

Research on the Differentiated Service Quality Evaluation of Chinese Domestic Airlines

Jiangnan Chen¹ Dan Wu²

^{1,2} *School of Economics and Management, North China University of Technology, Beijing 100144, China*

¹ *Corresponding author.*

ABSTRACT

Conducting differentiated service quality evaluation for Chinese domestic airlines is of great significance for improving the level of differentiated service quality of domestic airlines. Therefore, this study adopts the SERVQUAL model, selects 22 indicators from 5 dimensions of reliability, responsiveness, tangibility, empathy, and assurance, and constructs a differentiated service quality evaluation system for Chinese domestic airlines. Researchers take China Southern Airlines as the research object, design a survey questionnaire and distribute it, and through the analysis of passenger expected service needs and the evaluation of differentiated service quality of China Southern Airlines, the key factors affecting the differentiated service quality of China Southern Airlines are identified, and countermeasures and suggestions for improving the differentiated service quality of China Southern Airlines are proposed. Research shows that the differentiated services provided by China Southern Airlines basically meet the expected service needs of passengers. However, there are problems with China Southern Airlines' differentiated services, such as insufficient promotion of aviation service information, incomplete feedback and response mechanisms for passengers, low service efficiency, and inability to timely grasp passengers' differentiated preferences. Therefore, researchers propose to improve the differentiated service quality of China Southern Airlines from five aspects, such as using Internet technology to understand passenger preferences, building a service problem remediation system, designing service products and processes oriented towards passengers, establishing a differentiated service quality assessment system for China Southern Airlines, and correctly guiding passengers, so as to improve the quality of air transportation experience services.

Keywords: *Airlines, Differentiated services, Service quality, Evaluation, SERVQUAL model.*

1. INTRODUCTION

With the upgrading of people's consumption, for passengers, airplanes are no longer just a means of transportation, but also a travel choice that carries humanistic care, leisure and entertainment, and cultural experience. With the introduction of the "Regulations on the Management of Public Air Transport Passenger Services" and "'The 14th Five-Year Plan' for the Development of Civil Aviation", airlines have begun to attempt differentiated service reform. The differentiated services provided by Chinese domestic airlines mainly include the establishment of onboard entertainment platforms, personalized meals, special care for special passengers, waiting experience, personalized services provided by high-quality service personnel, and linkage with travel platforms or individual travel products.

2. LITERATURE REVIEW

Differentiated services refer to personalized services and price choices provided to meet the different needs of customers, emphasizing the research and segmentation of target markets in product development and implementation, and striving to provide multiple service products to meet the personalized needs of different target customer groups, which is a market segmentation marketing strategy in the differentiation strategy of enterprise competition. [1] The core of differentiated services is to determine the needs of each target customer group and customize services according to their needs, thereby creating higher value for customers and striving for more profitable choices for enterprises. The research on differentiated services mainly explores the

importance, influencing factors, practical application effects, innovative methods, and practical cases of differentiated services, covering various industries such as the steel industry, real estate industry, and air transportation industry. Among them, the air transportation industry is a typical industry that provides differentiated services to passengers.

The differentiated services of airlines are designed to meet the needs of passengers who "have their own views", and to maximize the satisfaction of passengers' expectations. The main differentiated services of current airlines are mainly reflected in brand freight services, namely "displacement services+X", where X represents additional services. According to the definition of the Airline Tariff Publishing Company (ATPCO), "If an airline packages its ticket prices with various optional services such as refunds, mileage accumulation, pre-selected seats, luggage, and meals, it is what we call brand freight." [2] IdeaWorks pointed out in its report on the revenue from additional services provided by airlines: "Additional services are directly sold by airlines to passengers, or indirectly sold to passengers as part of the travel experience, and are income other than airline tickets." [3] The most important service provided by airlines is displacement service, and in addition to this, the services provided by air transportation can be referred to as "additional services". These include onboard meals, multi-class cabins, customized onboard services, and more. The "displacement+X" mode actually allows passengers to "pay as needed" and hand over the choice of services to passengers.

