A Research on Passenger Service Quality and Promotion Strategy of Shanghai Hongqiao Airport

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Abstract

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This study aims to analyse and improve the quality of passenger services at Shanghai Hongqiao Airport, and to explore strategies to improve the efficiency and effectiveness of airport services by comprehensively assessing passenger satisfaction with different types of airport services. The thesis is centred on a questionnaire survey of passenger service satisfaction at Shanghai Hongqiao Airport, which collected a large amount of actual user feedback. Then after the statistical analysis of the data, some problems were found, based on these findings, the thesis proposed a series of innovative improvement strategies. By continuously monitoring passenger feedback and flexibly adjusting service strategies, Shanghai Hongqiao Airport can significantly improve its service quality and brand competitiveness, increase passenger loyalty and provide them with a more enjoyable travelling experience.

Key words
Passenger satisfaction, Airport passenger services, Service quality, Shanghai Hongqiao Airport

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1 Introduction

In 2021, China's leaders put forward the “Greater Hongqiao” blueprint, which aims to make the Shanghai Hongqiao Business District the centre of the Yangtze River Delta and lead China's Yangtze River Delta region to better participate in international cooperation and competition. This is a new era of development for Shanghai Hongqiao Airport, which is located in the main functional area of Shanghai Hongqiao Business District. In this context, how to continuously improve the quality of passenger service at Shanghai Hongqiao Airport becomes particularly important.

1.1 Research background and objectives

The civil aviation industry has changed from the era of stock market to the era of experience economy. Airports play an important role in the development of civil aviation, and with the strengthening of passenger's awareness of their personal rights, the rapid development of the civil aviation transport industry and the improvement of people's living standards, passenger’s demand for airport services, including baggage, check-in, security checks, etc., is constantly upgrading. Arnoldin has found that passenger choose between several airports based on the level of service and luxury of the airports, and therefore how to continuously Improving the quality of passenger service and maintaining high levels of passenger satisfaction has become a key competitive advantage within the airport industry.(Arnoldin 2014, 398-409) But even as airports focus more on service, consumer complaints continue to rise year on year, so the challenge for all airports is how to consistently and efficiently improve the quality of airport passenger service.

The purpose of this thesis is to understand the current situation of passenger service at Shanghai Hongqiao Airport on the existing basis, analyse the strengths and weaknesses that exist in Shanghai Hongqiao Airport through methods such as customer satisfaction questionnaires, and put forward improvement and development strategies for the shortcomings in a targeted manner. This will enable Shanghai Hongqiao Airport to represent China to the world to show the innovation and progress of airport services, improve passenger satisfaction and airport competitiveness, and at the same time can better serve passengers from different countries.

1.2 Thesis structure

This study will be divided into seven chapters. The first chapter is a description of the background and significance of the research topic and introduces the framework structure of this study. Chapter 2 provides an overall overview of the basic information of Shanghai Hongqiao Airport, and then analyses the current service provision and status quo of Shanghai Hongqiao Airport to prepare for the subsequent investigation of this study. Chapter 3 provides the theoretical

framework of this study and is divided into three parts. The authors show and analyse the relevant theoretical studies from broad to detailed, and make suggestions on some of the theories that are not comprehensive enough. Chapter four carries out the research, using the literature method, SWOT analysis and questionnaire survey method respectively, aiming to make the research more objective and reasonable. Chapter 5 uses the satisfaction measurement method and analyses the questionnaire data to give the results of the study. Chapter 6 analyses the problems encountered in the service of Shanghai Hongqiao Airport and the reasons for the problems according to the data obtained from the questionnaire, and then gives constructive enhancement strategies. Chapter 7 is the discussion, reflection and conclusion of the study. The authors will reflect on the limitations of the study and give their personal reflections and takeaways from the research topic, and finally summarize the study.

Table 1.Overlay matrix (adapted from Peltonen 2017, 3)

Investigative questions	Theoretical framework(chapters)	Results (chapters)	Questionnaire questions
Airport traffic service	3.3.1	6.1	5-7
Check-in service	3.3.2	6.2	8-12
Baggage handling service	3.3.3	6.3	13-17
Security and Joint Inspection Services	3.3.4	6.4	18-21
Customer service center	3.3.5	6.5	22-25
Leisure and catering services	3.3.6	6.6	26-30
Transit service	3.3.7	6.7	31-33
Flight delay services	3.3.8	6.8	34-36
Inclusive service	3.3.9	6.9	37-39

2 Background

In this part, the author mainly elaborates on Shanghai Hongqiao Airport. First, the author explains the basic situation of Hongqiao Airport, analyzes the position and importance of Shanghai Hongqiao Airport in the current civil aviation market, and the competition between Shanghai Hongqiao Airport and Shanghai Pudong Airport. Then, on the basis of the general situation, the author analyzed the service supply and current situation of the airport by means of online reference and offline field investigation, so as to prepare for the later questionnaire survey.

2.1 Overview of Shanghai Hongqiao Airport

Shanghai Hongqiao International Airport is one of the two civil international airports in Shanghai and is also a Class 4E civil international airport. It was built in 1921 and began operation in 1929. The airport is located on the west side of the city and has a building area of 510,000 square meters. The terminal building covers an area of 444,600 square meters, with two runways, an apron of about 486,000 square meters and a total of 89 slots. The airport has two terminals, T1 and T2. T1 began to be used for China's civil aviation in 1964, while T2 began operations on 16 March 2010 as the main project for the construction of the Shanghai Hongqiao Transportation Hub.This has realised a new situation of dual terminals and dual runways operating simultaneously, with taxiways running between the two terminals, while subways and shuttle buses can connect the two terminals. The Hongqiao Integrated Transportation System is the combination of T2 and the East and West Transportation Centers and Hongqiao Railway Station.

Serving 114 domestic and international destinations, Shanghai Hongqiao Airport is not as big as Shanghai Pudong Airport in terms of size and capacity, and with 57 service routes overlapping with Shanghai Pudong Airport, the two airports are competing fiercely. The table 1 below shows the annual passenger throughput of Shanghai Hongqiao Airport from 2010-2023 based on data compiled by the Shanghai Bureau of Statistics, which shows a 45.8% increase in passenger throughput from 2010 to 2019 alone. It can also be seen from the graph that although in 2020, due to the severe impact of the COVID 19 , most of the routes in the first half of the year were suspended, Shanghai Hongqiao Airport still maintained 31,166,000 passengers and achieved the first time to overtake Shanghai Pudong Airport in terms of annual passenger throughput.In 2022, there were 14,711,600 passengers at Shanghai Hongqiao Airport, which is a decline of 55.7 per cent compared to the previous year but in 2023 In 2022, Shanghai Hongqiao Airport will handle 14,711,600 passengers, a decline of 55.7% from the previous year, but in 2023, it will grow to 42.5 million passengers, a huge potential. Therefore, in the face of the pressure from Shanghai Pudong Airport, it is crucial for Shanghai Hongqiao Airport to optimize its passenger services and provide better airport services to passengers in close proximity to their real needs.

Figure 1 Annual passenger throughput of Shanghai Hongqiao Airport (2010-2023)

2.2 Service Supply

Hongqiao Airport takes “true service ” as its service concept, puts forward the service goal of ‘the best aviation protection for a better life’, and constantly explores the application of new technologies around the travelling needs of passengers. Shanghai Hongqiao Airport continues to build its industry-leading brand image through intelligent facilities, humane services, boutique business and other service modules.

1.Transportation Services

Shanghai Hongqiao Airport is a major part of the Hongqiao comprehensive transport hub, and other components include Hongqiao Railway Station, long-distance bus terminals, maglev terminals, metro, highways and so on. Therefore, passengers choosing Shanghai Hongqiao Airport can choose from a variety of transport options to arrive, transfer or depart. Passengers travelling by car or taxi can enter and exit the airport via a number of elevated roads, and there are nearly 4,200 parking spaces of various sizes available for different types of vehicles 24 hours a day. Compared to Pudong Airport, Hongqiao Airport is smaller in size and is surrounded by a denser and more varied transport network, so easy access is a major service advantage of Shanghai Hongqiao Airport.

The authors conducted a field study of the transfer times required from the T2 terminal at Hongqiao Airport to various transport points. As shown in Figure 3, it takes about 2-18 minutes to walk to each transport point, with the closest being the taxi stand, which is only a 2-minute walk, and the furthest transfer point, the long-distance passenger bus station, taking 18 minutes because of the complexity of the hub's architecture.

Table 2 Transfer time of Hongqiao T2 Terminal

Terminal T2, 1 / F to various transport connections	**Approximate walking time (minutes)**
To the train station departure level	15
To the long-distance passenger station	18
To the bus hall	6
To the parking lot	5-10
To the entrance of the subway station	5
To the taxi stand	2

In January 2024, in order to cope with the high volume of people at Chinese New Year, the Hongqiao hub opened two new convenience measures: the opening of the Air-Rail Interchange Service Centre and the addition of a new lift facility at the Hongqiao Railway Station. This is the most recent update of transport services at Hongqiao Airport to date.

