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## **The Study on the Usability for Tourism Websites of Scenic Spots -Took Hainan Province as the Example**

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### **ABSTRACT**

At present, people pay more and more attention on the usability of tourism websites. The websites with poor usability can not bring good experiences for the users. For good scenic spots, good experiences can bring the positive propaganda and poor website experience can made the tourists abandon the trip their destination trip. The paper made the comparison and exploratory research for the web portals of tourist attraction in Hainan. By using the evaluation methodology of correction and elicitation, the writer made sure the index to the websites made by users. The paper analyzed the questionnaires based on 5 categories and 30 indexes, discussed present construction status of tourism website for the scenic spots in Hainan province, searched the relation between the star level and usability for the tourist spots, researched the influences to the trip of travelers caused by website usability and found out the insufficient of trip website construction in the scenic spots of Hainan province to improve the management level for the tourist destination and tourist spot, provide theoretical basis for the plan of trip promotion and improve the quality of traveling experience for travelers. In the paper, the research meanings are as follows:

1. The paper used the method of correction and enlightenment and took the feeling of tourists (who browsed the website) into consideration. By using 5 categories and 31 usability indexes of tourism website, the writer made the modeling and assessment for the tourism websites of scenic spots in Hainan. From five aspects, such as language, page structure and design, information structure, user interface and navigation mark and the whole part, the writer made omni bearing and deep assessment for the tourism websites of scenic spots in Hainan. He knew fully the deficiencies and provided the suggestions and opinions for the construction of tourism website in Hainan.
2. The aim of the paper is researching the relation among star level and usability and so on for Hainan scenic spots and finding the deficiencies for the tourism website usability of Hainan scenic spots to put forward relative improvement measures and helped servers who provided the tourism information to improve the tourism service and provide more convenient, timely and efficient tourism information. It aims to improve the management level for travel destination and scenic spots and provide theoretical basis for the plan of trip promotion.
3. Finding out the influences to scenic spot expectation of tourists made by websites of tourist attraction to understand well the influences to scenic spot propaganda made by the website of tourist attraction.

*Keywords:* Tourism website, usability, expectation.

### **RESEARCH STATUS**

With the rapid development of the Internet, it is urgent to study the usability of the website. Presently, scholars offered various definitions from the perspective of technology and users but failed to separate the essence of efficiency and satisfaction. Travis (2003) stated that website usability refers to the efficiency, effectiveness and satisfaction of users embraced after browsing the fixed website, realizing the fixed aim and searching the useful information. From the optimization of websites, Wang Qing (2011) defined the usability as the website design could satisfy users' information-searching need and the interaction of interface could support the operation of the website, which involved the security of interaction process, users' performance, learn-ability and users' satisfaction with products. On the premise of gaining the global data, Yuanhong (2010) made a further analysis on the definition of website usability by using the method of cluster and hierarchical thinking; and also, did the website usability experiment in 29 universities in Jiangsu Province. With reference to the literature, the definition of usability in this dissertation is the efficiency, effectiveness and satisfaction of the user to complete a given target.

The enhancement in website usability has a big significance of website construction and scholars evaluate the usability from different points of view. Liu zeng (2009) pointed that focus on the users is the key to construct the website. From the perspective of users, this website offered the usability standard and usability evaluation system standard on base of engineering theory. Based on the engineering theory, we concluded the features of website design and conceive the standard of website usability evaluation. Lei Yinzhi (2011) pointed that the usability degree affects the utilization efficiency of website by quoting the example of e-government website "e-Beijing" and testing the usability. Then put forward that the design concept should be adopted and focus on the users and usability evaluation, so as to boost the propinquity, service efficiency and change the actuality of information-jam in government websites and high charge in website maintenance. With the deepening of the research, there are more and more research methods in website usability. Au Yeung and Law (2004) classified the usability research steps into four parts, which included the evaluation of website usability indexes, questionnaire designing and collecting, questionnaire analysis and offering the improved suggestion.