Air travel itself is an experience, but different types of passengers have different needs, which require personalized and differentiated services that are "people-oriented", which is very important for air services. The study of differentiated services for airlines began in the 1980s, when its application in the air transportation industry was relatively limited. Airlines mainly used pricing and route network optimization to gain competitive advantages, and few companies paid attention to differentiated services. By the 1990s, theoretical research on differentiated services for airlines gradually deepened. Scholars such as Dub  l found through empirical research that differentiated services for airlines had a significant positive impact on customer loyalty and corporate performance. [4] In the early 21st century, with the intensification of globalization and market competition, airlines began to adopt more innovative differentiated

service methods, and research shifted towards specific airline practices of differentiated services. For example, Kong Fansheng conducted research on the differentiated competitive strategies of China Southern Airlines. [5] Jiang Ruirui conducted a study on the differentiated service competition of Shenzhen Airlines. [6] At the same time, some scholars have conducted comprehensive research on differentiated services. For example, Liu Bei summarized the implementation methods and successful cases of differentiated services in Chinese airlines through investigations and case studies. [7]

According to the literature review, it can be seen that the research on differentiated services of airlines is generally in a relatively broad state, and the focus of differentiated services of airlines lies in the pricing of service products and the service products themselves. The pricing of service products is related to the number and level of "X" services involved in brand freight, such as whether to provide onboard meals, differences in checked baggage share, and differences in cabin class, all of which can cause differences in prices, as well as the service products themselves, that is, whether the services provided by airlines can meet the personalized needs of passengers. Scholars tend to focus more on the overall competitive strategy of airlines, treating differentiated services as a small branch and lacking a comprehensive differentiated service quality evaluation system. Therefore, it is urgent to establish a differentiated service quality evaluation system for airlines. In this paper, researchers construct a differentiated service quality evaluation system for airlines and conduct research on China Southern Airlines.

3. DIFFERENTIATED SERVICE QUALITY EVALUATION SYSTEM OF CHINESE DOMESTIC AIRLINES

The quality of airline service is determined by the experience of passengers, so the evaluation of airline service quality should be centered on "passengers". The SERVQUAL model is an effective way to investigate passenger satisfaction.

3.1 Evaluation Method

The SERVQUAL model is a model for consumers to perceive service quality, which divides services into five evaluation dimensions, namely reliability, responsiveness, tangibility,

empathy, and assurance, forming the SERVQUAL scale, as shown in "Table 1".

Table 1. Dimensions of service quality evaluation

Evaluation dimensions	Content
Reliability	Can the enterprise fulfill its commitment to the products or services purchased by consumers
Responsiveness	Can the enterprise timely understand changes in consumer demand and respond accordingly
Tangibility	Can the enterprise provide the corresponding level of completeness of service facilities and standardization of service personnel
Empathy	Can the enterprise prioritize consumer interests and meet their inner needs
Assurance	Can the professional abilities of the service personnel of the enterprise ensure the high-quality implementation of services

This model is actually a comprehensive comparative evaluation by customers based on their expected service quality and the actual service quality they enjoy, as shown in "Figure 1".

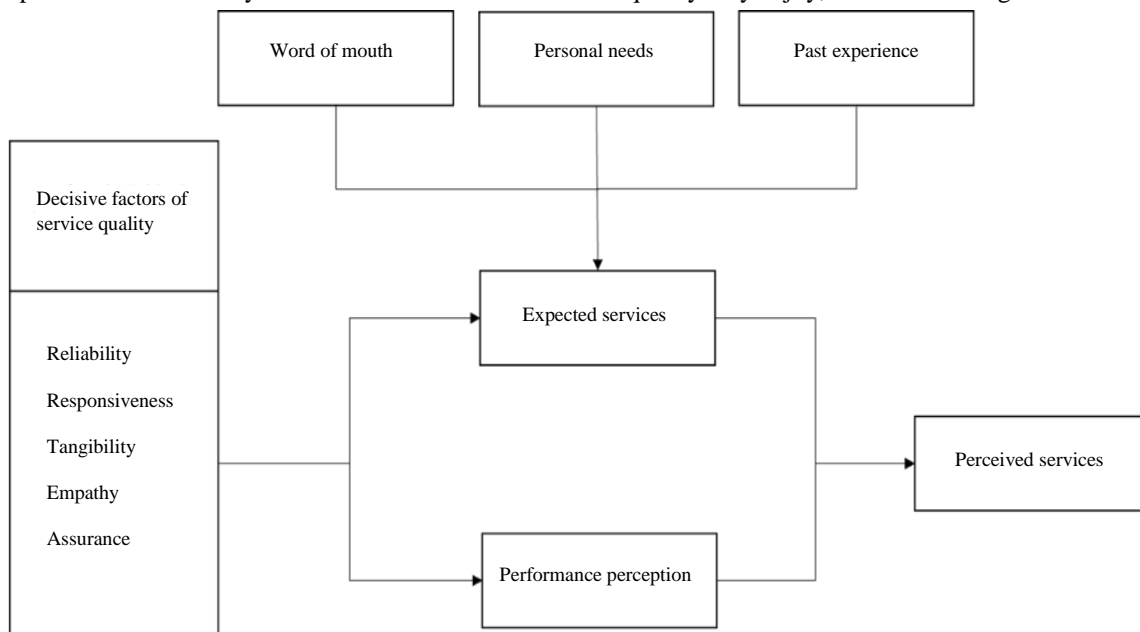


Figure 1 Schematic diagram of SERVQUAL model.