2. Shopping Services

Shanghai Hongqiao Airport has three highlights in terms of shopping services. Firstly, it has one of the highest densities of coffee shops in China, with more than 10 global coffee chains, so passengers can walk for 3-4 minutes and come across a coffee shop. This provides passengers with ample leisure space and creates a business ecosystem that is trendy, open and interactive. Secondly, after years of restructuring the business and careful layout, the number of luxury brand boutiques in Terminal 2 is now close to 20. These include: Louis Vuitton, Hermes, Gucci, etc. Nearly 70% of them belong to directly-managed shops and 40% are the first shops in airports nationwide, and many of the latest styles of luxury goods are available at the airport. (Jiefang Daily 2010) Hongqiao Airport's Terminal 2 will create a business model that focuses on mid-to-high-end internationally renowned brands while featuring mass convenience consumer goods, while Terminal 1 will feature duty-free shops that will allow passengers to buy goods at more favourable prices. Thirdly, Hongqiao Terminal 2 will take ‘theme week’ as the form of activities, organizing merchants to carry out promotional activities for theme weeks such as China Week, Italy Week, UK Week, etc., according to the country of the brand, and launching innovative commercial and cultural experience activities continuously.

3. Check-in Service

Shanghai Hongqiao Airport has manual check-in islands in the flight check-in area, and the check-in island in Terminal T1 is the first terminal in China to provide all-self-service check-in and boarding. Passengers can obtain electronic boarding passes through the self-service check-in equipment as well as check-in baggage on their own, after which they can pass through the self-service security channel in the security check area, while the ‘intelligent channel’ of the security check can automatically correlate the passengers and baggage to achieve the ‘bag goes with the person’. RFID baggage tracking project will also cover all domestic routes within the year. In the final boarding link is through self-service equipment to scan the face to achieve full self-service boarding. This improves the efficiency of travelling by air and also refreshes the travelling experience of passengers.

4. Inclusive Services

One of the features of Shanghai Hongqiao Airport's inclusive service is ‘All Age Friendly Flight’. The airport has established a green service channel of ‘one-stop acceptance and smooth travelling’ in conjunction with the high-speed railway and the metro, and special passengers can enjoy the whole process of service from the door to the cabin door after making a reservation. For the elderly, Hongqiao Airport has specially designed the ‘Elderly Flight Service Handbook’, which facilitates the smooth travelling of elderly passengers who are unfamiliar with digital equipment. For children, kids can enjoy the in-transit theme park co-branded with Shanghai Disneyland at the airport. The airport also has 65 dedicated barrier-free parking spaces in the T1 and T2 parking garages, which passengers can call to make reservations in advance.

5. Green Service

Shanghai Hongqiao Airport has the first megawatt photovoltaic power station for domestic civil aviation in China, with an average annual power generation capacity of 2.51 million kilowatt-hours, and a renewable energy usage in 2021 that accounts for 2.2 percent of the airport's total energy consumption. Hongqiao Airport also has an on-site charging station for storage vehicles, which can provide 110 charging spaces for new energy vehicles, with charging capacity exceeding 30,000 kWh on peak days. This can help realize projects such as the renewal of the 400Hz bridge-mounted power supply in Terminal 2 and the addition of new mobile power supplies in the far-flying positions, with the replacement rate of APUs in the near-flying positions at nearly 100 percent and the replacement rate of new energy vehicles in the flight area reaching 21.8 percent. (Xinmin Daily 2023)

2.3 Service status

The article analyses the Civil Aviation Passenger Service Evaluation (CAPSE) passenger service measurement report for Shanghai Hongqiao Airport for the first quarter of 2024 and the full year of 2023. The report analyses airport services in six different dimensions, including airport security, traffic, commercial activities, services and facilities, flight exception handling and baggage services. According to the report, Shanghai Hongqiao Airport ranked third in the overall ranking of China's airport services in 2023, receiving a high score of 4.2 out of 5. The CAPSE data showed that Terminal T2 ranked significantly better than Terminal T1 in all indicators, while Terminal T1 ranked poorly in airport commerce and trade and ranked significantly lower than Terminal T2 in airport security and airport facilities, and in terms of its ability to deal with flight anomalies In terms of the ability to handle flight irregularities, Terminal T1 performed better than Terminal T2, and the issues that accounted for a higher percentage of the detailed indicator options for Terminal T2 were mainly related to self-check-in, including “few self-check-in facilities” and “ failure of self-service baggage check-in equipment ”. In addition, the two terminals face similar challenges in terms of overall airport security and flight exception protection services, such as “delayed service response is not timely”, “inaccurate estimated departure time” and “inconvenient baggage and personal security check”. (CAPSE 2024)

3 Theretical framework

The author divides this part into three parts, which are service quality theory, satisfaction forming mechanism theory and the theory related to airport passenger satisfaction research. The first two theories are the basic theories of the whole service aspect, while the last one is some literature and theories closely related to the research topic. In the third part, the author divides it into nine dimensions, which is to correspond with the problem analysis and strategy in the following one by one, so as to make the article more organized.

3.1 Service quality theory

Grönroos, a Finnish scholar, proposed the concept of Customer Perceived Service Quality and Model of Total Perceived Service Quality for the first time in 1982 based on the basic theory of cognitive psychology. Grönroos' definition and model of Total Perceived Service Quality became the cornerstone of the research field of Customer Perceived Service Quality. (Marketing school 2023)

SERVQUAL model was proposed by American marketing scientists Parasuraman, Zeithaml and Berry in 1988, this model is based on the theory of Total Quality Management in the service industry proposed a new service quality evaluation system, the core of the theory is that the quality of service depends on the difference between the level of service perceived by the user and the level of service expected by the user. The core of the theory is that service quality depends on the degree of difference between the service level perceived by the user and the service level expected by the user. The model evaluates service quality gaps based on five dimensions: reliability, responsiveness, assurance, empathy, and tangibility. (Wikipedia)

The SERVPERF model is an extension and improvement of the SERVQUAL model. Developed by Cronin and Taylor in 1990, this model focuses solely on customer perceptions of service quality. Unlike SERVQUAL, this model suggests that the best way to measure service quality is to assess customers' perceptions of the service they receive, rather than comparing expectations and perceptions. The SERVPERF model suggests that service quality can be more effectively measured through the assessment of service performance itself. (Gennar 5 December 2023)

3.2 Satisfaction formation mechanism theory

Expectancy Confirmation Theory (ECT) originated in the fields of consumer research and social psychology. The theory was first introduced into the field of marketing to study consumer satisfaction and consumer decision-making processes. The basis of satisfaction stems from applied psychological research related to life and employment satisfaction. For example,

individuals set initial standards of expectation and any deviation from the initial reference point affects their satisfaction. Similarly, consumers have a basic need for a product and certain expectations to fulfil their needs. When a product fails to satisfy consumers' expectations, it leads to unfavourable attitudes towards the product. The theory suggests that individuals experience psychological conflict when their behaviour is inconsistent with their beliefs and thoughts. (Shukla, A. , Mishra, A. & Dwivedi, Y. 2023)

Thomassen defines customer satisfaction as “the perception that customers have of their experience by consciously or unconsciously comparing it to their expectations”. This is the same as the core of Expectation Acknowledgement Theory mentioned above and Kotler & Keller build on this definition by stating that customer satisfaction depends on “the degree to which someone is satisfied or disappointed with an observed product or service in relation to their expectations”. According to Thomassen, the “value proposition” and other influencing factors have an impact on ultimate customer satisfaction. In his satisfaction model, Thomassen shows that brand value, individual needs, experience and marketing determine customer expectations. (Scribbr 2023)

3.3 Airport passenger expectations and satisfaction study

The theory of airport service passenger satisfaction is practically close to the topic of this research thesis, and the authors categorized this section according to different service types before proceeding to literature reading and theoretical research.

3.3.1 Airport transportation services

Shi Shilian pointed out that Qingdao Jiaodong Airport uses AI video analysis and other technologies to sense in advance the number of passengers waiting in the loading area and the capacity resources of the storage yard, and combined with the passenger flow prediction algorithm to predict the number of passengers coming, automatically generating scheduling commands, and at the same time, linking the storage yard and loading area gate system to automatically release the passengers. This realizes accurate cab scheduling and rapid entry and exit of private cars, avoiding congestion caused by stranded passengers at the airport. (Severn Traffic Network 2021)

In his study, Wang Jun emphasized that optimizing parking facilities is one of the keys in order to enhance airport passengers' satisfaction with transportation services. This includes expanding the parking area to provide more parking spaces of different categories, and improving the management measures of the parking lot, such as enhancing the efficiency of vehicle entry and exit. (Wang J 2021)

3.3.2 Check-in service

In her research, Zhang Chunmin mentioned that one of the reasons for pulling down passenger's satisfaction with airport facilities is the inconsistency in the use of airport self-check-in equipment and requirements, with overly complex procedures, and the need to use different operating procedures for the same content, which can create a messy impression of the passenger's experience. Such as self-service check-in terminals, each airline and airport has different requirements, and the process on the mobile terminal will have different results. (Zhang C, 2021)

Wang Jun mentioned in his research that airports should skilfully use big data technology to provide passengers with self-check-in and self-clearance services. This will not only allow airports to simplify their work and save manpower, but also facilitate travel for passengers and improve the efficiency of check-in at airports. (Wang J, 2021)

From the studies of these two authors, Wang Jun saw the advantages of self-check-in, but did not consider the difficulties encountered in implementing self-check-in and the inconvenience of passenger operation. While Zhang Chunmin captured the problem, compared to Wang Jun she considered it more comprehensively. This thesis will also focus on the use of self-service check-in at Shanghai Hongqiao Airport in the questionnaire and strategy development section, taking into account the real feelings of passengers.

