

Application of Kano Model to Discuss Tourist Demands on Service Quality in Recreational Travel

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Summary

This study applied the Kano Model to discuss tourists' perceived service quality in recreational travel and to understand their actual needs, in order to provide a reference for the tourism industry to improve and enhance service quality. The results indicated that, among the 27 service quality items categorized according to the Kano Model, the Attractive quality element and Must-be element have the highest weights. The quality improvement index analysis divides service quality factors into four quadrants. Several improvement suggestions are proposed to Nanshan Cultural Tourist Area, including upgrade of transportation infrastructure, merchandise safety and after-sale services, personnel training, and diversity in food services.

Key words:

Recreation travel, Service quality, Kano Model

1. Introduction

In the coming recreational era, more and more people are seeking better living quality, and regard recreation and travel as an important part of life. Thus, how to improve recreational travel and enhance the existing service quality has become a new issue faced by the tourism industry. As compared to manufacturing industries, service quality of the tourism industry is difficult to measure. Besides providing services from the perspectives of tourists, the tourism industry also strives to continuously enhance customer satisfaction. [1] A high-quality service not only would earn tourists' satisfactions, but also enhance their willingness to revisit and strengthen the word-of-mouth effect, thus further helping the business to build a good image and increasing profitability. Hence, the importance of maintaining high quality services is obvious. The Kano Model is used to illustrate the relationship between customer satisfaction and product quality (or service quality). It combines and integrates the factors of service

quality and service product so that the best satisfying service quality could be delivered to tourists.[3,4,7,8]

Nanshan Cultural Tourist Area of Sanya City, Hainan Province, is a part of the "High Priority Tourism Development Project" of the National Tourism Administration currently under development in China. It consists of Fushou Cultural Park, Nanshan Buddhism and Cultural Park, and Nanhai Cultural Park. It plans to merge recreation and Buddhism culture into the tourism industry in order to lead a trend in recreational travel in Hainan. This research adopts the Kano two-dimension quality model to discuss and analyze the service characteristics of Nanshan Cultural Tourist Area. It aims to identify the basic needs concerned by tourists and help to increase tourist satisfaction and reduce dissatisfactions, which could be conducive to the park administrator in improving and enhancing the service quality, and building brand image.

2. Literature Review

2.1 Recreational travel and service quality

"Recreational travel is travel designed for relaxation and leisure purpose. It emphasizes more on tourists' spiritual enjoyment with highlights on their state of existence during a certain period of time in a surrounding of cultural creations, appreciation, and structures. It is through the collection of people's behaviors, thoughts, emotions, cultural atmosphere creations, cultural information transmissions, and cultural perspective developments to attain the comprehensive development of one's body, mind, and spirit. It has created conditions according to the many demands from people living in the modern life." [6]

Service quality is a key factor that influences customer perceptions and satisfaction evaluations. It is also a popular topic in researches on service and marketing. The concept of service quality is derived from the concept of product quality, thus, it is called service quality[5]. However, given the characteristics of services, the concept of product quality does not sufficiently define service quality. One of the commonly applied service quality measurement model at present is the Conceptual Model of Service Quality proposed by Parasuraman, Zeithaml and Berry in 1985. It is also known as PZB Service Quality Model[11]. This model suggests that there are differences between customers' perceived services and received services.

2.2 Kano Model

Kano Model originated from the Two Factor Theory proposed by behaviorist Herzberg. In 1984, Professor Noriaki Kano[10] of Tokyo Polytechnic University introduced the theory into product quality control. Based on the relative correlation between the two coordinates, Kano's two-dimensional quality divides service qualities into:

1. Must-be element: When it is sufficient, it does not lead to satisfaction; when insufficient, there is dissatisfaction.
2. One-dimensional element: When it is sufficient, it leads to satisfaction; when insufficient, there is dissatisfaction.
3. Attractive quality element: When it is sufficient, it leads to satisfaction; when insufficient, it does not lead to dissatisfaction.
4. Reverse quality element: When it is sufficient, it leads to strong dissatisfaction; when insufficient, there is satisfaction.
5. Indifferent quality element: Whether provided or not, it does not lead to neither satisfaction nor dissatisfaction.