There are four steps adopted in usability analysis of most website. For example, Abeleto (2002) enumerated 56 indexes of

website usability valuation in his essay, which include five categories, language, website structure design, information structure, user linking navigation and general impression. Tao.Hu and Law amended the conclusion of Abeleto and put 24 indexes of website usability valuation applying to the mainland travel, which includes five categories, language, website structure and design, information structure, users' interface and website navigation indication and the entirety. Sandeep made the usability evaluation of Britain websites by using heuristic approach, consumer survey and tool-testing method. Ke Qing extracted the data from browsing the websites and analyzed the usability in interface information, page view, website construction, website function and browser feelings, which offered a new idea in viability calculation by exploring the usability computing method and value internal.

## RESEARCH METHOD

### The Modeling Process of Usability Evaluation

Based on the evaluation index of usability for the tourism websites of Chinese Mainland which was put forward by Hu Tao, according to the practical situation and features of Hainan tourism websites, the paper made the modification and put forward 30 evaluation indexes of usability with five dimensionalities which suits to the websites of scenic spots. According to different indexes and the scores made by the tourists who browsed the official websites of scenic spots, in the paper, the writer used the method of likert five scale and got such result- the highest score is five and the lowest score is 1. And then, the writer worked out the evaluation value for the usability of different dimensionality and index and he got the evaluation values of usability for the scenic spots of different star levels and the total valuation values of usability for official websites of Hainan scenic spots. The detailed computing methods are as follows:

The whole evaluation system was consisted by five dimensionalities and every dimensionality has M index; in every dimensionality, we should work out the contribution weight for user satisfaction degree made by the indexes, namely the importance factor, the computing method is as follows:

$$I_r = \frac{\bar{C}_r}{\sum_{i=1}^m \bar{C}_i} \quad (1)$$

$r$  means the index serial number of the index;  $r=1,2, \dots,m$

$m$  means the index number of the dimensionality

$\bar{C}_r$ : means the average score of  $r$

$\bar{C}_i$ : means the average score of index  $i$

$I_r$ : means the importance factor of  $r$ ;  $r=1,2,\dots,m$

Importance factor means the contribution degree to the usability of the dimensionality made by the index; in the same dimensionality, the sum of the importance factor of every index is 100%.

For every index, we should average the score, according to the satisfaction degree we got and the computing method for the usability is as follows:

$$U_r = (\bar{C}_r - 1) * I_r * 5 \quad (2)$$

In the same dimensionality, the sum of usability value for all indexes is the usability value of this dimensionality and the sum of the five dimensionalities is the usability value of the tourism website. Based on the evaluation system of usability in this paper, we can make the quantification for the usability evaluation value for every index of every website of every scenic spot and the contribution level of every index; so the computing method for the evaluation value of every dimensionality is as follows:

$$D_i = \sum_{r=1}^m U_r \quad (3)$$

The whole evaluation value of usability for the website

$$H = \sum_{i=1}^5 D_i \quad (4)$$

$i$  means the value number of dimensionality;  $i$  equals to 1, 2, 3, 4 and 5

$U_r$ : means the usability evaluation value of r

$D_i$  means the usability evaluation value of I

$H$  means the whole usability evaluation value for the websites of scenic spots

The scope of usability value for every dimensionality is from 0 to 20; the change scopes of the whole usability for websites of scenic spots is from 0 to 100, which meant the different levels respectively; the scope from 0 to 20 means the very poor evaluation for the usability of the website made by the users; the scope from 21 to 40 means poor evaluation for the usability; the scope from 41 to 60 means the usability is on the average level; the scope from 61 to 80 means good evaluation and the scope from 81 to 100 means the usability evaluation for the website of scenic spot is excellent.