3.3.3 Baggage handling services

According to the Civil Aviation News of China, Daxing Airport in Beijing has launched the outbound baggage visualization service. When checking in, passengers can see the check-in baggage sorting operation process in the back hall through the flight display screen at the check-in counter, and the staff's action of loading and unloading baggage as well as the on-site environment are all presented in front of the passengers, realizing the baggage operation process with full transparency. (China Civil Aviation News 2022)

London Stansted Airport in the UK spent 70 million pounds to upgrade its baggage handling system. The system replaces the previous conveyor belts and chutes with 2.4 kilometers of track, which is currently the longest of its kind in the world. The new baggage handling system transports passengers at speeds of up to 5 meters per second (18 km/h), which means that it takes just six minutes from the time a passenger checks in at Stansted to the time they are ready to load their baggage onto the aircraft, helping to improve passenger satisfaction with baggage handling. This end-to-end integrated baggage handling system takes baggage handling at Stansted to a new level, and Klaus, CEO of Beumer Group UK, said: “Modern airports are renowned for their design

and operations, and improved baggage traceability and security is essential at every stage of baggage handling.” (Airport Technology 2021)

3.3.4 Security and joint inspection services

In his article, Li Wanmin discusses the necessity of intelligent security check, and mentions that some leading airports promote the use of carry-on baggage automatic transfer equipment, new baggage inspection equipment and human body scanning and imaging equipment as a complete set of security check equipment. For example, the British Smiths Detection Company launched the “Smart Lane” concept of intelligent security channel, the United States L3 company also launched the automatic baggage diversion and tray return system (TRS) and IntelliCore as the core of the future-oriented passenger security solutions. This solves to a certain extent the problem of mixing suspicious luggage with safe luggage, low security efficiency and high labor intensity of employees. However, this thesis believes that more attention should be paid to the actual application of high technology, such as how to solve the problem of slow querying of inspection information, the realization of the unified integration of information and centralized operation and management of these problems. (Aviation Think Tank 2021)

Zheng Wei et al. have mentioned in a study on civil aviation security services that with the rapid development of China's civil aviation industry, passengers' requirements for security screening have not only stayed at the safety level, but also put forward higher requirements for the process, staff and facilities and equipment, etc. Meanwhile, it was also found in the study that travellers have the highest concern for the efficiency of passage in the airport. (Wei, Jiayi&Zheng 2019, 78-80)

3.3.5 Customer Service Center

A 2020 study on customer experience at airports confirmed that airport staff play a vital role in engaging passengers throughout their interactions with the airport. However, the same study found that customer service departments receive complaints and negative attention due to staff attitudes. Customer service centers are an important part of airports and airports must address this issue in order to achieve high customer satisfaction. (Clootrack 2021)

3.3.6 Recreation and catering services

In his study, Chen Wenchang suggested that the leisure and entertainment services of airports around the world should learn from Singapore's Changi Airport. Changi Airport is a world-renowned attraction and has been voted the most popular airport by travellers many times. This is due to the fact that the airport has been regularly renovating its outdated terminal building over the

past decades, so that it is always fresh and new for travellers. Passengers can experience different types of recreational programs while waiting for their flights within Changi Airport, such as the Waterfall Garden in Terminal T1, which offers innovative green recreational spaces for travellers to take a break amid the beauty of the scenery. Changi Airport also highly integrates commerce with the flow, placing retail businesses on the main passenger air travel process, while placing ancillary businesses such as food and beverage and hotels in areas independent of the process, successfully utilizing the rigid demand for food and beverage services to drive foot traffic in remote areas within the terminal and rationalizing the use of space. (Chen 2020, 37-40)

3.3.7 Transfer service

Qingdao Jiaodong Airport has built a cooperative control platform integrating airport buses, cabs, high-speed railways and other modes of transportation, and the information of multiple modes of transportation is interconnected. On the one hand, it can realize efficient cooperative management of different modes of transportation, especially in emergency scenarios to carry out scientific scheduling of the capacity of multiple modes of transportation. On the other hand, it can provide passengers with convenient travel services in the whole process, including accurate waiting time release, multi-modal transportation recommendation, etc., so as to improve the passengers' transfer experience in the hub. (Severn Traffic Network 2021)

3.3.8 Flight delay services

Xu Lu, in her exploration of airport service quality improvement strategies, mentions that one of the most serious service problems at Beijing's Capital Airport is the lack of timely emergency response remedies for flight delays (Xu L 2020, 91-93)

According to the data of Civil Aviation Administration of China (CAAC), in 2021 the airport release normalization rate has been improved, but the airport's service after flight delays still has a big gap with travellers’ expectations. In case of flight delays, timely notification of delayed information and accommodation arrangements are of great concern to travellers, and this is often the difficulty and blockage point of post-flight delay services. This requires airports to establish a cooperative and efficient working mechanism, enhance the synergy with air traffic control, airlines and other units, and formulate plans in advance. (China Civil Aviation News 2022)

3.3.9 Inclusive services

Brad McCannell mentions in his article that despite the best efforts of airports to improve inclusive services, passengers with disabilities can still experience stress when traveling. Passengers may feel apprehensive even before arriving at the airport, and this uneasiness may not go away until

they reach their destination. For people with disabilities, this feeling is amplified by the endless and unnecessary obstacles encountered along the way. Air travel is increasingly becoming the preferred mode of travel, and this means that there is a growing need for airport accessibility for the world's largest minority group - one billion people with disabilities. (Brad 3 December 2022)

3.3.10 Evaluation and reflection

1. The author argues that the model proposed by Grönroos, the SERVQUAL model and the SERVPERF model have a high degree of similarity in that they all emphasize the evaluation of services from the customer's point of view and consider that service quality is based on customer perceptions. However, they differ in their focus, with the Grönroos model distinguishing between technical and functional quality and emphasizing the role of corporate image, SERVQUAL covering five more detailed dimensions and emphasizing the difference between travellers' expectations and perceptions, and SERVPERF focusing only on the actual performance of the service and ignoring the expectations factor. SERVQUAL is the most relevant theory for the research topic of this thesis, and the authors believe that travellers' expectations and demands on airports are increasing year by year, and airports must stand on travellers' perspectives and not ignore their expectations if they want to gain more competitive advantages. However, there are some drawbacks to this theory, firstly, customer evaluations of service quality are very subjective and everyone has a different idea. Therefore, interpreting and acting on the data can be challenging. Second, measuring service quality across multiple dimensions can be complex and resource-intensive, requiring careful design of survey instruments and data collection methods. Finally, customer expectations of service quality change over time, and airports need to be mindful of the need to continually adapt and update their services.

2.Expectation-Confirmation Theory is very popular in explaining customer satisfaction, and like the three theories related to service quality, it is based on the comparison between consumer expectations and actual experience. This shows a strong correlation between the theory of service quality and the theory of customer satisfaction. Although this theory provides important insights into the process of customer satisfaction formation, it has some limitations. The authors argue that this theory is more simplistic in viewing consumer satisfaction as a direct comparison between expectations and actual experience, potentially ignoring other factors that influence satisfaction, such as personal values and emotional influences. It is also important to note that consumer satisfaction feelings may vary in different cultures, but the confirmation theory does not adequately consider this cultural variability. Shanghai Hongqiao Airport is an international airport, and passengers from various countries arrive at the airport every day, so this thesis will pay attention to

cultural sensitivity when conducting the questionnaire, taking into account the differences in the living environment of passengers.

Compared with confirmation theory, Thomassen's definition emphasizes more on the interaction and commitment between brand and consumer, rather than just a simple comparison between consumer experience and expectation.Thomassen provides a more comprehensive understanding of the framework, taking into account the importance of brand strategy and consumer expectation management. And it focuses more on long-term relationship building and maintenance rather than just single-experience satisfaction.

3. The author found out that in the part of investigation and proposing strategies to focus on airport smartness, not all big data engineering and smart processes have received good feedback. How to optimize some innovative devices and make travellers really experience the smartness is a question to think and examine.

The authors' next step will be to investigate the passenger service quality of Shanghai Hongqiao Airport on the basis of existing literature, mainly by questionnaire survey method, supplemented by SWOT analysis method. And analyze and propose constructive solutions to the problems found.

4 Research methodology

This thesis uses three research methods, namely literature research method, SWOT analysis method and questionnaire survey method. Focusing on questionnaire survey, the author conducted an in-depth study on passenger satisfaction at Shanghai Hongqiao Airport.

4.1 Literature research method

Literature research method is a research method in which the author conducts scientific research by collecting, reading, evaluating and synthesizing existing literature in order to organize and summarize the results of practice in the relevant field. This method allows for the study of the history, current status, and future trends of the topic, identifies gaps in knowledge within the field of study, and contributes a basis for the author to propose new theories.

In this study, I mainly find, read and collect literature through the following ways: first, I mainly read academic journals as my main reading object, and systematically search through databases such as Web of Science, PubMed, CNKI (China Knowledge Network). The focus was on papers published in the related fields of airport service quality and passenger satisfaction. Second, I collected reports published by official governmental organizations such as the Civil Aviation Administration of China (CAAC) and the transportation department, such as the report on airport service standards and the report on the relevant statistics of Shanghai Hongqiao Airport. Appropriate use of official reports will make this thesis more authoritative and convincing. Third, I screened and read the specialized books on service quality management and airport management in the library search system in the last 3 years to enrich the citation sources and make the article more convincing. Fourth, I searched for conference literature on airport services in the last two years, so that I could pay attention to the latest trends in the industry and be more innovative in proposing improvement strategies. Finally, I made a field trip to Shanghai Hongqiao Airport, I positioned myself as a passenger to complete the process of flying in Shanghai Hongqiao Airport, and visited different types of service staff to obtain relevant information, and combined with the literature to analyze the current situation of service quality in Shanghai Hongqiao Airport in a more comprehensive way.