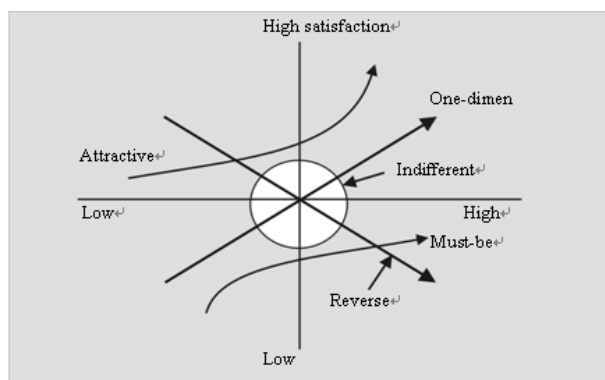


Figure 1: Kano 2-dimensional model[10]

2.3 Classification of Kano 2-dimensional quality elements

The study chose the 2-dimensional quality element classification table developed by Matzler and Hinterhuber [9] as the questionnaire items for this study. Based on the cross-comparison of five major elements and the positive and negative choices answered by the respondents, it further categorized 5 main elements.

Table 1 : Two-dimensional quality element classification table by Matzler and Hinterhuber

Positive \ Negative					
	Like	Must be	Neutral	Acceptable	Dislike
Like	O	A	A	A	O
Must be	R	I	I	I	M
Neutral	R	I	I	I	M
Acceptable	R	I	I	I	M
Dislike	R	R	R	R	O

Source: Matzler & Hinterhuber[9]

2.4 Quality improvement index

This study adopted the quality improvement index proposed by Matzler and Hinterhuber[9]. The equation is as follows:

$$1. \text{ Index of increasing satisfaction} = \frac{(A+O)}{(A+O+M+I)} \dots (\text{Eq. 1})$$

$$2. \text{ Index of reducing dissatisfaction} = \frac{(O+M)}{(A+O+M+I)} \dots (\text{Eq. 2})$$

(where, A is Attractive quality, O is One-dimensional, M is Must-be, I is Indifferent)

When the satisfaction index value is closer to 1, it indicates greater influence on customer satisfaction; when the dissatisfaction index value is closer to 1, it indicates greater influence on customer dissatisfaction. Based on these indexes, enterprises can have a better understanding on the most important and beneficial factors when planning or improving services.

3. Research Method

3.1 Research structure

This study applied PZB's five service quality dimensions as the basic structure in questionnaire design, and adopted Kano's questionnaire design to divide the items into positive and negative responses. In personal information, Kano Model was also applied in categorizing quality

elements, and further used to analyze the effects of different characteristics of respondents on the process of classification. Chi-square test for independence was conducted to test the variations between tourist attributes and items[2]. Finally, the results were used to obtain the quality improvement index.

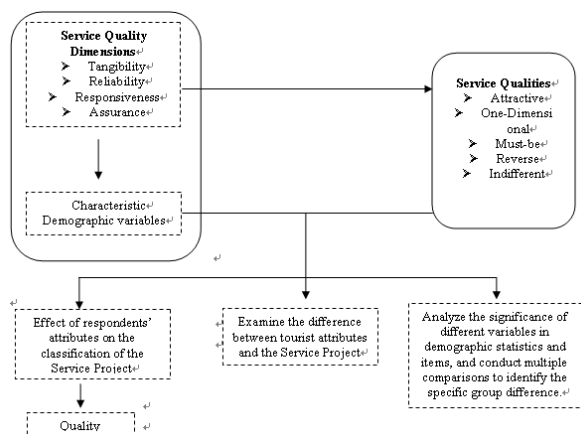


Figure 2: Research Framework

Source:compiled by this study

3.2 Sampling method and sample description

This study first conducted literature review to conclude the demands of tourists on recreational travel service quality, and then referred to the concept of Kano Model to design the questionnaire. A total of 456 paper-based questionnaires were distributed to the public by random sampling, and 435 were collected. After eliminating the invalid questionnaires, there were 391 valid questionnaires; the valid return rate was 89.9%. The data was categorized according to Kano quality elements for analysis.

4. Data analysis and results

4.1 Reliability analysis

Cronbach α coefficient of the “tangibility” dimension is 0.704, “reliability” is 0.702, responsiveness” is 0.704, “assurance” is 0.723, and “empathy” is 0.721, which are between 0.702 and 0.723, thus indicating a high reliability.

4.2 Basic information analysis

Among the 391 valid samples, 207 are male (52.9%), and 184 are female (47.1%); and the majority is 21-30 years old (33.5%), has high school/vocational school education (29.2%), works in industrial/commercial/service industries

(22.0%), has a monthly income of \$1501-2500 (27.1%), visits by recommendation of relatives and friends (33.0%), lives in northern region (28.4%), visits by tourist bus (45.0%), in a group size of over 16 people (32.2%), and is visiting for the first time (56.3%).

