency lovers. Awad et al. (2020) concluded that average satisfaction at Dubai airport varies by nationality, but found no differences by trip purpose. Bunchongchit and Wattanacharoensil (2021) found that the impact of each service quality attribute on the overall rating varies by traveller type. Chatterjee et al. (2023) found that, for airport lounges, the variables with the greatest impact on satisfaction vary by passenger group and culture. Guan et al. (2022) showed that cultural understanding can affect both ratings and web reviews in hospitality contexts and Maki et al. (2025) found that hotel service quality dimensions are influenced by traveller nationality. In the context of virtual reality tourism, Kokash (2026) concluded that cultural orientation moderates the relationship between service quality attributes and satisfaction and enjoyment.

Taken together, these studies suggest that culture bears on service attributes in different ways: Guan et al. (2022) align staff adaptiveness with power distance, masculinity, long-term orientation and indulgence, and standardised processes with individualism and uncertainty avoidance, while Maki et al. (2025) find uncertainty avoidance to matter most for tangible aspects and power distance for staff. In the airport context, however, this contingency has been established only for lounges (Chatterjee et al., 2023), a discretionary facility used by fewer passengers.

From a theoretical perspective, market segmentation theory assumes that heterogeneous consumer groups differ in their needs, preferences and responses to service attributes (Harrison et al., 2015; Bunchongchit & Wattanacharoensil, 2021). Hofstede's cultural dimensions further provide a theoretical basis for expecting such heterogeneity across cultures, as culturally embedded values shape consumers' service expectations and evaluations (Hofstede, 2001; Radojevic et al., 2019; Guan et al., 2022). Accordingly, the effects of airport service attributes on overall evaluation and recommendation are expected to vary across passenger profiles.

Finally, a market segmentation hypothesis was added:

- **H9:** The impact of service quality attributes on (a) passengers' overall perceptions of service experience and (b) recommendation behaviour varies according to the passenger profile (traveller type, experience at the airport, region of origin and culture).

3. Methodology

3.1. Data Collection and Description

The data for this study (text reviews and online ratings) were gathered from the Skytrax website (see www.airlinequality.com). Skytrax, a London-based company, is well known for conducting regular passenger surveys on service quality in the civil aviation industry, making it a recognised leader in air travel research. Passengers post a text review of their experience, rate it on a scale from 1 to 10 ($M = 3.83$) and indicate their intention to recommend (i.e., "Recommended" (25.23%) or "Not recommended"). They also assess their experience in terms of eight airport attributes: (1) Queuing Times ($M=2.47$), (2) Terminal Cleanliness ($M=3.13$), (3) Terminal Seating ($M=2.44$), (4) Terminal Signage ($M=2.79$), (5) Food & Beverages ($M=2.44$), (6) Airport Shopping ($M=2.67$), (7) Wi-Fi Connectivity ($M=2.57$) and (8) Airport Staff ($M=2.27$) on a scale from 1 to 5. The dataset also included information about the type of traveller (i.e., solo leisure, couple leisure, family leisure, and business travellers), experience at the airport (arrival and departure, arrival only, departure only, and transit) and passengers' country of origin. The country of origin enabled the construction of two additional variables: the passenger's region and cultural dimensions based on the Hofstede classification (Hofstede, 2001).

Regarding the airport experience, 38.83% of the available reviews pertain to passengers who both arrive and depart from the airport, 12.31% to those who arrive only, 35.90% to those who depart only, and the remaining 12.92% to passengers in transit. In terms of traveller type, leisure travellers account for 80.5% of the sample. Business travellers represent 19.53%, leisure couples 29.78%, family leisure travellers 21.71%, and solo leisure travellers 28.98%. The dataset also includes passengers' nationalities, grouped into major regions. European passengers make up 55.38%, 21.84% are from North America, 12.15% from Asia, 1.12% from Africa, and 8.77% from Oceania.

3.2. Data Treatment

This research employed a two-step mixed-methods approach to analyse two types of user-generated content: ratings and text.



The qualitative step involved identifying themes in passenger narratives shared online using Leximancer. Leximancer enables the automatic identification of themes from review text with minimal researcher intervention and provides a visualisation of the main themes and concepts in a concept map (Brochado et al., 2023). Each concept/ theme is described based on the number of hits (i.e., the number of text blocks in the transcripts associated with each theme) and connectivity rate (i.e., the degree to which each theme is connected to other themes). For each dimension, an example of a positive and a negative review is provided, offering a clearer understanding of each airport passenger experience dimension.

In the quantitative step, two models were estimated. Multiple regression was used to test H1a to H8a, taking the overall rating (ranging from 1 to 10) as the dependent variable and the eight service quality dimensions (ranging from 1 to 5) the independent variables. Binary logistic regression was then estimated to test H1b to H8b, with recommendation behaviour as the dependent variable (1 = "Recommended"; 0 = "Not recommended"). Prior to model estimation, the assumptions underlying multiple linear regression and binary logistic regression were assessed. For the multiple regression models, multicollinearity was examined using variance inflation factors (VIF), with values below 5.0 indicating the absence of problematic multicollinearity. Linearity and homoscedasticity were assessed by examining the residuals, and the normality of the residuals was evaluated using normal probability plots. Standardised residuals and Cook's distance were examined to identify potentially influential observations. For the binary logistic regression models, multicollinearity, linearity in the logit and potentially influential observations were also assessed. The diagnostic analyses did not reveal substantial violations of the assumptions that would compromise model estimation.

Then, to test hypotheses H9a and H9b (i.e., heterogeneity in responses linked to traveller profile), regression and logistic regression coefficients were estimated for different passenger groups based on their traveller type, airport experience, and region of origin.

National culture was operationalised through Hofstede's framework (Hofstede, 2001), widely used in cross-cultural research (Radojevic et al., 2019), comprising six dimensions: power distance (tolerance of unequal authority), individualism versus collectivism (self-reliance versus in group loyalty), masculinity versus femininity (competitive achievement versus care and life balance), uncertainty avoidance (discomfort with ambiguity), long term orientation (perseverance and thrift versus tradition and immediate norms), and indulgence versus restraint (permissiveness towards enjoyment versus social regulation of desires). Reviewer nationality was identified from the self-declared country of residence in each Skytrax review. Nationality was matched to country scores retrieved from the Hofstede Insights database (Hofstede Insights, 2025), each ranging from 0 to 100. Reviews were then classified on each dimension using the scale midpoint as the cutoff, yielding six independent high and low groups. The midpoint was preferred to a median split because it anchors group membership in the index rather than in sample composition (Radojevic et al., 2019).

4. Results

4.1. Content Analysis of Passengers' Airport Text Reviews

The content analysis of the reviews uncovered 13 main themes, which were further grouped into ten dimensions for better interpretation: Dimension = Airport Staff (theme = staff), Airline Services (flight), Queuing Times (queue and walk), Airport Experience (airport and experience), Terminal Signage (terminal and signs), Airport Shopping (shops), Terminal cleanliness (clean), Terminal seating (seating), Food & Beverages (food) and Wi-Fi Connectivity (wifi). Figure 1 is a map of the themes and concepts generated by Leximancer.

The most prominent theme is staff, joining the concepts staff (count=23446, relevance=51%), security (18074, 42%), gate (12349, 32%), area (11250, 30%), people (11908, 31%), departure (9725, 27%), work (5531, 20%), open (4609, 18%), rude (4949, 19%), check-in (3904, 17%), trying (3976, 17%) and fast (3087, 15%). The analysis of passenger reviews revealed that the main topics discussed are helpfulness and assistance for special needs (medical conditions or disabilities), the attitude of airport staff either positive (friendly, polite) or negative (rude, unfriendly), efficiency (handling services such as check-in, security, and baggage claim), professionalism and knowledge, communication and ability to clearly explain procedures or provide instructions (about flight details, gate changes, and boarding) and language barriers.

