The Tourist Satisfaction Research of Service Quality of Cruise Ports

-----A Case of Wusongkou Cruise Port in Shanghai, China

Hong Jiang[1]

[1] Management School, Shanghai University of Engineering and Science, China

Correspondence: Hong Jiang, Management School, Shanghai University of Engineering and Science, China. E-mail: 15035755616@163.com

Received: October 9, 2013 Accepted: October 23, 2013 Online Published: October 30, 2013

doi:10.5430/bmr.v2n4p12 URL: http://dx.doi.org/10.5430/bmr.v2n4p12

Abstract

By combining SERVQUAL model and ACSI model and considering the specificity of port service, this paper built conceptual model and assessment indexes system about cruise tourist satisfaction of service quality of Port. The paper made an empirical analysis of Wusongkou port in Shanghai, China. What's more, the thesis employed "AHP", "Entropy Weight Method" and statistic analysis of research results to evaluate tourist satisfaction. The research results indicated that cruise tourists were satisfied with service quality of Wusongkou Port. The paper can not only provide guidance and reference for managers of the cruise ports, but the model and assessment indexes system in this paper can evaluate cruise tourist satisfaction of service quality of other ports.

Keywords: Service quality, Tourist satisfaction, Index measuring model, SERVQUAL model, Entropy weight method

1. Introduction

In recent years, with the rapid development and huge potential of cruise tourism and the favorable advantages of many harbor cities in China, the development of cruise tourism is quite promising. The service quality of cruise port directly influences the overall quality of experience of cruise tourism products and the visitors' impression to harbor cities and even the development of domestic cruise tourism.

Tourists are the purchasers of tourism products and also the key research objects of tourism resources planning and development. Tourism scholars at home and abroad are always focusing on the degree of tourists satisfaction. The scholars before mainly concentrated on the concept of tourist satisfaction (Alegre and Garau,2010),the assessment model(Hasegawa, 2010; Ignacio,2008; Haiyan,2013; Haiyan et al,2012;Xia et al,2005;Kai et al,2011;Xia et al,2010) and so on. However, the researches on building assessment index system and model of tourist satisfaction of service quality of cruise ports were few. The assessment of port service quality was based on various angles such as freight corporation, logistics and so on(Waner,2010) ,for the past ports were mainly the logistics centers. So there was not the special evaluation on cruise tourist satisfaction of port service quality. Otherwise, in the past,the assessment methods the scholars used were just mathematic statistic method, AHP(Lei W and Qinjun W,2007),and cloud model and the establishment of concept model was based on SERVQUAL model(Song X,2007; Ehsan et al,2012) and KANO model. In this paper, the author established conceptual model and assessment indicator system of service quality of cruise ports by combining SERVQUAL model and ACSI model (Xinyan L,2003), and made the assessment by combining the entropy weight method(Sui Z et al,2010)and AHP, which aimed to provide some guidance, advance local service level, promote the international fame and recognition and also accelerate development of local cruise tourism and economy.

2. Theoretical Foundation

2.1 Building Conceptual Model

Conceptual model of tourists satisfaction assessment of service quality of cruise ports was established by combining ACSI model, SERVQUAL model and the distinctiveness of port service. The conceptual model was shown in figure 1.