4.2 SWOT analysis

SWOT analysis was proposed by Wyrick, a management professor at the University of San Francisco, in the early 1980s, and is often used in the formulation of corporate strategies, analysis of competitors, etc. SWOT analysis analyses the internal and external conditions of an enterprise by analyzing its Strengths, Weaknesses, Opportunities and Threats, and synthesizes and

summarizes all aspects of the enterprise's internal and external conditions. All aspects are synthesized and summarized. The author will use SWOT to analyze the overall competitive development environment of Shanghai Hongqiao Airport and implement the aspects related to service quality. The SWOT analysis will help Shanghai Hongqiao Airport to focus its resources on its strengths and where it has the most opportunities, and make the airport's strategy clearer. (MBA Think Tank)

Strengths:

1. Excellent location and transportation connectivity. Shanghai Hongqiao Airport's proximity to the downtown area of Shanghai and its integrated transportation hub with surrounding highways, subways and high-speed railways are important for business travellers who need to move quickly through Shanghai or surrounding cities. Having strong land transportation support and services is a very obvious advantage of Shanghai Hongqiao Airport over other airports.

2. Innovative F&B. The commercial management of Hongqiao Airport believes that the F&B industry has changed from the traditional low-cost, low variety model to a shopping center model with abundant choices and excellent quality. Therefore, Hongqiao Airport's F&B business is constantly seeking innovation and quality improvement. Supported by in-depth market research and analysis of passenger behaviour, the operations team has identified a range of popular brands that are relevant to passenger needs and introduced them to the airport, including brands that have never been seen before in China's domestic airports(Dermot 18 January 2022) . Hongqiao also opened a food court in the T2 check-in hall, a space that brings together a wide range of cuisines from different countries and is open to arriving passengers as well as family and friends who are being transported to and from the airport. This will enrich passengers' choices and create a more personalized atmosphere.

3. High-quality services and facilities. Shanghai Hongqiao Airport has been awarded the SKYTRAX 5-Star Airport in 2024 for its outstanding achievements in service facilities and service quality improvement, standing out from the competition of many outstanding airports around the world (China Civil Aviation News 2024). SKYTRAX is an authoritative international air transportation research and certification organization that annually recognizes five-star airports as the world's leading airports in terms of service innovation and quality. There is no doubt that Hongqiao Airport's service quality and the internationalization of its facilities are on the way to becoming one of the world's leading airports.

Weakness:

1. International flight limitations. Hongqiao Airport mainly serves domestic flights and only a few international flights. Because the area around Hongqiao Airport is surrounded by urbanization, with many residential areas and various industrial buildings, the clearance conditions for large passenger aircraft are extremely restricted. So for passengers who need to use international flights, they usually need to travel further to Pudong International Airport. This is very inconvenient for passengers who live in the city center. (Zhihu 2020)

2. Limited Expansion Capacity. Hongqiao Airport is located in a more densely populated area within the city of Shanghai, so this results in more constraints on its expansion space. This is a significant disadvantage compared to Pudong Airport, which is located in the suburbs and has greater potential for expansion. This limits its space and potential for future growth, especially in terms of handling larger volumes of passengers.

3. Traffic congestion. Although Hongqiao Airport is strategically located close to the city center, this also means that passengers may face severe traffic congestion when traveling to Shanghai Hongqiao Airport during peak hours, especially during public holidays and commuting time periods.

Opportunity:

1. Government policy support. In 2023, China's National Development and Reform Commission (NDRC) issued the Policy Measures on Promoting the Further Upgrading of Hongqiao International Open Hub. The construction and upgrading of the Hongqiao International Open Hub is a major layout of the country's strategy to promote the integrated development of the Yangtze River Delta (YRD), and Shanghai Hongqiao Airport, as a core part of the Hongqiao International Open Hub, has benefited remarkably. This policy centers on strengthening the function of serving the Yangtze River Delta region and promoting the linked development of Hongqiao Hub with Hefei, Wuhu and other cities in the Yangtze River Delta region. It gradually realizes resource sharing and platform construction, and puts forward eight specific measures to enhance the international aviation service function of Shanghai Hongqiao Airport, jointly build a cross-regional rail transportation network, and construct a whole-chain scientific research service system. (Pengpai news 2020)

2. Refined development of air-rail connectivity. Data show that through high-speed rail connection, Nanjing and Hangzhou have more than 80 trips to Shanghai every day, while Suzhou and Jiaxing have more than 40 high-speed rail trips to Shanghai. The coverage network of Hongqiao Railway Station with more than 20 trips per day has sunk to the third and fourth tier cities in the Yangtze River Delta provinces. Therefore, Shanghai Hongqiao Airport can keep expanding the mainland market source of passengers for itself through rail transportation. With the continuous improvement of the network of airports in Nanjing and Hangzhou, as well as other small and medium-sized

airports in the Yangtze River Delta region, the scarcity of Hongqiao Airport's moment resources will increase through the improvement of facility resources and airspace conditions. Hongqiao Airport has the opportunity to focus on the domestic market, and with its high quality demand coverage and scarce flight time resources, it will continue to iterate its route structure in the direction of the most optimal routes.

Threats:

1. Increased competition. With the rapid development of the aviation industry in the surrounding areas of Shanghai, the construction of new airports will increase the competitive pressure on Hongqiao Airport in the aviation market. In particular, the continued optimization and expansion of Shanghai Pudong Airport will bring some threats to Hongqiao Airport. First of all, Pudong Airport, as one of the largest international aviation hubs in China, has more international routes and larger airline bases. With the expansion of Pudong Airport's route network, Hongqiao Airport may face diversion of passenger flow, especially on international routes and long-haul domestic routes. Secondly, when choosing a base airport, airlines generally prefer Pudong Airport because it offers more international routes and more room for development. This skewed allocation of resources may result in Hongqiao Airport being restricted in terms of airline resources and investment. Finally, Pudong Airport may exceed Hongqiao Airport in terms of branding and market influence due to its international nature and status as a large aviation hub. This could be a disadvantage for Hongqiao Airport in terms of competing for premium customers.

2. Technological change and emerging transportation. The development of high-speed ground transportation such as high-speed rail and super high speed rail (e.g., Hyperloop) may pose a threat to the short-haul flight market, particularly in China, where the high-speed rail network is very well developed, which may divert a portion of travellers who would otherwise choose airplanes as a means of transportation.

4.3 Questionnaire method

Questionnaire survey is a research method of collecting information by asking questions in writing. It involves designing a series of questions in a structured or semi-structured format to elicit respondents' views on a particular topic. Questionnaires are often used by researchers to measure research questions and collect reliable information through standardized questionnaires.

Based on the research question of this thesis: strategies for improving passenger service quality at Shanghai Hongqiao Airport, the authors designed a questionnaire on passenger service satisfaction at Shanghai Hongqiao Airport to assist the research question. The authors distributed

the questionnaires to different groups to ensure the diversity of the sample, and ultimately to obtain the real opinions of the passengers and propose constructive strategies based on the opinions.

1. Principles of selecting satisfaction evaluation indexes

Relevance: The evaluation indexes in the satisfaction evaluation index system based on passenger perception should be closely related to the research object to ensure that they can accurately measure the service quality of Hongqiao Airport.

Comprehensiveness: The evaluation indexes should cover all service aspects of Hongqiao Airport, including security check, check-in service, catering service and so on. The authors want to ensure that the selected indicators can fully cover the needs and expectations of users, so that the evaluation index system can fully reflect the satisfaction of passengers with the airport services.

Operability: the evaluation indicators should have clear standards and definitions so that different respondents have similar understanding of them. Attention should also be paid to making it easy for respondents to understand so that they can complete the evaluation objectively.

3. Questionnaire design

The Airports Council International's Global Airport Passenger Satisfaction Scale is a widely used assessment tool to measure passenger satisfaction with the quality of airport services. Designed by ACI, the scale covers a wide range of evaluation indicators and can comprehensively reflect passengers' experiences and needs. This study will build a comprehensive passenger service satisfaction evaluation index system for Hongqiao Airport based on this scale and then combine it with the actual situation of Shanghai Hongqiao Airport. As shown in the Table 3 below, “A1-A9” are the primary indicators and “B1-B35” are the secondary indicators. There are 39 questions in the questionnaire, and the first part, i.e., questions 1-4 are about personal information. The second part is scale questions (5-39), and each secondary indicator is the core of each scale question. The target population of the survey was Chinese passengers who had experience of flying at Shanghai Hongqiao Airport. The questionnaires were randomly sampled and conducted via online, and the authors will select the first 100 questionnaires for data collection and analysis.