[illegible]

An example of a negative review reads as follows:

A satisfied passenger with the staff wrote:

The dimension queuing times includes two themes, queue and walk. The theme queue includes the concepts queue (13318, 33%), check (13316, 33%), wait (12944, 33%), long (10665, 29%), passengers (11481, 30%), passport (9915, 27%), line (8406, 25%), immigration (7556, 23%), boarding (6643, 22%), bags (7024, 22%), process (3266, 16%), told (3541, 16%), slow (2772, 15%), hand (2431, 14%), left (2407, 14%). The theme walk joins the concepts walk (7343, 23%), customs (7136, 22%), down (3978, 17%), due (2683, 15%), outside (2734, 15%), having (2562, 14%), several (1976, 13%) and system (2108, 14%). The key



topics frequently mentioned in relation to queuing times are short, long, or mixed waits at check-in, security, passport control, baggage claim, customs, and duty-free.

A passenger unsatisfied with the queuing times wrote:

"Queue management is one thing that Delhi airport can do something about at all three places i.e. tickets, immigration and security. Even after arriving 3 hours earlier I was standing non-stop in queues before I made it to the plane. If you have a long journey ahead it only makes it more tiring for passengers. In comparison say at Amsterdam airport the whole thing hardly takes 45 mins to one hour. The thing is there is enough infrastructure at the airport to make these queues shorter but not enough personal on the counters to make those queues shorter. Hope someone can do something about this to make passengers journey less stressful" (Delhi, Departure Only, Family Leisure, 5, No).

An example of a review from a satisfied passenger reads as follows:

"The best airport in the world. I have used it multiple times, and there is never any significant waiting time at check-in or security. [...] And on top of all this, you get free water and a newspaper while you wait for the plane. The best by far." (Aalborg, Solo Leisure, Arrival and Departure, 10, Yes).

The dimension Terminal Signage includes the themes terminal and signs. The theme terminal includes the concepts terminal (17644, 41%), use (11389, 30%), travel (10145, 28%), service (7013, 22%), international (4728, 18%), bad (4507, 18%), transit (3945, 17%), airline (3255, 16%), train (3115, 15%) and building (2724, 15%). The theme signs encompasses the concepts signs (1971, 13%), bus (4246, 17%), car (4192, 17%), parking (3895, 17%), signage (3261, 16%), taxi (2683, 15%), pay (2687, 15%) and year (2132, 14%). There are several topics shared by passengers about Terminal Signage, including clarity and clear directions, confusion/lack of signage, and language barriers (which create difficulties for international travellers). Positive reviews appreciate airports where signage is well-placed and helps travellers navigate efficiently between gates for connecting flights. Negative reviews express frustration over poor signage, leading to confusion in wayfinding for connections, especially in complex or larger terminals.

An unsatisfied passenger with Terminal Signage shared:

"There is no signs indicating how to get into the duty free shops for passengers going to gate D an E before they are in areas D and E. (...) Truly a disappointing experience. The signs are terrible, I speak and read three languages including Spanish and I saw absolutely no indication of this in any way. Very disappointing" (Barcelona, Departure Only, Family Leisure, 2, No).

A typical review from a satisfied passenger with the Terminal Signage is:

"One of the easiest airports to transit through. There are multiple signs to indicate which direction you should go". (Frankfurt Main, Transit, Family Leisure, 7, Yes)

The theme airport shopping includes the concepts shops (10057, 28%), free (6115, 21%), nice (3524, 16%), place (5963, 20%) and toilets (3877, 17%). From the analysis of the reviews related to airport shopping, the following main topics were discussed that contributed to the assessment of the shopping experience: variety of stores (duty-free shops, luxury boutiques, local speciality stores and general retail stores), shopping options available (ranging from international brands and unique local products), pricing (value-for-money deals on perfumes, alcohol, good deals in duty-free prices or high prices), quality of products and exclusive items found in airport stores, convenience of the location in the terminal and layout and customer service in shops.

An unsatisfied passenger shared:

"Shopping is very limited and overpriced" (Addis Ababa, Transit, Business, 1, No).

By contrast, a satisfied passenger wrote:

"Upon departure, the place always gives me that huge burst of energy and excitement - it's definitely something about the architecture and general ethos of the place. I also love the shopping features and terminal layouts". (London Heathrow, Arrival and departure, Business, 6, Yes).

The theme terminal cleanliness joins the concepts clean (5691, 20%), seems (3872, 17%), efficient (3893, 17%), lack (2481, 14%), main (2266, 14%), space (1921, 13%), day (3237, 16%) and air (1695, 13%). The passengers commented on the overall



cleanliness of the terminal (floor, waiting areas, seating areas, seating zones, food courts), the maintenance of high traffic areas, sanitation and hygiene, including visible cleaning by staff, and restroom cleanliness, described as either clean and well maintained or dirty and poorly maintained. Some reviews state that a tidy and organised terminal contributes to a more pleasant airport experience. Passengers also commented on waste management, complaining about overflowing trash bins and uncollected garbage.

An unsatisfied passenger with terminal cleanliness shared:

"Urine smell in filthy restrooms, men's and women's. Dirty floors, dirty seats, did not see one single custodial person doing any cleaning. Absolute disgrace for the city of Philadelphia and the state of Pennsylvania. Shame on the city of Philadelphia". (Philadelphia, Arrival and Departure, Family Leisure, 1, No).

A passenger satisfied with terminal cleanliness shared:

"Most clean airport and friendly staff, outside well manicured and inside immaculately clean. I used the facility it was well equipped for different passengers needs and clean in all areas". (Bangalore, Arrival and Departure, Couple Leisure, 9, Yes).

The theme seating includes the concepts seating (6567, 21%), lounge (5118, 19%), friendly (4231, 17%), available (2849, 15%), floor (2157, 14%) and water (1984, 13%). Based on the reviews mentioning airport seating, the main topics discussed are the comfort of seating (waiting areas and lounges), the availability (or lack thereof) of seating, the design, layout, and arrangement of terminal seating, and convenient access to power outlets for charging devices.

A passenger with a negative rating maintained:

"Finally, there were not enough seats and people were sitting on the floor having already queued for hours to check in due to disorganisation". (Rhodes, Departure Only, Family Leisure, 2, No).

A passenger with a positive rating shared:

"Had a 13 hr. layover at this airport. Sounds long but because of the airport's facilities, it didn't feel that long. I used their rest and relax area which was full of resting couches, recliner seats and massage chairs". (Seoul Incheon, Transit, Solo Leisure, 10, Yes)

The theme food & beverages includes the concepts food (6348, 21%), facilities (4617, 18%), poor (4170, 17%), expensive (2308, 14%) and money (1828, 13%). Regarding food and beverages, the main topics discussed are variety of food and drink options (to suit different tastes, types of cuisine), availability of special diet options (Halal and Kosher Food, vegan, regional and ethnic), quality of food and beverages and portion sizes (praising fresh ingredients and flavourful and well-prepared dishes, or criticising low-quality, bland, or overpriced options), pricing and value for money (in comparison to typical market prices and typical airport prices), availability of restaurants and cafes and opening hours, customer service and atmosphere of cafes and restaurants and convenience and accessibility of food outlets.

A typical negative comment about the lack of special diet options reads:

"Very limited Halal food options for Muslims". (Bangkok Suvarnabhumi, Arrival and Departure, Couple Leisure, 5, No)

A typical positive comment is as follows:

"There are a wide variety of very affordable, healthy, non fast food options to be had which makes a very welcome change from the usual burgers and fries. There are also quite a number of restaurants with vegetarian/vegan options which was a nice discovery particularly for eating out in Japan". (Tokyo Haneda, Arrival and Departure, Couple Leisure, 10, No)

The theme Wi-Fi connectivity includes the concept wifi (1602, 10%). As regards Wi-Fi, reviews assess whether free Wi-Fi is widely available throughout the airport, with positive feedback for airports that offer widespread, easy access to Wi-Fi, as well as the connection speed, ease of access, time limits and data caps, and signal strength.

