Research on Service Quality Gap of Tourist Attractions Based on Grounded Theory: A Case Study of Nanjing Underwater World

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Abstract

Tourism is an activity where travelers seek profound experiences, and the quality of tourism services is a key indicator for evaluating tourist attractions. Based on the Grounded Theory, this paper selects online review text data and employs a three-level coding process to categorize and analyze the negative online comments of Nanjing Underwater World. The analysis includes four main categories: tourism price, management services, facility environment, and tourism experience. The study reveals that the service quality gap at Nanjing Underwater World mainly concentrates in the domains of tourism pricing and tourism experience. Consequently, this paper proposes corresponding strategies and recommendations to address these issues, offering insightful suggestions for the future development of Nanjing Underwater World.

Keywords

Nanjing Underwater World; Grounded Theory; Service quality.

1. INTRODUCTION

With the continuous development of China's economy and the improvement of people's material living standards, there are increasing expectations and demands for the tourism industry (Zhang Dongdong et al., 2021). In addition to traditional natural tourism resources, theme parks have gradually emerged in China, garnering attention and importance from many tourists. Theme parks serve as a valuable complement to our country's tourism industry, directly propelling economic growth, and holding significant implications for satisfying the ever-growing material and cultural needs of people, as well as ensuring the sustainability of our economy.

As modern tourist destinations, ocean theme parks meet the desires and demands of inland residents to experience, understand, and connect with the ocean. These kind of parks attract a considerable number of citizens and tourists annually, and their growth has been rapid in recent years. According to the "2019-2025 China Ocean Theme Park Industry Market Trends and Investment Strategy Consultation Report" published by Wisdom Research & Consulting, the attendance at ocean theme parks in China has grown from 31 million visitors in 2010 to 81.09 million visitors in 2018. A survey by the Co-Research Institute shows that by 2023, the number of ocean theme parks in China has risen to 82, covering over 20 provinces, municipalities, and autonomous regions, and has expanded significantly in scale. As the primary spatial carriers of modern marine leisure tourism, ocean theme parks' role has become increasingly crucial.

In recent years, with the widespread use of internet technology and the rise of third-party review websites and online travel operators, travelers can search for tourist attractions online and often utilize online communities as platforms to share evaluations of the service quality of these attractions after their trip (Jin Siyang, 2020). In the context of big data, service quality, as

one of the significant indicators to evaluate the connotation, scale, brand, and visibility of tourist attractions, is particularly crucial for attractions (Yuan Ling, 2022). High-quality service can exponentially enhance the value of tourist attractions, while poor service quality can lead to negative evaluations. Negative word-of-mouth, as a form of tourist perception, can influence potential travelers' behavioral intentions toward these attractions (Nusair K et al., 2017).

Hence, analyzing online review texts and exploring the factors influencing the service quality gap in ocean theme parks is of paramount significance for enhancing the market competitiveness of these attractions. Against this backdrop, this paper, utilizing negative online comments from the Ctrip travel website, focuses on Nanjing Underwater World as the research subject. By employing the Grounded Theory, it analyzes negative online comments of the tourist attraction to uncover existing issues in the tourism service quality and proposes concrete strategies, thereby offering valuable recommendations for the future development of Nanjing Underwater World.

2. THEORETICAL BACKGROUND

The Grounded Theory is a qualitative research method that entails the development of substantive theories from the bottom-up (Glaser B G, 1968). As one of the most influential paradigms in contemporary social science research and a leading methodology in the "qualitative research revolution", Grounded Theory has gained extensive application in the field of sociology (Jia Xudong & Heng Liang, 2020) and has also found widespread use in tourism research (Miao Xueling & Xie Jia, 2021). This research paradigm emphasizes a "discovery logic" rather than a "verification logic". It operates without preconceived theoretical hypotheses, focusing on a particular research question and specific phenomena. By systematically organizing a vast collection of relevant primary data through layered induction, it constructs theory from the ground up, refining a theoretical framework grounded in real-world phenomena and data. This methodology consists of three main stages: data collection and analysis, data coding process (open coding - axial coding - selective coding), and theory generation and verification (Holton J A, 2007). It has been widely adopted in various research fields including education, sociology, and communication studies (Chen Xiangmin, 2015; Wu Suyan & Li Mingyun, 2020; Hu Yu & Lu Honglei, 2020).