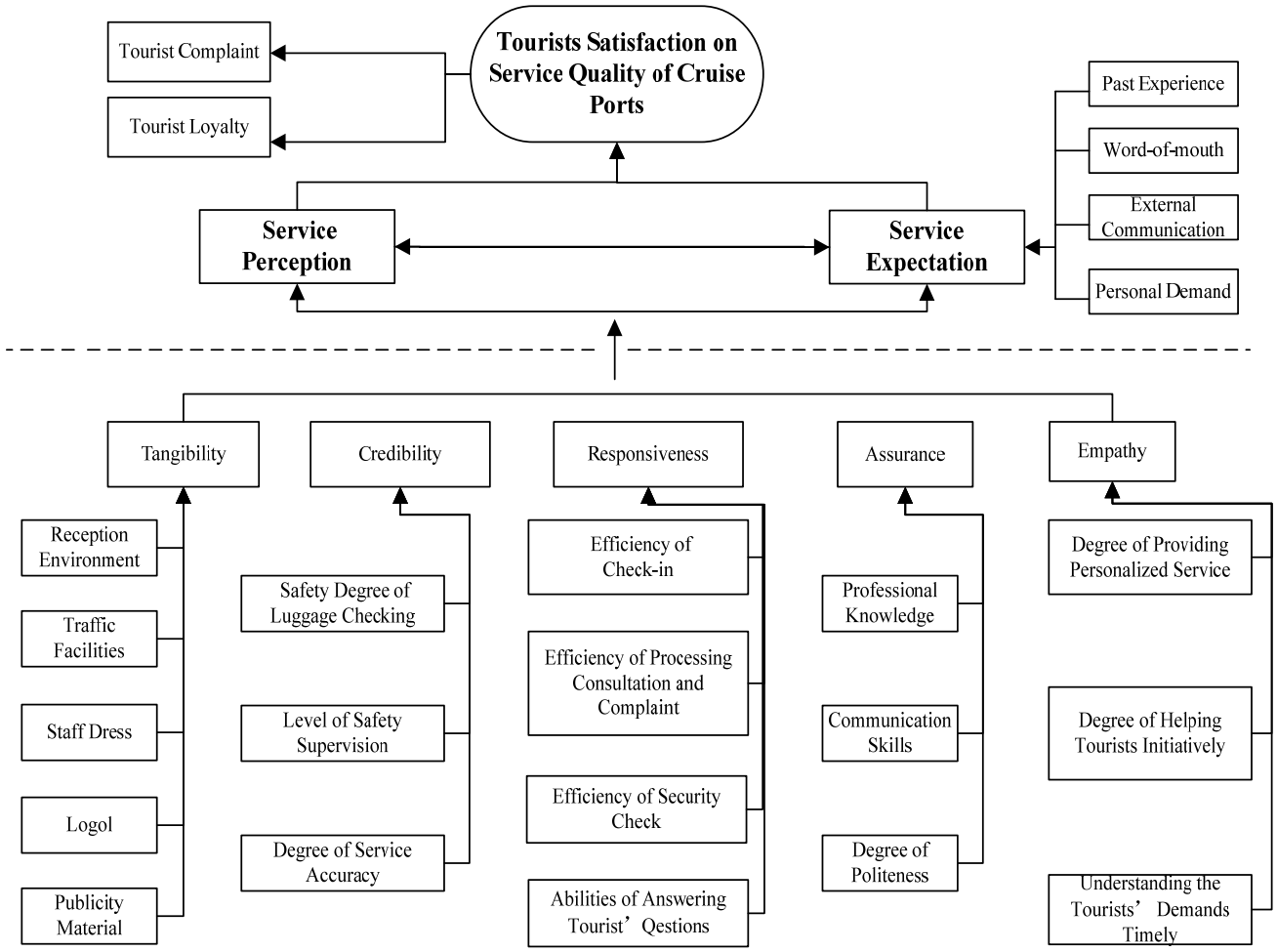

Figure 1. The conceptual model of tourist satisfaction assessment of service quality of cruise ports

2.2 Building Assessment Indicator System

The assessment indicator system of tourists satisfaction of service quality of cruise ports was based on the conceptual model. It was divided into three levels. First level was "destination level" based on "service perception" and "service expectation"; second one was the "standard level" which included "tangibility", "credibility", "responsiveness", "assurance" and "empathy"; third level was the "factor level" which contained 18 indicators. The indicator system was shown in table 1.

3. Methodology

3.1 Investigation Design and Data Analysis

The data were obtained by questionnaire method and interviewing distinctive tourism distributors and typical cruise tourists in the Wusongkou Cruise Port of Shanghai and on the cruise. The questionnaires were designed according to the indicator system and Likert scale (1-strongly dissatisfaction, 3-dissatisfaction, 5-no idea, 7-satisfaction, 9-strongly satisfaction). A total of 800 questionnaires were distributed, and 620 were valid .So the effective return ratio was 85.2%.The questionnaire reliability was measured by SPSS software and the coefficient of Cronet's α was 0.833, which meant the questionnaire credibility was high.

Table 1. Assessment indicator system and results of tourist satisfaction of service quality of cruise ports