One review with a negative assessment reads:

"The one thing that did not work was the WiFi. It did not at all work and my data only worked for 1 minute, so be prepared for this". (Addis Ababa, Transit, Couple Leisure, 8, Yes)



One review with a positive assessment reads:

"I sat there for 5 hrs just streaming Netflix on the wifi. May I say the wifi is great. Highly recommend". (Bilbao, Departure Only, Family Leisure, 10, Yes)

The theme airline services includes the concepts flight (23830, 52%), time (20368, 46%), hours (12976, 33%), minutes (11516, 30%), take (7470, 23%), baggage (6473, 21%), luggage (6016, 21%), plane (5908, 20%), arrival (5070, 19%), problem (3996, 17%), return (3662, 16%), least (2885, 15%) and aircraft (1809, 13%). Passengers also commented on topics related to airline services (flights) that significantly impacted their overall airport experience, including flight punctuality, delays, cancellations, and on-time performance.

Passengers with cancelled or delayed flights shared details of their negative experiences. One reviewer recalled:

"Made it only because my next flight was first delayed, then cancelled - something that happens frequently at JFK. My advice - if you can, use a different airport for your arrival into the US". (JFK, Transit, Solo Leisure, 1, No).

In contrast, a satisfied passenger shared that:

"Great flight and on time. (...) Great flight back. Would I use Bristol again? Well yes, absolutely". (Bristol, Arrival and Departure, Couple Leisure, 9, No)

The dimension Airport experience includes the themes airport and experience. The theme experience joins the concepts airport (57226, 100%), better (4001, 17%), easy (3118, 15%), world (2821, 15%), old (2567, 14%), country (2552, 14%), best (2277, 14%) and local (1256, 12%). The theme experience includes the concepts experience (9390, 26%), fly (5023, 19%), recommend (4507, 18%) and city (2777, 15%).

A negative overall experience reads as follows:

"The worst experience in over 30 years of extensive international travel. Everything was disorganized, dirty, and messy. Line for passport check was ridiculously long and moved at a snail's pace. Hope to return to Edinburgh, which is an amazing city, but hopefully never through this airport. So glad we are not leaving from there". (Edinburgh, Arrival Only, Couple Leisure, 1, No)".

A positive comment reads as follows:

"The new Canberra airport is a stunningly beautiful modern building. Now it's opened up to international flights they have put forward every effort to ensure Australia's capital creates a world class first impression. The look and feel is more high end hotel or art gallery than airport but I loved it". (Canberra, Arrival and Departure, Solo Leisure, 9, Yes).

4.2. Determinants of passengers' overall perceptions of service experience and intent to recommend

The results reveal that all eight service quality attributes are positively and significantly associated with passengers' overall perception and the intention to recommend, which means hypotheses H1(a,b) to H8(a,b) are supported for the worldwide airports under study. The VIFs ranged from 1.86 (Wi-Fi connectivity) to 3.27 (airport shopping), indicating the absence of multicollinearity in the data.

Both model estimates (regression and logistic regression) indicate that the two attributes with the strongest influence are airport staff and queuing times. However, the rank of the remaining attributes differs. The attribute with the lowest impact on overall experience is Wi-Fi connectivity, whereas, for recommendation behaviour, it is terminal cleanliness, and terminal signage rises from fourth to third position. Overall assessment and recommendation therefore share their principal drivers but not the ordering of the remainder (see Table 2).

4.3. Results by Traveller Type

Regarding traveller type, the coefficients for the eight attributes are statistically significant in explaining overall service quality perceptions for the business, family leisure, and solo leisure groups. In the regression model for the couple leisure group, Wi-Fi connectivity was not statistically significant.

The logistic regression results showed that Wi-Fi connectivity is not significantly associated with the recommendation behaviour of the couple leisure group, and that neither Wi-Fi connectivity nor airport shopping is significant for family leisure passengers.



The attribute with the highest impact on overall perception of the business group is queuing times, followed by airport staff. The other three groups exhibit the same ranking of importance for the two most important attributes as in the overall sample.

In terms of airport recommendations, the first and second most important attributes are queuing times and airport staff for business travellers; airport staff and queuing times for couple leisure; and airport staff, followed by terminal signage, for both family and solo leisure groups.

While H1(a,b) to H8(a,b) were supported in the overall sample, the segment models reveal exceptions, with Wi-Fi connectivity and airport shopping losing significance in particular traveller groups (see Table 2).

Table 2 - Model estimates for the overall sample and by Traveller Type

Dependent variable: Overall Rating - Regression Analysis									
		Overall	Business	Couple Leisure	Family Leisure	Solo Leisure			
(Constant)	B	-1.75 ***	-1.78 ***	-1.54 ***	-1.76 ***	-1.80 ***			
	t	-55.04	-26.85	-24.18	-27.98	-29.14			
Queuing Times	B	0.48 ***	0.59 ***	0.48 ***	0.48 ***	0.39 ***			
	t	36.67	22.03	17.67	17.86	16.62			
Terminal Cleanliness	B	0.12 ***	0.11 ***	0.13 ***	0.10 **	0.13 ***			
	t	8.14	3.78	4.34	3.11	4.72			
Terminal Seating	B	0.30 ***	0.33 ***	0.24 ***	0.30 ***	0.32 ***			
	t	18.88	9.87	7.36	9.08	11.50			
Terminal Signage	B	0.25 ***	0.27 ***	0.19 ***	0.23 ***	0.28 ***			
	t	17.47	9.73	6.63	8.04	10.69			
Food Beverages	B	0.23 ***	0.19 ***	0.24 ***	0.25 ***	0.22 ***			
	t	13.36	5.60	6.79	7.06	6.74			
Airport Shopping	B	0.11 ***	0.12 ***	0.11 ***	0.08 *	0.12 ***			
	t	6.53	3.51	3.30	2.40	3.81			
Wi-Fi Connectivity	B	0.08 ***	0.08 **	0.03	0.08 **	0.12 ***			
	t	6.72	3.17	1.29	3.17	5.55			
Airport Staff	B	0.64 ***	0.52 ***	0.63 ***	0.72 ***	0.67 ***			
	t	46.95	18.30	21.92	25.58	27.45			
ANOVA (F)		5551.27***	1164.49***	1024.64***	1548.51***	1782.80***			
R-Squared		79.18%	78.20%	73.61%	82.40%	80.44%			
Dependent variable: Recommendation - Logistic Regression									
		Overall	Business	Couple Leisure	Family Leisure	Solo Leisure			
Queuing Times	Exp(B)	1.71 ***	2.00 ***	1.82 ***	1.80 ***	1.45 ***			
	Wald	335.24	122.55	84.59	83.38	53.97			
Terminal Cleanliness	Exp(B)	1.16 ***	1.18 *	1.18 *	1.12	1.14 *			
	Wald	14.04	4.17	4.69	1.55	4.33			
Terminal Seating	Exp(B)	1.53 ***	1.57 ***	1.57 ***	1.36 ***	1.60 ***			
	Wald	127.39	31.88	32.80	13.32	53.34			
Terminal Signage	Exp(B)	1.55 ***	1.47 ***	1.36 ***	1.81 ***	1.61 ***			
	Wald	143.05	26.32	14.94	49.72	57.23			
Food Beverages	Exp(B)	1.36 ***	1.21 *	1.49 ***	1.55 ***	1.26 **			
	Wald	52.61	4.84	19.12	20.78	9.70			
Airport Shopping	Exp(B)	1.17 ***	1.19 *	1.21 *	1.11	1.19 *			
	Wald	13.94	4.02	4.16	1.22	5.78			
Wi-Fi Connectivity	Exp(B)	1.16 ***	1.27 ***	1.03	1.08	1.25 ***			
	Wald	26.23	13.62	0.26	1.34	20.22			
Airport Staff	Exp(B)	2.02 ***	1.74 ***	2.14 ***	2.05 ***	2.16 ***			
	Wald	503.24	67.85	120.97	119.02	196.69			
Constant	Exp(B)	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***			
	Wald	2552.38	568.98	593.87	544.80	788.01			
% Correctly Classified		91.00%	90.80%	92.57%	92.50%	89.27%			
Nagelkerke R Square		77.81%	74.94%	77.08%	80.69%	77.62%			

Note: B = beta coefficient; t = test statistic; *, **, and *** statistically significant at the 5%, 1%, and 0.1% level.

