



## **Strategies for Improving Passenger Service Quality at Changsha Huanghua International Airport**

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## Abstract

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<p>With the rapid development of modern economy, people's living standards are constantly undergoing tremendous changes. In order to meet the diverse service experiences of passengers choosing air transportation and better stimulate the consumption vitality of the air transportation market, in line with the Civil Aviation Administration's "Civil Aviation Service Quality and Efficiency Improvement Year" in 2024, we aim to accelerate the competitiveness of air transportation enterprises and face more pressures and challenges in the future. As the main aviation hub in Changsha, Changsha HuangHua International Airport (Abbreviated as Changsha HH Airport in the text) needs to improve its service quality in the increasingly fierce market competition. How to improve service quality is a meaningful research direction.</p> <p>This article adopts methods such as literature analysis, questionnaire survey, SWOT analysis, PEST analysis, etc., selects HH Airport as the research object, conducts a survey questionnaire on passenger service satisfaction at HH Airport, studies and analyzes the data, explores the existing problems, and provides improvement suggestions for the future T3 terminal. Firstly, the author analyzed domestic and foreign literature, combined with relevant civil aviation policies in China, and then analyzed the internal and external environment of Changsha HH Airport. The external environment analysis will use PEST analysis method, and the internal environment analysis will use SWOT analysis method; Based on the SERVQUAL service quality theory, a satisfaction survey questionnaire on the service quality of Changsha HH Airport was designed, and data was collected from the population who had visited HH Airport.</p> <p>By analyzing the survey questionnaire, the problems currently existing in the airport's service process, facilities and equipment, personnel services, etc. were identified. This article proposes a strategy to accelerate infrastructure upgrades, prioritize the construction of T3 terminal and comprehensive transportation center, and simultaneously optimize the layout of existing facilities. It is hoped that this will have an effective impact on airport operations in the future.</p>
<b>Key words:</b> Airport passenger service quality; Improvement of service quality; Questionnaire

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# **1 Introduction**

## **1.1 Background of The Subject**

In recent years, with the development of the global economy and the improvement of people's living standards, the civil aviation industry has shown a booming trend. According to data from the Civil Aviation Administration of China, in 2023, the entire industry completed a total transportation turnover of 118.834 billion ton kilometers, an increase of 98.3% compared to the previous year. The total transportation turnover of domestic routes was 86.733 billion ton kilometers, an increase of 123.6% compared to the previous year. Among them, the Hong Kong, Macao, and Taiwan routes completed 1 billion ton kilometers, an increase of 334.2% compared to the previous year; The total transportation turnover of international routes reached 32.101 billion ton kilometers, an increase of 51.8% compared to the previous year. From a global perspective, the International Air Transport Association (IATA) also points out that the increasing demand for air transportation will serve as an important force in promoting global economic integration and tourism development.

In today's increasingly competitive civil aviation industry, passenger service quality has become a key factor for airports to gain a competitive advantage. For Changsha HH Airport, high-quality service quality can attract more passengers to choose the airport for travel and increase the airport's market share. A good service reputation helps to enhance the brand image of the airport, strengthen its influence at home and abroad, attract more airlines to settle in, further expand the route network, and form a virtuous cycle. With the increasing diversification and personalization of passenger demands, higher requirements have been put forward for airport service quality. HH Airport needs to continuously improve service quality to meet passenger expectations.

## **1.2 Purpose and significance**

The research aims to comprehensively investigate the problems in check-in, waiting and other aspects of passenger service quality improvement at Changsha HH Airport, optimize services based on passenger needs, reduce queuing time, add humanized services, enhance satisfaction and loyalty, and stand out in the fierce competition of the aviation market, attracting airlines and passengers. For passengers, this can bring a comfortable and convenient travel experience; From the perspective of airport operation, it can reduce costs and increase non aviation revenue; For regional development, it is conducive to enhancing the city's image and driving industrial development; From an industry perspective, it can provide reference for other airports, promote the overall progress of the air transportation service industry, and fully meet travel needs.

### **1.3 Current research status at home and abroad**

#### **1.3.1 Abroad Research Status**

Compared with China, foreign countries have more abundant data collection on the service quality for airport passengers. The depth and breadth of their research have reached a certain level, and their research achievements have also been widely applied.

Laura Eboli and others focused on exploring the methods of collecting and analyzing passengers' perception data, and classified and evaluated the types of surveys, data collection and analysis methods. This provides a methodological foundation for subsequent research on how to accurately grasp passengers' needs in terms of airport service quality, enabling researchers to obtain and interpret passengers' opinions on airport services more scientifically and effectively, so as to optimize service processes in a targeted manner. (Maria Grazia Bellizzi, Laura Eboli, Gabriella Mazzulla 2020.) Faisal Tehseen Shah and others used systematic sampling and mediating analysis techniques to reveal the mediating role of passenger satisfaction between the service quality of airlines and behavioral intentions. This is of great significance for understanding passengers' decision-making psychology and behavior patterns during air travel, provides a theoretical basis for airports and airlines to jointly improve service quality and influence passengers' behavioral decisions, and points out the direction for optimizing service strategies from the perspective of the correlation between passengers' psychology and behavior. (Faisal Tehseen Shah, Zaineb Syed, Abeer Imam, Aiman Raza 2020)

These studies, from different angles such as airport comparison, data collection and analysis methods, and the relationship between passengers' psychology and behavior, provide multiple perspectives and methodological support for the research on improving airport service quality. In follow-up studies, it can be further considered to comprehensively apply these achievements to the improvement of actual airport operations, and expand the research scope to more types of airports and service scenarios.

#### **1.3.2 Domestic research status**

The research data on the service quality for airport passengers in China is more detailed. Many outstanding Chinese experts and scholars have conducted in-depth explorations of airport service quality and improved and optimized traditional research methods, making them more widely

applicable in practical applications. A number of scholars have carried out research on the issue of improving the service quality of different airports.

Wang Jun used the literature research method, questionnaire survey method and comparative research method, and proposed strategies for Mianyang Airport to improve service facilities, processes and attitudes, etc.(Wang Jun 2021,1-25)Li Xiangying, through the analysis of the questionnaire survey of Zhengzhou Airport, put forward improvement countermeasures including establishing service concepts and accurately identifying needs. (Li Xiangying 2020.6-30)Liu Chong explored the methods for Nanning Airport to improve service quality to cope with competition and changes in demand in the new era of the civil aviation industry. (Liu Chong 2023,1-15)Gan Bojia evaluated the consumer experience, pointed out the deficiencies of Chinggis Khaan International Airport in Mongolia and proposed improvement measures.( GANBOLD 2023,10-25) Ba Xiang used the questionnaire survey method to provide suggestions for Jinan Airport to improve service quality.( Ba Xiang 2020) Shen Jie constructed satisfaction measurement indicators based on public needs and relevant theories, investigated the public service issues of Chongqing Jiangbei Airport and proposed countermeasures. (Shen Jie 2021)Li Ruijie adopted a variety of models and methods to analyze the internal and external environments and improvement strategies of Shuangliu Airport.( Li Ruijie 2024) Liang Xiaoyan used a variety of research methods to analyze the service quality issues and countermeasures of Changbei International Airport. (Liang Xiaoyan 2020)Zhu Miaomiao proposed strategies to improve the public service satisfaction of W Airport from aspects such as strengthening supervision, improving the system, and the participation of non-governmental organizations. (Zhu Miaomiao 2024)Fan Xiyang proposed four measures for S Airport to improve the service quality for passengers. (Fan Xiyang 2024)Tong Qian pointed out the service quality issues of SZ Airport and proposed five improvement strategies, and made improvements in aspects such as the improvement of airport hardware facilities, the improvement of the incentive and supervision mechanisms for passenger services, the strengthening of the awareness of differentiated services, the improvement of the recruitment and training mechanisms for service personnel, and the reinforcement of the awareness of differentiated services.( Tong Qian 2021)

These studies mainly focus on using a variety of research methods to identify the existing problems in airport services, and then put forward targeted improvement strategies from multiple aspects such as service concepts, facility construction, personnel management, and process

optimization. The aim is to meet the needs of passengers, improve the economic benefits and competitiveness of airports, and provide rich ideas and methods for reference for the practice and research of improving airport service quality. Follow-up studies can consider further deepening the exploration of aspects such as cross-airport comparative analysis and the impact of the application of new technologies on service quality.

## **1.4 Research methods and content**

### **1.4.1 research method**

#### **(1) SWOT Analysis Method**

A large number of academic papers use SWOT analysis to assess a company's strengths, weaknesses, opportunities, and threats. When analyzing traditional industrial projects, this paper will elaborate on the strengths of internal production technology, brand awareness, as well as the deficiencies in management efficiency and the lack of innovation capabilities. At the same time, it will cover external market demand and growth, policy support, as well as the threats of rising raw material prices due to competition and price fluctuations. By constructing a SWOT matrix, this paper introduces various strategic options for the company, such as growth strategies and even turnaround strategies, to guide the company in rationally allocating resources and enhancing its competitiveness.

#### **(2) PEST Analysis Method**

In the field of strategic management, many papers use PEST to analyze the external environment. This type of paper conducts a comprehensive analysis by comprehensively dissecting the macroeconomic environment from the four dimensions of politics, economy, society, and technology. For example, a research paper on an online company will explore the impact of regulatory policies on the enterprise, analyze how fluctuations in the economic situation affect market demand and the company's investment decisions, uncover changes in user behavior and needs caused by social and cultural changes, and track technological innovations such as artificial intelligence and big data to reshape the industry structure. Through PEST analysis, this paper can lay the foundation for the company to formulate strategies, help the company seize opportunities, address challenges, and achieve sustainable development.