Currently, the application of Grounded Theory extends to tourism management research. For instance, researchers like Zhao Sihan et al. (2021) utilized Grounded Theory to explore process factors that influence the enjoyable experience in tourism by analyzing online travelogues, and thereby construct a process model for evaluating visitor enjoyment. Cai Yonglong et al. (2018), focused on four major ecological scenic areas in Guangzhou, employ visitor comments as their foundation and combine Grounded Theory to identify factors influencing visitor satisfaction in ecological tourist destinations. Wen Jiemin & She Yin (2023) applied Grounded Theory and IPA analysis to study the experiential process of tourists in coastal tourism destinations and the associated influencing factors.

This paper will be grounded in the Grounded Theory, utilizing negative online comments about Nanjing Underwater World from the Ctrip website as its primary research material. Through this approach, it aims to analyze the service quality gap in tourist attractions.

3. METHODOLOGY

3.1. Description of selected sample case

Nanjing Underwater World is situated beside the picturesque Meihua Mountain of Nanjing City. It was collaboratively constructed by Singaporean investments and the management bureau of Zhongshan Mausoleum in late 1995, and was officially opened to the public in

December 1996. Covering an area of 32,000 square meters with a built-up area of approximately 16,000 square meters, this attraction stands as a large-scale ocean theme park that integrates popular science education, observation, and entertainment. Within the premises, more than 200 species of marine life are featured, including a diverse array of precious jellyfish species, over 10,000 marine fish, six Emperor Penguins from Antarctica, more than 20 temperate penguins, as well as over 30 marine mammals like polar bears, Arctic foxes, dolphins, and sea lions. Notably, the Dolphin Pavilion spans 1,500 square meters, accommodating nearly a thousand seats, making it a renowned marine-themed theater in the East China region.

Furthermore, Nanjing Underwater World boasts an acrylic tunnel spanning 74 meters in length, 3 meters in width, and 2.4 meters in height, constructed with 180-degree transparent glass. With a water capacity of over 4,000 tons, the tunnel is home to over a hundred marine fish species, offering visitors the immersive experience of strolling beneath the sea while beholding captivating underwater vistas. The facility is renowned for interactive and distinctive services such as Underwater Strolls, children frolicking with dolphins, underwater weddings, and the opportunity for visitors to take photos and interact with mermaids, dolphins, and sea lions. There's also the unique chance to personally feed sea dogs, seals, and polar bears.

This study selects Nanjing Underwater World as its research subject mainly because it represents one of China's earlier-established traditional ocean theme park attractions, boasting a considerable history of operation and a well-established tourism development foundation. Thus, the service quality issues currently faced by Nanjing Underwater World hold a certain degree of representativeness within this category of attractions.

3.2. Data Collection

This article first uses utilized the Baidu search engine to search for "Nanjing Underwater World", and then proceeded to collect tourist reviews about Nanjing Underwater World from well-known travel websites such as Mafengwo, Dianping, Tongcheng Tourism, and Ctrip, among others. The results revealed that Ctrip had the largest number of tourist reviews related to Nanjing Underwater World, with a total of 7,149 reviews. Therefore, in this study, a total of 367 negative online comments from Ctrip, spanning from June 2020 to July 2023, were selected as research samples. In order to ensure the quality of the research sample, preliminary screening was conducted: firstly, texts that were clearly intended for word counting and advertising promotion were excluded; Secondly, eliminate photos, emoticons, and irregular characters; Thirdly, corrections have been made to typos and online language, such as changing "the scenic area is very stall" to "the scenic area is very small", and changing "rabbit service" to "rubbish service". After organizing and modifying the research sample, a total of 356 comments were obtained.

3.3. Open Coding

The process of applying grounded theory to data analysis requires conceptualizing the collected data at the beginning. I have obtained tourist comments through repeated reading, without any personal tendencies or research hypotheses. Encode and label the negative comments of the original tourists' word by word, sentence by sentence, and merge some comments with similar meanings and logic to obtain 32 open decoding results. Due to space limitations, the article only selects representative original tourist reviews for each level of coding, as shown in Table 1.