In terms of measuring the differentiated service quality of airlines, the SERVQUAL model is more in line with research needs. First, the SERVQUAL model can help companies better understand the real needs and opinions of consumers. Second, the SERVQUAL model analyzes the reasons for the service quality gap from two aspects: expectations and performance, which has enlightening significance for subsequent adjustments and improvements in service methods and resource allocation.

3.2 Construction of SERVQUAL Evaluation System

The core purpose of constructing the SERVQUAL evaluation system is to understand the real service needs of airline passengers and evaluate the quality of differentiated services provided by airlines. The main basis for constructing a differentiated service quality evaluation system for airlines is, firstly, the basic indicators for airlines to implement differentiated services. In the process of catering to passengers' consumption preferences and implementing differentiated services, airlines can't ignore some of the most basic service

elements of air transportation services, including on-time takeoff and landing, ensuring flight safety, timely informing flight information, and not delaying passengers' travel due to airlines' own reasons. The second is the service quality evaluation indicators related to differentiated services provided by airlines. The differentiated services of airlines are mainly manifested in the abilities of service personnel, cabin environment

experience, differentiated information protection, richness of onboard entertainment services, and variety of meals. The third is that airlines have formed competitive advantages in booking, employee clothing, aircraft decoration, and passenger feedback services.

Finally, an indicator system is formed based on five evaluation dimensions, as shown in "Table 2".

Table 2. Evaluation indicators of SERVQUAL scale

Indicators	Evaluation item
Reliability	A1 Flights take off and land on time
	A2 Flight safety
	A3 Can provide accurate flight dynamic information
	A4 Can record the service process
	A5 Don't have any delay in travel due to the airline's own reasons
	A6 Can ensure the privacy of passengers' travel and protect their privacy
Responsiveness	B1 Efficient and convenient ticket purchase and reservation process
	B2 Actively provide feedback to passengers' inquiries
	B3 Promptly announce the reasons for flight schedule adjustments and arrange customer itineraries in a timely and appropriate manner
	B4 Passengers can provide feedback and suggestions to the airline through different channels and receive timely responses for handling
	B5 Airlines will actively take measures to compensate for previous service faults/errors
Tangibility	C1 Cabin equipment and utensils are clean and the environment is comfortable
	C2 The cabin layout is diverse and can meet the travel needs of passengers in different states
	C3 Service personnel dress appropriately and have certain airline characteristics
	C4 Airlines' airframe is clean, with beautiful and personalized painting
Empathy	D1 Airline service personnel are able to provide special attention to customers' personal needs and situations
	D2 Airlines can prioritize the interests of different passengers in different situations
	D3 Airlines can provide rich and personalized air entertainment activities
	D4 Airlines can provide rich, diverse, and delicious meals
Assurance	E1 Service personnel are friendly, polite, and trustworthy
	E2 Service personnel have excellent professional skills and literacy
	E3 The service efficiency of service personnel

4. OBJECT OF STUDY AND QUESTIONNAIRE DESIGN

Due to understand the real service needs of passengers, it is necessary to construct an index system according to the SERVQUAL model and design the corresponding questionnaire, and then evaluate the service quality of airlines.

4.1 Object of Study

As one of the three major airlines in China, China Southern Airlines has always been committed to providing customers with high-quality services. In 2017 and 2020, China Southern Airlines was awarded the National "User Satisfaction Benchmark" Enterprise by the China Association for Quality twice, and the "Top 100 Brand" at the 2019 Chinese Brand Power Ceremony of the China Media Group. In 2021, China Southern Airlines ranked 7th in Brand

Finance's "The 50 Most Valuable Airlines in the World" and won SKYTRAX's "Best Airline in China" award in 2022. China Southern Airlines has been actively promoting differentiated, diversified, and personalized services, continuously improving service quality and competitiveness. However, as competition becomes increasingly fierce, China Southern Airlines is also facing higher customer demands and higher service requirements.