#### **(3) Servqual Theory**

The SERVQUAL theory is widely applied in papers on service quality research. Based on the

service quality gap model, this theory measures the gap between customers' expectations and perceptions of service quality from five dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy.

Firstly, Tangibles: It refers to the appearance of hardware facilities, equipment, personnel, and communication materials in the service, such as the clean environment of the airport lounge, neatly dressed uniforms, and a good image of employees.

Secondly, Reliability: It refers to the ability of an enterprise to accurately fulfill the promised services. For example, an airline takes off and arrives on time, and there is no loss or damage to the luggage.

Thirdly, Responsiveness: It refers to the willingness and speed of employees to assist customers and provide convenient services. For instance, airport staff can quickly answer passengers' questions and handle problems.

Fourthly, Assurance: It includes employees' knowledge, skills, and attitudes, as well as the company's reputation, which can make customers feel safe and at ease. For example, professional airport security inspectors can easily check passengers.

Fifthly, Empathy: It refers to the care and personalized services that an enterprise provides to customers, being able to put oneself in the customers' shoes, and meeting their special needs. For example, the airport provides special service channels and assistance for special passengers.

With excellent reliability and validity, the SERVQUAL scale can not only comprehensively measure the overall level of service quality but also be used for phased inspections, accurately evaluating the company's overall service quality in different periods and specific performances at each stage. This enables enterprises to deeply understand the importance of perceived quality and the interaction mechanism among its constituent elements.

As a key place where passengers have frequent interactions with staff, every aspect of a passenger's air travel journey relies on the assistance of the staff, and every aspect of the service is of vital importance. Among them, reliability and assurance are the cornerstones for the stable operation of airport services. Based on this, this paper introduces the SERVQUAL method and carefully designs a questionnaire, aiming to accurately identify and deeply diagnose the existing gaps in airport service quality, so as to provide a strong basis for the subsequent improvement of service levels.

### 1.4.2 Research content and ideas

The paper focuses on the strategies for improving passenger service quality at Changsha HH Airport. Firstly, it elaborates on the research background and significance, reviews the current research status at home and abroad, and introduces theories of service quality and customer satisfaction as support; Then analyze the internal and external environment of the airport and set up relevant survey questionnaires to conduct a service quality survey; Digging deeper into issues such as insufficient hardware facilities, cumbersome service processes, and poor employee service; Furthermore, improvement strategies are proposed from several aspects such as optimizing hardware facilities, improving service processes, and strengthening employee training management; Finally, summarize the results at the end of the study and look forward to future research directions. The structural framework of this article is shown in Figure 1-1:

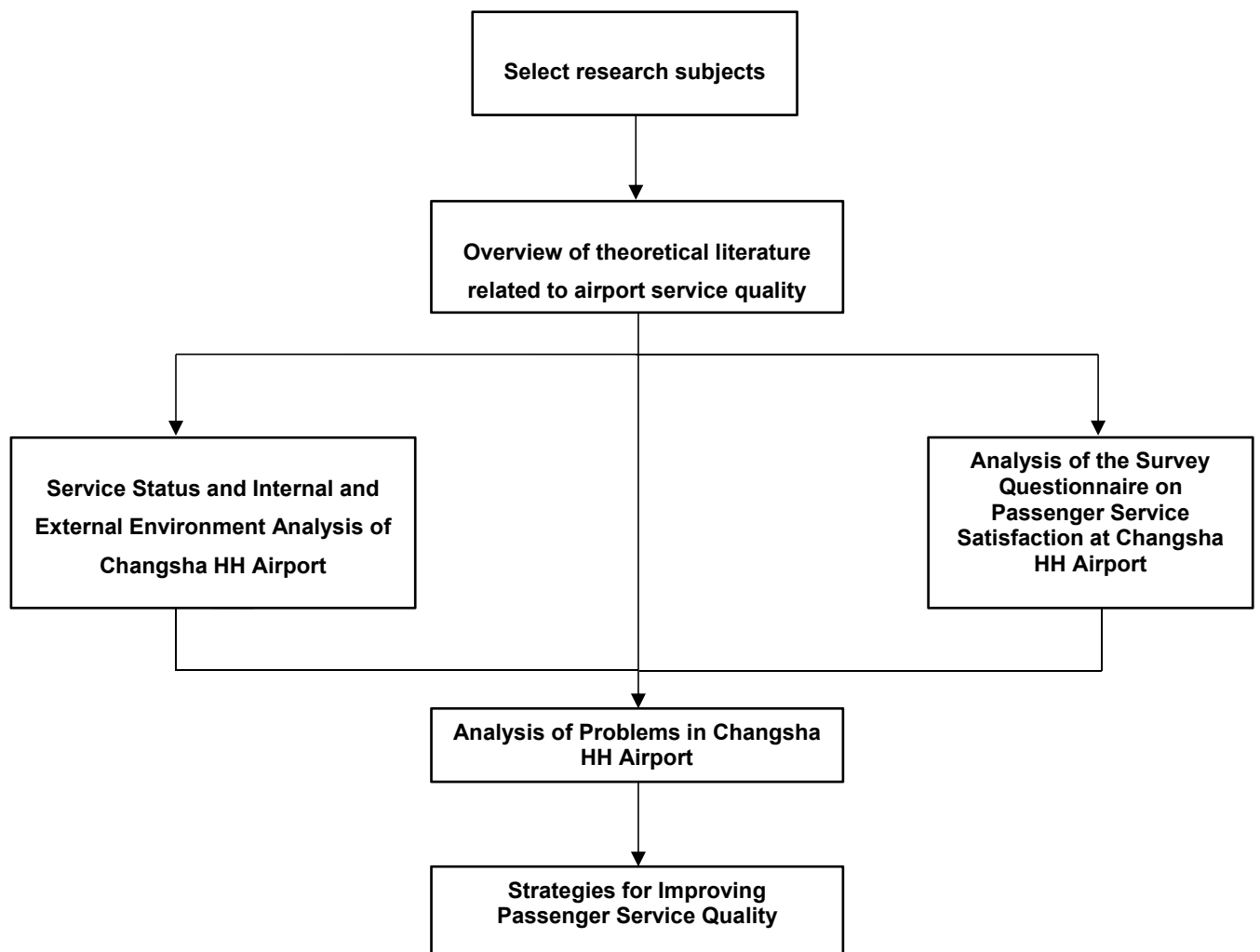


Figure 1-1 Research Content and Approach

**1.5 Paper structure**

The entire paper will be divided into six chapters. The first chapter introduces the background and significance of the research on Changsha HH Airport, the current research status at home and abroad, as well as the research methods, content, and structure of the paper. Chapter 2 will conduct an internal and external analysis of Changsha HH Airport, using SWOT analysis and PEST analysis. Chapter 3 introduces the service survey analysis of Changsha HH Airport, which includes an overview of Changsha HH Airport, as well as the design of the survey questionnaire and the analysis of the results. The fourth chapter is to study the problems generated by the questionnaire, conduct root cause analysis, and propose improvement strategies. Chapter 5 draws on excellent airport cases at home and abroad to enrich the content of improvement strategies. Chapter 6 is the conclusion and outlook of the paper, providing suggestions and reflections on future development. The overlay matrix provided here can well reflect the structure of Table 1 in this article.

Table 1-1. Overlay matrix

Investigative questions	Results (Chapter)	Questionnaire Questions
Facility Services	4.1.3	8、 10、 16、 17
Catering demand	4.1.3	18
Security check efficiency and process	4.1.3	7、 11、 12、 15、 19、 22
Service	6.1.3	9、 13、 14、 20、 21、 23、 24

## **2 Internal and External Analysis**

### **2.1 SWOT Analysis**

#### **2.1.1 Strengths Analysis**

##### **(1) Remarkable Location Advantage**

Changsha HH International Airport is located in the central region of China and serves as an important node connecting the north and the south and bridging the east and the west. As an important province in the Yangtze River Economic Belt and the strategy of Central China's Rise, Hunan Province has seen a continuous increase in the economic radiation capacity of its capital city, Changsha. HH Airport can effectively cover the whole province of Hunan and some areas of neighboring provinces, providing air travel services for a large number of passengers. For example, some business travelers and tourists from neighboring provinces will choose to transfer at HH Airport and then head to other domestic and foreign cities. At the same time, its geographical location also facilitates the establishment of an efficient route network with major domestic aviation hubs, enabling rapid transfers.

##### **(2) Gradual Improvement of the Route Network**

In recent years, HH Airport has been continuously expanding its flight routes. As of the first half of 2024, flights to 12 international and regional cities such as London have been restored in total. Domestic routes reach major cities across the country. Since the summer flight season in 2023, the weekly scheduled flights have reached 4,960, connecting to 108 domestic airports. Many domestic passenger destinations such as Aksu and Alar have been added (or restored). The Hunan-Beijing Express Route, Hunan-Shanghai Express Route, Hunan-Sichuan Express Route, Hunan-Hainan Express Route, etc. have been continuously optimized, strengthening the connections between Changsha and major cities across the country. The rich route network meets the travel needs of different passengers and enhances the attractiveness of the airport.

##### **(3) Continuous Upgrading of Infrastructure**

Currently, Changsha HH International Airport has two terminals. The area of Terminal T1 is 53,600 square meters, and the area of Terminal T2 is 213,000 square meters. The civil aviation apron has 81 aircraft parking positions, including 32 jet bridge positions. The first runway is 3,200 meters long and 45 meters wide, and the second runway is 3,800 meters long and 60 meters wide, which can meet the usage requirements of an annual passenger throughput of 35 million person-times, a cargo and mail throughput of 440,000 tons, and 244,000 aircraft takeoffs and landings. Moreover, the ongoing reconstruction and expansion project is designed to meet the target of an annual

passenger throughput of 60 million person-times and a cargo and mail throughput of 600,000 tons by 2030, which will greatly enhance the airport's operational capacity and service level in the future.

