JOURNAL OF H&T
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How to Build up Smart Tourism Attractions: based on the perspective of Tourists Information Demands

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Abstract
For the past few years, smart tourism attractions construction has set off a boom in China. However, the tourism attractions pays more attention on smart management, but not enough attention on smart service, tourist participation is low, the tourist information demands cannot be met and other problems make smart tourism attractions construction unable to benefit the tourists. Based on qualitative analysis, this study obtains the classification of tourists information demands, analyzing the data from the questionnaire of the case area; we study the differences between tourist information demands and tourism attractions information service. The results showed that: (1) Tourist information demands, specifically representing as accommodation information, ticket information, entertainment program real-time information, entertainment program given information, traffic information and additional service information; (2) the information service provided by the tourism attractions and tourist information demands mismatch, which affects tourist's satisfaction about the tourism attractions; (3) entertainment program real-time information is what the tourism attractions needs to focus and improve.

Keywords : Smart tourism attractions, Information demand, Information service

Introduction
In 2012, China announced the 22 pilot smart tourism attractions, and then smart tourism attractions construction began to set off a boom in China. Jiuzhaigou Valley, Mountain Emei and other tourism attractions have begun to explore and practice smart construction, through the development of tourism attractions APP, the We chat official account and other public information platforms can provide information services for tourists. Tourists can easily book tickets, make hotel reservations, travel information inquiry and other smart function through internet or mobile clients.

As people's quality of life is continuously improving, the demand for tourism is increasingly personalized. But how to find the information they need from the massive and uneven information is a problem. The attractions information services provided for tourists are often based on the premise of the tourism attractions management, so there may be different between what the tourists really need and that in the eyes of the managers, it is difficult to meet the needs of tourists; therefore during smart tourism attractions construction process, it is very necessary to see from the perspective of tourists, and seriously consider the real information demands of them, and it will play an important role for smart tourism attractions construction and enhancing attractions tourist satisfaction.

Therefore, after understanding the basic construction of the tourism attractions information services, the authors will start to investigate information demands of attractions tourists and how the demands are met, and to understand personalized demands and the inadequate parts of attractions tourist information service, and then make suggestions and comments on smart tourism attractions construction and development.

1. Literature review

1.1 Research Progress of Smart tourism attractions

China started to study smart tourism attractions a few years ago, so the definition of smart tourism attractions has not yet unified, but most studies have focused on academic research system design of smart tourism attractions. Mo Hongyuan, etc. (2013) proposed a shared platform that integrates tourism attractions business applications and services system to support smart tourism attractions construction; Ge Junlian, etc. (2012) from the perspective of stakeholders, explored smart tourism attractions service infrastructure by constructing tourism attractions regulatory systems, tourist's travel decision support system, tourist services in-transit system, public reputation system to satisfy the demands of regulatory groups, consumer groups, interest groups and operators dependents communities, and ultimately serve the interests of the stakeholders, regulate the development and protection of the tourism attractions, and enhance tourist satisfaction and maximize the benefits of industries; Dang Anrong, etc. (2011) based on the characteristics of tourism attractions, proposed 3 platforms including information infrastructure, data infrastructure and shared service infrastructure 5 systems including resource protection system, business management system, travel management system, public service system, decision support system; and 7 guarantees including management policy, operational mechanism, funding, information technology standard, personnel, security safeguard. Ming Guisheng, etc (2014) studying on Guilin smart tourism attractions tourist service platform, proposed the overall framework of established information infrastructure layer, data support layer, application support layer, application layer. Only a few scholars have studied the standardized questions of smart tourism attractions. Jin Bo (2014) in allusion to that fact that smart tourism attractions construction is in lack of standardization system, discussed the construction of smart tourism attractions standardized construction and intellectual standard framework; Deng Xianfeng, etc. (2012) being tourist-oriented, from three dimensions visitor management, visitor experience, tourism attractions management, tourism product, proposed the construction of "smart tourism attractions," the 17 II standard criteria and 41 IIIstandard criteria.

There is no "smart tourism attractions" related terms in foreign countries, but their research on tourism information and digitization started very early. In the 1990s, Ravi Kalakota and Hagel began to study tourism e-commerce, and defined the concept. Buhalis and Licata (2002) based on the marketing medium, discussed the use of information technology in the growth process of tourism attractions; Sharda (2009) from the travel recommendation system, community and user interface design three angles, interpreted the tourist information science. In 1995, Ray and Satran first began the study of travel sites, and proposed that travel sites should set information sharing, interacting with tourists and page impressions as three key designs; Hanna and Millar (1997) subsequently submitted the idea of regarding the World Wide Web as the basis of tourism service development; Kirakowski and Claridge (1998) believed that a tourism website should have be efficient, workable, learnable, helpful and attractive; Bacchus and Molina (2001) based on the premise that Network development was increasingly common and convenient, discussed the tourism problems that might arise in the Internet age and the future trends; Choi and Ylehto (2007) studied the effects of various types of urban tourism website on the city tourism image-building. In tourism website evaluation, Ho (1997) was the first scholar who had began the

evaluation of travel sites, he used the method of content analysis to conduct evaluation studies on several tourist sites; Bender (1997/1998) proposed three-site quality evaluation dimensions: links convenience, download speed, visual appeal of the interface; Perdue (2001) deemed, when evaluating travel sites, site traffic should be put into account.