Table 1. The Example of Open Coding

Original negative evaluation	Initial conceptualization
Ticket prices are too high; 175yuan per ticket! Expensive! Very expensive.	Ticket prices are expensive
Low cost-effectiveness; Not worthy; Really low cost-effectiveness.	Low cost-effectiveness
No Fun; Not interesting; Nothing funny.	There's nothing interesting about it
I will never come again; I won't go again, and neither should you.	I won't revisit again
The overall facilities are outdated; The venue is somewhat outdated; The facilities inside are quite old.	Old facilities
To be honest, The venue is very small; The place is not very large; The underwater world is very small, with a total of two floors.	The venue is relatively small
Dolphins, sea lions performances are less interesting; Far inferior to Zhuhai Changlong (another similar park); The performance content is too simplistic, it's always about feeding.	The performance was not exciting enough
There are very few types of animals inside; There should be more animal species, this is in Nanjing!	Few animal species
There are only a few animals of each type; There are really few animals.	Low number of animals
Feeding three small slices of meat to the sea lions needs 30 yuan; Polar bear feeding costs 30 yuan once, unbelievable.	Feeding animals is too expensive
Penguins lack vitality; Animals are spiritless.	Poor animal condition
The design of the tourist route from the fourth floor to the third floor is terrible; There's only one narrow passage way, causing severe congestion.	Poor venue route design
The overall environment is relatively dark; It's very dark everywhere; no lights!	The lighting is too dim
Lack of order in watching the performances; Disorder; Chaos!	Disordered within the venue
The third floor is too commercial; The commercial district occupies the vast majority of the area; All for the purpose of making money.	Too commercial atmosphere
Bad smell inside; The air quality is poor; Causing dizziness and discomfort.	Poor ventilation and poor air quality
The men's restroom on the third floor is not cleaned; Very dirty; There's a lot of trash in the venue that's not being taken care of.	Poor sanitation
It's a bit far and a bit of traffic jam on the road; Heavy traffic jam and the cars are everywhere.	The road to the scenic area is particularly congested
The transportation is not good, and bus waiting time is too long; Due to the large number of people, electric vehicles in the scenic area needs at least one hour to get.	Difficulty in buses, scenic area electric vehicles, etc
Parking is particularly difficult; Parking is inconvenient.	Inconvenient parking
Apart from seeing many people, I saw nothing; There are too many people and crowds to enjoy it well.	Too many people, very crowded
The queue for watching the performance is too long; The queue for the performance is too long, it takes more than an hour to line up to only enters the venue.	Long queue time for watching performances
There was a photo taken at the entrance, saying that one photo would be given for free. Actually, it's not. After filming, there will be a fee when I go to the third floor to collect it.	Photography is said to be free, but there is actually a charge
A ham sausage costs 10 yuan; Food is too expensive.	Catering prices are on the high side
There are few choices of food, and children's meal costs 35yuan; There's no good food inside.	Lack of catering options
The parking fee is too expensive, 60 yuan for two hours; The parking fee is also high, 20 yuan for 15 minutes.	Parking fees are expensive
When I ask a service staff where the exit is, he ignored me.	The service personnel love to ride and ignore
I was preparing to come to the night show, but the service staff had a very poor attitude and refused directly. It took me a long time to come. However, the opening hours were not correct and I still had to be criticized.	Poor attitude of service personnel
There is no sign inside the venue, and it depends on which venue you want to go to; No road signs, walk around recklessly.	The scenic area logo is not obvious
The entire underwater world has toilets only on one floor; There are too few restrooms.	Less toilets
The glass is particularly dirty and the photos don't look good; The glass curtain wall of the underwater tunnel is really too dirty.	Dirty glass curtain wall
The animal performance ended very soon; Short performance content.	Short performance time

3.4. Axial Coding

Through the aforementioned open coding process, this article continues to perform axial coding based on Grounded Theory. The process of axial coding is divided into two steps for categorization: firstly, on the basis of open coding, a lower level of categorization is carried out

at the micro level to obtain axial coding result 1; Then, the axial coding result 1 is re integrated and further categorized at a higher macro level to obtain axial coding result 2. The specific analysis results are shown in Table 2.