#### (4) Excellent Operational Data Performance

In 2023, the passenger throughput of Changsha HH Airport reached 27.25 million person-times, setting a new historical high. It has ranked first in Central China for three consecutive years and is also the only airport among the three major cities in Central China whose passenger throughput exceeds that before the pandemic. From January to July 2024, Changsha HH Airport completed a cumulative passenger throughput of 18.043 million person-times, an increase of 19% compared with the same period of the previous year, ranking first in Central China. It has even surpassed Nanjing Lukou Airport, the airport of Nanjing, the capital city of Jiangsu Province, which is the second largest economic powerhouse province in China. The good operational data reflects the airport's strong competitiveness and development potential.

### **2.1.2 Weaknesses Analysis**

#### (1) Aging problems of airport facilities

Some facilities and equipment constructed in the early stage have been in use for a long time. For example, the seats in some waiting areas, toilets, etc., have shown varying degrees of aging and damage, which affects passengers' waiting experience. Although the reconstruction and expansion project has been ongoing, before the new facilities are fully put into use, the negative impact of the old facilities on the service quality still exists.

#### (2) Service quality needs to be improved

During peak hours, there may be long queues at check-in and security checkpoints, resulting in a decline in passenger satisfaction. The service attitude and professional level of some staff also need to be improved. When handling passengers' inquiries, complaints and other issues, they sometimes cannot solve them promptly and effectively. Compared with some advanced domestic airports, Huanghua Airport still has a gap in the refinement and humanization of services.

#### (3) Relatively lagging freight development

Although the passenger transportation business is developing well, there is a large gap between the cargo and mail throughput and that of some strong freight airports. In 2023, the cargo and mail throughput of Changsha HH Airport was only 176,800 tons, ranking 21st in the country. The freight infrastructure, route layout, and logistics supporting services are not perfect enough. There is a

lack of a professional freight operation team and an efficient logistics information system, making it difficult to meet the growing freight demand.

### **2.1.3 Opportunities Analysis**

#### **(1) The Attraction of Changsha's IPs**

In the field of cultural tourism, Changsha excavates historical and cultural resources such as Yuelu Academy and Mawangdui Han Tombs to create IPs, and develops immersive experience and research study products. It can also integrate fashionable elements such as light shows and music performances into modern cultural and tourism landmarks like Juzizhou Head and Jiefang West Road, creating modern urban IPs and new consumption scene IPs. In the fields of new media and cultural and creative industries, relying on its "internet-famous" characteristics, Changsha develops the short video and live streaming industries, encourages creators to create internet-famous IPs, and creates film, television and animation IPs with the resources of Mango TV. In the field of consumer brands, it supports the innovation of local food brands such as "Pleasant Tea Countenance" and "Wenheyou", creates characteristic food chain brands, develops fashion and pop culture industries in combination with the young consumer group, holds fashion activities to cultivate local fashion brand IPs. In the fields of education and technology, it builds innovation IPs for industry-university-research cooperation based on the scientific research achievements and academic brands of universities, endows cultural IPs with the energy of technologies such as artificial intelligence and virtual reality, and constructs digital cultural experience projects. The influence and attraction of these Changsha IPs will bring more benefits to customers.

#### **(2) Rapid Development of the Regional Economy**

In recent years, the economy of Hunan Province has maintained stable growth, and the urban status of Changsha has been continuously enhanced. Many enterprises have settled in, and the demand for business trips continues to grow. At the same time, the vigorous development of the tourism industry has also brought a large number of tourists. For example, Changsha has been rated as one of the happiest cities in China for 15 consecutive years and has become one of the cities with the strongest talent attraction. In 2022, its population growth even topped the list among cities in the "trillion-yuan club". The urban attraction has led to a continuous increase in the number of passengers, providing a broad market space for the development of the airport.

#### **(3) Growth of the Aviation Market Demand**

With the improvement of people's living standards and the transformation of tourism consumption concepts, the demand for air travel is constantly increasing. The domestic tourism market remains booming, and the international tourism market is gradually recovering, which is very beneficial to

the development of the passenger transportation business of Changsha HH Airport. In addition, the rapid development of the e-commerce industry has driven the increase in the demand for air freight, providing opportunities for the expansion of the airport's freight business.

#### (4) New Opportunities Brought by the Reconstruction and Expansion Project

The ongoing reconstruction and expansion project of Changsha HH Airport and its comprehensive transportation hub has a total investment of over 40 billion yuan. After completion, it will become the comprehensive transportation hub with the largest number of transportation connection methods in China. After the new Terminal T3 and related facilities are put into use, the airport's operational capacity and service quality will be greatly improved, attracting more airlines to settle in, expanding more flight routes, and further enhancing the airport's competitiveness.

### **2.1.4 Threats Analysis**

#### (1) Fierce competition from surrounding airports

Surrounding airports such as Wuhan Tianhe Airport and Zhengzhou Xinzheng Airport are also constantly developing and competing with Changsha HH Airport in terms of passenger sources, flight route resources, etc. For example, Zhengzhou Xinzheng Airport has obvious advantages in air freight. In 2019, its freight volume reached 520,000 tons. Its complete freight route network and logistics system have attracted a large amount of goods. Relying on its economic strength and geographical location, Wuhan Tianhe Airport also occupies a certain share in the passenger transportation market, bringing competitive pressure to HH Airport.

#### (2) Many uncertain factors in the aviation industry

Factors such as fluctuations in the global economic situation, changes in the international political situation, natural disasters, and public health incidents may all have a significant impact on the aviation industry. For instance, during the COVID-19 pandemic from 2020 to 2022, the aviation industry was severely hit, and the passenger flow and operating revenue of Changsha HH Airport dropped significantly. In the future, these uncertain factors may still pose a threat to the development of the airport.

#### (3) Competition from other transportation modes such as high-speed railways

The construction of the high-speed railway network is constantly advancing, and the competition in the medium and short-distance mobility market has intensified. Some passengers who originally chose air flights may choose high-speed railways due to factors such as the convenience, punctuality, and relatively stable prices of high-speed railways. For example, after the high-speed

railways from Changsha to some surrounding cities were opened, to a certain extent, the air passenger flow was diverted, challenging the operation of the airport's short-distance flight routes.

## **2.2 PEST analysis**

### **2.2.1 Political analysis**

**Strong Policy Support:** The state and the government of Hunan Province attach great importance to the development of the aviation industry and have introduced many favorable policies. In 2011, the People's Government of Hunan Province issued the "Opinions on Supporting Changsha Huanghua International Airport to Build a Regional International Aviation Hub", providing policy support for HH Airport in aspects such as route expansion and infrastructure construction. In 2023, the leaders of the Hunan Provincial Party Committee emphasized accelerating the construction of Changsha Airport into a first-class airport, helping it to become an international aviation hub in the central region, providing solid policy guarantees for the development of the airport, which is conducive to obtaining resources and expanding the scale.

**Driven by the Regional Coordinated Development Strategy:** Changsha has integrated into regional development strategies such as the Yangtze River Economic Belt and the Rise of Central China, and strengthened cooperation with surrounding areas. As an important regional transportation hub, HH Airport will, with this impetus, strengthen its linkage with surrounding airports, optimize the route layout, attract more transfer passengers, and promote the sharing and coordinated development of regional aviation resources.