1.2 The Research Status of Information Studies

At the beginning, information demand was a concern object of intelligence information science and library science, but due to its complexity and difficult to measure, so far there is no agreed definition of the concept. Belkin and Vickery (1985) believed that to observe and measure the information demands was very difficult because information demands only exist in the internal of human mind, and then only during the search or after the search behavior has happened, can we draw the conclusion according to the process of observation. At this moment, more scholars define information demands from an economic point of view, Pan Fanglian, etc. (2003) thought that the information demands should refer to the information consumers' demand of information goods (including information services) under certain price conditions. Zhou Aimin (2003) supposed that the information demands are the direct motion and ultimate purpose of information production, if there is no information demand, there is no information market. When information demands and tourism activities are combined, some scholars carry out research based on the information search point of view. Moe (2003) found that the tourists' motivations for using network to search for information, were to understand tourism products, enhancing information intake and enjoying the fun of browsing the product; by studying the tourist's consumption information searching behavior during travelling, established a tourist consumption information searching model; after Xiang (2011) analyzed the statistics of the three major search engines, he found in tourist information search process, the proportion of the search for accommodation and transportation are the highest, followed by tourism attractions information, while proportion of dining and shopping information is the lowest; the study of Kim and Okazaki (2007) focused on the effects of gender on Internet travel information search behavior, and in the study, they found a higher participation of women searching for online travel information and Women's satisfaction with the Internet is better than men; Hyde, (2008) based on the three behavioral characteristics(information searching, holiday planning, holiday booking) that tourists show before they make travel decisions, established travel decision-making model.

All in all, when it comes to studying on smart tourism attractions, Chinese scholars pay more attention to tourism attractions system architecture design and application of new technologies, while foreign scholars focus on the impact of information technology on tourism and related research on tourist websites; it can be seen that both ignored the role of the tourists; and research on information demands often indirectly determine the information demands through people's information-seeking behavior, which is often prone to generate bias; so from the perspective of tourists, directly facing the information demands during the process of smart tourism attractions construction has research significance.

2. Research Design

2.1 Variable Selection

In 1991, scholar Sun Shangqing proposed six elements of tourism concepts, namely food, living, transportation, travel, shopping and entertainment. Based on six elements theory aiming at the personalized requirements of tourists, the author conducted tourists interviews, at the same time, after comprehensively analyzing the tourists comments on Ctrip, Qunar, the author obtained the 6 aspects primarily concerned with tourist personalized information demands, namely: accommodation information, ticket information, the entertainment program real-time information, The entertainment program given information, traffic

information and additional service information.

Accommodation information is the dinning and accommodation information within and near the tourism attractions that needs to be acquired during the trip.

Ticket information refers to the related ticket information, such as ticket prices, booking tickets, tickets discount that needs to be acquired during the trip.

The entertainment program real-time information refers to time-sensitive real-time information needing to be updated about entertainment programs, such as open state, queuing, and the performance time arrangements that needs to be acquired during the trip.

The entertainment program given information refers to the entertainment program information that will not change in a certain period of time, for example, recommended tourism attractions characteristic program, the program playing requirements, program explanation and other information that needs to be acquired during the trip.

Traffic information refers to the round-trip traffic guidance from the origin of tourist to the tourism attractions and the internal traffic guidance that needs to be acquired during the trip.

Additional service information refers to the information in addition to these five information type, such as attractions assistance, complaints and other information, and links to nearby attractions that need to be acquired during the trip.

2.2 Research Model and Hypothesis

The main objective of this study is to explore the tourist personalized information demands in the progress of informatization and the situation of how the demands are met, looking for the deficiencies in tourism attractions information service, and put forward suggestions for China's smart tourism attractions construction according to the results. In the qualitative analysis of interviews with tourists to the website message, it has proposed six aspects of tourists personalized information demands. At the same time, according to customer perceiving service quality theory proposed by Gronroos (1982) namely, the difference between customer expectations of service quality and service quality actually obtained, and its goal is to meet the personalized requirements of tourists. On smart tourism attractions construction, providing tourists with high-quality information services is what the tourism attractions need to achieve, when tourist tourism attractions offer tourists information services beyond the desired, tourists' perception on service is surprised; when information service is lower than less than tourist expectations, the service is unacceptable, tourists may look for alternatives next time when they need to buy, and they are not satisfied with the service; when the customer's perception of service is consistent with the expectations, they are satisfied with the service. Whereby we propose the research model and hypotheses of this study（See Figure 1）.