4.3 Classification of Kano two-dimensional quality elements

The selection of quality elements for classification was based on the choices made by the “relatively majority”. The results of statistical analysis are shown in Table 2. Among the 27 items, there are 9 items on Attractive quality (33.3%), followed by 8 items on Must-be quality (29.6%), 7 items on Indifferent quality (25.9%), 3 items on One-dimensional quality (11.1%), and none on Reverse quality.

4.4 Chi-square test for independence

In order to find out whether there is significant difference between different tourist groups and their perspectives on quality element classification under different demographic variables, this study used chi-square test for independence for analysis. The results found that different tourist attributes, such as gender, age, education, occupation, monthly income, source of information, residency, means of transportation, group size, number of visits (including first time) to the attraction site, have significant correlation with the service quality in Nanshan Cultural Tourist Area. It demonstrates the significant different perspectives of tourists toward the service quality characteristics in Nanshan Cultural Tourist Area. Also, tourists of different demographic variables have different demands on service quality.

4.5 Kano quality improvement index

This study calculated the increasing satisfaction and decreasing dissatisfaction indexes for each item to analyze the index values for quality improvement, and developed a quadrant graph based on the average mean of the index values.

Items in the first quadrant have great effects on increasing tourist satisfaction and reducing dissatisfaction. These items are highly concerned by tourists, thus, should be implemented as top priority, as they can bring profits or maintain competitiveness for the Tourist Area.

Items in the second quadrant do not have great effects on increasing tourist satisfaction; however, they can greatly reduce tourist dissatisfaction. Therefore, the implementation of these requirements can be view as a conservative marketing strategy.

Items in the third quadrant have low effect on tourist satisfaction and dissatisfaction as tourists are concerned

less about these items. Therefore, it is not necessary for business to pay too much attention to these items.

Table 2 Classification of Kano service quality attributes⁴³

Items ⁴³	Quality elements ⁴³				
	Attractive ⁴³	Indifferent ⁴³	Must-be ⁴³	One-Dimensional ⁴³	Reverse ⁴³
1. There is clear guidance and indication to the destination, it is easy to find the way. ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
2. There are sufficient parking spaces. ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
3. There are barrier-free spaces for disabled. ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
4. The locations of restrooms are appropriate. ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
5. The buildings and decoration of the area are unique. ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
6. Price list is available at the entrance. ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³
7. There are proper fire extinguishing and emergency facilities. ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³
8. The merchandises sold on site are trustworthy. ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³
9. The foods provided by the restaurants match the marketing theme. ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
10. Service staffs are willing to accept returns or exchanges. ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³
11. Service staffs are able to correctly calculate the price amount for merchandises. ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³
12. There is smooth channel for customer complaints. ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
13. Service staffs are actively learning tourists' needs in order to provide quick services. ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
14. Service staffs always have a good attitude in serving tourists. ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³
15. Service staffs are able to answer all questions with patience. ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³
16. Service staffs are able to accurately inform tourists about the location of merchandises. ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
17. Service staffs work together to provide good services. ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
18. Service staffs are dressed neatly. ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³
19. Service staffs are always smiling and approachable. ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³
20. During the shopping process, the tourists feel trust toward the service staffs. ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³
21. Services staffs can describe the correct features of different merchandises. ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
22. Services staffs concern about tourists' rights and interests. ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
23. Shopping routes in the store is smooth, and merchandises are orderly displayed. ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
24. Well-designed guide pamphlets are provided. ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
25. Narration and tour guide service are available. ⁴³	↔ ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³
26. The store provides special packages and merchandises for different seasons and festivals. ⁴³	↔ ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³
27. The store provides trials on merchandises (such as sampling). ⁴³	√ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³	↔ ⁴³

Source: this study.⁴³

Items in the fourth quadrant can significantly increase tourist satisfaction, but are very unsuccessful in reducing dissatisfaction. Items that are not valued by tourists may waste resources of the Tourist Area.

Based on the distribution of the 27 service quality items, as shown in Figure 3, the 6 items in the first quadrant should be the priority items. They are: "There is clear guidance and indication to the destination," "The foods

provided by the restaurants match the marketing theme," "Service staffs are willing to accept returns or exchanges," "There is smooth channel for customer complaints," "During the shopping process, the tourists feel trust toward the service staffs." If these items can be resolved quickly or improved, the Tourist Area can increase profitability or maintain competitiveness.