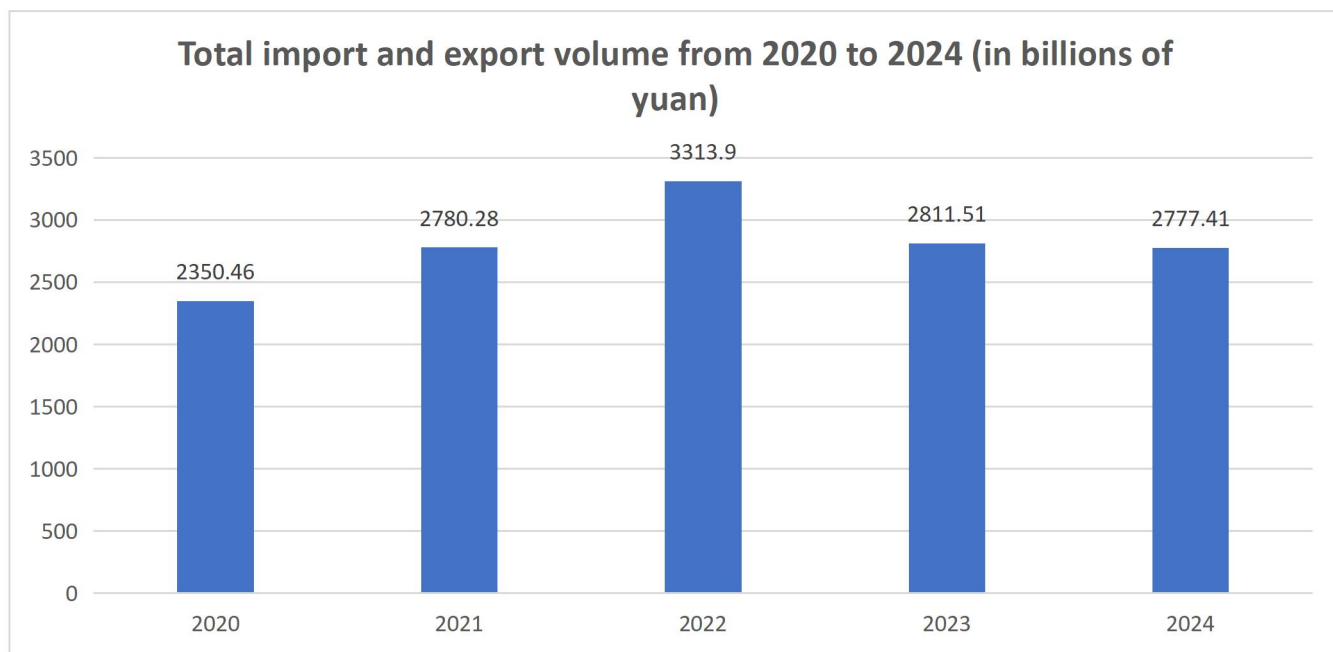
### **2.2.2 Economic analysis**

With the continuous development of the global economy, exchanges between countries have become more frequent, international trade has been vigorously developed, and the domestic regional economy is also growing steadily. The economy of Hunan Province has been developing steadily and continuously. As the capital city, Changsha's economic strength has been continuously enhanced. In 2024, its regional gross domestic product (GDP) reached 1,526.878 billion yuan, increasing by 5.0% compared with the previous year. (Changsha Bureau of Statistics 2025)The economic prosperity has driven up the demand for business trips, tourism consumption, etc., providing an abundant source of passengers for Huanghua Airport and promoting the development of its passenger transportation business. At the same time, air transportation is not

only a means of transportation but also a link between countries. The air transportation industry has brought more potential investment directions to people and created more job opportunities. The development of the civil aviation industry is inseparable from the support of national policies. Good national policies can enhance the vitality of enterprises, increase import and export trade, stimulate the demand for air freight, and facilitate the expansion of the airport's freight business.

In 2024, the total value of imports and exports (in terms of customs statistics) was 277.741 billion yuan (equivalent to 39.039 billion US dollars), a decrease of 1.2% compared with the previous year. Among them, the total export value was 178.131 billion yuan, a decrease of 6.1%; the total import value was 99.610 billion yuan, an increase of 9.0%. Among the total export value, mechanical and electrical products accounted for 116.530 billion yuan, accounting for 65.4%; high-tech products accounted for 41.100 billion yuan, accounting for 23.1%. Among the total import value, mechanical and electrical products accounted for 46.780 billion yuan, accounting for 47.0%; high-tech products accounted for 40.85 billion yuan, accounting for 41.0%. (Changsha Bureau of Statistics 2025).( See Figure 2-1)

Figure 2-1



Data source: Changsha Municipal Bureau of Statistics

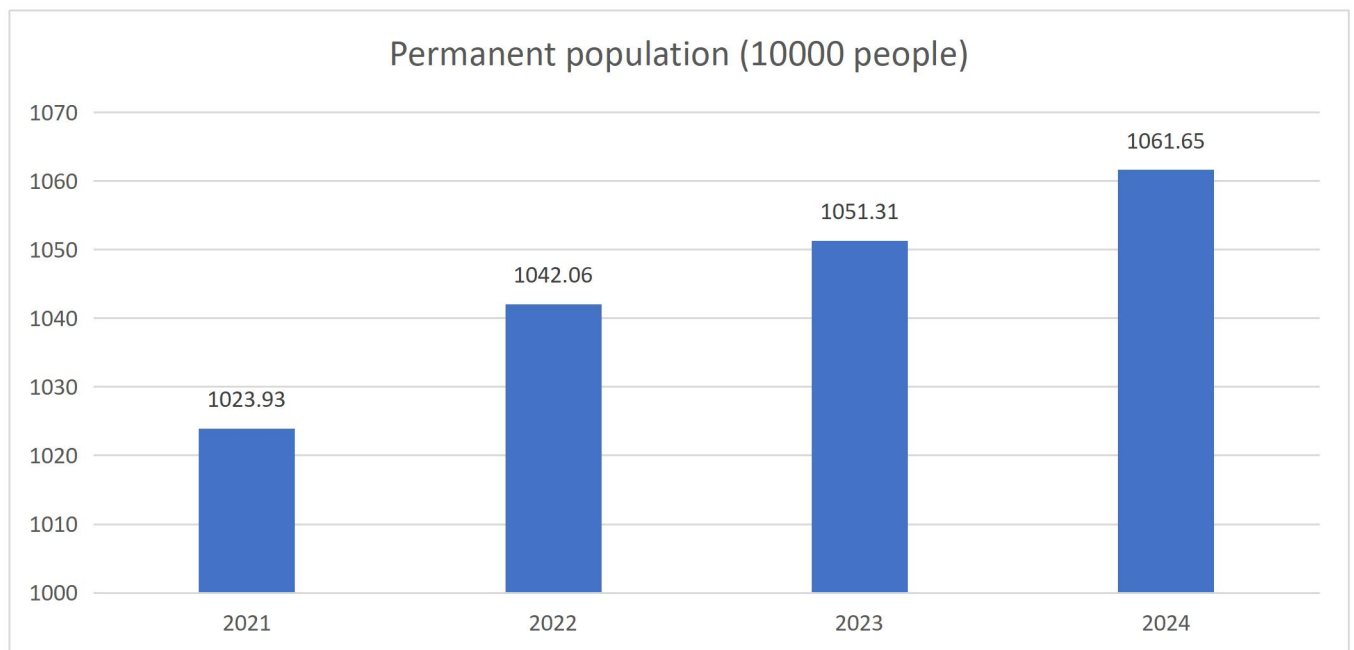
Improvement of Residents' Income and Consumption Capacity: With the increase in residents' income levels and the upgrading of the consumption structure, consumption expenditures on tourism, leisure, etc. have increased. Throughout the year, a total of 215.0185 million domestic and

foreign tourists were received, representing a growth of 10.5% compared with the previous year; the total tourism expenditure was 242.341 billion yuan, an increase of 10.5%. (Changsha Bureau of Statistics 2025) More people choose to travel by air, and the demand for air travel has shifted from mainly business trips to diversification including business trips, tourism, visiting relatives, etc., bringing a broader market space for Changsha HH Airport and promoting the continuous growth of passenger traffic. Changsha HH Airport should be guided by passengers' needs to further improve the quality of passenger services.

### 2.2.3 Sociocultural analysis

Social factors influence people's living and consumption patterns. The permanent resident population of Changsha reached 10.6165 million by the end of 2024. (Changsha Bureau of Statistics 2025) Judging from the population development trend in Changsha in recent years, the annual growth rate is relatively stable (see Figure 2-2). In 2024, the tourism and cultural industry developed vigorously: Changsha is rich in tourism resources, and the influence of the "internet-famous city" has been continuously expanding. Scenic spots such as Juzizhou Head and Yuelu Mountain have attracted a large number of tourists. Characteristic brands such as "Pleasant Tea Countenance" and "Wenheyou" have enhanced the city's attractiveness. In 2023, Changsha received 192 million domestic and foreign tourists, and achieved a total tourism revenue of 202.67 billion yuan. The travel of a large number of tourists has promoted the passenger transportation business of Huanghua Airport and increased the airport's popularity and passenger flow.

Figure 2-2: Resident Population of Changsha City from 2021 to 2024



Data source: Changsha Municipal Bureau of Statistics

Changes in travel concepts and demands: Consumers' demands for convenience and comfort in travel have increased, highlighting the advantages of air travel. At the same time, the increasing demand for personalized and customized services has prompted Huanghua Airport to improve its service quality and enrich its service content, such as optimizing the waiting environment, providing diversified catering options, and developing intelligent service applications to meet the needs of passengers.

#### **2.2.4 Technological analysis**

Accelerate the construction of a smart airport: HH Airport actively introduces new technologies to promote intelligent transformation. Self-service check-in and self-service baggage check-in equipment are widely used, which improves the efficiency of passengers' formalities. Face recognition technology is applied to security checks and boarding procedures, enhancing safety and the speed of passage. Big data analysis helps to optimize flight scheduling and resource allocation, improving operational efficiency and service quality.

Opportunities brought by aviation technology innovation: With the progress of aircraft manufacturing technology, new aircraft have improved fuel efficiency, increased range, and enhanced passenger capacity, providing conditions for Huanghua Airport to optimize its route layout and expand long-haul international routes. At the same time, the research, development, and application exploration of new energy aircraft, if mature in the future, will reduce the airport's operating costs, decrease environmental pollution, and be in line with the trend of sustainable development.

## **3 Investigation and Analysis of Passenger Services at Changsha HH Airport**

### **3.1 Overview of Changsha HH Airport**

Changsha Huanghua International Airport, one of the twelve major trunk airports and one of the ten regional international aviation hubs in China, plays a significant role in China's civil aviation industry. It is located in Huanghua Town, Changsha County, Changsha City, Hunan Province, 23.5 kilometers west of the center of Changsha City.

In 2024, Changsha Airport had established routes to 130 Chinese and foreign cities, including London, Nairobi, and Singapore. Among them, 107 are domestic cities, and 23 are international cities and regions. There are 125 inbound and outbound flights per week, reaching 16 countries and regions in Asia, Africa, Europe, and the Americas. As of December 15, the passenger throughput of Changsha Airport in 2024 had exceeded 30 million. Following the breakthrough of 20 million in passenger throughput in 2016, it has achieved another leap of 10 million.