The most typical differentiated service provided by airlines is the differentiated brand freight products, namely "displacement services+X", where "X" represents various additional services. This paper focuses on the demand for differentiated services in terms of passenger experience in the air transportation service process, that is, "X" includes additional services related to passenger emotions and experiences and doesn't involve the study of differentiated product pricing. The differentiated service measures of China Southern Airlines are shown in "Table 3".

Table 3. Differentiated service measures of China Southern Airlines

Serial number	Differentiated service measures
1	Cooperating with bookstores, passengers can go to the airport bookstore to read while waiting, and can use China Southern Airlines' points to exchange books
2	The service concept of "thinking before passengers, doing before being asked by passengers"
3	The service quality of onboard personnel is relatively high and they can provide differentiated services according to the different service needs of passengers
4	Differentiated fleet structure provides passengers with different cabin environment experiences
5	Different information protection technologies are used to strictly protect passenger information security based on the different booking equipment used by passengers
6	Onboard entertainment facilities will provide diverse leisure facilities due to differences in structures and aircraft types
7	In terms of food, it provides selected food with corresponding regional characteristics, such as "Air Cellar" and "Air Tea Garden", and also offer options for booking meals for passengers with special needs

a Source: China Southern Airlines official website, Civil Aviation Resource Net

4.2 Questionnaire Design

Based on the indicators in "Table 2", researchers design a survey questionnaire on passenger demand and evaluation of differentiated service quality of China Southern Airlines. The questionnaire mainly involves three parts: Firstly, researchers investigate the basic information of passengers and determine that the sample is passengers from China Southern Airlines. Secondly, using the Likert scale, the sample passengers evaluate the degree of expectation of 22 secondary indicators. The score range is 1-7 points, with

different scores corresponding to different levels. 7 points represent the most important and 1 point represents the least important. Thirdly, researchers ask the sample passengers to conduct an experience evaluation of the actual situation of China Southern Airlines' services, and the indicators are the same as the evaluation of degree of expectation, with a score range of 1-7 points.

The samples selected for this questionnaire are all passengers with air travel needs. Researchers distribute and collect the questionnaire through online questionnaires. A total of 300 questionnaires are collected this time, and after excluding

unmatched samples and questionnaires that don't meet the filling requirements, a total of 260 valid questionnaires are collected.

4.3 Questionnaire Reliability and Validity Test

The reliability and validity of the collected questionnaires need to be tested to determine the validity and reliability of the questionnaire data results before specific analysis is carried out.

4.3.1 Reliability Test

In order to ensure the reliability and validity of the survey results, researchers use SPSS data

analysis software to conduct reliability and validity analysis of the survey data. The essence of reliability analysis is to analyze the accuracy of survey results, mainly through the Cronbach's α to observe, which is usually in the range of 0-1. The larger the value, the higher the reliability of the questionnaire. When the value is less than 0.6, it indicates that there are problems with the questionnaire survey. If the value is greater than 0.8, it indicates that the reliability of the questionnaire is very good. Overall, the Cronbach's α is 0.975, which is greater than 0.8, indicating that the questionnaire has high credibility, as shown in "Table 4".

Table 4. Reliability test

Dimension	Question number	Alphaif Item Delete	Cronbach's α
Reliability	A1	0.896	0.905
	A2	0.895	
	A3	0.894	
	A4	0.896	
	A5	0.895	
	A6	0.893	
Responsiveness	B1	0.876	0.892
	B2	0.878	
	B3	0.877	
	B4	0.878	
	B5	0.877	
Tangibility	C1	0.818	0.850
	C2	0.820	
	C3	0.821	
	C4	0.827	
Empathy	D1	0.795	0.827
	D2	0.793	
	D3	0.799	
	D4	0.791	
Assurance	E1	0.756	0.812
	E2	0.755	
	E3	0.755	

Researchers use SPSS to conduct reliability analysis on five dimensions of China Southern Airlines' service quality evaluation indicators, and the final structure is shown in "Table 4". The values of Cronbach's α of the five dimensions of quality evaluation system also exceed 0.8, proving that the constructed evaluation indicator system has good scientificity, rationality, and feasibility.

4.3.2 Validity Test

Validity is used to measure the effectiveness and accuracy of a questionnaire. The higher the

validity of the questionnaire, the more it can demonstrate that the data can truly reflect the actual situation, ensuring the effectiveness of the survey results. Researchers conduct KMO and Bartlett tests on the questionnaire, and the higher the KMO value obtained, the higher its validity. As shown in "Table 5", the final statistical result KMO value is 0.964, and the significance of Bartlett's sphericity test Sig is less than 0.05, indicating that the structural validity of this questionnaire is high, which meets the standard requirements, and the survey is effective.