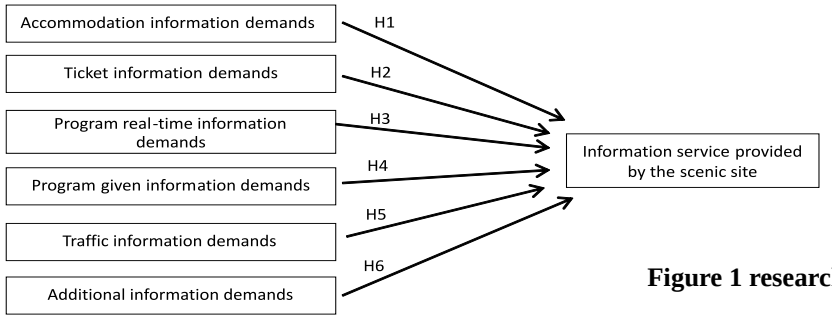


Figure 1 research model

Based on the relationship between the research model and various factors, the hypotheses are put forward:

Hypothesis 1(H1): Accommodation information service provided by the tourism attractions can't meet the accommodation information demands of tourists.
Hypothesis 2 (H2): Ticket information service provided by tourism attractions can't meet the ticket information demands of tourists.
Hypothesis 3 (H3): Program real-time information service provided by tourism attractions can't meet the program real-time information demands of tourists.
Hypothesis 4 (H4): Program given information services provided by tourism attractions can't meet the program given information demands of tourists.
Hypothesis 5 (H5): the traffic information service provided by tourism attractions can't meet the traffic information demands of tourists.
Hypothesis 6 (H6): Additional information service provided by tourism attractions can't meet the additional information demands of tourists.

2.3 Questionnaire Design

Questionnaire is designed according to the visitor interviews and qualitative analysis of website comments. The main objective is to measure the demand level of the six factors and the tourists' evaluation on attractions information service. A total of 51 multi-items on the questionnaire, mainly divided into four parts, including the tourist information behavior and information issue, visitor information demands, tourist information service perception of tourism attractions and visitor personal information.

The main part of the questionnaire is to measure tourists' information demands and the information service providing degree of tourism attractions that tourists perceive, using V Likert scale, proposes 19 measurement indexes of the 6 factors, sets the ratings for the measurement from 1 to 5 to measure the demand degree and the information service providing degree of tourism attractions that tourists perceive of the 19 measurement indexes. Using statistical software to precede analyses of data gained from surveys, descriptive analysis, factor analysis, ANOVA and IPA analysis included.

3. A Case Study of Shenzhen OCT East

3.1 Case Site Overview

Shenzhen OCT East tourist tourism attractions is located in Dameisha, covering an area of 9 square kilometers, with two theme parks, three tourist towns, four tourism attractions hotels, two 36-hole mountain golf courses, Huaxing Temple and other programs as one, the wide range of tourism attractions and high degree of program integration are second to none in Shenzhen. In 2012, Shenzhen OCT East has been elected as the pilot smart tourism attractions; in 2013 it was named as "outstanding smart tourism attractions organization award" on Tourism Fair in Guangzhou. Its official information platform OCT East Wechat official account has been put into use, the basic structure of the Wechat official account (See Figure 2) :

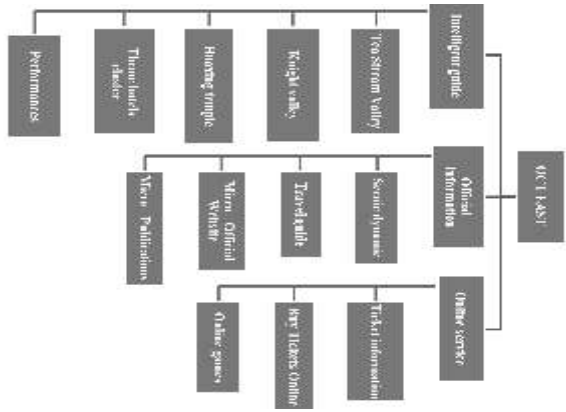


Figure 2 : OCT East Wechat official account

The Wechat official account have the function of tourism attractions intelligent guide, attractions, online ticketing and others in an ideal state, but in actual use, it needs the support of the wireless network, the instability of wireless network in tourism attractions and other problems affect the normal function of Wechat official account .

3.2 Data Collection and Analysis of Samples

The questionnaire study facing OCT East tourists, so the questionnaires are issued in the form of on-site distribution in the tourism attractions, there were 420 questionnaires, and 416 of which are valid, the questionnaire efficiency was 99%.

Through the analysis of the basic situation of respondents, we get the following information: among the 416 respondents, male accounted for 48.3%, females, 51.7%; 53.6% of the respondents were from Shenzhen city, 46.4% for other areas; 70% concentrated in the age 18-25, 25.5% for 26-35, which is consistent with the actual situation that the major groups using the network and the mobile network are young people; 55.8% has the education as college and undergraduate, high school and below accounted for 36.8%; for occupation, the highest proportion is enterprises employees, 33.2%, followed by freelancers, 30.0%; the income 3001-6000 accounted for the highest, 45.2%, while less than 3,000 yuan and no income accounted for 36.3% so we can tell that tourism has become a popular leisure activity.