The airport had 208,000 take - off and landing flights and a cargo and mail throughput of 189,000 tons, with year - on - year growth of 8.1% and 12.5% respectively. The number of inbound and outbound passengers at Changsha Port reached 1 million, a 130% increase year - on - year. The rapid development of Huanghua Airport has not only strengthened the economic and cultural exchanges between Hunan and other regions at home and abroad but also injected strong impetus into the regional economic development.

#### **3.1.1 Development history of airports**

In June 1986, Changsha Huanghua International Airport started construction amidst anticipation, opening a new chapter in Hunan's aviation industry. On August 29, 1989, Huanghua Airport was opened. The runway was 2,200 meters long, the terminal building covered an area of 22,000 square meters, and it had the capacity to handle 1.6 million passengers annually. A route network connecting major domestic cities such as Beijing, Shanghai, and Guangzhou was initially established, making it an important air passage for Hunan's external exchanges.( Logistics and Port Office of the Municipal Government 2024)

After its completion, the development pace of Huanghua International Airport did not stop. In 1993, it was expanded for the first time. The runway was extended to 3,200 meters, enabling it to accommodate large passenger aircraft. The airport facilities were improved, and the level of

security and services was significantly enhanced. In 2000, a new international terminal building was constructed, greatly enhancing the airport's capacity to receive international passengers and further expanding its international routes. In 2011, Terminal T2 and its supporting facilities were put into use. The 134,000-square-meter terminal building could meet the annual passenger throughput of 18 million passengers. Huanghua Airport entered a new stage of development, and its route network continued to extend to regions such as Southeast Asia, Northeast Asia, Europe, and the United States, becoming one of the important aviation hubs in the central region. From 2017 to 2019, indicators such as passenger throughput, cargo and mail throughput, and flight takeoff and landing quotas increased, demonstrating a strong development momentum.

In 2021, the construction of Terminal T3 of Huanghua International Airport began. It is planned to meet the demand of an annual passenger throughput of 40 million passengers. At the same time, the construction of supporting facilities for the comprehensive transportation hub is steadily advancing. In the future, seamless connections between aviation and various transportation modes such as high-speed railways, subways, and maglev trains will be realized, further enhancing the airport's radiation and driving role, and injecting new and powerful impetus into the economic development and opening up of Hunan and even the central region.

### **3.1.2 Operation scale and route network**

As an important aviation gateway of Hunan Province, Changsha Huanghua International Airport has been continuously expanding its operation scale and route network, playing an important role in the regional air transportation field. In terms of operation scale, as of January 2023, the airport has two terminal buildings. Terminal T1 covers an area of 53,600 square meters, and Terminal T2 covers an area of 213,000 square meters, which can meet the annual passenger throughput demand of 35 million people. In 2023, the passenger throughput of Changsha Huanghua International Airport reached 27.2483 million person-times, ranking 14th in the country. The mail throughput was 176,800 tons, ranking 21st in the country. The Terminal T3 under construction is expected to be put into use in 2026. At that time, the airport's passenger throughput will reach 60 million person-times, and the number of parking aprons will increase to 154, which can greatly improve the airport's carrying capacity and meet the growing demand for air travel.

## **3.2 Survey on the Current Status of Service Quality**

### **3.2.1 Survey design**

Through the questionnaire survey, we can understand the shortcomings of the passenger services at Changsha Huanghua International Airport and the existing resources. This survey investigates passenger satisfaction based on six aspects: safety, tangibility, reliability, responsiveness, assurance, and empathy. The subjects of the questionnaire survey are 100 passengers (including those on flights and arriving passengers) who have experienced the services of Changsha Huanghua International Airport and were randomly selected. Subsequently, the data are summarized and sorted out.

The survey takes the form of a questionnaire: the respondents fill in the questionnaire by themselves. For some of the questions in the content part, a 5-level Likert scale is adopted, namely: very satisfied, relatively satisfied, average, relatively dissatisfied, and very dissatisfied, which are used to equivalently evaluate the service quality. The questionnaire can be found in the appendix.

### **3.2.2 Reliability and validity analysis**

Finally, through questionnaire collection, it was shown in the backend data of Wenjuanxing that a total of 100 valid questionnaires were collected, including 2 invalid questionnaires (not included in data analysis, removed). The following is an analysis of the reliability and validity of the questionnaire to ensure its authenticity and reliability.

(1) Reliability analysis is used to measure whether the sample's answer results are reliable, that is, whether the sample has actually answered scale items; Reliability analysis is only applicable to quantitative data. If the Cronbach's alpha coefficient (Cronbach's alpha) is above 0.8, the reliability of the test or scale is very good; Reliability coefficients above 0.7 are acceptable; If it is above 0.6, the scale should be revised without losing its value; If it is below 0.6, the scale needs to be redesigned with new items. It can be seen from the data that the reliability of the questionnaire is met, and the Yangben data is reliable.

Figure 3-1 Reliability Analysis Table (generated by exporting data from Questionnaire Star SPSS software)

Sample size	Item	Cronbach. $\alpha$
100	23	0.869

KMO test and Bartlett's sphericity test are two important statistical tests before factor analysis, used to evaluate whether data is suitable for factor analysis. KMO test: measures the commonality between variables, with a value range of 0 to 1. It is generally believed that a KMO value greater than 0.9 is very suitable for factor analysis; 0.8-0.9: Suitable for factor analysis; 0.7-0.8: acceptable; Below 0.6: Not suitable for factor analysis.

It can be seen that the KMO of the questionnaire meets the standards, reflecting that the data in this study is very suitable for extracting data, and also indirectly reflecting that the questionnaire data has good validity.

Figure 3-2 Validity analysis table (generated by exporting data from Wenjuanxing SPSS software)

KMO	0.841	-
Bart sphericity value	987.454	-
df	253.000	-

### 3.2.3 Questionnaire collection

#### (1) Social platform selection criteria

Rednote and Weibo are widely influential social platforms in China. Rednote is mainly targeted at young users who tend to share their life experiences, consumer reviews, and other content, providing rich sensory cognition and detailed descriptions; Weibo, on the other hand, has the characteristics of fast dissemination, strong interactivity, and diverse user groups, making it suitable for quickly spreading research information and triggering extensive discussions. The user groups of both cover travelers of different ages, professions, and consumption levels, which helps to obtain comprehensive and representative samples.

#### (2) Rednote

1. Content Release: Create multiple topic tags related to the service experience of Changsha Huanghua International Airport on Rednote, such as #Service Evaluation of Changsha Huanghua

International Airport#, #Travel Guide for Huanghua International Airport#, etc., and publish research notes with both pictures and texts. The content of the notes should introduce the research purpose, the way to fill out the questionnaire, and the participation rewards in detail. Match them with real-scene pictures of the airport and simple and easy-to-understand guiding diagrams for filling out the questionnaire to enhance the attractiveness.

2. Interactive Promotion: Actively reply to the messages left by users in the comment section of the notes, answer their questions, and guide them to participate in filling out the questionnaire.

Proactively search for user notes related to Changsha Huanghua International Airport, and send interactive invitations in the comment section to expand the coverage of the research.

3. Data Collection and Follow-up: Through the built-in link jump function of the Rednote platform, direct users to professional questionnaire collection platforms such as Questionnaire Star.

Regularly check the data of the filled-out questionnaires, and conduct private message follow-ups for questionnaires that are incompletely filled out or have doubts to supplement and perfect the information.

### (3) Weibo platform

1. Topic creation and operation: Create a # Changsha Huanghua Airport Service Experience Survey # topic, post it on the top research Weibo, and explain in detail the background, purpose, and participation methods of the survey. Add vivid and interesting descriptions to Weibo copywriting to attract users' attention.

2. Under the topic of Changsha Huanghua Airport, identify the target audience and invite them to participate in the survey through private messages and comments.

3. Data management: Through the Weibo backend data statistics function, real-time understanding of the dissemination effect and participation of the questionnaire can be achieved. Timely organize and classify the collected questionnaire data to ensure its accuracy and completeness.

### **3.2.4 Analysis of survey results**

According to the survey results, a total of 100 questionnaires were surveyed and collected. Among them, 47 were from male respondents, accounting for 47% of the total number of respondents, and 53 were from female respondents, accounting for 53% of the total number of respondents. The gender ratio is basically even (see Figure 3-3). Among them, there are 4 minors under the age of 18, 58 respondents are aged between 18 and 30, 15 respondents are aged between 31 and 50, 8

respondents are aged between 51 and 70, and 15 respondents are over 70 years old. From the ages of the respondents, it can be concluded that the surveyed population is mostly young and middle-aged groups (see Figure 3-4). Moreover, from the results, it can be seen that the group with the largest proportion of education among the surveyed population has a bachelor's degree, followed by those with an education level below senior high school/vocational secondary school, and there are 13 respondents with a master's degree or above (see Figure 3-5).

Regarding the survey of Changsha Huanghua International Airport, it shows that most of the surveyed travelers take flights due to travel needs. 20% of them do so for work requirements, and the remaining 36% do it to visit relatives and friends. The survey on the number of air travelers in the past few years has found that after the COVID-19 pandemic, the domestic aviation industry is gradually recovering, and with the revival of the tourism industry, more people choose to travel. And according to the results, it can be seen that the group that travels by air once or more times a year is the largest, and most people will take flights to travel more or less within a year.