Table 5. Validity test

KMO measure of sampling adequacy		0.964
Bartlett sphericity test	Approximate chi-square	21667.079
	Degree of freedom	946
	Significance	.000

5. EMPIRICAL RESEARCH

On the basis of determining the reliability of the questionnaire data, this paper conducts an empirical study on the service quality of China Southern Airlines, including clarifying the real demand of passengers for air services and evaluating and analyzing the service quality of China Southern Airlines in five dimensions.

5.1 Analysis of the Expected Service Needs of China Southern Airlines Passengers

The sample passengers have the highest demand for service reliability, which includes content related to safety and flight schedules. The second is the responsiveness and empathy of services, both of which are highly related to the passenger experience during the air travel process. Furthermore, it is the assurance of service, which is actually the requirement of passengers for service personnel, as service personnel run through the entire process of passenger service. Among the five dimensions, passengers have the lowest demand for tangibility, as shown in "Table 6".

Table 6. Average expected service scores of passengers in the five dimensions

Dimension	Reliability	Responsiveness	Tangibility	Empathy	Assurance
Average expected scores	6.21	6.12	5.90	6.12	6.13
Ranking	1	2	5	2	4

According to "Table 6", the expected service importance score of passengers is shown in "Figure 2".

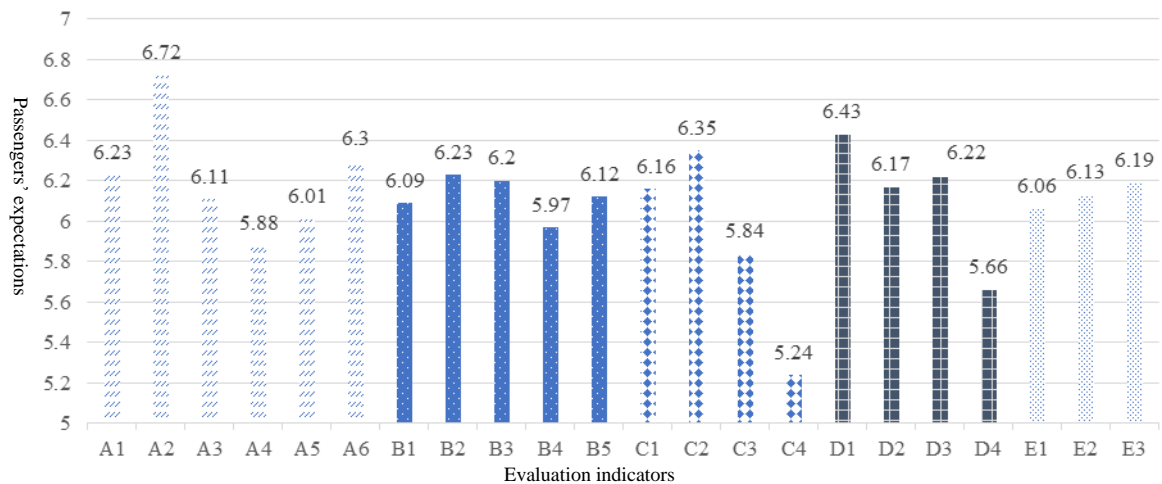


Figure 2 Passengers' expected service importance score.

From the perspective of reliability, passengers have the highest expectations for A2, i.e., the flight safety, that is, almost all passengers attach great importance to safety. The higher scores for A1 and A3 are due to the fact that the main reason most passengers choose air travel is that fast speed can save time. If the flight is not on time or the information is unclear, it is not conducive to passengers arranging their own itinerary. Passengers have relatively low scores for the A5 evaluation indicator. In fact, when there are no issues such as lost items or service personnel errors during the service process, passengers are not very concerned about whether the service process is recorded.

From the perspective of responsiveness, the overall importance score of this part is relatively high. The evaluation indicators above 6 points are firmly linked to the transportation service process: B1 emphasizes the pre-service process, B2 is reflected in the entire transportation service process, and B3 and B5 are the remedial processes for the service. The scores of B4 by passengers reflect a relatively low demand for diversified feedback channels, which may be due to the current direct and convenient passenger inquiry channels. On the other hand, some passengers don't like to spend time and energy giving feedback without substantial losses.