3.3 Data Analysis

3.3.1 Attractions Information Problem and Behavior

In the analysis of access to information, use of information channels of attractions, information problems that tourists might encounter, and other tourist information behavior and information issues for scenic site, the following information can be obtained: 45.4% of respondents informed with the tourism attractions were introduced by friends, 32.9% knew OCT East tourism attractions through network search; 73.6% of respondents said they have through the Internet search tourism attractions information, which means that most of them will get the information they need through the network; but in comparison, 60.1% of respondents did not use OCT East tourism attractions official website, 68.3% of respondents did not focus on the official micro-channel OCT East service number; tourism attractions offer tourists access to information usage is relatively low; do not use for tourists The reason OCT East tourism attractions official micro-channel and official website, 63% of respondents said they did not know the official website and micro-channel, 32.9% that the use of other sites easier, 17.3% indicates that the micro channel using the tedious process; tourist in the area encountered information problem, 46.2% of respondents said the program queuing delay long play time, 39.9% said that the tourism attractions WIFI was unusable, 35.6% said that the program had been stopped was not informed in advance, 20.9% expressed attractions signs were not clear, and it caused detour problem.

3.3.2 Reliability and Validity Analysis

Reliability is whether questionnaire results are consistent, and whether the measured values can be trusted by people, we use Cronbach's α coefficient is a measure of the credibility of the questionnaire, under normal circumstances, Cronbach's α factor greater than 0.7, a questionnaire that is has a high credibility. To this end, the test, as shown in Table 1 Reliability analysis of the results of the questionnaire, was 0.829, so this study data has reliability.

Table 1 Reliability Analysis Table of the Entire Variable

Cronbach's Alpha	N of item
.829	38

Validity is the validity of the questionnaire, the results of measurement by KMO and Bartlett test of sphericity obtained, when significant KMO> 0.7 and Bartlett statistic is less than 0.01, the sample data with validity, factor analysis can be done. We can see from Table 2: KMO measure 0.784> 0.7, Bartlett statistic significance 0.000 <0.01, making it suitable for factor analysis.

Table 2 Validity Analysis Table of the Entire Variable

Kaiser-Meyer-Olk in measure of sampling adequacy		.784
Bartlett's Text of Sphericity	Approx. Chi-square	6072.535
	df	703
	Sig.	.000

3.3.3 Factor Analysis

Through factor analysis, the main factor to extract high-level summary data and information on the factors that the original classification tourist information demands to verify the correction. According to the survey data analysis, six factors when extracting maximum contribution rate variance 64.212%, that extract six factors most appropriate. Also verify that the qualitative analysis based on interviews with the travel website tourists while travel demand will be divided into six categories Tourist information is reasonable, while each of the factors items under the measure is reasonable (See Table 3).

Table 3 Factor Analysis Table

Factor	Factor Items	Factor load
Program real-time information	Opening status of programs in the scenic spot	.748
	Timetable of shows in the scenic spot	.747
	Real time status of queuing of popular program	.704
Ticket information	Price of entrance ticket of the scenic spot	.792
	Special offer of entrance ticket of the scenic spot	.742
	Purchase channel of the scenic spot	.685
Additional information	Services and Help in the scenic spot	.766
	Ways to complain in the scenic spot	.741
	Shopping information in and around the scenic spot	.663
	Information about other scenic spots nearby	.531
	Weather information in the scenic spot	.425
Program given information	Detailed explanation about programs	.867
	Requirements about playing in the scenic spot	.720
	Recommendation of special program	.582
Traffic information	Timetable of bus in the scenic spot	.731
	Guide of inner route in the scenic spot	.635
	Recommendation of travel route to the scenic spot	.524
Accommodation information	Catering in and around the scenic spot	.824
	Nearby accommodation information	.788

3.3.4 ANOVA

By one-way ANOVA analysis, measuring the tourist characteristics and the relevant factors' influence on visitor information demands, and determining whether there is a significant relationship between the difference and visitor information demands difference, at the 95% confidence range, when the significant P value is <0.05, then the factors have significant

influence on visitor information demands. The measurement results are shown in the table 4 below.

Table 4 One-way ANOVA Analysis of Tourist Information Demand

Sig. P								
Tourist information demand	Factor							
	origin of tourist	Gender	Age	Qualifi-cations	Occu-pation	Income	Way of travel	Time of travel
Accommodation information demand	.002	.145	.016	.000	.020	.000	.267	.000
Ticket information demand	.005	.135	.095	.002	.690	.108	.652	.003
Program given information demand	.769	.783	.234	.000	.339	.743	.007	.112
Program real-time information demand	.000	.464	.852	.000	.552	.093	.660	.364
Traffic information demand	.438	.963	.849	.010	.043	.011	.367	.367
Additional information demand	.876	.135	.029	.000	.000	.000	.000	.001

From the Table 4 we can draw the following conclusions:

The tourist characteristic differences, such as origin of tourist, age, education, occupation, income, residence time will have a significant impact on tourist accommodation information demands; differences in origin of tourist, education, time of travel have a significant impact on the tourist ticket information demands; differences in qualifications, way of travel will have significant influence on the programs given information demands; differences in origin of tourist, qualifications will have a significant impact on tourist real-time information demands; differences in qualifications, occupation, income will have a significant impact on tourist transportation information demands; differences in age, qualifications, occupation, income, way of travel, time of travel will have a significant impact on tourist's additional information demands. The above analysis, it can be seen that the tourist information demands are influenced by a variety of factors, tourist information demands have strong personalization features.