Table 3 Index distribution

Topic of the survey	**Tier 1 indicators**	**Secondary indicators**

Passenger Service Satisfaction at Shanghai Hongqiao Airport	Airport traffic A1	Airport accessibility B1
		Traffic guidance signs B2
		Car park facilities and services B3
	Check-in service A2	Ease of operation of self-service check-in equipment B4
		Service at manual check-in counters B5
		Queuing time at manual check-in counters B6
		Clarity of Information B7
		Privacy Protection B8
	Baggage handling services A3	Convenience of baggage check-in process B9
		Professionalism in handling baggage B10
		Efficiency of handling baggage problems B11
		Waiting time for baggage claim B12
		Baggage Service Information B13
	Security and Joint Inspection Services A4	Waiting time for security checks B14
		Service attitude of security screening staff B15
		Modernization and efficiency of security screening equipment B16
		Efficiency and service attitude of joint screening B17
	Customer Service Center A5	Accessibility and location of service centers B18
		Professionalism of service center personnel B19

Passenger Service Satisfaction at Shanghai Hongqiao Airport		Accuracy of information provision B20
		Efficiency of problem solving B21
	Leisure and food services A6	Cleanliness of environment B22
		Reasonableness of food prices B23
		Quality of leisure and entertainment facilities B24
		Variety of dining and recreation options B25
		Availability of recreational facilities B26
	Transit service A7	Clarity of the transit process B27
		Efficiency of transit counters B28
		Comfort and facilities in transit lounge areas B29
	Flight delay services A8	Delayed information transmission B30
		Flight delay follow-up service B31
		Effectiveness of response measures B32
	Inclusive Services A9	Barrier-free facilities B33
		Multilingual Orientation B34
		Special care services for children and the elderly B35

4. Questionnaire reliability and validity analysis

Reliability and validity analysis is a critical step in assessing the quality of questionnaires in psychometrics and aims to determine the reliability and validity of these instruments. Understanding and ensuring the reliability and validity of measurement instruments is essential to

ensure the accuracy and reliability of research findings. Reliability is used to measure the internal consistency and stability of a questionnaire, that is, whether different items in a questionnaire measure the same concept in concert. Commonly used statistical methods include calculating the Cronbach's alpha value. If this value is higher than 0.8, it means high reliability, if this value is between 0.7 and 0.8, it means good reliability, if this value is between 0.6 and 0.7, it means acceptable reliability, if this value is less than 0.6, it means poor reliability. CITC stands for “Corrected Item-Total Correlation”, which is a common metric used in reliability analyses to assess the consistency of individual items in a measurement instrument with the overall measurement objective. The CITC allows researchers to determine which question items are closely related to the overall conceptualization of the measurement instrument and which items may not have sufficient consistency. In this thesis, the reliability of the questionnaire was analyzed mainly by using spss18.0 software and the total reliability coefficient of the questionnaire was found to be 0.987, which is enough to prove that the reliability quality of the research data of the passenger satisfaction questionnaire designed by the authors is high. For “CITC”, the CITC values of the analyzed items are all greater than 0.4, which indicates that there is a good correlation between the analyzed items. Specific analyzed data can be seen in Table 4 In conclusion, the questions in the questionnaire are highly reasonable and accurate, and the data collected by using this questionnaire can support the final research results.

Table 4 Reliability analysis

Title	Corrected Item-Total Correlation (CITC)	Cronbach α
Accessibility to the airport	0.858	0.987
Traffic guidance signs	0.814	
Parking facilities and number of parking spaces	0.825	
Ease of operation of self-check-in facilities	0.815	
Service at manual check-in counters	0.854	
Queuing time at manual check-in counters	0.863	
Clarity of information (baggage policy, security policy)	0.763	
Privacy at check-in	0.840	

Title	Corrected Item-Total Correlation (CITC)	Cronbach α
Convenience of baggage check-in process	0.813	
Attitude and professionalism of the staff in handling luggage	0.803	
Efficiency of handling damaged or lost luggage	0.844	
Baggage claim waiting time	0.802	
Clarity and accessibility of baggage service information	0.822	
Waiting time at security checkpoints	0.800	
Attitude of staff during security check	0.817	
Modernization and efficiency of security equipment	0.783	
Efficiency of joint inspections and attitudes toward services	0.801	
Accessibility and location of passenger service centers	0.847	
Attitude and professionalism of service center personnel	0.857	0.987
Accuracy and usefulness of information provided	0.837	
Efficiency of problem solving	0.831	
Cleanliness of airport environment	0.843	
Reasonableness of food prices	0.793	
Quality of recreational facilities	0.858	
Variety of dining and recreation options	0.846	
Availability of recreational facilities	0.854	

Title	Corrected Item-Total Correlation (CITC)	Cronbach α
Clarity of the transit process	0.825	
Efficiency of the transit counter	0.818	
Comfort and facilities of transit rest areas	0.850	
Timeliness and accuracy of delay information delivery	0.847	
Follow-up services for flight delays	0.789	
Overall effectiveness of response measures	0.818	
Availability of barrier-free facilities	0.803	
Clarity and visibility of multilingual signage	0.838	
Special care services for children and the elderly	0.814	

Validity analysis is used to examine the design soundness of quantitative data (especially scale questions). The steps for its conduct are: Firstly, the KMO value is analysed, if this value is higher than 0.8, it means that the research data is very suitable for extracting information, if this value is less than 0.6, it means that the data is not suitable for extracting information. Secondly, the correspondence between the question items and the factors is then analysed. If the correspondence is generally consistent with the psychological expectations of the study, it indicates good validity. Third, if the validity is not good or the commonality value corresponding to an analysed item is less than 0.4, the item may be considered for deletion.

As can be seen from the following table: all the research items correspond to a common degree value higher than 0.4, which indicates that the information of the research items can be effectively extracted. In addition, the KMO value is 0.966, which is greater than 0.8, indicating that the data can be effectively extracted information. In addition, the variance explained value of factor 1 is 69.946%, and the cumulative variance explained after rotation is 69.946% > 50%. This means that the amount of information of the research item can be extracted effectively. (Chung,Kim&Abreu 2004, 66-80)

Table 5 Validity analysis

Validity analysis results		
Title	Factor load coefficient	Common degree
	Factor 1	
Accessibility to the airport	0.867	0.752
Traffic guidance signs	0.825	0.681
Parking facilities and number of parking spaces	0.836	0.698
Ease of operation of self-check-in facilities	0.826	0.682
Service at manual check-in counters	0.863	0.745
Queuing time at manual check-in counters	0.872	0.761
Clarity of information (baggage policy, security policy)	0.776	0.603
Privacy at check-in	0.850	0.722
Convenience of baggage check-in process	0.824	0.678
Attitude and professionalism of the staff in handling luggage	0.815	0.664
Efficiency of handling damaged or lost luggage	0.854	0.730
Baggage claim waiting time	0.814	0.663
Clarity and accessibility of baggage service information	0.833	0.693
Waiting time at security checkpoints	0.812	0.660
Attitude of staff during security check	0.828	0.686
Modernization and efficiency of security equipment	0.795	0.632
Efficiency of joint inspections and attitudes toward	0.813	0.660

Validity analysis results

Title	Factor load coefficient	Common degree
	Factor 1	
services		
Accessibility and location of passenger service centers	0.857	0.735
Attitude and professionalism of service center personnel	0.867	0.751
Accuracy and usefulness of information provided	0.847	0.718
Efficiency of problem solving	0.841	0.708
Cleanliness of airport environment	0.853	0.727
Reasonableness of food prices	0.805	0.649
Quality of recreational facilities	0.868	0.753
Variety of dining and recreation options	0.855	0.732
Availability of recreational facilities	0.863	0.744
Clarity of the transit process	0.836	0.699
Efficiency of the transit counter	0.829	0.687
Comfort and facilities of transit rest areas	0.860	0.739
Timeliness and accuracy of delay information delivery	0.857	0.734
Follow-up services for flight delays	0.801	0.642
Overall effectiveness of response measures	0.829	0.688
Availability of barrier-free facilities	0.814	0.663
Clarity and visibility of multilingual signage	0.848	0.720

Validity analysis results

Title	Factor load coefficient	Common degree
	Factor 1	
Special care services for children and the elderly	0.825	0.681
Characteristic root value (before rotation)	24.481	-
Variance explanation rate %(before rotation)	69.946%	-
Cumulative variance explanation rate %(before rotation)	69.946%	-
Feature root value (after rotation)	24.481	-
Variance interpretation rate %(after rotation)	69.946%	-
Cumulative variance explanation rate %(after rotation)	69.946%	-
KMO	0.966	-
Bartlett	3848.781	-

5 Satisfaction assessment

For the calculation of the score of each indicator in the satisfaction questionnaire, the authors chose to use the Likert scale method of measurement. The Likert scale was established by Renices Likert and is a psychological response scale. When respondents answer the items of such questionnaires, they specify the degree to which they agree with the statement. Each question in the questionnaire has five options for each of the five responses: very satisfied, satisfied, fair, dissatisfied, and very dissatisfied, which are recorded as 5, 4, 3, 2, and 1, respectively, and the total score obtained is the sum of the respondent's scores for each of the questions. (Wikipedia)

In this questionnaire, “very satisfied” is scored as 5, “satisfied” is scored as 4, “average” is scored as 3, “dissatisfied” is scored as 2, and “dissatisfied” is scored as 2. “Satisfied” is scored as 4, “Average” is scored as 3, “Unsatisfied” is scored as 2, and “Very Unsatisfied” is scored as 1. The formula for calculating the satisfaction level of the questionnaire is as follows: number of people who are “very satisfied” × 5 + number of people who are “satisfied” × 4 + number of people who are “generally satisfied” × 3 + number of people who are “dissatisfied” × 2 + Number of “very dissatisfied” x 1 ÷ Total number of people. This formula can be used to calculate satisfaction for the overall questionnaire, for each dimension and for individual questions at the same time.