Note: exp(B) = odds ratio; Wald = Wald chi-squared test.



4.4. Results by Experience at the Airport

The eight attributes have a statistically significant relationship with both the overall perception of the service experience and the recommendation behaviour of passengers in the groups arrival and departure, departure only, and transit. For the arrival-only group, the regression and logistic regression results showed that airport shopping and food and beverages are not statistically significant (see Table 3).

Airport shopping has a larger effect on the overall perception of the experience among departure-only and transit passengers. Regarding airport recommendations, terminal seating showed the second largest effect for the departure-only group.

Table 3 - Model results by Experience at Airport

Dependent variable: Overall Rating - Regression Analysis		Arrival and Departure		Arrival Only		Departure Only		Transit	
(Constant)	B	-1.86	***	-1.55	***	-1.59	***	-1.76	***
	t	-38.24		-14.12		-30.36		-20.23	
Queuing Times	B	0.49	***	0.70	***	0.42	***	0.44	***
	t	24.74		16.50		19.00		11.71	
Terminal Cleanliness	B	0.16	***	0.13	*	0.09	***	0.13	**
	t	7.24		2.50		3.43		3.15	
Terminal Seating	B	0.29	***	0.32	***	0.32	***	0.28	***
	t	12.17		5.47		12.02		6.67	
Terminal Signage	B	0.31	***	0.22	***	0.18	***	0.29	***
	t	14.36		4.48		7.92		7.57	
Food Beverages	B	0.30	***	0.00		0.21	***	0.20	***
	t	11.46		-0.05		7.42		4.15	
Airport Shopping	B	0.07	**	0.02		0.14	***	0.19	***
	t	3.05		0.24		4.98		4.01	
Wi-Fi Connectivity	B	0.09	***	0.16	***	0.06	**	0.07	*
	t	4.80		3.63		3.13		2.14	
Airport Staff	B	0.58	***	0.54	***	0.70	***	0.63	***
	t	27.35		11.05		31.72		16.20	
ANOVA (F)		2848.67	***	406.57	***	1625.30	***	719.80	***
R-Squared		82.64%		75.93%		75.17%		78.94%	
Dependent variable: Recommendation - Logistic Regression		Arrival and Departure		Arrival Only		Departure Only		Transit	
Queuing Times	Exp(B)	1.90	***	2.00	***	1.47	***	1.70	***
	Wald	186.14		56.74		62.17		34.71	
Terminal Cleanliness	Exp(B)	1.16	*	1.38	*	1.14	*	1.27	*
	Wald	5.57		4.96		4.09		3.87	
Terminal Seating	Exp(B)	1.54	***	1.44	*	1.57	***	1.56	***
	Wald	52.81		6.30		55.58		17.66	
Terminal Signage	Exp(B)	1.68	***	1.42	**	1.45	***	1.60	***
	Wald	78.66		7.52		36.83		22.03	
Food Beverages	Exp(B)	1.47	***	1.14		1.31	***	1.27	*
	Wald	31.47		0.60		16.16		3.90	
Airport Shopping	Exp(B)	1.12	*	1.01		1.18	*	1.51	***
	Wald	4.02		0.00		5.77		11.31	
Wi-Fi Connectivity	Exp(B)	1.18	***	1.29	*	1.18	***	1.11	*
	Wald	12.63		5.31		11.41		4.08	
Airport Staff	Exp(B)	2.01	***	1.72	***	2.02	***	2.07	***
	Wald	182.25		25.95		201.40		62.58	
Constant	Exp(B)	0.00	***	0.00	***	0.00	***	0.00	***
	Wald	1025.93		219.96		940.50		312.94	
% Correctly Classified		91.20%		91.06%		90.80%		92.62%	
Nagelkerke R Square		81.20%		74.91%		72.87%		79.62%	

Note: B = beta coefficient; t = test statistic; *, **, and *** statistically significant at the 5%, 1%, and 0.1% level.

Note: exp(B) = odds ratio; Wald = Wald chi-squared test.



4.5. Results by Region

In the two models estimated for travellers from Asia, the coefficients of six of the eight attributes are statistically significant; Wi-Fi connectivity and airport shopping are not. Airport shopping is not significant in explaining recommendations for African travellers. The t-tests in the regression analysis and the Wald tests for the logistic regression revealed that all variables are statistically significant in the European sample (see Table 4).

Table 4 - Model estimates by Region of Origin

Dependent variable: Overall Rating - Regression Analysis		Asia		Africa		Europe		North America		Oceania		South America	
(Constant)	B	-1.64	***	-1.86	***	-1.69	***	-1.71	***	-1.80	***	-1.70	***
	t	-5.90		-21.69		-40.37		-24.67		-13.64		-4.48	
Queuing Times	B	0.30	*	0.44	***	0.50	***	0.46	***	0.53	***	0.38	**
	t	2.32		14.27		28.31		15.78		10.99		3.03	
Terminal Cleanliness	B	0.24	*	0.17	***	0.13	***	0.11	***	0.08		0.07	
	t	1.99		4.24		6.21		3.58		1.41		0.39	
Terminal Seating	B	0.34	*	0.34	***	0.27	***	0.29	***	0.34	***	0.28	*
	t	2.25		8.84		12.37		8.73		5.54		1.99	
Terminal Signage	B	0.21	*	0.34	***	0.20	***	0.23	***	0.31	***	0.24	*
	t	1.97		9.30		10.68		7.78		5.47		2.40	
Food Beverages	B	0.60	***	0.24	***	0.28	***	0.17	***	0.05		0.16	*
	t	3.66		5.74		11.62		4.51		0.73		1.99	
Airport Shopping	B	-0.02		0.12	**	0.10	***	0.10	**	0.24	***	-0.03	
	t	-0.13		2.99		4.42		2.77		3.54		-0.20	
Wi-Fi Connectivity	B	0.03		0.11	***	0.09	***	0.03		0.11	*	0.20	*
	t	0.32		3.63		5.38		1.31		2.31		1.99	
Airport Staff	B	0.48	***	0.54	***	0.63	***	0.76	***	0.52	***	1.00	***
	t	3.58		15.62		33.40		26.35		10.40		6.79	
ANOVA (F)		70.85***		1077.85***		2917.32***		1067.87***		320.15***		61.08***	
R-squared		81.34%		82.58%		79.11%		76.61%		75.55%		85.78%	
Dependent variable: Recommendation - Logistic Regression		Asia		Africa		Europe		North America		Oceania		South America	
Queuing Times	Exp(B)	1.21	*	1.74	***	1.82	***	1.54	***	1.96	***	5.09	*
	Wald	4.39		62.32		199.71		45.85		36.22		4.09	
Terminal Cleanliness	Exp(B)	1.98	**	1.14	*	1.98	**	1.23	**	1.01		1.01	
	Wald	6.79		3.96		7.53		7.03		0.01		0.01	
Terminal Seating	Exp(B)	2.16	**	1.52	***	1.44	***	1.55	***	1.96	***	2.03	*
	Wald	7.21		21.78		44.95		33.49		21.59		3.92	
Terminal Signage	Exp(B)	1.24	*	1.68	***	1.54	***	1.39	***	1.87	***	1.28	*
	Wald	3.95		31.99		63.43		21.08		17.22		4.15	
Food Beverages	Exp(B)	2.16	**	1.33	**	1.38	***	1.28	***	1.59	**	2.38	***
	Wald	6.86		8.16		27.67		8.07		8.36		4.84	
Airport Shopping	Exp(B)	0.77		1.04		1.23	***	1.15	*	1.53	*	12.33	***
	Wald	0.31		0.17		11.17		3.86		5.78		11.00	
Wi-Fi Connectivity	Exp(B)	1.14		1.25	**	1.17	***	1.09		1.03		9.47	**
	Wald	0.23		10.34		13.06		1.79		0.08		6.73	
Airport Staff	Exp(B)	2.05	**	1.80	***	2.09	***	2.25	***	1.64	***	2.43	***
	Wald	5.62		62.20		249.43		161.95		18.77		12.19	
Constant	Exp(B)	0.00	***	0.00	***	0.00	***	0.00	***	0.00	***	0.00	**
	Wald	29.97		424.39		1269.30		574.93		162.87		5.84	
% Correctly Classified		90.60%		88.70%		92.00%		90.30%		91.20%		94.40%	
Nagelkerke R Square		77.40%		76.80%		79.00%		74.76%		79.63%		92.00%	