3.3.5 Importance-Performance Analysis (IPA)

After determining the 6 major factors in tourist information demands, the authors attempt to compare the degree of tourist demands on information with the degree of the tourism attractions provide on information, and to find out the differences between the tourist information demands and tourism attractions information services. In the IPA analysis, the extent of the demand degree, namely the degree of tourist demands is the importance of this information, and the degree of the tourism attractions provided is the performance of this information. Here we conduct the IPA analysis of various factors and the IPA analysis of the contained measure indexes under the factors.

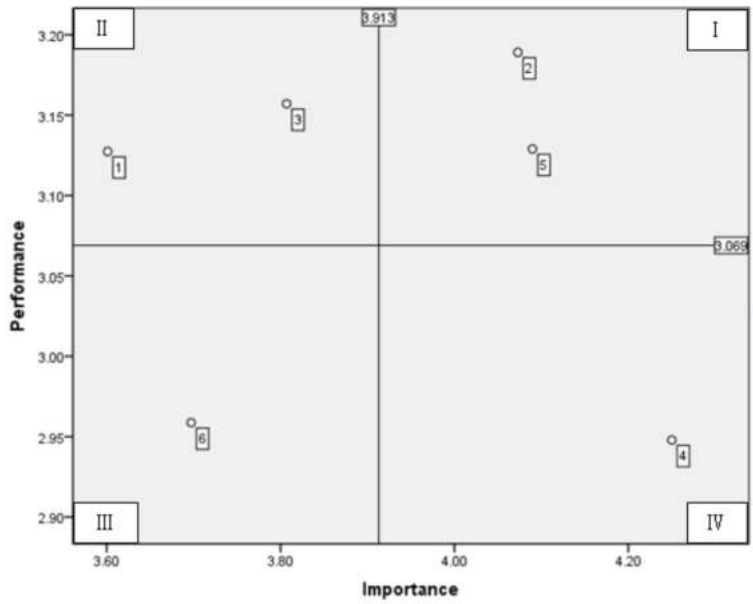
During the course of the IPA analysis, firstly, separately calculate the average score

and the grand average of each factor as the importance and performance of each measure, while conducting T test on the paired samples to compare if the difference between the performance and the importance was significant, Table 5 shows the results of various factors related to the average value, and standard deviation. We can see the score of tourist information demands were higher than the score of tourism attractions information service , the performance and importance of tourist information demands exist significant differences; the degree of tourist accommodation information demand, ticket information demand and other factors were greater than the average tourism attractions offer degree mean that the information services provided by the tourism attractions cannot meet the demands of tourists corresponding information, so the research hypotheses H1, H2, H3, H4, H5, H6 are true.

Table 5 IPA analysis table of six factors

Tourist information demand	The degree of tourist demand（importance）		The degree of scenic site provide（performance）		SIG Bilateral
	n	Average	n	Average	
Accommodation information	416	3.6010	416	3.1274	.000
Ticket information	416	4.0729	416	3.1891	.000
Program given information	416	3.8069	416	3.1571	.000
Program real-time information	416	4.2500	416	2.9479	.000
Traffic information	416	4.0897	416	3.1290	.000
Additional information	416	3.6971	416	2.9587	.000
Total average	416	3.9130	416	3.0693	.000

Set the demand degree as horizontal axis, and the providing degree the vertical axis, the total average value of the demand degree as the X-axis reference marking, the total average value of providing degree as Y-axis reference marking, draw IPA distribution diagram of each factor, the reference marking will divide IPA distribution diagram into four quadrants, in which Ⅰ quadrant is maintained area, Ⅱ quadrant oversupply area, Ⅲ quadrant low priority area, Ⅳquadrant strengthened improving area.



1. Accommodation information
2. Ticket information
3. Program given information
4. Program real-time information
5. Traffic information
6. Additional information

Figure 3 IPA distribution figures of six factors

Although there are significant differences between the various factors importance and expressiveness, but from Figure 3, we can find the relative performance of good and bad factors in the 6 factors. In the 6 factors, at the premise that tourists demand degree is higher, relatively good information that tourists perceive in the tourism attractions is the ticket information and traffic information, bad information is program real-time information; at the premise that tourists demand degree is relatively lower, tourism attractions providing accommodation information and the program given information have better performance, additional service information is provided relatively poor.