5.1 Basic information result

The number of valid questionnaires obtained for this survey was 100. In terms of gender, 62% of the survey respondents were female, which was the major group, while 38% were male. Through the survey on the age composition of passengers, it was found that 18-30 years old passengers accounted for the largest proportion of 43%. 12 respondents were under 18 years old, 15 respondents were between 31-50 years old, 18 respondents were between 51-65 years old, and 12 respondents were over 65 years old. This reflects that the youth group is the main group of people traveling by plane, which is also in line with the industry characteristics of the aviation industry which is aimed at tourism and business trips. It also reflects that this questionnaire basically covers all age groups and the feedback received will be more comprehensive. In terms of reasons for traveling, tourism is the main purpose, accounting for 52%, while the number of people choosing business travel and visiting friends and relatives are 32 and 16 respectively. This also reflects the strong recovery of China's tourism industry after COVID 19, and people's growing demand for traveling. In terms of travel frequency, it can be seen that very few passengers use Shanghai Hongqiao Airport every month, only 5 people, and the largest number of people use it every six months, 36 people. Other detailed data is shown in the table below.

Table 6 Gender statistics

Options	Total	Proportion
Male	38	38%
Female	62	62%
Reluctant to disclose	0	0%
Number of valid entries	100	

Table 7 Age statistics

Options	Total	Proportion
Under 18 years old	12	12%
18-30 years old	43	43%
31-50 years old	15	15%
51-65 years old	18	18%
65 years old and above	12	12%
Number of valid entries	100	

Table 8 Purpose statistics

Options	Total	Proportion
Business	32	32%
Travel	52	52%
visit relatives and friends	16	16%
Number of valid entries	100	

Table 9 Frequency statistics

Options	Total	Proportion
Monthly	5	5%
Quarterly	26	26%
Semi-annually	36	36%
Annually	16	16%
Irregularly	17	17%
Number of valid entries	100	

5.2 Satisfaction scores for indicators

The authors have compiled the final results of the passenger satisfaction scores through the satisfaction calculation method, and the satisfaction scores of A1-A9 can be seen in Table 10. The overall passenger satisfaction score for the services of Shanghai Hongqiao Airport is 3.66, and its specific data is shown in the table:

Table 10 Satisfaction scores (A1-A9)

Indicator(A1-A9)	Satisfaction score
A1 Airport traffic service	3.66
A2 Check-in service	3.66
A3 Baggage handling service	3.65
A4 Security and joint inspection services	3.64
A5 Customer service center	3.66
A6 Leisure and catering services	3.68
A7 Transit service	3.64
A8 Flight delay services	3.62

A9 Inclusive service	3.63

Comparing these nine services, it can be found that only Leisure and catering services (A6) is higher than the overall service satisfaction score of 3.68 . This indicates that Shanghai Hongqiao Airport has the best performance in catering and leisure services, which also confirms the author's previous statement that Hongqiao Airport is constantly upgrading and improving its catering services in order to provide passengers with a better experience when waiting for their flights. Passengers also gave positive feedback to the airport in this aspect. airport traffic (A1), Check-in service (A2) and Customer service center (A5) scores are equal to the overall satisfaction score of 3.66. This indicates that passengers are satisfied with these three major types of services as a whole, and there may be some minor problems that need the airport to pay attention to in time. This indicates that passengers are satisfied with these three major services as a whole, and there may be some minor problems that may arise, which need to be paid attention to by the airport. Baggage handling service (A3), Security and Joint Inspection Services (A4), A7 Transit service (A7), Flight delay services (A8) and Inclusive service (A9) are the five major types of services. A7 Transit service (A7), Flight delay services (A8) and Inclusive service (A9) are all below the overall satisfaction average. The lowest score is Flight delay services with 3.62. This also reflects that Shanghai Hongqiao Airport, like other airports, lacks effective measures to deal with the problem of airplane delays. It is necessary for Shanghai Hongqiao Airport to pay attention to these five services, adjust its mechanisms and strategies from the perspective of passengers, especially to strengthen the construction and improvement of infrastructure, in order to find a better service for airport passengers, and then effectively improve passenger satisfaction.

Table 11 Satisfaction scores (B1-B35)

Indicator(B1-B35)	Satisfaction score	Complaint rate
Airport accessibility B1	3.65	15%
Traffic guidance signs B2	3.59	16%
Car park facilities and services B3	3.73	15%
Ease of operation of self-service check-in equipment B4	3.63	13%
Service at manual check-in counters B5	3.69	12%
Queuing time at manual check-in counters B6	3.72	13%

Clarity of Information B7	3.61	16%
Privacy Protection B8	3.67	16%
Convenience of baggage check-in process B9	3.72	14%
Professionalism in handling baggage B10	3.65	14%
Efficiency of handling baggage problems B11	3.61	16%
Waiting time for baggage claim B12	3.6	14%
Baggage Service Information B13	3.71	13%
Waiting time for security checks B14	3.58	16%
Service attitude of security screening staff B15	3.7	11%
Modernization and efficiency of security screening equipment B16	3.58	14%
Efficiency and service attitude of joint screening B17	3.73	15%
Accessibility and location of service centers B18	3.64	12%
Professionalism of service center personnel B19	3.69	11%
Accuracy of information provision B20	3.69	13%
Efficiency of problem solving B21	3.64	18%
Cleanliness of environment B22	3.72	14%
Reasonableness of food prices B23	3.7	15%
Quality of leisure and entertainment facilities B24	3.69	15%
Variety of dining and recreation options B25	3.67	18%
Availability of recreational facilities B26	3.64	11%
Clarity of the transit process B27	3.62	16%

Efficiency of transit counters B28	3.67	13%
Comfort and facilities in transit lounge areas B29	3.63	15%
Delayed information transmission B30	3.62	15%
Flight delay follow-up service B31	3.64	17%
Effectiveness of response measures B32	3.64	16%
Barrier-free facilities B33	3.61	19%
Multilingual Orientation B34	3.61	12%
Special care services for children and the elderly B35	3.69	13%

The table shows that “Car park facilities and services (B3)” has the highest satisfaction score of 3.73. This is tied with “Efficiency and service attitude of joint screening (B17)”, indicating that passengers are generally satisfied with these two aspects of the airport experience. “Waiting time for security checks (B14)” had the lowest satisfaction score of 3.58, which is a key aspect of the passenger experience, and improvements in this area at Hongqiao Airport may improve overall satisfaction. “Service attitude of security screening staff (B15)” has the lowest complaint rate at 11%, while “Barrier-free facilities (B33)” has the highest complaint rate at 11%. “ Has the highest complaint rate at 19%. This suggests that there is much room for improvement in making airports more accessible to all passengers, especially those with disabilities or mobility problems.

The data shows that Shanghai Hongqiao Airport has a high level of satisfaction and a low complaint rate in areas related to passenger interaction and service (e.g. service at manual check-in counters, service attitude of security staff). This suggests that airports should capitalize on their strengths in this area and actively engage in team training and building to bring better manual services to passengers. However, there are a few indicators related to process efficiency, such as “Efficiency of problem solving (B21)”, which has the highest complaint rate of 18%, second only to accessibility. This suggests that airports should pay more attention to operational efficiency in order to provide passengers with a more convenient experience. At the same time, Shanghai Hongqiao Airport should also focus on the accessibility of its facilities. While the parking facilities are well received, the “Barrier-free facilities (B33)” are clearly lagging behind, suggesting that while airports can provide good ground facilities, they need to do a better job of catering to the needs of all users.

6 Main Problems

Although Hongqiao Airport does well in some services and has obvious shortcomings in some services, the author finds that there are some problems in each indicator. Therefore, in order to ensure the comprehensiveness of the results, the author describes the existing problems from nine indicators.

6.1 Airport traffic service

Although Hongqiao Airport's transportation service satisfaction scores are average, there are still some issues that can be easily overlooked. The authors found that many passengers have negative comments and feedback about the long passage time from the metro station to the terminal at T1. although T1 is ostensibly connected to the city through the metro, passengers exiting the metro need to walk through an outdoor walkway about 400 meters long to get to T1. this is unfriendly to passengers with bulky baggage as well as passengers with disabilities.

As shown by the questionnaire data, the satisfaction score of airport guidance signs is 3.59, which is the lowest score in the whole Airport Transportation Services (A1) segment. Hongqiao Airport's guidance signs lack good coordination, resulting in deficiencies in location, consistency, and conspicuousness of the guidance signs in T1 and T2 terminals. The most prominent problem is that the airport often adds a lot of new commercial facilities and advertisements, which are very attractive to passengers' eyes and weaken the presence of the guidance signs to a certain extent.

6.2 Check-in service

Although Hongqiao Airport has been committed to building a digital airport in recent years, advocating all-self-service and convenient travel for passengers in check-in, security check, baggage check-in, etc., according to the questionnaire data analysis, it was found that manual check-in has a higher satisfaction rate than self-service check-in. Inadequate use of self-service check-in equipment is one of the common problems in airports as they continue to develop towards intelligence. The authors' investigation found that the usability of the self-check-in devices at Hongqiao Airport is potentially insufficient in the following ways: first, the user interface design of the devices may not be intuitive enough and may be difficult to understand and operate, especially for older people who do not often use technological products. Second, the lack of sufficient guidance instructions around the equipment, especially for some newly introduced equipment, makes it difficult for passengers to solve problems on their own when they are not clear about the operation process, and they have to queue up at the manual check-in counters. Third, the process and requirements for using self-check-in devices are inconsistent and complex, and generally this

inconsistency increases the learning cost and inconvenience for passengers, especially for those who frequently use the services of different airlines.