Table 2. Main Categorization Results Formed by Axial Coding

Open coding results 356 negative comments in total	Axial coding result 1 Micro level negative comments proportion%	Axial coding result 2 Macro level negative comments proportion%
Ticket prices are expensive. 64 sentences	Ticket Price 17.97%	
Low cost-effectiveness. 46 sentences	Cost performance 12.92%	
Parking fees are expensive. 24 sentences	Transportation Costs 6.74%	Tourism Price Category 39.6%
Catering prices are on the high side. 4 sentences Feeding animals is too expensive. 3 sentences	Other Price 1.97%	
141 sentences in total		
Poor venue route design. 4 sentences The scenic area logo is not obvious. 6 sentences Disordered order within the venue. 5 sentences	Venue Management 4.22%	
Long queue time for watching performances. 3 sentences Too many people; Very crowded. 12 sentences	Visitor Management 4.22%	Management Services Category 10.96%
The service personnel love to ride and ignore. 3 sentences Poor attitude of service personnel. 6 sentences	Service Quality 2.52%	
39 sentences in total		
Less toilets. 4 sentences Lack of catering options. 3 sentences Difficulty in buses; scenic area electric vehicles; etc. 2 sentences Inconvenient parking. 4 sentences The traffic jam on the road to the scenic area is quite heavy. 2 sentences	Supporting Facilities 4.21%	
Old facilities. 26 sentences The venue is relatively small. 30 sentences The lighting is too dim. 4 sentences	Venue Facilities 16.86%	Facility Environment Category 24.16%
Poor ventilation and poor air quality. 5 sentences Poor sanitation. 3 sentences Dirty glass curtain wall. 3 sentences	Hygienic Environment 3.09%	
86 sentences in total		
Few animal species. 13 sentences Low number of animals. 10 sentences Poor animal condition.	Landscape Experience 7.58%	Tourism Experience Category 25.28%

4 sentences		
There's nothing interesting about it.		
30 sentences		
The performance was not exciting enough.	Item Experience	
8 sentences	12.64%	
Short performance time.		
3 sentences		
Fewer performance programs.		
4 sentences		
I won't visit again.		
4 sentences		
Too commercial atmosphere.	Other Experience	
9 sentences	5.06%	
The photo said it was free. Actually, there is a fee to be charged.		
5 sentences		
90 entences in total		

4. RESULTS ANALYSIS

According to the preliminary categorization results presented in Table 2 above, it can be observed that the issues concerning the 13 micro-level subcategories at Nanjing Underwater World are ranked from highest to lowest in terms of their proportions as follows: ticket price, venue facilities, cost performance, item experience, landscape experience, transportation costs, other experience, venue management, visitor management, supporting facilities, hygienic environment, service quality, and other price. On the macro-level, the four major categories are ranked from highest to lowest proportion as follows: tourism price category, tourism experience category, facility environment category, and management services category.

The "tourism price category" contributes for 39.6% of the issues, with the most prominent problem being the perceived high cost of admission tickets at Nanjing Underwater World, priced at 175 yuan per ticket. Visitors express dissatisfaction with the value for money, deeming the 175 yuan ticket price as too steep for the current state of the attractions. Some visitors also highlight the high parking fee, which charges 60 yuan for a two-hour parking period, considered excessively costly. Additionally, a small portion of visitors find the dining and animal feeding costs within the attraction to be exorbitant.

Issues reflected in the "tourism experience category" are also of significant concern. Many visitors find the attraction to be lacking in enjoyable activities, and the performances are not captivating enough. The limited variety and insufficient quantity of animals, coupled with their subpar conditions, contribute to an unsatisfactory experience. Some visitors even express an unwillingness to revisit, attributing this to the excessive commercial atmosphere of the attraction and deceptive consumer practices in the promotional photography at the entrance. This series of negative feedback from visitor experiences has a detrimental impact on potential visitors' perceptions.

In the "facility environment category", a prominent issue lies in the fact that Nanjing Underwater World's facility has been in operation for an extended period, resulting in outdated and relatively small venue facilities that fail to meet visitors' expectations. Simultaneously, the accompanying amenities such as the quantity of restrooms, parking capacity, and the availability of park shuttles and electric vehicles fall short of visitors' needs. Furthermore, the air quality within the attraction's environment is subpar, with issues regarding the maintenance and cleanliness of glass curtain walls and hygiene facilities.