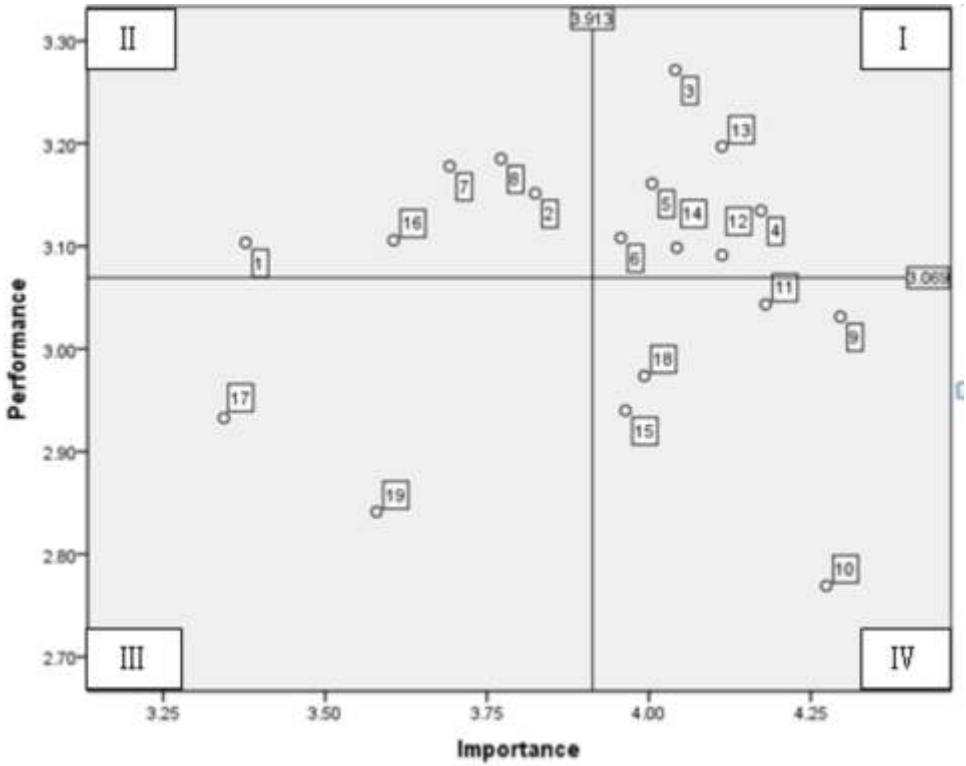
After understanding the good and bad performance of factors that tourists perceive in the tourism attractions, the measure of the various factors are analyzed, we can learn more about the differences of every aspect of various factors, specifically, and come up with practical recommendations for tourism attractions, the specific situation of every measure index is shown in Table 6 and Figure 4.

Table 6 IPA analysis table of factor items

Factor items	Importance		Performance		Sig
	n	Average	n	Average	
Nearby accommodation information	416	3.3774	416	3.1034	.000
Catering in and around the scenic spot	416	3.8245	416	3.1514	.000
Price of entrance ticket of the scenic spot	416	4.0409	416	3.2716	.000
Special offer of entrance ticket of the scenic spot	416	4.1731	416	3.1346	.000
Purchase channel of the scenic spot	416	4.0048	416	3.1611	.000
Recommendation of special program	416	3.9567	416	3.1082	.000
Detailed explanation about programs	416	3.6923	416	3.1779	.000
Requirements about playing in the scenic spot	416	3.7716	416	3.1851	.000
Opening status of programs in the scenic spot	416	4.2957	416	3.0312	.000
Real time status of queuing of popular program	416	4.2740	416	2.7692	.000
Timetable of shows in the scenic spot	416	4.1803	416	3.0433	.000
Recommendation of travel route to the scenic spot	416	4.1130	416	3.0913	.000
Guide of inner route in the scenic spot	416	4.1130	416	3.1971	.000
Timetable of bus in the scenic spot	416	4.0433	416	3.0986	.000
Weather information in the scenic spot	416	3.9639	416	2.9399	.000
Information about other scenic spots nearby	416	3.6058	416	3.1058	.000
Shopping information in and around the scenic spot	416	3.3438	416	2.9327	.000
Services and Help in the scenic spot	416	3.9928	416	2.9736	.000
Ways to complain in the scenic spot	416	3.5793	416	2.8413	.000
Total Average	416	3.9130	416	3.0693	.000

From Table 6, it can be found that, as for every measure index set in terms of tourist information demands, there are significant differences among the demand degree of tourist information demand and providing degree of tourism attractions provided.