6.3 Baggage handling service

The authors found that the problems of baggage handling services at Hongqiao Airport are mainly related to low-cost airlines. In the fourth quarter of 2020 CAPSE Airport Passenger Service Evaluation, the problem of "inconsistent baggage check-in standards" in Terminal T1 was significantly higher than the industry average. Passengers complained most about opaque baggage policies and the need to pay extra for checked baggage, a problem that often occurs with low-cost carriers. Passengers often find it difficult to clearly distinguish between the different baggage regulations of full-service and low-cost carriers. So how Hongqiao Airport can effectively popularize the difference between the two to passengers, and how to cooperate with low-cost airlines to enhance the clarity of baggage policy is an issue worth thinking about. Shanghai Hongqiao Airport also has some basic baggage service issues, such as baggage delays, where the efficiency of baggage handling decreases when there is a high volume of passengers, and security screening can be a factor in handling delays. This can cause passengers to wait longer for their luggage, which can lead to complaints.

6.4 Security and joint inspection service

The problems with security services at Shanghai Hongqiao Airport arise from the general environment. Because all airport security checks in China are stricter than those in foreign countries, in addition to the control of dangerous items such as guns and ammunition, there are also strict restrictions on daily necessities such as liquids, and these restrictions may aggravate passengers' dissatisfaction and thus conflict with security staff. In addition to the factors of the environment, the two terminals of Hongqiao Airport have an additional security inspection process at the entrance of the terminal building, which mainly focuses on explosion-proof detection, while the security inspection before entering the waiting area mainly focuses on personal items, and sometimes manually opens the bag for inspection. Such multiple security checks will cause many problems, such as different passengers have different feelings about the strict standards of security checks, and some people will feel that the checks are too strict and reluctant to cooperate. There are also some passengers who are very resistant to open bag inspection, they feel that their privacy has been violated. In the tedious security process, the attitude of security staff is particularly important, unfriendly and unprofessional behavior will aggravate the dissatisfaction of passengers. For example, sometimes security staff find that some passengers carry prohibited items and shout at passengers, which does not play a good reminder role.

6.5 Customer service center

The data shows that the accessibility and location of the service center and the efficiency of problem solving are two indicators that get low satisfaction scores. The authors found that the customer service center at Hongqiao Airport has very inconspicuous signage and uneven distribution of service points, which makes it difficult for passengers to find the center, especially in case of emergencies when they need help. The customer service center at Hongqiao Airport is often crowded during peak travel periods, and there are not enough service points. This is due to the fact that Hongqiao Airport has a relatively tight manpower situation, which makes many staff members reluctant to work on the front line and makes it impossible to rationally allocate human resources while they are under heavy workloads.

6.6 Leisure and catering services

The data show that most passengers are satisfied with the entertainment and food and beverage services at Hongqiao Airport, which is a major brand advantage of the airport and should be continued. However, the authors found an imbalance in the development of food and beverage services in T1 and T2, with some passengers saying that T1 has a problem of too much shopping and fewer dining options. Airports should also pay attention to improving the availability of recreational facilities, an indicator that scored lowest in the broad category of A6. Although the airport has an abundance of recreational facilities, some of them are under constant maintenance or not open to the public, and do not serve the actual purpose of serving passengers.

6.7 Transit service

Hongqiao Airport has two main problems with its transit service: first, the transit information is not updated in a timely manner. Hongqiao Airport's inadequate explanation of transit procedures or untimely updating of the information display system can lead to situations where passengers get lost and arrive at the wrong gate during the transit process. Second, inadequate handling of emergencies. In case of emergencies or special weather conditions, Hongqiao Airport's transit service is currently unable to effectively deal with a large number of affected transit passengers, such as meals, accommodations, and complaints provided during flight delays. Most airports have the same problem in these two points, and Hongqiao Airport should formulate enhancement strategies in light of its actual situation.

6.8 Flight delay services

Flight delay service scored the lowest in the passenger satisfaction questionnaire, only 3,62. In fact, airlines should take more responsibility and complain about flight delays, but because flight delays

and cancellations will have a certain negative impact on passengers' emotions. Passengers will frequently ask the airport staff about the time of the flight, and at this time the ground staff cannot answer the passengers positively because they cannot get the latest information in time, which is likely to intensify the conflict between the two and lead to passengers' dissatisfaction with the airport service. In addition, the authors learned that during the delay, Hongqiao Airport could not provide a better resting place for economy class passengers, which would also make passengers feel dissatisfied. At present, for Hongqiao Airport, how to do a good job of service during flight delays and slow down the anxiety of passengers is a difficult point. Because in the base case of flight delays, passengers will be concerned about the temperature, facilities and other environmental quality of the airport will rise, while the satisfaction of the airport service has dropped sharply.

6.9 Inclusive service

The results of the questionnaire show that Hongqiao Airport's satisfaction rating for inclusive services is below average, and there are some problems, especially in the availability of barrier-free facilities. The accessibility facilities at Hongqiao Airport are relatively comprehensive among Chinese airports, but with the development of inclusive tourism in recent years, the airport's accessibility facilities are insufficient in number and aging in function. Still another problem is that Hongqiao Airport has insufficient training for its employees on inclusive services and lacks uniform service standards. Employees are not adequately trained to recognize and cater to travelers with different backgrounds and needs, especially in understanding and handling special needs travelers.

7 Strategies

Although Hongqiao Airport has different problems in nine indicators, the author found that the root cause of some problems is the same. Problems with flight delays, check-in and baggage handling, for example, are to some extent related to airports not working well with airlines. Therefore, the author puts forward a summary strategy according to the causes of the questions, instead of dividing them into nine indicators like questionnaires and problems.

7.1 Optimizing the airport transportation experience

If Hongqiao Airport wants to improve its transportation experience, it should first improve passengers' access from the T1 subway station to the terminal. The airport can consider providing passenger ferry service from the metro station to the terminal in the short term, especially during peak hours and rainy days to increase capacity. From a long-term perspective, the airport can explore the feasibility of building underground passages in conjunction with the metro. In addition, Hongqiao Airport can also learn from Stockholm, Sweden's subway station to build the way, the subway station to the terminal walkway into an art gallery. The design is full of color and three-dimensional space personalized design, so that passengers have a wonderful sensory experience in the process of walking. Hongqiao Airport can design an art gallery with the theme of the Pearl of the Orient, which can not only improve the cultural brand image construction of the Hongqiao Airport terminal, but also enhance the transportation experience of passengers in the airport, so that passengers can experience the cultural charm of the city of Shanghai in the process of transportation transfer.

Shanghai Hongqiao Airport can consider introducing digital technology to develop indoor navigation services. Due to the airport's complex indoor architectural structure and easily overlooked guide signs, it is more difficult for passengers to accurately remember the layout of various places in the building, as reflected in the questionnaire data. Currently, various map software provides relatively comprehensive outdoor navigation services, but has not yet developed location guidance services for large indoor buildings such as airports and shopping malls. Based on these common problems of indoor access, Gayatri proposes to enhance the indoor access experience by using a mobile application to calculate the traveler's exact location inside a building and guide the user to the destination by outputting text and images with the help of Wi-Fi technology. Google has launched AR indoor navigation technology in 2021, and its official website describes the use of this technology with San Francisco Airport as an example, illustrating the feasibility of this technology in airport buildings. (Gayatri R 2021,35-44) The authors believe that Shanghai Hongqiao Airport should actively introduce similar technology to enhance passengers'

awareness of self-service navigation and further promote the innovative development of airport intelligence.

7.2 Create a self-service check-in sharing platform

Hongqiao Airport should actively create a shared platform for self-check-in within the terminal. All airlines are vigorously implementing self-check-in services, and China Eastern Airlines, China Southern Airlines, Shandong Airlines, Spring Airlines and Xiamen Airlines all have their own self-check-in facilities at Shanghai Hongqiao Airport. However, the self-check-in platforms set up by all airlines at Shanghai Hongqiao Airport are currently restricted to passengers of their own airlines and cannot be shared with other airlines. This is a major cause of confusion for passengers at self-check-in. Hongqiao Airport could try to link up with airlines to put in airline-wide self-check-in facilities. Airports should also design more simple and intuitive check-in interfaces, establish standardized self-service processes and enhance user guidance, especially when new machines are just being introduced or when operational processes change. Hongqiao Airport can also regularly collect feedback from passengers using self-service check-in devices, especially regarding aspects related to process complexity, and then use the data collected to continuously optimize processes and interfaces. By implementing these measures, airports can move towards simplifying and harmonizing the self-check-in process, thereby increasing overall passenger satisfaction. This will not only help improve the operational efficiency of airports, but also enhance a positive travel experience for passengers.

7.3 Strengthening linkages with airlines

Airports are serviced by multiple parties, including airports, airlines, and ATC, but airlines and airports have the most opportunities for direct contact with travelers, and most of the services that travelers receive in airports are provided by these two parties. The airlines and airports do not have any alliance in most of their operations, and both parties plan to maximize their own interests. If airports and airlines do not work together and share information effectively, it can lead to a bad experience for passengers in areas such as baggage services, security services and dealing with flight delays. If Shanghai Hongqiao Airport wants to improve passenger service satisfaction, it must further deepen its cooperation with airlines and increase the degree of adhesion between the two parties to achieve a win-win situation.