Note: B = beta coefficient; t = test statistic; *, **, and *** statistically significant at the 5%, 1%, and 0.1% level.

Note: exp(B) = odds ratio; Wald = Wald chi-squared test.

Regarding North American passengers, Wi-Fi connectivity is not significant in either model. For passengers from Oceania, the model estimates indicated that terminal cleanliness and food and beverages are not significant in explaining overall perception, nor are terminal cleanliness and Wi-Fi connectivity in explaining the intention to recommend. For South American passengers, terminal cleanliness, food and beverages, and airport shopping are not significant in explaining variations in overall perception, and terminal cleanliness is also not significant for recommendation behaviour.

The regression model estimates for passengers from Africa, Europe, North America, Oceania, and South America revealed that airport staff and queuing times rank among the most important attributes in explaining overall perception. However, for passengers from Asia, food and beverages is the variable that has, on average, the strongest impact on overall ratings. For passengers from Europe and Africa, the most important attributes in explaining recommendations are airport staff, followed by queuing times. For passengers from Asia, the most important factors are terminal seating and food and beverages. In



North America, airport staff is the most important, followed by terminal seating. For Oceania, queuing times and terminal seating are most significant, while for South America, Wi-Fi connectivity and queuing times are the key factors.

4.6. Results by Hofstede dimensions of culture

Some differences were observed in the impact of each service quality attribute on overall rating and recommendation with regard to Hofstede's cultural dimensions. Attributes with the highest importance for overall rating remain consistent across cultural classifications. Airport shopping has a stronger influence on overall rating in countries characterised by masculine rather than feminine traits, and on recommendations in countries with high power distance rather than low, as well as in those with high long-term orientation rather than low. Terminal signage is the primary driver of recommendation for passengers from cultures with a low long-term orientation (Table 5).

5. Discussion

The first research question asked what the main themes are in positive and negative online text reviews of airports worldwide by passengers. The analysis of the text reviews showed that the airport experience can be described based on the eight dimensions used by Skytrax: airport staff, queuing times, terminal signage, airport shopping, terminal cleanliness, terminal seating, food and beverages, and Wi-Fi connectivity; moreover, airline services also emerged as a dimension of the passenger narratives. The narratives also included comments about the overall airport experience. The results confirm that passengers describe their airport experience using narratives related with both aviation and non-aviation services (Gitto and Mancuso, 2017).

Compared with the findings of Barakat et al. (2021), the concept map reveals that passengers describe airport facilities in a small number of themes (i.e., seating, food and beverages, and shopping). Although Gitto and Mancuso's (2017) study concluded that 70% of the sentences shared by passengers related to non-aviation services, the present results indicated that the most prominent themes in the web reviews relate to aviation services (i.e., flight, airport staff, queuing times). Bae and Chi (2022) described the airport experience based on text reviews in the following main themes: airport, clean, gate, hour, time, luggage, and queue. The web reviews under analysis provide a more detailed description of the airport experience, in line with the sub-rating dimensions used by the Skytrax platform. The congruence between the Skytrax sub-ratings and the concept map themes is in line with the results of Brochado et al. (2023) for airlines. The analysis of the narratives also showed that each theme can contribute to both satisfaction and dissatisfaction. For example, a satisfied passenger with the airport staff may describe them as polite and friendly, whereas an unsatisfied passenger may describe them as rude.

The second research question asked which service attributes are associated with passengers' overall perceptions of airport experiences and their recommendation behaviour. The regression and logistic regression estimates showed that Airport Staff and Queuing Times have the strongest impact, while Wi-Fi Connectivity and Airport Shopping had the lowest impact on overall ratings. Similarly, Wi-Fi and Terminal Cleanliness were found to have the least influence on passengers' likelihood to recommend. These findings align with previous studies, such as Brochado et al. (2026), Pholsook et al. (2024) and Hsiao and Li (2026), in the context of airports. However, they differ from Chatterjee et al. (2023), who concluded that for airport lounges, catering is the most important determinant of recommendation behaviour.

The third research question asked whether the impact of the main service attributes on passengers' overall perceptions of airport experiences and their recommendation behaviour varies by passenger profile. The estimates showed that traveller type, experience at the airport, region of origin and culture are relevant market segmentation variables. The results also showed that the drivers of the overall rating and of recommendation behaviour may differ. The assessment of queuing times has a stronger impact for business than leisure groups and terminal signage is the second most important variable in the recommendation of the airport by solo travellers and family travellers. As regards the experience at the airport, queuing times have a stronger effect on both the overall rating and the recommendation for arrival-only passengers, and terminal seating is the second-most important driver of the recommendation for departure-only passengers. Airport shopping has a greater impact on the recommendation behaviour of departing and transit passengers compared to other groups. Regarding the region of origin, the attribute with the largest effect on the overall rating of Asian passengers is food and beverage services, while terminal seating has the greatest influence on their likelihood to recommend the airport. Similarly, terminal seating showed greater importance for recommendation behaviour among passengers from North America. For South American passengers, Wi-Fi connectivity emerged as the strongest factor influencing their recommendation decisions. Terminal signage is an important driver of recommendation for passengers from countries with a low long-term orientation.