Combined with Figure 4, we can draw the following conclusions:



1. nearby accommodation information
2. Catering in and around the tourism attractions
3. Price of entrance ticket of the tourism attractions
4. Special offer of entrance ticket of the tourism attractions
5. Purchase channel of the tourism attractions
6. Recommendation of special program
7. Detailed explanation about programs
8. Requirements about playing in the tourism attractions
9. Opening status of programs in the tourism attractions
10. Real time status of queuing of popular program
11. Timetable of shows in the tourism attractions
12. Recommendation of travel route to the tourism attractions
13. Guide of inner route in the tourism attractions
14. Timetable of bus in the tourism attractions
15. Weather information in the tourism attractions
16. Information about other attractions nearby
17. Shopping information in and around the attractions
18. Services and Help in the attractions
19. Ways to complain in the attractions

Figure 4 IPA distribution figures of factor items

The accommodation information and the included "**nearby accommodation information"**, "**catering in and around the attractions"**, the two measurement indicators are in quadrant Ⅱ ,namely, over supply area, which indicates the tourist information demand degree is relatively not high, but tourists think the tourism attractions provide good information; In fact the mean value of its demand degree is higher than the mean value of providing degree, but compared with additional information, it is better provided; therefore the providing degree of tourism attractions failed to meet the demand degree of tourists in accommodation information.

Ticket information and the included "**price of entrance ticket of the tourism attractions"**, "**special offer of entrance ticket of the tourism attractions"** and "**purchase**

channel of the tourism attractions", these three metrics are in quadrant Ⅰ, namely tourists demand degree of ticket information is high, while also providing degree of attractions is high, tourism attractions may remain.

Program given information is in quadrant Ⅱ, which contains "**detailed explanation about programs"**, "**requirements about playing in the attractions"** in quadrant Ⅱ, " **recommendation of special program"** in quadrant Ⅰ; The providing situation of program given information is good, but "**detailed explanation about programs"**, "**requirements about playing in the attractions"** and "**recommendation of special program"**, tourists have relatively higher demand for characteristic program recommendation information.

Program real-time information and its three measurement indicators are in quadrant Ⅳ, namely demand degree of real-time information is high, but the providing degree of tourism attractions is very low, belonging to the part that needs improvement, in which "**real time status of queuing of popular program"** is in minimum.

Traffic information and its three measurement indicators are in quadrant I, which is represented in traffic, tourists have a high demand degree , while providing degree of tourism attractions is relatively good, tourism attractions may remain.

Additional service information is in quadrant Ⅲ, indicating the overall demand degree of additional service information is not high, the providing degree of tourism attractions is also in general. But the "**weather information in the tourism attractions"**, "**services and help in the tourism attractions"** are in quadrant Ⅳ, the two information demands are higher compared to other information demands; "**information about other tourism attractions nearby"** is in quadrant Ⅱ, representing for additional service information, the tourism attractions providing degree of "**information about other tourism attractions nearby"** is relatively higher than the rest.

3.4 Strategy and Advice for Tourist Information Service

The main aim of this study is looking at the differences between the tourist information demands and tourism attractions information services by studying, in allusion to the information service problems for the OCT East smart tourism attractions construction process, and put forward recommendations for improvement, to make information and services more in line with tourists information demands, tourist information demands are better met. Here based on the results of the above analysis, the following suggestions are made for OCT East tourism attractions；

(1) Focusing on personalized information services. Currently, needs of tourists are increasingly personalized; the tourism attractions should change the outdated way of information service, and provide information on line with the personalized requirements of tourists. Based on ANOVA analysis results of demographics factors such as the age, education level, occupation, income, way of travel and time of travel differences can significantly affect the tourist information demands, so the different characteristics of tourists have different information demands, the tourism attractions should provide different information for different tourist services, to meet the needs of tourists 'personalized information.

(2) Improving the tourism attractions hardware. 39.9% of the respondents said that they could not use WI-FI in tourism attractions, 20.9% of the respondents said the internal signs of tourism attractions are unclear, 18.8% of the respondents said attractions tour map is not accurate, there is problem like inaccessible official website. While tourism attractions sites continuously improving online information platform, they also need to constantly upgrade hardware facilities, and lay good foundation for tourists to better use information platform

and fewer information problems in future.

(3) Increasing the promotion of tourist information platform. During the construction process of OCT East smart tourism attractions, it specifically developed Wechat official account for traveler information platform, but more than 60% of the survey respondents did not use the tourism attractions information platform, and the main reason why they did not is that they did not know that the tourism attractions had Wechat official account. Low use of tourist information platform will make it useless like a decoration, the various information provided by the tourism attractions cannot be effectively communicated with the tourists. Therefore tourism attractions should take various measures to promote tourist information platform, and improve utilization rate of visitor information platform, and ensure the effective realization of attractions information service.

(4) Appropriately adjusting tourist information platform content. Increase the content of the information platform, so as to cover the six aspects of tourist information demands, and at the same time, there should be emphasis. Appropriately continue to maintain the providing degree of ticket information and traffic information, focus on increasing the program real-time information and improving information services, particularly the open state information and queuing information, which tourists have high demand degree , but the tourism attractions providing degree is very low, need special improvement; For queuing information that tourists concerned the most, we can draw lessons from the reservation system in Hong Kong Ocean Park, trying to develop the function that tourist can through the information platform to have reservation. For programs given information and additional service information, appropriately enhance its providing degree.

Conclusion

Based on the tourist information demands during the process of smart tourism attractions construction, and the survey about the tourism attractions information services, based on the analysis of the collected data, the authors draw the following conclusions:

(1) During smart tourism attractions construction process, the lack of attention to the tourist information demands, information service provided by the tourism attractions does not meet the tourist information demands.