Within the "management services category", a majority of visitors perceive inadequate signage within the attraction, leading to navigation difficulties. Poorly designed routes also contribute to navigation challenges. The high volume of visitors and long queue times for performances reflect poor crowd control, further contributing to visitors' perception of

inadequate management. In terms of service attitude, visitors report instances of impatience, poor attitudes, and lack of attention from service staff when inquiring about matters, which impacts their overall experience.

5. RECOMMENDATIONS

Based on the analysis of the online review data presented earlier, this study identifies the most prominent issues in the service quality of Nanjing Underwater World to be within the "tourism price category" and "tourism experience category". The incongruence between the ticket prices and the services and experiences provided to visitors results in dissatisfaction. This series of issues significantly impacts the image of the attraction's services, necessitating the urgent attention of the management to facilitate timely improvements and optimizations.

5.1. Reduce ticket price appropriately

The "tourism price category" encompasses the highest proportion of negative comments. Therefore, Nanjing Underwater World can consider reducing admission fees and parking charges. Enhancing visitors' experience through the development of entertainment projects and retailing cultural and creative products, which have the potential to generate sustained revenue growth, would encourage visitors to willingly increase their expenditures and subsequently enhance operational income. For instance, diversifying dining services to include high-end, mid-range, and budget options would cater to different visitor segments. Expanding VIP experience offerings and introducing value-added services would attract a wider audience and elevate overall revenue.

5.2. Enhance tourist experience

The issues reflected in the "tourism experience category" primarily revolve around the lack of enjoyable activities, unsatisfactory performances, and the subpar condition, variety, and quantity of animals. Therefore, the operators and management of Nanjing Underwater World can continuously enrich existing offerings, particularly focusing on marine-related products that foster greater visitor engagement. Organizing a range of family-friendly activities such as seawater mixing and marine animal identification would enable visitors to feel more than mere observers; they would become indispensable participants. Expanding the variety and quantity of marine animals would enhance visitor experiential engagement and evoke emotional resonance. Moreover, the attraction can plan and host marine-themed events in response to diverse visitor demands, and strategically adjust repetitive performances to maintain visitor interest and encourage multiple visits, ultimately fostering attraction popularity.

5.3. Improve facility environment

Within the "facility environment category", the managers of Nanjing Underwater World should prioritize the updating and maintenance of venue facilities, particularly hygiene conditions. With the growing number of marine-themed parks nationwide, contemporary visitors increasingly expect superior hardware design and hygiene conditions. As such, Nanjing Underwater World should continually update its facilities, prioritize hygiene maintenance, and expand its facilities. Incorporating modern entertainment options, such as large-scale mechanical amusements, is crucial to avoid solely relying on marine animal exhibitions. Additionally, the attraction should focus on improving transportation and parking convenience, which could involve increasing the frequency of internal park buses and electric shuttles within the Zhongshan Scenic Area and expanding the number of nearby parking facilities for visitor convenience.

5.4. Optimizing management and service quality

From the perspective of the "management services category", Nanjing Underwater World needs to dedicate efforts toward enhancing management and service standards. Firstly, the attraction should improve directional signage and establish safety standards and also security responsibilities for various locations, tailored to the attraction's unique circumstances, to prevent safety hazards due to excessive visitor numbers. Especially during peak tourist seasons, enhanced safety supervision, personnel deployment for maintaining order, and efficient crowd management measures are essential. Secondly, in terms of service quality, the attraction should raise the professionalism of front-line staff, ensuring a high level of service awareness. Clear reward and punishment systems should be in place to motivate front-line staff toward continuous improvement and excellence.

6. CONCLUSIONS

In conclusion, this study takes Nanjing Underwater World as a case example to analyze negative online review texts, aiming to explore the influencing factors behind the service quality disparities in marine-themed parks. The study has identified issues within the tourism service quality of Nanjing Underwater World, primarily categorized as tourism price, management services, facility environment, and tourism experience. Based on these findings, strategies have been proposed, including appropriate reduction in admission costs, enhancement of visitor tourism experiences, improvement of facility environment, and optimization of management and service quality. This research contributes to the study of tourism attraction service quality and provides valuable managerial insights for the future development of ocean theme parks in China.

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