Table 5 - Model estimates by Hofstede cultural dimensions

		Collectivism	Individualism	Power Distance - Low	Power Distance - High	Feminine	Masculine	Uncertainty Avoidance - Low	Uncertainty Avoidance - High	Long term Orientation - Low	Long term Orientation - High	Restraint	Indulgence
Dependent variable: Overall Rating - Regression Analysis													
(Constant)	B	-1.76 ***	-1.87 ***	-1.82 ***	-1.80 ***	-1.76 ***	-1.86 ***	-1.80 ***	-1.85 ***	-1.75 ***	-1.91 ***	-1.84 ***	-1.78 ***
	T	-26.95	-25.78	-23.24	-29.06	-22.66	-20.32	-25.54	-27.58	-26.31	-26.96	-25.80	-26.88
Queuing Times	B	0.53 ***	0.45 ***	0.45 ***	0.52 ***	0.52 ***	0.48 ***	0.46 ***	0.51 ***	0.49 ***	0.49 ***	0.47 ***	0.52 ***
	t	20.96	16.53	15.88	21.62	17.52	4.01	16.96	20.42	19.22	18.64	17.83	20.04
Terminal Cleanliness	B	0.13 ***	0.19 ***	0.17 ***	0.14 ***	0.15 ***	0.15 **	0.12 ***	0.17 ***	0.10 **	0.21 ***	0.19 ***	0.12 ***
	t	4.17	5.64	4.87	4.82	4.02	2.60	3.49	5.54	3.15	6.46	5.84	3.89
Terminal Seating	B	0.26 ***	0.34 ***	0.36 ***	0.26 ***	0.24 ***	0.35 ***	0.29 ***	0.32 ***	0.31 ***	0.29 ***	0.37 ***	0.23 ***
	t	8.39	9.97	9.89	8.54	6.61	3.30	8.40	10.11	9.93	8.45	11.14	7.26
Terminal Signage	B	0.29 ***	0.32 ***	0.34 ***	0.28 ***	0.28 ***	0.31 ***	0.32 ***	0.29 ***	0.32 ***	0.28 ***	0.32 ***	0.29 ***
	t	10.33	10.23	10.02	10.43	8.52	3.24	10.34	10.16	11.25	9.14	10.49	9.93
Food Beverages	B	0.19 ***	0.23 ***	0.25 ***	0.18 ***	0.30 ***	0.16 **	0.21 ***	0.22 ***	0.23 ***	0.19 ***	0.23 ***	0.20 ***
	t	5.73	6.14	6.32	5.63	7.36	2.72	5.67	6.48	6.65	5.26	6.30	5.61
Airport Shopping	B	0.15 ***	0.11 **	0.11 **	0.15 ***	0.06	0.18 **	0.17 ***	0.10 **	0.09 **	0.18 ***	0.11 **	0.16 ***
	t	4.69	3.00	2.79	4.98	1.49	2.61	4.74	3.13	2.81	5.16	3.11	4.78
Wi-Fi Connectivity	B	0.05 *	0.10 ***	0.07 **	0.07 **	0.10 ***	0.05 *	0.04	0.09 ***	0.06 **	0.08 **	0.06 *	0.08 ***
	t	2.11	4.10	2.69	3.30	3.51	1.99	1.59	4.10	2.72	3.07	2.38	3.44
Airport Staff	B	0.60 ***	0.58 ***	0.54 ***	0.63 ***	0.63 ***	0.59 ***	0.65 ***	0.56 ***	0.62 ***	0.58 ***	0.56 ***	0.62 ***
	t	22.84	19.37	16.92	24.87	19.41	17.78	21.86	20.95	23.07	19.49	19.36	22.80
ANOVA (F)		1380.01***	1446.39***	1229.87***	1575.00***	1143.62***	1701.72***	1350.93***	1492.86***	1415.14***	1438.02***	1498.86***	1322.36***
R-squared		78.31%	82.89%	82.60%	78.90%	81.30%	89.33%	81.30%	80.10%	79.00%	82.40%	82.60%	78.40%
Dependent variable: Recommendation - Logistic Regression													
Queuing Times	Exp(B)	1.83 ***	1.65 ***	1.65 ***	1.84 ***	1.77 ***	1.73 ***	1.63 ***	1.82 ***	1.73 ***	1.77 ***	1.67 ***	1.84 ***
	Wald	118.25	64.38	57.14	129.17	72.35	110.41	63.36	118.93	95.99	86.34	75.74	109.58
Terminal Cleanliness	Exp(B)	1.11	1.17 *	1.14	1.14 *	1.14	1.12	1.17 **	1.08	1.02	1.28 **	1.15 **	1.12
	Wald	1.88	3.86	2.31	4.07	2.03	2.40	3.64	1.05	0.08	8.14	4.03	2.01
Terminal Seating	Exp(B)	1.56 ***	1.63 ***	1.62 ***	1.55 ***	1.38 ***	1.76 ***	1.52 ***	1.67 ***	1.70 ***	1.46 ***	1.69 ***	1.49 ***
	Wald	38.55	36.41	33.01	39.54	14.32	68.26	27.03	50.88	58.23	20.33	46.22	28.58
Terminal Signage	Exp(B)	1.68 ***	1.66 ***	1.74 ***	1.64 ***	1.64 ***	1.71 ***	1.73 ***	1.65 ***	1.77 ***	1.59 ***	1.60 ***	1.72 ***
	Wald	52.87	40.79	43.43	51.95	36.39	60.14	48.79	49.00	67.16	32.84	39.43	53.73
Food Beverages	Exp(B)	1.33 ***	1.27 **	1.38 ***	1.25 **	1.37 **	1.30 ***	1.31 ***	1.36 ***	1.47 ***	1.16	1.25 ***	1.37 ***
	Wald	12.52	6.81	11.37	8.19	10.01	11.63	8.71	14.40	23.00	2.53	6.78	13.56
Airport Shopping	Exp(B)	1.30 **	1.04	0.96	1.36 ***	1.06	1.23 ***	1.14	1.16	1.07	1.28 **	1.08	1.30 **
	Wald	10.53	0.17	0.15	15.05	0.31	7.66	2.20	3.63	0.74	7.96	0.86	9.43
Wi-Fi Connectivity	Exp(B)	1.10 *	1.32 ***	1.29 ***	1.12 *	1.25 ***	1.12 **	1.13 **	1.23 ***	1.20 **	1.14 *	1.20 **	1.16 ***
	Wald	2.85	19.20	14.99	4.69	11.01	4.58	3.63	13.71	10.75	4.39	8.92	6.60
Airport Staff	Exp(B)	1.83 ***	1.91 ***	1.84 ***	1.89 ***	2.13 ***	1.72 ***	1.99 ***	1.77 ***	1.74 ***	2.11 ***	1.94 ***	1.78 ***
	Wald	105.88	83.90	70.50	120.87	106.82	90.63	104.31	90.80	88.87	110.40	99.21	88.11
Constant	Exp(B)	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***
	Wald	663.65	552.69	484.97	724.60	473.63	748.17	562.70	665.01	680.34	547.04	579.67	632.70
% Correctly Classified		90.80%	90.10%	91.80%	94.40%	90.60%	90.10%	89.80%	90.60%	89.90%	91.00%	89.50%	91.00%
Nagelkerke R Square		77.20%	78.70%	77.80%	77.90%	79.30%	77.40%	78.00%	78.10%	77.10%	79.30%	78.00%	77.70%



6. Conclusions

6.1 Theoretical Implications

The findings of this study contribute both theoretically and practically. The study expands on prior research by analysing the airport experience using both text reviews and Skytrax online ratings. Through content analysis of the text reviews, this study conceptualised the service experience at airports across eight dimensions, in addition to flight-related and overall dimensions of the airport experience. Whereas earlier dimensional accounts derive from single regions (Gitto & Mancuso, 2017; Kiliç & Çadirci, 2022) or from case-study applications (Hsiao & Li, 2026), the present account is based on a worldwide corpus. The identification of a dimension related to airline services, which has no counterpart among the platform's sub-ratings, indicates that predefined attribute sets may omit concerns that passengers consider salient (Hsiao & Li, 2026), an omission reflected in the body of airport research estimated on those ratings.

This research also responds to previous calls for research (Bunchongchit & Wattanacharoensil, 2021) by examining the heterogeneity of impacts across each attribute of the airport experience, not only on overall ratings but also on passengers' likelihood of recommending the airport. The results show that the two outcomes are not driven by the same attributes: airport staff and queuing times lead both, while the ordering of the remaining attributes diverges, with terminal cleanliness falling from sixth to last and terminal signage rising from fourth to third. Studies in this field have modelled a single outcome (Pholsook et al., 2024; Hsiao & Li, 2026), and where both have been considered this has been within a discretionary facility (Chatterjee et al., 2023), leaving the divergence across the terminal encounter unobserved. A further contribution concerns position in the journey: for arriving passengers, catering and shopping show no significant relationship to either outcome, whereas shopping exerts its strongest effect among transit passengers. Segmentation in this literature has proceeded by trip purpose and nationality (Awad et al., 2020; Bunchongchit & Wattanacharoensil, 2021; Chatterjee et al., 2023), and journey position proves at least as consequential.