(2) Origin of tourist, age, education and other characteristic differences significantly affect the demand degree of tourist information demands, the tourist information demands are increasingly personalized.

(3) During smart tourism attractions construction process, entertainment program real-time information, especially tourist queuing information are most concerned, which is also the weakest performance of the tourism attractions, how to effectively solve the problem is the process of problem cannot be ignored during smart tourism attractions construction process, which should lead to high attention of tourism attractions.

Acknowledgment

This study was sponsored by the OCT Enterprises Co. Foundation: Smart Tourism Attractions Construction Research: Path Selection, Technical Architecture and Application System, and the Jinan University's Scientific Research Creativeness Cultivation Project for Outstanding Undergraduates Recommended for Postgraduate Study.

Reference

Bender, D.(1997/1998). Navigation for Better Online Marketing. HSMAI Marketing Review, 13:7-9.

Buhalis,A,D, LICATA,M,C. (2002).The Future E-tourism Intermediaries. Tourism Management, 23(3):207-220

Bacchus, L, R.and Molina, A. (2001). Internet Based Tourism Services: Business Issues and Trends .Futures, 33(7):589-605.

Belkin, N, J.and Vickery, A. (1985). Interaction in Information Systems: A Review of Research from Document Retrieval to knowledge-Based Systems.Boston Spa, England: British Library.

Choi S, Ylehto.(2007).Destination Image Representation on the Web: Content Analysis of Macau Travel Related Websites. Tourism Management, 28(8):118-129.

Dang Anrong, Zhang Danming, Chen Yang. (2011). the Meaning of Smart Scenic Site & Study on General Framework, Chinese Landscape Architecture, 15-21.

Deng Xianfeng, Li Xia. (2012).Smart Scenic Site: Standard Evaluation System. E-government Affairs, (9): 100-106. (In Chinese)

Ge Junlian, Gu Xiaojun, Long Yi.(2012).Smart Scenic Site Construction Discussion Based on the Stakeholder Theory. Industry Forum, (5):183-225. (In Chinese)

Gursoy, D& Mccleary,K,W. (2004).An Integrative Model of Tourists Information Search Behavior.Annals of Tourism Research, 31(2):353-373.

Gronroos C. (1983). Marketing in service companies. Malmo Liber, 21-38.

Ho J. (1997). Evaluating the Worldwide Web: A Global Study of Commercial Sites.Computer Mediated Communication, 3(1):1-30.

Hanna,J,R,P.& Millar,R. (1997).Promoting Tourism on the Tnternet. Tourism Management, 18(7): 469-470

Hyde,K,F.(2008). Information Processing and Touring Planning Theory.Annals of Tourism Research, 35(3):712-731.

Jin Bo.(2014). On Smart Scenic Site Standardized Construction. Standard Practice, (3): 96-99. (In Chinese)

Kirakowski, J.&Claridge,N,Whitehand.(1998). Measuring the Usability of Websites, Proceedings of the Human Factors Society 42ed Annual Meeting. 143-148.

Kim,D,Y.& Lehtob,X,Y. Morrisonc,A,M. (2007). Gender Differences in Online Travel Information Search: Implications for Marketing Communications on the Internet.Tourism Management, 28(2):423-433.

Mo Hongyuan, Cai Jianmin, Liu Guang. (2013). Smart Scenic Site Construction Supported by Shared Platform. Surveying & Spatial Information Technology, 36(8): 98-108. (In Chinese)

Ming Guisheng, Li Ping. (2014). Guilin Smart Scenic Site Tourist Service Platform Development and Application. China Science and Technology Information, (11): 112-114. (In Chinese)

Moe,W,W. (2003). Buying, Searching, or Browsing: Differentiating Between Online Shoppers Using in Store Navigational Click Stream.Consumer Psychology, 13(1):29-39.

Okazaki,S.& Hirose,M.(2009). Does Gender Affect Media Choice in Travel Information Search on the Use of Mobile Internet. Tourism Management, 30(6):794-804.

Perdue,R. (2001). Internet Site Evaluations: The Influence of Behavioral Experience, Existing Images, and Selected Website Characteristics.Travel & Tourism Marketing, 11(2/3):21-38.

Pan Fanglian, Wu Lin. (2003). A Review Overview of Information Economics for the Past Few Years. Books and Information, (2): 7-10. (In Chinese)

Ray,K. Satran A. (1995).Interactivity by Design.CA:Adobe Press,1995.156-170

Sharda,N,L. (2009). Tourism Informatics: Visual Travel Recommender Systems, Social Communities and User Interface Design. New York: Yurchak Printing Inc: 2-5

Xiang Z, Pan B. (2011). Travel Queries on Cities in the United States: Implications for Search Engine Marketing for Tourist Destinations.Tourism Management, 32(1):88-97.
Zhou Aimin. (2003) Knowledge Society Organizations Intelligence Service in Knowledge Economy Era. Information Science, (9): 953-956. (In Chinese)

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