Figure 3-3



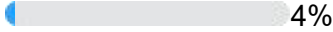
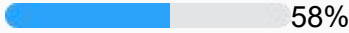
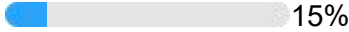
Option	Subtotal	Proportion
Male	47	 47%
Female	53	 53%
Number of valid respondents for this question	100	

Figure 3-4

Option	Subtotal	Proportion
Under 18 years old	4	 4%
18-30 years old	58	 58%
31-50 years old	15	 15%

51-70 years old	8	8%
Over 70 years old	15	15%
Number of valid respondents for this question	100	

Figure 3-5

Option	Subtotal	Proportion
High school/vocational school or below	17	17%
Junior college	11	11%
Undergraduate	59	59%
Master degree or above	13	13%
High school/vocational school or below	100	

### (1) Facility Services

This aspect includes questions 8, 10, 16, and 17. The questionnaire data shows that the average score for this section is 4.00 (rounded to two decimal places); Regarding airport hardware facilities such as self-service check-in, hand carts, and restrooms, the satisfaction level is moderate.

Figures 6-9 are detailed satisfaction diagrams.

Figure 3-6

### Question 8: Simple self-service check-in operation

The average score for this question: 3.96

Option	Subtotal	Proportion
Satisfied	28	28%
Basically satisfied	47	47%
General	19	19%

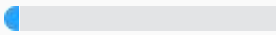

Not satisfied	5	 5%
Dissatisfied	1	 1%
Number of valid respondents for this question	100	

Figure 3-7

Question 10: Convenient and Adequate Handcart Luggage Retrieval

The average score for this question: 4.02


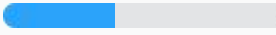
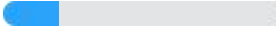
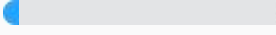
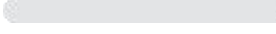
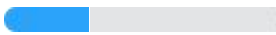
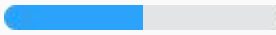
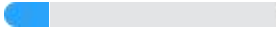
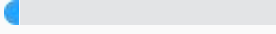
Option	Subtotal	Proportion
Satisfied	34	 34%
Basically satisfied	40	 40%
General	20	 20%
Not satisfied	6	 6%
Dissatisfied	0	 0%
Number of valid respondents for this question	100	

Figure 3-8

Question 16: Adequate and Convenient Toilets

The average score for this question: 4.04

Option	Subtotal	Proportion
Satisfied	30	 30%
Basically satisfied	49	 49%
General	16	 16%
Not satisfied	5	 5%

Dissatisfied	0	0%
Number of valid respondents for this question	100	

Figure 3-9

Question 17: Cleaning situation of the bathroom

The average score for this question: 3.99

Option	Subtotal	Proportion
Satisfied	31	31%
Basically satisfied	46	46%
General	16	16%
Not satisfied	5	5%
Dissatisfied	2	2%
Number of valid respondents for this question	100	

## (2) Catering and Shopping

This aspect includes question 18. The questionnaire data shows that the score for this section is 4.00 (rounded to two decimal places); Regarding the satisfaction survey on reasonable airport catering and shopping fees, it can be seen from the figure that 26 people are not very satisfied or dissatisfied, accounting for 26%, which is slightly higher. This area needs further reform and optimization by the airport. Figure 10 is a detailed satisfaction situation diagram.

Figure 3-10

Question 18: Reasonable Fees for Catering and Shopping

The average score for this question: 3.26

Option	Subtotal	Proportion
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Satisfied	18	18%
Basically satisfied	22	22%
General	34	34%
Not satisfied	20	20%
Dissatisfied	6	6%
Number of valid respondents for this question	100	

### (3) Security check efficiency and process

This aspect includes questions 7, 11, 12, 15, 19, and 22. The questionnaire data shows that the average score for this section is 3.84 (rounded to two decimal places); Regarding security checks and airport efficiency issues, the score for this section is less than 4 points, indicating certain issues. Figure 100-120 shows a detailed satisfaction chart.

Figure 3-11

#### Question 7: Airport check-in is convenient and fast

The average score for this question: 3.83

Option	Subtotal	Proportion
Satisfied	14	14%
Basically satisfied	63	63%
General	17	17%
Not satisfied	4	4%
Dissatisfied	2	2%
Number of valid respondents for this question	100	

Figure 3-12

Question 11: Passing speed of security check

The average score for this question: 3.94

Option	Subtotal	Proportion
Satisfied	24	24%
Basically satisfied	51	51%
General	20	20%
Not satisfied	5	5%
Dissatisfied	0	0%
Number of valid respondents for this question	100	

Figure 3-13

Question 12: Comprehensive and serious security check

The average score for this question: 4.16

Option	Subtotal	Proportion
Satisfied	40	40%
Basically satisfied	43	43%
General	11	11%
Not satisfied	5	5%
Dissatisfied	1	1%
Number of valid respondents for this question	100	

Figure 3-14

Question 15: Walking distance of the terminal building

The average score for this question: 3.67

Option	Subtotal	Proportion
Satisfied	26	26%
Basically satisfied	32	32%
General	29	29%
Not satisfied	9	9%
Dissatisfied	4	4%
Number of valid respondents for this question	100	

Figure 3-15

Question 19: Convenient and Easy Transfer

The average score for this question: 3.75

Option	Subtotal	Proportion
Satisfied	20	20%
Basically satisfied	46	46%
General	24	24%
Not satisfied	9	9%
Dissatisfied	1	1%
Number of valid respondents for this question	100	

Figure 3-16

Question 22: Luggage retrieval speed

The average score for this question: 3.68

Option	Subtotal	Proportion
Satisfied	21	21%
Basically satisfied	38	38%
General	29	29%
Not satisfied	12	12%
Dissatisfied	0	0%
Number of valid respondents for this question	100	

(4) Service

This aspect includes questions 9, 13, 14, 20, 21, 23, and 24. The questionnaire data shows that the average score for this section is 4.00 (rounded to two decimal places); Regarding the issue of airport services, the questionnaire design mainly focuses on the service attitude of the airport. Figures 17-23 are detailed satisfaction diagrams.

Figure 3-17

Question 9 Check in staff service attitude

The average score for this question: 4.3

Option	Subtotal	Proportion
Satisfied	51	51%
Basically satisfied	37	37%
General	5	5%
Not satisfied	5	5%

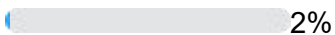
Dissatisfied	2	 2%
Number of valid respondents for this question	100	

Figure 3-18

Question 13: Service attitude of security personnel

The average score for this question: 3.99

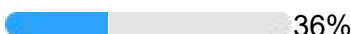
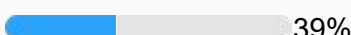
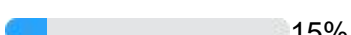
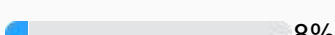
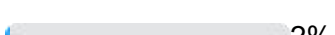
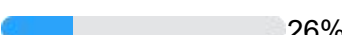
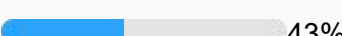
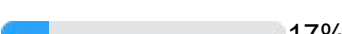
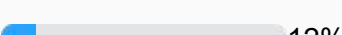

Option	Subtotal	Proportion
Satisfied	36	 36%
Basically satisfied	39	 39%
General	15	 15%
Not satisfied	8	 8%
Dissatisfied	2	 2%
Number of valid respondents for this question	100	

Figure 3-19

Question 14: Separate luggage opening service

The average score for this question: 3.79

Option	Subtotal	Proportion
Satisfied	26	 26%
Basically satisfied	43	 43%
General	17	 17%
Not satisfied	12	 12%
Dissatisfied	2	 2%

Number of valid respondents for this question	100	
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Figure 3-20

Question 20: Satisfaction with service measures after flight delay

The average score for this question: 3.84

Option	Subtotal	Proportion
Satisfied	24	24%
Basically satisfied	48	48%
General	18	18%
Not satisfied	8	8%
Dissatisfied	2	2%
Number of valid respondents for this question	100	

Figure 3-21

Question 21: Luggage retrieval guidance

The average score for this question: 4.16

Option	Subtotal	Proportion
Satisfied	34	34%
Basically satisfied	53	53%
General	9	9%
Not satisfied	3	3%
Dissatisfied	1	1%
Number of valid respondents for this question	100	

question		
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Figure 3-22

Question 23: Integrity of luggage

The average score for this question: 4

Option	Subtotal	Proportion
Satisfied	30	30%
Basically satisfied	50	50%
General	13	13%
Not satisfied	4	4%
Dissatisfied	3	3%
Number of valid respondents for this question	100	