Moreover, this study responds to the call by Brochado et al. (2026) for further investigation of cultural differences in airport service evaluations by testing heterogeneity across Hofstede's cultural dimensions (Hofstede, 2001). The results indicate that traveller type, airport experience, region of origin and cultural dimensions are valuable market segmentation variables, and that their significance varies across the two outcomes. The cultural findings extend previous work in three respects. First, they concern the weight attached to each attribute rather than the level of the rating awarded, the quantity theorised by Guan et al. (2022) and Maki et al. (2025) but distinct from the direct cultural effects on review valence reported by Stamolampros et al. (2019). Second, they derive from a compulsory service encounter, whereas the available evidence comes from settings in which the provider is chosen in advance (Guan et al., 2022; Maki et al., 2025) or from a discretionary facility used by a minority of passengers (Chatterjee et al., 2023). Third, the cultural effect proves selective: the attributes of greatest importance remain stable across cultural classifications, with differences concentrated in airport shopping and terminal signage.

These findings suggest that cultural differences are more selective than pervasive across the airport experience, with variation concentrated in particular attributes rather than in the core attributes that consistently dominate passenger evaluations.

Overall, these findings extend the multidimensional view of airport service quality by showing that the relative importance of service attributes is contingent on both the outcome considered and passenger characteristics, rather than being uniform across passengers and behavioural outcomes.

6.2 Practical Implications

The results carry several implications for airport management. The concept map identified the dimensions of the airport experience recorded by Skytrax together with an additional dimension relating to airline services, indicating that user-generated content captures concerns, such as flight punctuality, that the rating scale does not record but that passengers associate with the airport. This supports using ratings and text reviews jointly, rather than ratings alone, for performance monitoring.

Airport staff and queuing times exert the strongest influence on both the overall assessment and the recommendation, and together outweigh the remaining six attributes. A one-point improvement in airport staff ratings approximately doubles the odds of a recommendation. This suggests that the human and procedural components of the encounter weigh more heavily on passenger evaluation than the terminal's commercial and technological facilities, with corresponding implications for the allocation of improvement budgets and the emphasis placed on staff training and queue management at points of high passenger stress.

Because the same attributes do not drive the two outcomes, priorities depend on the objective pursued. Terminal cleanliness ranks sixth among the drivers of the overall rating but last among those of recommendation, whereas terminal signage rises from fourth to third. Airports concerned with their position in published rankings, which aggregate ratings, and those concerned with word of mouth are therefore not served by identical priorities, and wayfinding merits greater attention than its rank in the overall rating would suggest.

The segment estimates indicate that traveller type, experience at the airport, region of origin and culture condition these priorities. Business travellers are the only group for whom queuing times outweigh airport staff, while for arriving passengers catering and shopping bear no significant relationship to either outcome and shopping exerts its strongest effect among transit passengers. This suggests that commercial provision is most consequential airside and in transfer areas, and that arrivals halls are evaluated principally on processing. The greater weight of catering among Asian passengers likewise indicates scope for tailoring provision to the composition of an airport's traffic.

6.3 Limitations and future research

Although user-generated content is freely available online and the large sample size is a strength of this study, this study has limitations. The assessments are based solely on Skytrax reviews, which are predominantly in English, concentrated among European travellers, and written by a self-selecting population. Predictors and outcomes are also reported by the same passenger, at the same moment, on the same instrument, and overall impressions of quality are known to spill over across rating criteria (Radojevic et al., 2019).

Segments were defined a priori, which presupposes that the lines along which passengers differ coincide with the categories imposed by the analyst; for culture, this rests on national scores attributed to individual passengers and grouped at the scale midpoint (Guan et al., 2022). Future studies can instead use latent class regression, allowing segments to emerge from the structure of the evaluation itself.

A further avenue concerns the intersection of culture and income. Research on cultural effects, including the present study, treats national culture as though it exhausted a passenger's social position. Whether cultural differences in attribute weighting hold across income levels, or attenuate among passengers whose expectations are formed against globally standardised service formats, bears directly on the convergence and divergence debate

Declaration on the Use of Artificial Intelligence

During the preparation of this manuscript, the author used Grammarly Premium for English-language editing and grammar correction. The author carefully reviewed and edited all suggested changes and takes full responsibility for the final content of the manuscript.

Declaration of competing interest: None.

References

- Abouseada, A. A. H., Hassan, T. H., Saleh, M. I., & Radwan, S. H. (2023). The power of airport branding in shaping tourist destination image: Passenger commitment perspective. *GeoJournal of Tourism and Geosites*, 47(2), 440–449. <https://doi.org/10.30892/gtg.47210-1042>
- Allen, J., Bellizzi, M. G., Eboli, L., Forciniti, C., & Mazzulla, G. (2020). Latent factors on the assessment of service quality in an Italian peripheral airport. *Transportation Research Procedia*, 47, 91–98. <https://doi.org/10.1016/j.trpro.2020.03.083>
- Arasli, H., Saydam, M. B., Jafari, K., & Arasli, F. (2023). Nordic airports' service quality attributes: Themes in online reviews. *Scandinavian Journal of Hospitality and Tourism*, 23(2–3), 248–263. <https://doi.org/10.1080/15022250.2023.2259345>
- Awad, M., Alzaatreh, A., AlMutawa, A., Al Ghumlasi, H., & Almarzooqi, M. (2020). Travelers' perception of service quality at Dubai International Airport. *International Journal of Quality & Reliability Management*, 37(9–10), 1259–1273. <https://doi.org/10.1108/ijqrm-06-2019-0211>
- Bae, W., & Chi, J. (2022). Content analysis of passengers' perceptions of airport service quality: The case of Honolulu International Airport. *Journal of Risk and Financial Management*, 15(1), 5. <https://doi.org/10.3390/jrfm15010005>
- Bakir, M., Akan, Ş., Özdemir, E., Nguyen, P.-H., Tsai, J.-F., & Pham, H.-A. (2022). How to achieve passenger satisfaction in the airport? Findings from regression analysis and necessary condition analysis approaches through online airport reviews. *Sustainability*, 14(4), 2151. <https://doi.org/10.3390/su14042151>
- Barakat, H., Yeniterzi, R., & Martín-Domingo, L. (2021). Applying deep learning models to Twitter data to detect airport service quality. *Journal of Air Transport Management*, 91, 102003. <https://doi.org/10.1016/j.jairtraman.2020.102003>
- Brochado, A., Duarte, M., & Mengyuan, Z. (2023). Passengers' perceptions of Chinese airlines' service quality: A mixed methods analysis of user-generated content. *Journal of China Tourism Research*, 19(3), 677–699. <https://doi.org/10.1080/19388160.2022.2122647>
- Brochado, A., P. Rita, C., Oliveira, F., & Oliveira, C. (2019). Airline passengers' perceptions of service quality: Themes in online reviews. *International Journal of Contemporary Hospitality Management*, 31(2), 855–873. <https://doi.org/10.1108/ijchm-09-2017-0572>
- Brochado, A., Veríssimo, J. M. C., & Lupu, C. (2026). Airport experience assessment based on Skytrax online ratings and importance-performance analysis: A segmentation approach. *Journal of Marketing Analytics*, 14, 358–372. <https://doi.org/10.1057/s41270-024-00326-x>
- Bunchongchit, K., & Wattanacharoensil, W. (2021). Data analytics of Skytrax's airport review and ratings: Views of airport quality by passengers' types. *Research in Transportation Business & Management*, 41, 100688. <https://doi.org/10.1016/j.rtbm.2021.100688>
- Chatterjee, S., Kittur, P., Vishwakarma, P., & Dey, A. (2023). What makes customers of airport lounges satisfied and more?: Impact of culture and travel class. *Journal of Air Transport Management*. <https://doi.org/10.1016/j.jairtraman.2023.102384>
- Garcia, G. M., Gadotti dos Anjos, S., Dos Anjos, F. A., Pereira, T., & Edar, A. . (2025). Bookings through the hotel's website: Factors influencing perceived value and customer loyalty, mediated by satisfaction. *Tourism & Management Studies*, 21(2), 113–125. <https://doi.org/10.18089/tms.20250208>