First of all, Hongqiao Airport cooperates with all airlines to establish an irregular flight remediation system. Flight delays are one of the most important factors affecting the service quality of airports and airlines, but delays are now an unavoidable event in the civil aviation service industry, so airports should focus on remedial work after delays. One strategy is to establish an irregular flight

remediation system. This system can be based on the concept of an irregular flight service remediation management system proposed by Jian Wang and adapted to the specific situation of Hongqiao Airport. The system can be categorized into three levels: first, prior to flight delays, the airport issues early warnings to airlines by predicting possible irregular flight events at the airport. Second, in case of flight delays, the relevant airlines should inform the airport of irregular flight information in a timely manner. Upon receipt of the information, the airport should provide information on flights of other airlines that are still in operation to help the delayed airlines to quickly provide rebooking services for travelers. Third, after a delayed flight, the airport and airlines should provide regular joint training on irregular flights for staff to optimize the service remediation process and rules in a timely manner (Wang 2021,81-84). By implementing such a system, Hongqiao Airport can work more effectively with airlines to jointly enhance passenger experience and be able to provide more effective solutions when faced with problems such as flight delays.

Second, Hongqiao Airport can consider cooperating with low-cost airlines to build exclusive terminals for low-cost airlines. According to the flight operation data of Hongqiao Airport, the routes of low-cost airlines operating in the airport daily account for 50% of the total routes in the airport, which means that Hongqiao Airport has a large part of the passenger group that purchases tickets of low-cost airlines. Low-cost carriers' operating strategies usually differ significantly from those of full-service carriers in terms of baggage and connecting services, and there is no clear boundary between low-cost carriers and full-service carriers operating at Shanghai Hongqiao Airport at present. This makes it more difficult for passengers to clearly understand the different service regulations of low-cost carriers, which in turn creates negative feelings towards airport services. Based on the above issues, it is recommended that Shanghai Hongqiao Airport adopt the following measure：Building an exclusive terminal building for low-cost airlines, and operating low-cost airlines separately. This will make it easier for passengers to distinguish between the services of full-service airlines and low-cost carriers, and at the same time solve the service problems caused by the lack of passenger awareness of baggage and transfers, thus improving passenger satisfaction with the airport.

7.4 Upgrade airport security services

The passenger flow of the airport has obvious periodicity, such as holidays than the weekday traffic will increase significantly, and in the holidays still use the conventional security check mode will lead to passenger security check through the efficiency is reduced. Hongqiao Airport can flexibly adjust the security check mode according to the passenger flow to improve the efficiency of passenger security check under the premise of ensuring safety. Such a mode can be accomplished by upgrading and using biometrics. Hongqiao Airport's security services have also

introduced some biometrics, such as face recognition self-service lanes and fingerprint recognition. The technology can be combined with other security manual service links to further improve the efficiency of security check.

In addition, Shanghai Hongqiao Airport should pay attention to the attitude of the security service personnel, which is an important factor in pulling down passenger satisfaction. The airport should strengthen the training and education of the security service personnel, so that the staff will be a better integration of service concepts and security work together, rather than only focusing on security and ignoring the service. This requires airports to pay a certain cost, such as increasing the salary of frontline security staff and giving them more power, which will help increase their confidence and loyalty and bring more humanized services to passengers.

7.5 Refinement of key airport infrastructure

Although Hongqiao Airport has a full range of infrastructure in related areas such as catering and entertainment, VIP lounges and inclusiveness, there are still some details that need attention, such as the uneven distribution of facility resources between T1 and T2, the insufficient number of customer service centers and inclusiveness services, and so on. Therefore, the airport should start from the details to fill the shortage of key service facilities.

Hongqiao Airport should pay more attention to the infrastructure construction of T1 terminal. As mentioned before, T1 Terminal has fewer types of food and beverage, which is in obvious contrast to T2 Terminal. Hongqiao Airport can first add a number of different categories of robotic stores in T1 to quickly alleviate the problem of insufficient configuration of its trade and catering facilities, and then drive the progress of T1 with the help of the better-developed catering service of T2 to achieve a balance of development.

The airport should pay attention to the use of barrier-free facilities in a timely manner. A commissioner can be hired to conduct a comprehensive assessment and inspection of the existing barrier-free facilities, focusing on areas with high passenger flow and locations where the facilities are used frequently, and then upgrade the old facilities according to the results and add new barrier-free facilities in the necessary areas. The addition of low resistance carpeting, for example, can be more wheelchair friendly while providing better acoustics for the hearing impaired. Airports can also learn from other airports' smart and inclusive services, such as the self-driving electric wheelchairs for passengers with disabilities at Tokyo's Narita International Airport (Future Travel Experience 2019). These wheelchairs can independently detect and avoid people and obstacles and navigate on their own, which is friendly to people with disabilities who need to catch a connecting flight.

8 Own learning

Writing this thesis has taught me a lot, and has been a great way to summarize and enhance what I have learned in my four years of college. The writer found that making a satisfaction questionnaire, although it can clearly collect data for each indicator, it cannot tell from the satisfaction scores what specific problems exist in the airport. The problem analysis part of this thesis was completed by the author through fieldwork, collecting internet comments and combining the questionnaire data analysis. In the next research the author will try to collect a large number of internet comments instead of distributing questionnaires, which will make the passengers' opinions more specific and facilitate in-depth research. It is also worth reflecting on the fact that the target group of this questionnaire study is all Chinese, and in the next study, the authors may consider designing a multilingual questionnaire to include cultural background differences in the study of airport service quality.

I would like to express my sincere thanks to Hanna and Heini for their guidance and help during the writing of my thesis, which enabled me to identify some problems and gain a lot of new inspirations. With their help, the author was able to gain a deeper understanding of the theoretical knowledge of passenger service quality at Shanghai Hongqiao Airport and propose effective strategies to improve it.

I would also like to express my special thanks to the management team and staff of Hongqiao Airport for their great support and assistance during the fieldwork and data collection process. Through communication and cooperation with them, I was able to gain a detailed understanding of the current operation of airport services, which provided real and reliable first-hand information for my research.

Finally, I hope that Shanghai Hongqiao Airport will gain some inspiration from this article when formulating strategies to improve passenger services and provide better services to passengers around the world on behalf of Chinese airports.

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Appendices

Appendix 1. Passenger service satisfaction questionnaire of Chongqing Jiangbei Airport

Shanghai Hongqiao Airport Passenger Service Quality Satisfaction Questionnaire

Hello, Dear Passenger! In order to continuously improve the quality of service at Shanghai Hongqiao Airport and to better meet your travel needs, we would like to invite you to participate in the Passenger Service Satisfaction Survey. Your comments and suggestions are of vital importance to us and will help the airport to evaluate its existing services and begin to formulate necessary improvement strategies. We assure you that all survey information will be kept strictly confidential and will only be used to improve the quality of service. Please take a few minutes to fill in the following questionnaire based on your real experience. We look forward to receiving your valuable feedback and wish you a pleasant flight!

Part I: Basic information

1. Your gender [Single choice]*

○Male
○Female
○Would not like to disclose

2. Your age range [Single choice] *

○Under 18 years old
○18-30 years old
○31-50 years old
○51-65 years old
○Over 65 years old

3. The purpose of your most frequent air travel is for [Single choice]*

○Business
○Tourism
○Visiting friends and relatives

4. How often do you use Shanghai Hongqiao Airport?[Single choice]*

○Monthly

○Quarterly
○Half yearly
○Annually
○Irregularly

Part II: Scale Questions

The questions in this part are divided into five scales from very satisfied to very dissatisfied, which are: Very Satisfied (5 points), Satisfied (4 points), Fair (3 points), Dissatisfied (2 points), Very Dissatisfied (1 point)

Please select the score according to your actual situation!

5. Accessibility to the airport [Single choice]*

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

6. Traffic guidance signs [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

7. Parking facilities and number of parking spaces [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

8. Ease of operation of self-check-in facilities [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

9. Service at manual check-in counters [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

10. Queuing time at manual check-in counters [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

11. Clarity of information (baggage policy, security policy) [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

12. Privacy at check-in [Single choice]

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

13. Convenience of baggage check-in process [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

14. Attitude and professionalism of the staff in handling luggage [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

15. Efficiency of handling damaged or lost luggage [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

16. Baggage claim waiting time [Single choice]*

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

17. Clarity and accessibility of baggage service information [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

18. Waiting time at security checkpoints [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

19. Attitude of staff during security check [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

20. Modernization and efficiency of security equipment [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

21. Efficiency of joint inspections (e.g., customs, border control) and attitudes toward services [Single choice]*

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

22.Accessibility and location of passenger service centers [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

23.Attitude and professionalism of service center personnel [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

24. Accuracy and usefulness of information provided [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

25. Efficiency of problem solving [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

26. Cleanliness of airport environment [Single choice]*

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

27. Reasonableness of food prices [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

28. Quality of recreational facilities (e.g., WiFi, lounge area) [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

29. Variety of dining and recreation options [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

30. Availability of recreational facilities (e.g., charging stations, children's play areas, etc.) [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

31. Clarity of the transit process [Single choice]*

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

32. Efficiency of the transit counter [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

33. Comfort and facilities of transit rest areas [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

34. Timeliness and accuracy of delay information delivery [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

35. Follow-up services for flight delays [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

36. Overall effectiveness of response measures [Single choice]*

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

37. Availability of barrier-free facilities [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

38. Clarity and visibility of multilingual signage [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied

39. Special care services for children and the elderly [Single choice] *

Very satisfied ○5 ○4 ○3 ○2 ○1 Very dissatisfied