From the perspective of tangibility, passengers have high requirements for the hygiene and comfort of the cabin on board, and the diverse functional requirements of the cabin are essentially higher demands for the service experience during the flight. Overall, passengers don't have high requirements

for personnel clothing and aircraft appearance during the service process.

From the perspective of empathy, in addition to the necessary safety needs, passengers have the highest scores for D1, which means that passengers place great importance on the airline's ability to provide targeted and personalized services to their specific circumstances. The score of D3 is 6.22, indicating passengers' high demands for leisure and entertainment activities on board. Relatively speaking, due to the fact that some airlines require additional fees for onboard meals, some passengers gradually believe that providing meals by airlines is already a good service and their requirements for meals are relatively low.

From the perspective of assurance, these indicators are all related to service personnel, and there is not a significant difference in passenger score for this, all of which remain above 6 points. Overall, the requirements of passengers for service personnel are relatively high. From the scores, it can be seen that the importance ranking of the sample passengers' requirements for service personnel is: efficiency, profession, and manners and literacy. This is because most air passengers value time, and they have a higher demand for service efficiency. Moreover, passengers are more concerned about whether their own problems can be effectively solved, so they have higher requirements for the professional literacy of service personnel themselves.

In summary, in terms of air travel experience, passengers have high expectations for flight punctuality, necessary service processes, onboard experience, and the attitude of service personnel.

These expected service demands are essentially the actual service demands of sample passengers for air travel. From this, it can be told that passengers have a high demand for the entire process of air travel experience.

5.2 Analysis of Differentiated Service Quality Evaluation Results of China Southern Airlines

All in all, the overall score of the sample passengers on the performance perception of China Southern Airlines' services is 5.84 points, which is 0.26 points lower than the expected service score, indicating that the differentiated services provided by China Southern Airlines basically meet the expected service needs of passengers, but there is still a certain gap, as shown in "Table 7".

Table 7. Summary of SERVQUAL's five dimension scores

Item	Reliability	Responsiveness	Tangibility	Empathy	Assurance	Comprehensive
Expected services	6.21	6.12	5.90	6.12	6.13	6.10
Performance perception	5.99	5.82	5.89	5.56	5.93	5.84
Gap	0.22	0.30	0.01	0.57	0.2	0.26

5.2.1 Reliability Evaluation

From the evaluation results, passengers have the highest expected service demand for reliability,

with an average score of 6.21. However, there is still a certain gap in the actual performance perception of passengers in China Southern Airlines, as shown in "Table 8".

Table 8. Reliability evaluation of China Southern Airlines' differentiated services by passengers

Question number	Secondary indicators	Expected services	Performance perception	Gap
A1	Flights take off and land on time	6.23	5.98	0.25
A2	Flight safety	6.72	6.36	0.36
A3	Can provide accurate flight dynamic information	6.11	6.08	0.03
A4	Can record the service process	5.88	5.63	0.25
A5	Don't have any delay in travel due to the airline's own reasons	6.01	5.91	0.1
A6	Can ensure the privacy of passengers' travel and protect their privacy	6.3	6	0.3
Average score		6.21	5.99	0.22

Specifically, there is a significant gap in passengers' scores of China Southern Airlines' flight safety and punctuality. However, as of 2022, China Southern Airlines' continuous safe flight time has reached 2.78 million hours. The significant gap in passenger scores may be due to passengers' unclear understanding of safety issues during the flight process. From the perspective of A5 indicator, China Southern Airlines has fewer cases of flight problems due to its own reasons. However, like

other airlines, China Southern Airlines inevitably experiences flight delays or cancellations due to weather and other reasons. In terms of service process recording and passenger information protection, passengers' scores to some extent indicate that China Southern Airlines may not be able to detect some issues and may not do well in protecting information.

5.2.2 Responsiveness Evaluation

From the evaluation results, it can be seen that apart from the small gap between booking expectations and performance services, other issues

that arise during the process of providing services to passengers, such as flight delay handling, feedback channels, and service remedial measures, still need to be adjusted and improved, as shown in "Table 9".