Destination level	Standard level	Indicator weight	Factor level	Sorting weight level list	Hierarchy total sorts of the subjective weight a_i	Hierarchy total sorts of the objective weights b_i	The composite weight C_i
A Tourist Satisfaction of Service Quality of Cruise Ports(A Case of Wusongkou Cruise Port)	A1Tangibility	0.161	A11Reception Environment	0.257	0.042	0.047	0.036
			A12Traffic Facilities	0.461	0.074	0.051	0.069
			A13Staff dress	0.043	0.007	0.065	0.008
			A14logo	0.164	0.026	0.055	0.026
			A15Publicity Material	0.075	0.012	0.057	0.012
	A2Reliability	0.22	A21 Safety Degree of Luggage Checking	0.222	0.049	0.056	0.050
			A22Level of Safety Supervision	0.667	0.147	0.066	0.178
			A23Degree of Service Accuracy	0.111	0.024	0.061	0.027
	A3Responsiveness	0.461	A31Efficiency of Check-in	0.536	0.247	0.049	0.220
			A32Efficiency of Processing Consultation and Complaint	0.107	0.049	0.051	0.045
			A33Efficiency of Security Check	0.179	0.082	0.054	0.081
			A34Abilities of Answering Tourists' Questions	0.179	0.083	0.060	0.091
	A4Assurance	0.062	A41 Professional Knowledge	0.125	0.008	0.056	0.008
			A42Communi-cation Skills	0.375	0.023	0.057	0.024
			A43Degree of Politeness	0.5	0.031	0.058	0.033
	A5Empathy	0.096	A51Degree of Providing Personalized Service	0.143	0.014	0.050	0.013
			A52Degree of Helping Tourists Initiatively	0.429	0.041	0.050	0.037
			A53Understan-ding the Tourists' Demands Timely	0.429	0.041	0.057	0.042

By analysing data with SPSS software, we could calculate every indicator frequency, mean and standard deviation, which were shown in table 2.

3.2 Measuring and Calculating the Comprehensive Weight

3.2.1 Measuring and Calculating the Subjective Weight "a_i" with AHP

Firstly 15 professors marked the corresponding importance of every indicator in the indicator system with Delphi method. Secondly the author applied Richter "1-9" five-level scale and "reciprocal scaling" to build the judgment matrix. Thirdly, the author got the subjective weights of every indicator of all levels. Then the author made the

consistency check on mutual relation of every two factors of judgment matrix. The results of subjective weight were shown in table 1.

3.2.2 Measuring and Calculating the Objective Weight "b_i"with Entropy Weight Method

Step 1: Calculate the weight "K_i" which is jth assessment indicator value with respect to ith factor (Formula 3)

$$K_{ij} = Z_{ij} \Big/ \sum_{i=1}^{m} Z_{ij}$$
$$m = 1, 2, 3, \cdots 18 \tag{1}$$

In the formula, Z_{ij} is the jth indicator value with respect to the ith factor. Because the value will be taken the logarithm, the indicator values must be positive. K_{ij} is associated with frequency of investigation on tourist satisfaction index in table 2.

Table 2. Frequency, mean value and standard deviation of investigation on tourist satisfaction index of service quality of Wusongkou port

Investigation Value of Tourist Satisfaction	9points (%)	7points (%)	5points (%)	3points (%)	1 point (%)	Mean	Standard deviation
A11Reception Environment	15.15	30.3	39.39	9.09	6.06	5.79	2.089
A12Traffic Facilities	13.64	27.27	47.73	8.71	2.65	5.81	1.819
A13Staff dress	19.7	66.67	13.64	0.0001	0.0001	7.12	1.151
A14logo	9.09	56.06	25	3.03	6.82	6.15	1.897
A15Publicity Material	7.58	41.67	43.94	6.82	0.0001	6.00	1.47
A21 Safety Degree of Luggage Checking	20.73	56.01	16.5	6.76	0.0001	7.15	0.96
A22Level of Safety Supervision	9.09	68.94	21.97	0.0001	0.0001	6.74	1.087
A23Degree of Service Accuracy	4.55	60.98	29.55	4.55	0.38	6.27	1.357
A31Efficiency of Check-in	7.58	31.82	41.67	12.88	6.06	5.44	1.947
A32Efficiency of Processing Consultation and Complaint	12.12	42.42	30.3	14.39	0.76	6.02	1.821
A33Efficiency of Security Check	8.83	43.94	37.88	9.09	0.76	6.00	1.608
A34Abilities of Answering Tourists' Questions	6.82	43.94	46.21	3.03	0.0001	6.09	1.337
A41Professional Knowledge	12.12	48.48	34.09	4.55	0.76	6.33	1.553
A42Communication Skills	12.12	57.58	25	0.76	4.55	5.44	1.714
A43Degree of Politeness	15.91	56.82	23.48	0.0001	3.79	6.62	1.675
A51Degree of Providing Personalized Service	12.12	29.55	25.76	32.58	0.0001	5.42	2.064
A52Degree of Helping Tourists Initiatively	12.88	34.09	26.52	26.52	0.0001	5.67	2.014
A53Understanding the Tourists' Demands Timely	9.85	53.79	29.55	6.82	0.0001	6.33	1.494

Step 2: Calculate the entropy "e_i" of ith factor (Formula 4)

$$e_i = \frac{-\sum_{j=1}^{n} K_{ij} \ln(K_{ij})}{\ln(m)} \tag{2}$$
$$j = 1, 2, 3 \cdots$$

In the formula, $\ln$ is the natural logarithm, $e_i \geq 0$. So e_i lies between 0 and 1.