Figure 3-23

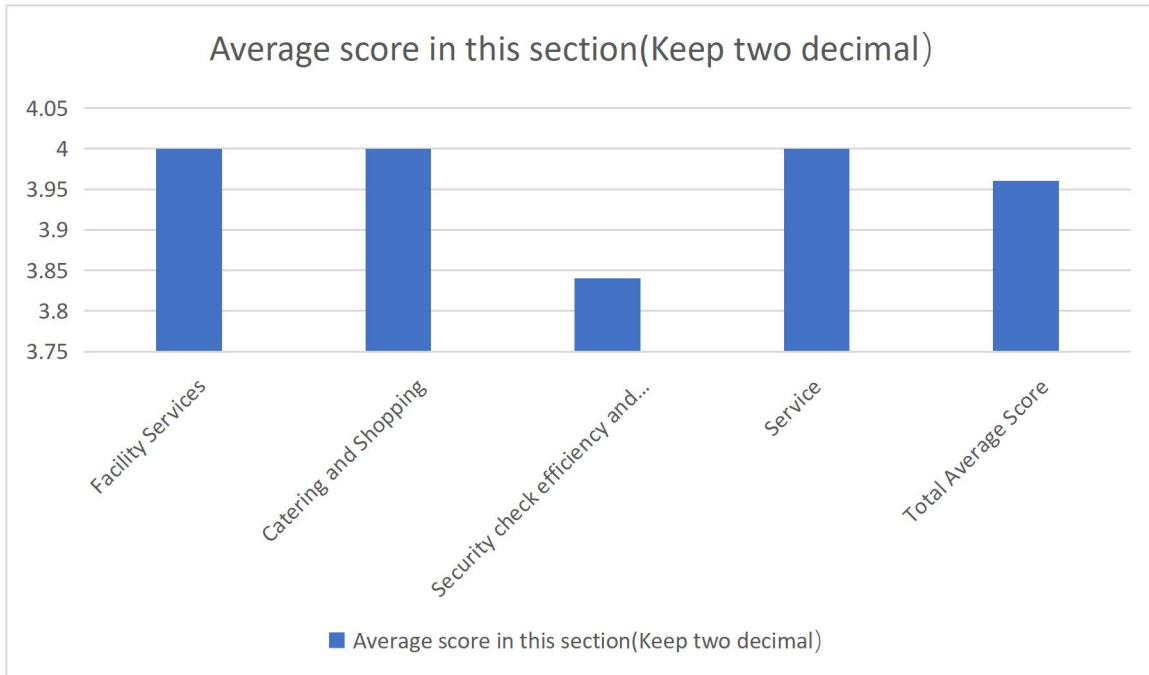
Question 24 Complaint Handling

The average score for this question: 3.89

Option	Subtotal	Proportion
Satisfied	31	31%
Basically satisfied	41	41%
General	17	17%
Not satisfied	8	8%
Dissatisfied	3	3%
Number of valid respondents for this question	100	

In summary, when comparing the scores of the four parts, it can be seen that the passenger satisfaction experience is relatively average, with the lowest scores for security check efficiency and process, as shown in Figure 24.

Figure 3-24



## **4 Analysis of Problems and Reasons for Passenger Service Quality at Changsha HH Airport**

### **4.1 There are problems**

As an important transportation hub in Hunan Province, Changsha HH Airport has made certain progress in improving service quality in recent years, but there are still some prominent problems. Through a survey questionnaire, the main focus is on the following aspects:

#### **4.1.1 Shortage of waiting facilities and service resources**

With the rapid growth of passenger flow (In 2025, Changsha Airport handled 3.584 million passenger trips and ensured 24,564 takeoffs and landings, representing a year-on-year increase of 4.2% and 0.6% respectively compared with the same period of the Spring Festival travel rush in 2024. [16]), a huge number of people gather within a short period, revealing some problems. At present, the existing terminal buildings (T1 and T2) of Changsha HH Airport can no longer meet the demand in terms of their designed capacities. There is a shortage of seats in the waiting hall, a lack of charging facilities, and long queues for the restrooms are common. Especially during peak hours (such as from 6:00 to 7:30 in the morning and from 19:00 to 21:00 in the evening), passengers have a poor experience. In addition, the catering area is small in size, and some catering merchants are forced to cut down on their service items due to space limitations, further intensifying the contradiction between supply and demand.

#### **4.1.2 Service quality and pain points of passenger experience**

##### **(1) Inflated catering prices and limited choices**

Despite the airport's implementation of the "same price as in the city" policy, in May 2024, there were still passenger complaints. A bowl of beef noodles cost 45 yuan and a steamed egg cost 32 yuan, which was three times the price in the urban area. The market supervision department responded that it was a market behavior, but the high price phenomenon reflected problems in the cooperation model between the airport and the merchants. For example, the high rent for merchants has led to the pricing power tilting towards the merchants, and the lack of competition (such as limited catering choices after security check) has further weakened the ability to regulate prices.

##### **(2) Insufficient security inspection efficiency and process optimization**

The overly long queue time for security inspection is a frequently complained-about issue by

passengers. The security inspection guide in October 2024 suggested that passengers arrive 2 hours in advance. After the security inspection level was upgraded in 2015, the queue time during peak hours once exceeded 40 minutes. In addition, the security inspection process design is not humanized enough. For example, the standards for liquid inspection are not clear, and the signs for special passenger channels are not clear, etc., resulting in passengers having to go back and forth repeatedly.

### (3) Inadequate implementation of services for special passengers

Although the airport has promised to provide "door-to-door" services for unaccompanied children, the elderly, and the disabled, there are loopholes in the actual implementation. A Douyin video in March 2025 showed that some passengers were not familiar with the reservation process, and the response speed of service personnel varied. For example, some passengers reported that the guidance for the love channel was not clear, increasing the risk of missing the flight.

## **4.1.3 Root cause analysis of the problem**

### (1) Insufficient investment in hardware facilities

The renovation and expansion projects of Changsha HH Airport have already started, but the current infrastructure is still operating under overload. Data in October 2024 showed that the airport had cumulatively completed an investment of 21.84 billion yuan, accounting for only 50.8% of the total investment. The construction period is relatively long, and passengers have been facing aging facilities and crowded spaces for a long time.

### (2) Imperfect service management mechanism

There is a phenomenon of "emphasizing commitment but neglecting implementation" in the airport's service quality management system. For example, among the 42 service commitments announced in 2021, the goal that the check-in time for 95% of domestic flights should not exceed 10 minutes was not fully achieved. In addition, the internal supervision mechanism is weak. There is a lack of quantitative indicators for customer and third-party service evaluations, and the improvement of problems lags behind.

### (3) Insufficient personnel training and motivation

The quality of service personnel varies. Some staff members have a blunt service attitude and insufficient professional capabilities. For example, the summary report in 2023 pointed out that

most of the airport service personnel used the Hunan dialect, which affected communication with passengers from other places. At the same time, the employee incentive mechanism is single, and there is a lack of differentiated assessment, resulting in a lack of motivation for service innovation.

#### (4) Airport catering optimization

The problem of high airport catering prices can be optimized from multiple dimensions: by introducing more catering brands of different grades and flavors, regularly adjusting investment policies to increase market competition, and encouraging businesses to set reasonable prices; In terms of cost control, encourage businesses to optimize supply chain management, plan store layout reasonably, and reduce food procurement and rental costs; In terms of regulation, the airport management department collaborates with the price department to establish price guidance standards and establish a supervision mechanism to punish violations of price increases; In addition, merchants can adopt intelligent devices, optimize service processes, improve operational efficiency, reduce labor costs, and increase table turnover, thereby creating space for price optimization.

## **4.2 Problem improvement strategy**

The service problems of Changsha HH Airport are caused by a combination of hardware deficiencies and management bottlenecks. In response to this, targeted improvement measures are proposed: First, accelerate the upgrading of infrastructure. Prioritize the construction of Terminal T3 and the comprehensive transportation center, and simultaneously optimize the layout of existing facilities, such as increasing the number of seats in the waiting area, expanding the catering area, upgrading charging facilities, etc. to relieve the pressure during peak periods. Second, strengthen the supervision of service quality. Establish a dynamic assessment mechanism for merchants, incorporate the rationality of prices and service satisfaction into the contract terms, eliminate illegal merchants. At the same time, introduce third-party evaluation agencies, regularly release service quality reports, and accept social supervision.

In addition, the service process and personnel training will also be optimized. Simplify the security inspection process, promote intelligent services such as "one ID for passage" and "self-service baggage check-in", strengthen the language training of employees and the assessment of

emergency handling capabilities, and establish a mechanism for selecting service stars. Improve the accuracy of services for special passengers, perfect the reservation system, provide multi-channel reservation services, predict needs through big data, and allocate resources in advance. Strengthen information transparency and emergency response, upgrade the flight information push system, establish a rapid emergency mechanism, and clarify the delay handling process. It is expected that after the renovation and expansion project of the airport is completed in 2026, the service quality will achieve a leapfrog improvement, and the airport will become an aviation hub that is "first-class in central China and leading in the country".

## **5 Experience reference for improving airport service quality at home and abroad**

### **5.1 Excellent Airport Cases at Home and Abroad**

#### **5.1.1 Beijing Daxing International Airport**

Beijing Daxing International Airport has numerous advantages. It is one of the largest airports in the world and boasts the world's largest single airport terminal building in terms of area. With a spacious interior, it can accommodate a large number of passengers. Its design is scientific and reasonable. Thanks to the "five-finger corridor" design, the distance from the departure level to the farthest boarding gate is only 600 meters, and it only takes passengers 8 minutes to walk there.

As the world's first airport with a double-layer departure and arrival system and a high-speed railway running underneath, it integrates six rail lines, including high-speed railways, subways, and intercity railways, achieving "zero transfer" of transportation. High-tech applications are widely used at the airport, enabling paperless travel throughout the whole process, boarding with facial recognition, and there are also intelligent passenger security inspection systems, full-process baggage tracking systems, etc. These not only facilitate passengers but also improve operational efficiency.

In addition, it serves as a comprehensive transportation hub in the Beijing-Tianjin-Hebei region. The transportation system of "five vertical and two horizontal" covers Beijing, Tianjin, and Hebei, making it extremely convenient for passengers to reach the airport. Its route network is constantly being densified. Passenger airlines operate more than 220 routes, reaching over 200 domestic and international destinations, and connecting nearly 30 countries in Europe and Asia.

At the same time, all business formats at the airport offer the same quality and price as those in the city. The catering stores have open kitchens, and there are also characteristic services such as "Xingxiansong" (advance delivery), providing passengers with a rich variety of consumption choices and considerate services.