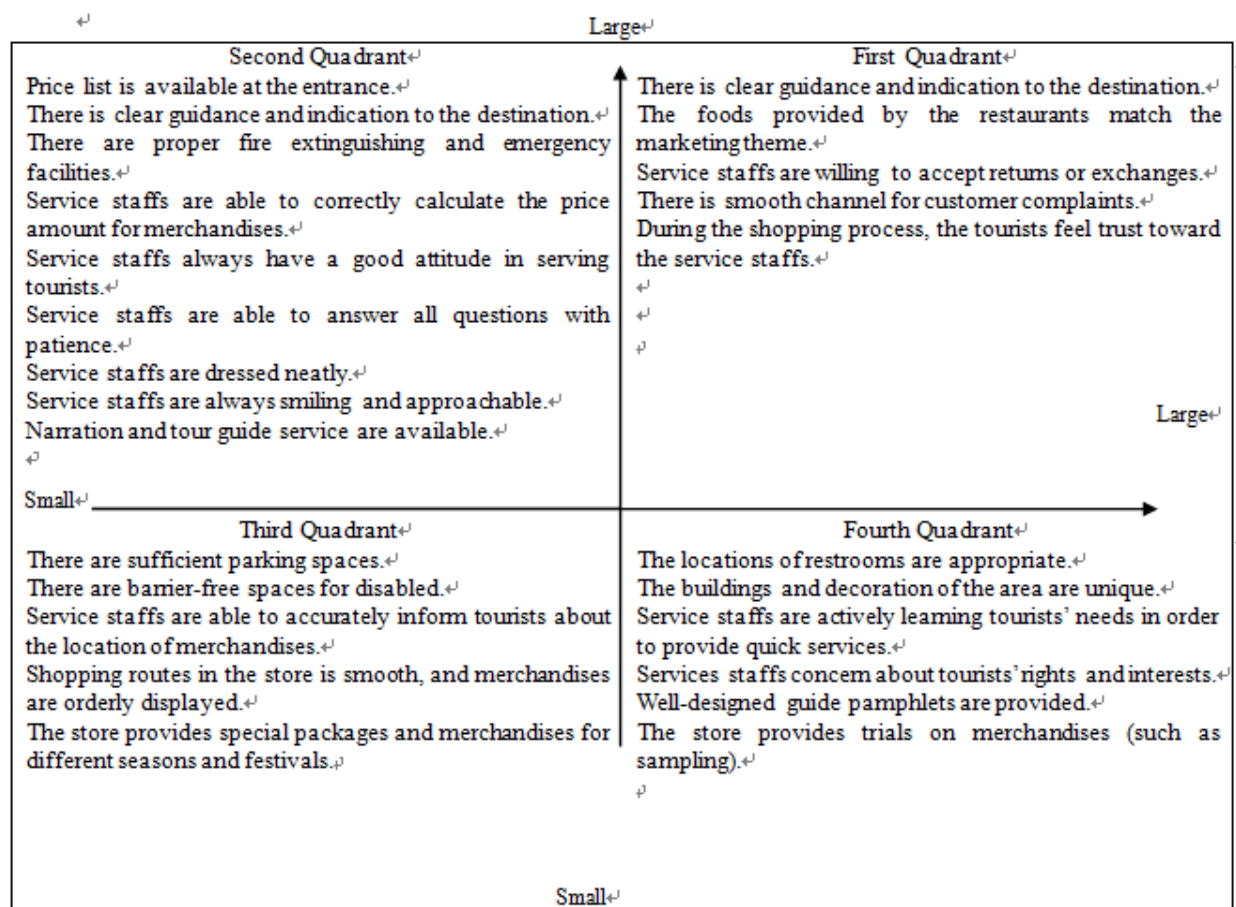


Figure 3: Kano Quality Improvement Index⁺

Source: this study

5. Conclusions and Suggestions

5.1 Conclusions

1. Based on the result of quality element classification, it is found that most items have different quality characteristics, indicating that the service quality in Nanshan Cultural Tourist Area has the features of two-dimensional quality elements.

2. There is a significant correlation between tourist satisfaction toward Nanshan Cultural Tourist Area and its service quality, while most of the categories have significant correlation in service quality characteristics. Therefore, for service quality characteristics in Nanshan Cultural Tourist Area, there is no significant correlation between the Kano two-dimensional quality classification, quality characteristics, and satisfaction.
3. Based on the above, the basic demands of tourists are transportation infrastructure, merchandise safety and

after-sale services, trustworthiness of service staffs, and food services. The park administrator should focus on these areas for improvements, in order to increase tourist satisfaction and reduce dissatisfaction.

5.2 Suggestions

1. Transportation: reinforce infrastructure to increase the accessibility for recreational travel.
2. Merchandise safety and after-sale services: improve the reliability by strictly monitoring merchandise quality, and implementing merchandise return and exchange services.
3. Service staffs: provide regular training to cultivate professionalism in service, and gain trust from tourists.
4. Food: combine with local specialties, and introduce diversified styles so that tourists would have more choices.

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