Step 3: Calculate the variance coefficient "Q_i" of ith factor (Formula 5)

$$Q_i = 1 - e_i \tag{3}$$

Q_i reflects the variance of indicator values. The bigger Q_i is, the larger the data variance is and the bigger the indicator weight is.

Step 4:Confirm objective weight "b_i" of ith factor(Formula 6)

$$b_i = \frac{Q_i}{\sum_{i=1}^{m} Q_i} \tag{4}$$
$$m = 1, 2, 3, \cdots 18$$

3.2.3 Measure the Comprehensive Weights "c_i"(Formula 7)

$$c_i = \frac{a_i b_i}{\sum_{i=1}^{m} a_i b_i} \quad (5)$$

$$m = 1,2,3 \cdots ,18$$

Synthesizing the subjective weight "a_i" and objective weight "b_i", the comprehensive weight "c_i" could be acquired, which were shown in table 1.

4. Calculating Satisfaction Index

The weight and value of every assessment factor have been calculated, so we can get final satisfaction index according to the assessment function.(The results were shown in table 3)

$$Y_i = c_i \times Z_i$$

$$Y = \sum_{i=1}^{m} Y_i \quad (6)$$

In the assessment functional expression(6),Y is the overall satisfaction index ;Y_i is the satisfaction index of ith factor; Z_i is the normalized value of ith factor; C_i is the comprehensive weight.

Table 3. Tourist satisfaction index of service quality of Wusongkou port

Destination level	Satisfaction index	Standard level	Satisfaction index	Factor level	Satisfaction index	Mean value of satisfaction
A Tourist Satisfaction of Service Quality of Cruise Ports(A Case of Wusongkou Cruise Port)	6.0790	A1 Tangibility	0.1453	A11Reception Environment	0.2101	5.79
				A12Traffic Facilities	0.4002	5.81
				A13Staff dress	0.0587	7.12
				A14logo	0.1591	6.15
				A15Publicity Material	0.0746	6.00
		A2 Credibility	2.9201	A21 Safety Degree of Luggage Checking	0.3580	7.15
				A22Level of Safety Supervision	1.1982	6.74
				A23Degree of Service Accuracy	0.1685	6.27
		A3 Responsiveness	2.5066	A31Efficiency of Check-in	1.1955	5.44
				A32Efficiency of Processing Consultation and Complaint	0.2727	6.02
				A33Efficiency of Security Check	0.4856	6.00
				A34Abilities of Answering Tourists' Questions	0.5527	6.09
		A4 Assurance	0.3974	A41Professional Knowledge	0.0512	6.33
				A42Communic-ation Skills	0.1303	5.44
				A43Degree of Politeness	0.2160	6.62
		A5 Empathy	0.5477	A51Degree of Providing Personalized Service	0.0688	5.42
				A52Degree of Helping Tourists Initiatively	0.2098	5.67
				A53Understan-ding the Tourists' Demands Timely	0.2691	6.33

5. Results

Research results indicated that the overall satisfaction index of service quality of Wusongkou Port was 6.0790. As to the standard level, the satisfaction index of credibility of the cruise port was highest(2.9201) and the satisfaction index of tangibility was lowest(0.1453). In the first indicator "tangibility" of the standard level, the satisfaction index of traffic facilities was the highest(0.4002), and then the reception environment(0.2101), logo(0.1591), publicity material(0.0746), the staff dress(0.0587); as to the indicator "credibility", the satisfaction index of level of safety was the highest (1.1982) and then safety degree of luggage checking(0.3580),the degree of service accuracy(0.1685);as for the "responsiveness" ,the satisfaction index of efficiency of check-in was the highest(1.1955) while the index of efficiency of processing consultation and complaint was the lowest (0.2727); About the forth indicator "assurance", the result of degree of politeness was highest(0.2160), and then the communication skill(0.1303), the professional knowledge(0.0512); in the last indicator "empathy" of standard level, the satisfaction index of understanding the tourists' demands timely was the highest(0.2691).

6. Discussion and Suggestion

The research results concluded that cruise tourists were satisfied with the service quality of Wusongkou cruise port. However, there were still many aspects which disappointed the tourists and should take some measures to improve the service quality.

6.1 About the Reception Area

Although the infrastructure is perfect, the supporting facilities are not able to meet the tourists' needs during the peak time; the crowdy problem is serious, which causes much dissatisfaction form tourists. Therefore, on one hand, we are supposed to enlarge the reception area and build service area include dining area, supermarket, shopping area so that not only they can create more comfortable and convenient environment but also increase the revenue; on the other hand, the port company should strength the cooperation with travel agencies to realize the seamless link of the service.