Table 9. Responsiveness evaluation of China Southern Airlines' differentiated services by passengers

Question number	Secondary indicators	Expected services	Performance perception	Gap
B1	Efficient and convenient ticket purchase and reservation process	6.09	6	0.09
B2	Actively provide feedback to passengers' inquiries	6.23	5.82	0.41
B3	Promptly announce the reasons for flight schedule adjustments and arrange customer itineraries in a timely and appropriate manner	6.2	5.87	0.33
B4	Passengers can provide feedback and suggestions to the airline through different channels and receive timely responses for handling	5.97	5.67	0.3
B5	Airlines will actively take measures to compensate for previous service faults/errors	6.12	5.75	0.37
Average score		6.12	5.82	0.30

Specifically, there is a significant gap in the scores of enthusiasm and accuracy in handling passenger issues, as the current passenger issues are diverse, dynamic, and complex. China Southern Airlines has a score difference of 0.37 in terms of remedial measures for service faults and errors, indicating that the effectiveness of the remedial measures it has taken is poor. At the same time, there is a significant gap in the scores for timely response and handling of passenger feedback. Therefore, it is necessary to improve the promotion process of service remedial measures and strengthen the construction of feedback channels to

better understand the problems that exist in the service process.

5.2.3 Tangibility Evaluation

From the evaluation results, it can be seen that in terms of the tangibility of the services provided by China Southern Airlines, passengers have a relatively high overall evaluation, and their expectations and demands for this part are relatively low, with a small score gap. This indicates that China Southern Airlines has basically met the needs of passengers in this regard, as shown in "Table 10".

Table 10. Tangibility evaluation of China Southern Airlines' differentiated services by passengers

Question number	Secondary indicators	Expected services	Performance perception	Gap
C1	Cabin equipment and utensils are clean and the environment is comfortable	6.16	6	0.16
C2	The cabin layout is diverse and can meet the travel needs of passengers in different states	6.35	6.07	0.28
C3	Service personnel dress appropriately and have certain airline characteristics	5.84	6.1	-0.26
C4	Airlines' airframe is clean, with beautiful and personalized painting	5.24	5.37	-0.13
Average score		5.90	5.89	0.01

Specifically, passengers' evaluations of employee clothing and the aesthetics of the aircraft have exceeded their expectations. There are still issues with the hygiene and comfort of the cabin, as it is a public place with a large passenger volume

and may have some negligence. This requires China Southern Airlines to strengthen the management of the cabin in the subsequent maintenance process. At the same time, there is a relatively large gap in passengers' expectations and

perceived evaluations of the diversity of cabin layout. China Southern Airlines needs to understand the characteristics of the customer group and make differentiated improvements in the cabin based on leg space and seat comfort.

5.2.4 Empathy Evaluation

According to passengers' evaluation of China Southern Airlines' differentiated services in terms of empathy, their performance perception score is

Table 11. Empathy evaluation of China Southern Airlines' differentiated services by passengers

Question number	Secondary indicators	Expected services	Performance perception	Gap
D1	Airline service personnel are able to provide special attention to customers' personal needs and situations	6.43	5.75	0.68
D2	Airlines can prioritize the interests of different passengers in different situations	6.17	5.71	0.46
D3	Airlines can provide rich and personalized air entertainment activities	6.22	5.49	0.73
D4	Airlines can provide rich, diverse, and delicious meals	5.66	5.27	0.39
Average score		6.12	5.56	0.57

Specifically, there is the highest score gap in the provision of China Southern Airlines' air entertainment activities, as people are now paying more attention to the experience of the journey process, and air entertainment activities are one of the main services provided by China Southern Airlines to passengers on board, and they are also an important manifestation of China Southern Airlines' differentiated service competition soft power from the perspective of experience economy. However, in this regard, what China Southern

Table 12. Assurance evaluation of China Southern Airlines' differentiated services by passengers

Question number	Secondary indicators	Expected services	Performance perception	Gap
E1	Service personnel are friendly, polite, and trustworthy	6.06	5.98	0.08
E2	Service personnel have excellent professional skills and literacy	6.13	6	0.13
E3	The service efficiency of service personnel	6.19	5.8	0.39
Average score		6.13	5.93	0.20

Specifically, the service attitude and professional literacy of the service personnel of China Southern Airlines are relatively good, which can better meet the service expectations of passengers. However, in terms of service efficiency,

only 5.56 points. However, passengers have high expectations for this part of the service, so the score difference is significant, reaching 0.57 points. This indicates that China Southern Airlines' overall level of empathy services is relatively low compared to other dimensions, and it is necessary for China Southern Airlines to more effectively segment passengers, pay attention to the needs of different passengers, provide differentiated and personalized services, and make significant improvements in the above four aspects, as shown in "Table 11".

Airlines has done has not yet met the expectations of passengers, and further exploration of passenger preferences and innovative service content is needed.