With these many advantages, Daxing Airport has won the Best Airport Award of the Airports Council International (ACI) for five consecutive years. It is the most convenient, cleanest, most pleasant airport, and has the most dedicated employees in the Asia-Pacific region. (Baidu 2025)

### **5.1.2 Chongqing Jiangbei International Airport**

Chongqing Jiangbei International Airport has remarkable advantages. Located in Chongqing, the only municipality directly under the central government in China's central and western regions, it serves as the connection point between the Belt and Road Initiative and the Yangtze River Economic Belt. The site selection is excellent, with a large population and economic scale within a 1.5-hour coverage area. The high-speed transportation system is composed of the East Loop Line of Chongqing Railway Hub, Chongqing Metro, Baotou-Maoming Expressway, Chongqing Bypass Expressway, etc., making the transportation very convenient.

The airport has complete facilities. There are three terminal buildings, namely T1, T2, and T3, with a total area of over 700,000 square meters. Among them, the building area of Terminal T3 is 538,000 square meters, which can meet the demand of handling 30 million passengers annually. There are three runways, with lengths of 3,200 meters, 3,600 meters, and 3,800 meters respectively, which can meet the demand of 373,000 aircraft takeoffs and landings per year. The civil aviation apron has a total of 180 aircraft parking positions, including 92 jet bridge positions, which can accommodate a large number of aircraft simultaneously.

The route network is rich. In terms of domestic routes, in 2023, flights to Beijing, Shanghai, Guangzhou, and Shenzhen were consolidated and added in the form of high-speed routes. The Chongqing-Fujian Express Route and the Chongqing-Shandong Express Route were constructed, and a large transfer passage of "from Xinjiang to Tibet and then to Yunnan" was established. The daily flights to Tibet, Xinjiang, and Yunnan reached 15, 15, and 25 respectively. In terms of international routes, there are actually more than 25 flights in operation and 130 flights per week. A main international route network to major cities in regions such as North America, Europe, Australia, the Middle East, Japan, South Korea, and Southeast Asia has been basically established. It enjoys national strategic support and various policy supports, which contribute to its rapid development. (Baidu 2025)

### **5.1.3 Narita International Airport**

Narita International Airport in Tokyo has obvious advantages. It is Japan's largest 4F-class international airport, located about 60 kilometers west of central Tokyo. It is the main international airport in Tokyo and also the Asian hub port for many airlines.

The airport has a well-developed route network. 106 airlines have opened 121 international/regional routes, connecting 118 cities in 41 countries and 3 regions. Domestic routes can reach 22 cities within Japan, making it convenient for passengers to travel to many cities around the world.

In terms of facilities and services, the airport has 3 terminal buildings with a total area of over 900,000 square meters. There are 171 aircraft parking positions, and two runways with lengths of 4,000 meters and 2,500 meters respectively, which can meet the needs of a large number of flight takeoffs, landings, and passenger waiting. Each terminal building is equipped with a variety of facilities such as duty-free shops, restaurants, lounges, prayer rooms, and children's play areas. Thoughtful services including foreign currency exchange, luggage storage, mobile phone rental, and Wi-Fi rental are also provided. In July 2021, a "face-scanning" boarding system was introduced, which improved travel efficiency.

Its transportation connections are equally excellent. As the main international airport in the Tokyo area, it is connected to the world and serves as an important hub for long-distance travel. Passengers can take trains such as the Narita Express and reach Tokyo Station directly within 1 hour, or take the Keisei Electric Railway Skyliner to Ueno Station. There are also many high-speed buses and limousines, making it convenient to travel to Tokyo and surrounding areas.

In addition, Narita International Airport performs outstandingly in terms of customs clearance efficiency. Advanced automated gate processes and other procedures have greatly shortened the waiting time for passengers upon arrival, enabling them to quickly start their journey in Japan.(BaiDu 2025)

## **6 Conclusion and Prospect**

### **6.1 Research Conclusion and Prospect**

This article mainly focuses on how to improve the passenger service quality, drawing on existing management theories and experiences both at home and abroad. Firstly, it analyzes the internal and external environments of Changsha HH Airport, adopting the SWOT analysis method and PEST analysis method. According to the corresponding needs, a questionnaire on the passenger service quality experience feedback of Changsha HH Airport is designed, and the respondents fill in the questionnaire by themselves. Some of the questions in the content part adopt the 5-level Likert scale. On this basis, it explores the deficiencies in the passenger service quality of Changsha HH Airport, which are manifested in the existing problems of the airport in aspects such as service processes, facilities and equipment, and personnel services. Subsequently, corresponding strategies are put forward from the aspects of hardware, service, and personnel.

Changsha HH Airport has always been committed to providing high-quality and satisfactory services to passengers. The discussion and research in this article can provide some practical suggestions for Changsha HH Airport and play a certain role in improving its service quality. Shuangliu Airport has developed rapidly in recent years and its scale has been continuously expanding. It is also constantly exploring and improving on how to occupy market share and a favorable position in the competition within the same industry. It is hoped that in future work processes, the management system and processes can be further improved to build a first-class advanced airport in China.

There are still many deficiencies in this article: Firstly, the research is not in-depth enough. Secondly, in terms of the analysis of the questionnaire survey, there is a lack of research in statistics, and the data processing is relatively rough. It is hoped to provide a reference for the establishment of Terminal T3 in the future. In the future, Changsha HH Airport will be guided by passenger needs, improve the service system, build a first-class modern aviation hub in China with international competitiveness, and contribute to the economic and social development and opening up of Hunan.

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# Appendices

## Appendix 1.

### Questionnaire on Passenger Service Quality of Changsha HH Airport

Dear Passenger,

Hello! Thank you very much for choosing the travel services of Changsha HH Airport. In order to provide you with a more high-quality and considerate travel experience, we have carefully designed this questionnaire. We sincerely invite you to spend 3 minutes of your precious time filling it out. The questionnaire covers aspects such as service experience and service satisfaction. Every one of your answers is of great importance and will serve as a crucial basis for us to improve and enhance our services.

All questions in the questionnaire have no right or wrong answers. Your answers will only be used for statistical analysis and service optimization. We will strictly keep them confidential and will not disclose any of your personal information. Thank you again for your support and cooperation. Have a pleasant journey!

#### Part 1: Personal Information

1. Your gender: [Single - choice question] \*
  - Male
  - Female
2. Your age: [Single - choice question] \*
  - Under 18 years old
  - 18 - 30 years old
  - 31 - 50 years old
  - 51 - 70 years old
  - Over 70 years old
3. Your highest educational attainment: [Single - choice question] \*
  - Below high school/secondary vocational school
  - Junior college
  - Undergraduate
  - Master's degree and above
4. Type of flight you took: [Single - choice question] \*
  - International
  - Domestic

5. The purpose of your trip: [Multiple - choice question] \*
- Business trip
  - Travel and vacation
  - Visiting relatives and friends
6. Flight frequency in the past year: [Single - choice question] \*
- Once or more times a week
  - Once or more times a month
  - Once or more times a year
  - Other \_\_\_\_\_

## Part 2: Evaluation of Airport Service Satisfaction

7. Convenience and speed of airport check - in: [Single - choice question] \*
- Very satisfied
  - Satisfied
  - Average
  - Not very satisfied
  - Very dissatisfied
8. Simplicity of self - check - in operation: [Single - choice question] \*
- Satisfied
  - Basically satisfied
  - Average
  - Not very satisfied
  - Dissatisfied
9. Service attitude of check - in staff: [Single - choice question] \*
- Satisfied
  - Basically satisfied
  - Average
  - Not very satisfied
  - Dissatisfied
10. Ease of access to luggage carts and their sufficiency: [Single - choice question] \*
- Satisfied
  - Basically satisfied
  - Average
  - Not very satisfied
  - Dissatisfied
11. Speed of passing through security check: [Single - choice question] \*
- Satisfied
  - Basically satisfied
  - Average
  - Not very satisfied
  - Dissatisfied
12. Thoroughness and conscientiousness of security check: [Single - choice question] \*
- Satisfied
  - Basically satisfied
  - Average
  - Not very satisfied
  - Dissatisfied

13. Service attitude of security check staff: [Single - choice question] \*
- Satisfied  Basically satisfied  Average
  - Not very satisfied  Dissatisfied
14. Baggage inspection service: [Single - choice question] \*
- Satisfied  Basically satisfied  Average
  - Not very satisfied  Dissatisfied
15. Walking distance in the terminal: [Single - choice question] \*
- Satisfied  Basically satisfied  Average
  - Not very satisfied  Dissatisfied
16. Sufficiency and convenience of restrooms: [Single - choice question] \*
- Satisfied  Basically satisfied  Average
  - Not very satisfied  Dissatisfied
17. Cleanliness of restrooms: [Single - choice question] \*
- Satisfied  Basically satisfied  Average
  - Not very satisfied  Dissatisfied
18. Reasonableness of catering and shopping prices: [Single - choice question] \*
- Satisfied  Basically satisfied  Average
  - Not very satisfied  Dissatisfied
19. Ease of making connections: [Single - choice question] \*
- Satisfied  Basically satisfied  Average
  - Not very satisfied  Dissatisfied
20. Satisfaction with service measures after flight delays: [Single - choice question] \*
- Satisfied  Basically satisfied  Average
  - Not very satisfied  Dissatisfied
21. Baggage claim guidance: [Single - choice question] \*
- Satisfied  Basically satisfied  Average
  - Not very satisfied  Dissatisfied

22. Speed of retrieving luggage: [Single - choice question] \*

- Satisfied  Basically satisfied  Average
- Not very satisfied  Dissatisfied

23. Integrity of luggage: [Single - choice question] \*

- Satisfied  Basically satisfied  Average
- Not very satisfied  Dissatisfied

24. Complaint handling: [Single - choice question] \*

- Satisfied  Basically satisfied  Average
- Not very satisfied  Dissatisfied

25. Do you have any other suggestions or comments for us? [Fill - in - the - blank question] \*