6.2 About the Traffic Facilities

Because the tourists' desire to the convenience and accessibility was high, the traffic facilities of the port were not able to satisfy the tourists. So cruise port should open up the green channel from train, subway and airport to the cruise port.

6.3 About the Tourism Publicity Materials

The tourism publicity materials in the reception area are quite few and single. The materials almost include some simple tourism information and fashion news which lack of the cultural connotation and the local tourism information is so deficient that they cannot meet the different tourists' need at different levels of consumption. The port should make the local tourism materials which include the introduction of tourist attractions, travel line, hotels and restaurants and stores of different levels of Shanghai and Baoshan District of Shanghai, China.

6.4 About the Staff

As to the index of "Empathy" and "Assurance", the reason why their satisfaction index was so low was that the port was at the initial stage. Many reception personnel were part-timers who have not receive relevant training. What's more, a lot of service details and humanistic concerns haven't been valued and paid much attention to. Therefore, the port company is supported to reinforce the training of service skills, levels and professional knowledge. In addition, it can cooperate with certain universities to reach temporary employment agreements to have the training properly and regularly. The port corporation not only should pay attention to advance the efficiency of check-in, service consultation and complaint but also advance communication skills particularly the communicational abilities of foreign languages.

7. Conclusion

The port service is an important part of cruise tourism experience and it is also a mirror of local image. The paper built conceptual model and assessment index system of tourist satisfaction assessment of service quality of cruise ports. Then the thesis made the empirical analysis with a case of Wusongkou cruise port in Shanghai, China. The research result indicated that the tourists were satisfied with the port service as a whole. The tourist satisfaction assessment and case analysis about crusie port in the paper can apply to the other cruise ports at home and abroad and they also contribute to the sound development of cruise tourism. What is more, there are some aspects requiring further researches, such as perfecting the assessment index system and adopting suitable assessment methods considering different cruise ports and so on.

References

Alegre J, Garau J. (2010). Tourist Satisfaction and Dissatisfaction. *Annals of Tourism Research.* 37(1), 52-73. http://dx.doi.org/10.1016/j.annals.2009.07.001

Ehsan A, Shahnaz A, Hossein A. (2012). Evaluating Educational Service Quality in Technical and Vocational Colleges Using SEEVQUAL Model Procedia. *Social and Behavioral Sciences.* 46(2),5285-5289.

Haiyan S, Robert V, Gang L, et al. (2012). The Hong Kong Tourist Satisfaction Index. *Annals of Tourism Research.* 37(1),459-479.

Hasegawa H. (2010). Analyzing tourists' satisfaction: a Multivariate Ordered Probit Approach. *Tourism Management.* 31(1): 86-97. http://dx.doi.org/10.1016/j.tourman.2009.01.008

Ignacio R B, Héctor S M. (2008). Tourist Satisfaction: A Cognitive-affective Model. *Annals of Tourism Research*. 35 (2): 551-573. http://dx.doi.org/10.1016/j.annals.2008.02.006

Kai W, Chengcai T, Jiaming L. (2011). A Measuring Model on Tourist Satisfaction Index in Cultural Creative-type Tourism Destination——A Case of 798 Art Zone in Beijing. *Tourism Tribune.* 09,36-44.

Lei W, Qingjun W. (2007). The Research on Evaluation Index System of Service Quality of Modern Port----A case of Rizhao Port in China. *Science & Technology Information.* 33,68-70.

Song X. (2007). Comparison of SERVQUAL in Tourism Industry at Home and Abroad. *Human Geography.* 03,82-86.

Sui Z,Mei Z, Guotai C. (2010). The Science and Technology Evaluation Model Based on Entropy Weight and Empirical Research During the10th Five-Year of China. *Journal of Management.* 01,34-42.

Waner Z. (2010). *Evaluation Index System of Service Quality of Port Logistics Park in China. Logistics Technology.* 12,93-95.

Xia W, Zehua L, Hong Z. (2010). Research Review and Outlook of Tourist Satisfaction. *Journal of Beijing International Studies University.* 01,22-29.

Xia W,Chaolin G,Hu M. (2005). Customer Satisfaction Index Model of Tourist Attractions. *The Geographical Journal.* 05,807-816.

Xinyan L, Yanni L, Zhi Y, Houfen W. (2003). *The Construction of a New Customer Satisfaction Index Model Based on the Analysis of SCSB, ACSI and ECSI.* 06, 52-56.