- Gitto, S., & Mancuso, P. (2017). Improving airport services using sentiment analysis of the websites. *Tourism Management Perspectives*, 22, 132–136. <https://doi.org/10.1016/j.tmp.2017.03.008>
- Guan, C., Hung, YC. & Liu, W. (2022). Cultural differences in hospitality service evaluations: mining insights of user generated content. *Electronic Markets*, 32, 1061–1081. <https://doi.org/10.1007/s12525-022-00545-z>
- Harrison, A., Popovic, V., & Kraal, B. (2015). A new model for airport passenger segmentation. *Journal of Vacation Marketing*, 21(3), 237–250. <https://doi.org/10.1177/1356766715571390>
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Sage Publications.
- Hofstede Insights. (2025). Country comparison tool. Retrieved from <https://www.theculturefactor.com/country-comparison-tool>
- Hsiao, Y.-H., & Li, B.-X. (2026). Exploring passenger perceptions of services and sustainability via online review analytics for airport assessing and diagnosing. *Journal of Retailing and Consumer Services*, 90. <https://doi.org/10.1016/j.jretconser.2025.104664>
- Kiliç, S., & Çadirci, T. O. (2022). An evaluation of airport service experience: An identification of service improvement opportunities based on topic modeling and sentiment analysis. *Research in Transportation Business & Management*, 43, 100744. <https://doi.org/10.1016/j.rtbm.2021.100744>
- Kokash, H. A. (2026). Cultural Moderation in Virtual Reality Tourism: Comparing Satisfaction and Travel Intentions Between Individualistic and Collectivist Orientations. *Journal of China Tourism Research*, 22(1), 1–32. <https://doi.org/10.1080/19388160.2025.2503759>
- Lourenço, C. E., Madeira, J. C., & Santos, V. M. (2025). Exploring the influence of flagship store experience and consumer interactions on purchase behaviour. *ReMark - Revista Brasileira De Marketing*, 24(3), e27409. <https://doi.org/10.5585/2025.27409>
- Lin, Y.-H., & Chen, C.-F. (2013). Passengers' shopping motivations and commercial activities at airports—The moderating effects of time pressure and impulse buying tendency. *Tourism Management*, 36, 426–434. <https://doi.org/10.1016/j.tourman.2012.09.017>
- Maki, F., Sano, K., & Sun, H. (2025). How Do International and Domestic Tourists Perceive the Service Quality of Japanese Ryokans? A Cross-Cultural Perspective. *Journal of Quality Assurance in Hospitality & Tourism*, 1–24. <https://doi.org/10.1080/1528008X.2024.2447879>
- Marques, R. C., & Brochado, A. (2008). Airport regulation in Europe: Is there need for a European observatory? *Transport Policy*, 15(3), 163–172. <https://doi.org/10.1016/j.tranpol.2008.01.001>
- Martín-Domingo, L., Martín, J., & Mandsberg, G. (2019). Social media as a resource for sentiment analysis of Airport Service Quality (ASQ). *Journal of Air Transport Management*, 78, 106–115. <https://doi.org/10.1016/j.jairtraman.2019.01.004>
- Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17(4), 460–469.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.
- Pholsook, T., Wipulanusat, W., & Ratanavaraha, V. (2024). A hybrid MRA-BN-NN approach for analyzing airport service based on user-generated contents. *Sustainability*, 16(3), 1164. <https://doi.org/10.3390/su16031164>
- Prentice, C., & Kadan, M. (2019). The role of airport service quality in airport and destination choice. *Journal of Retailing and Consumer Services*, 47, 40–48. <https://doi.org/10.1016/j.jretconser.2018.10.006>
- Radojevic, T., Stanisic, N., & Stanic, N. (2019). The culture of hospitality: From anecdote to evidence. *Annals of Tourism Research*, 79, 102789. <https://doi.org/10.1016/j.annals.2019.102789>
- Robertson, J., Vella, J., Duncan, S., Pitt, C., Pitt, L., & Caruana, A. (2024). Beyond surveys: leveraging automated text analysis of travellers' online reviews to enhance service quality and willingness to recommend. *Journal of Strategic Marketing*, 32(4), 516–535. <https://doi.org/10.1080/0965254X.2023.2256738>
- Stamolampros, P., Korfiatis, N., Kourouthanassis, P., & Symitsi, E. (2019). Flying to quality: Cultural influences on online reviews. *Journal of Travel Research*, 58(3), 496–511. <https://doi.org/10.1177/0047287518764345>
- Wattanacharoensil, W., Schuckert, M., Graham, A., & Dean, A. (2017). An analysis of the airport experience from an air traveller perspective. *Journal of Hospitality and Tourism Management*, 32, 124–135. <https://doi.org/10.1016/j.jhtm.2017.06.003>

Appendix - Leximancer Themes and Concepts

Dimension	Theme Concept	Count	Relevance	Dimension	Theme Concept	Count	%
Airport Staff	staff	23446	51%	Airport Experience	airport	57226	100%
	security	18074	42%		better	4001	17%
	gate	12349	32%		easy	3118	15%
	area	11250	30%		world	2821	15%
	people	11908	31%		old	2567	14%
	departure	9725	27%		country	2552	14%
	work	5531	20%		best	2277	14%
	open	4609	18%		local	1256	12%
	rude	4949	19%		experience	9390	26%
	check-in	3904	17%		fly	5023	19%
	trying	3976	17%		recommend	4507	18%
	fast	3087	15%		city	2777	15%
Airline Services	flight	23830	52%	Terminal Signage	terminal	17644	41%
	time	20368	46%		use	11389	30%
	hours	12976	33%		travel	10145	28%
	minutes	11516	30%		service	7013	22%
	take	7470	23%		international	4728	18%
	baggage	6473	21%		bad	4507	18%
	luggage	6016	21%		transit	3945	17%
	plane	5908	20%		airline	3255	16%
	arrival	5070	19%		train	3115	15%
	problem	3996	17%		building	2724	15%
	return	3662	16%		signs	1971	13%
	least	2885	15%		bus	4246	17%
	aircraft	1809	13%		car	4192	17%
Queuing Times	queue	13318	33%		parking	3895	17%
	check	13316	33%		signage	3261	16%
	wait	12944	33%		taxi	2683	15%
	long	10665	29%		pay	2687	15%
	passengers	11481	30%		year	2132	14%
	passport	9915	27%	Airport Shopping	shops	10057	28%
	line	8406	25%		free	6115	21%
	immigration	7556	23%		nice	3524	16%
	boarding	6643	22%		place	5963	20%
	bags	7024	22%		toilets	3877	17%
	process	3266	16%	Terminal cleanliness	clean	5691	20%
	told	3541	16%		seems	3872	17%
	slow	2772	15%		efficient	3893	17%
	hand	2431	14%		lack	2481	14%
	left	2407	14%		main	2266	14%
	walk	7343	23%		space	1921	13%
	customs	7136	22%		day	3237	16%
	down	3978	17%		air	1695	13%
	due	2683	15%	Terminal seating	seating	6567	21%
	outside	2734	15%		lounge	5118	19%
	having	2562	14%		friendly	4231	17%
	several	1976	13%		available	2849	15%
	system	2108	14%		floor	2157	14%
Wi-Fi Connectivity	wifi	1602	10%		water	1984	13%
				Food & Beverages	food	6348	21%
					facilities	4617	18%
					poor	4170	17%
					expensive	2308	14%
					money	1828	13%