5.2.5 Assurance Evaluation

According to passengers' evaluation of the differentiated service assurance of China Southern Airlines, the overall gap is not too large, as shown in "Table 12".

passengers have high expectations, but the perceived score is only 5.93, with a gap of 0.39 points. This to some extent indicates that the service efficiency of China Southern Airlines' service personnel needs to be further improved. In

situations where the quality of employees at China Southern Airlines is relatively high, it is necessary to pay more attention to whether it is caused by the service personnel themselves or by problems in the service process itself that lead to certain issues in service efficiency.

6. CONCLUSION

By constructing a differentiated service quality evaluation system for Chinese airlines and conducting research on China Southern Airlines, this study conducts a differentiated service quality evaluation analysis for China Southern Airlines. The research conclusions indicate that currently, among the five dimensions of service quality, China Southern Airlines is doing the best in terms of tangibility, but has great potential for development and optimization in terms of empathy and responsiveness. China Southern Airlines needs to take targeted measures to address specific issues in various service dimensions. For services that have already met or exceeded passenger expectations, resource investment can be reduced, and China Southern Airlines' resources can be more fully applied to aspects with significant gaps in passenger expectations, in order to improve the overall differentiated service quality of China Southern Airlines. The main problems with China Southern Airlines' differentiated services are: There are insufficient science popularization and promotion of aviation service information; the feedback and response mechanism of passengers is not perfect, and there is a lack of differentiated remediation awareness for service errors; the service efficiency needs to be improved; China Southern Airlines is unable to timely grasp passengers' differentiated and personalized preferences; on board entertainment and dining services are not sufficient to meet the needs of passengers.

To this end, researchers propose five countermeasures and suggestions. First, China Southern Airlines should follow the general trend of "Internet plus aviation" and use Internet technology to understand passenger preferences. Under the condition of ensuring the safety of passenger information, China Southern Airlines can collect passenger data through official website, WeChat official account and other channels, use big data analysis technology to analyze and mine the collected data, integrate and count the needs and preferences of passengers, discover the rules and trends of passenger behavior, and provide targeted

services for China Southern Airlines. Second, China Southern Airlines needs to build a service problem remediation system. It can select a professional service remediation team to address potential issues and resolve them. Third, China Southern Airlines should be passenger-oriented to design service products and processes. It should consider the needs of passengers from multiple perspectives as much as possible to design service products and processes, in order to achieve passengers' differentiated travel experience needs. Fourth, China Southern Airlines needs to establish a differentiated service quality evaluation system. It needs to establish a service quality evaluation indicator system, introduce advanced operational management systems and employee performance evaluation mechanisms. Fifth, it is necessary for China Southern Airlines to correctly guide passengers to improve the quality of air transportation experience services. The service personnel of China Southern Airlines should actively and correctly guide passengers, while conveying air transportation knowledge to them. As passengers' awareness of aviation services increases, they can better choose suitable travel experience products.

ACKNOWLEDGMENTS

Fund projects: Supported By the Beijing Urban Governance Research Base of North China University of Technology (2023CSZL01); North China University of Technology National-level Project Supporting Special Project (110051360023XN217).

REFERENCES

- [1] Zhang Junjie. Analysis on the Application of 4Vs Marketing Strategy Combination in Accounting Firms [J]. *The Chinese Certified Public Accountant*, 2012, (2): 95-98. (in Chinese)
- [2] Lu Meihua. Optimization Research on the Flight Space Control Considering Passenger Transfer Behavior [D]. Nanjing: Nanjing University of Aeronautics and Astronautics, 2019. (in Chinese)
- [3] Liu Jingjing. A study on the impact of additional services provided by airlines on passenger ticket buying behavior [D]. Tianjin: Civil Aviation University of China, 2020. (in Chinese)

- [4] Dubé Renagha. Creating Value in the Airline Industry: Customer Satisfaction, Loyalty, and Financial Performance [J]. *Journal of Business Research*, 2000, 47(2): 115-125.
- [5] Kong Fansheng. Research on Service Differentiation of Southern Airlines [D]. Chongqing: Southwest Jiaotong University, 2007. (in Chinese)
- [6] Jiang Ruirui. Research on Differentiated Competition Strategy of Shenzhen Airlines [D]. Shanghai: Fudan University, 2009. (in Chinese)
- [7] Liu Bei, Meng Jun, etc. Research on Differentiated Services of Chinese Airlines [J]. *Tourism Science*, 2014, 28 (1): 48-55. (in Chinese)