#### AVAILABILITY ANALYSIS FOR THE WEBSITE OF SCENIC SPOT

##### Availability Analysis

Because most respondents were students, the age scope is from 18 to 25 91. Such people were most and accounted for 91.7%; people whose household incomes per capita below RMB 3,000 accounted for 32.4%; people whose income scope is from 3,001 to 5,000 accounted for 43% and people whose income scope is from 5,001 to 10,000 accounted for 20.6%; such people are least whose income exceeded 10,000 and they accounted for 4%; for most respondents, their network ages are 7 years, 8 years and 9 years; the people number is 201 which accounted for 45.9%; people whose network ages exceeded 10 years accounted for 30.4%; it was decided by the main internet environment background of the respondents and students know the network early than other people; the respondents whose time online exceeded 30 hours accounted for 38.3%, whose time online scope is from 21 to 30 hours accounted for 38.3%, whose time online scope is from 5 to 10 hours accounted for 12.5% and whose time online is less than 5 hours only accounted for 10.1%. It was caused by such situation- nowadays, people usually take along their mobile phones and they always browse the websites to get relevant information, by using the mobile phone at any time and any place.

Table 1: website usability evaluation results

	coefficient of importance	3A	4A	5A
<b>language</b>		14.23	15.94	17.29
1. correct spelling and grammar	0.33	4.63	5.19	5.71
2. using standard language	0.34	5.10	5.53	5.95
3. the title is same with the theme	0.33	4.49	5.22	5.63
<b>page structure and designing</b>		13.11	14.86	16.28
1. the color of characters must be readable	0.14	2.05	2.27	2.45
2. with no horizontal axis	0.13	1.85	2.04	2.15
3. web page with moderate length	0.13	1.79	1.93	2.08
4. images with suitable size	0.12	1.61	1.75	1.91
5. contents with clear division	0.13	1.63	1.87	2.08
6. with few distraction	0.12	1.33	1.60	1.80
7. information of the web page could express the real content	0.12	1.41	1.72	1.98
8. images are not the main way to express information	0.12	1.43	1.68	1.84
<b>information structure</b>		11.13	13.34	15.30
1. be connected with the former site	0.18	1.80	2.13	2.45
2. guiding marks should be clear and available to browse	0.22	2.82	3.16	3.51
3. information should be updated in time	0.18	1.64	2.28	2.61
4. be connected with other relevant travel	0.19	1.95	2.40	2.92

website				
5. matching the images with the description	0.22	2.92	3.36	3.81
<b>User Interface and Navigation</b>		12.89	14.75	16.07
1. internal linking is normal	0.17	2.37	2.72	2.99
2. roller in homepage should not be used	0.16	2.02	2.32	2.51
3. with proper marks of navigation	0.17	2.22	2.47	2.70
4. clicked internal linking should be bold	0.16	1.86	2.14	2.31
5. return button is normal	0.18	2.59	2.87	3.06
6. searching results in website is accurate and usable	0.16	1.82	2.23	2.48
<b>in entirety</b>		10.74	12.32	14.31
1. it is unnecessary for users to learn latest tech	0.15	2.33	2.44	2.63
2. with high display speed	0.14	1.78	1.94	2.12
3. with reasonable arrangement of website content	0.14	1.77	2.00	2.27
4. with new browse tech such as 3D virtual point	0.09	0.56	0.73	0.90
5. network shopping is safe	0.12	1.06	1.28	1.59
6. website could be browsed with various language edition	0.10	0.74	0.93	1.19
7. website could be browsed with various language edition	0.13	1.32	1.55	1.84
8. website with individuation service	0.12	1.18	1.44	1.76
<b>toatal</b>		62.10	71.20	79.24

The evaluation results of usability for the websites made by the investigators were showed in table 1. Language dimensionality got the highest score, among the five dimensionalities. The website average scores for scenic spots of 3A, 4A and 5A were 4.74, 5.31 and 5.76 respectively, which were much higher than the average scores of other dimensionalities. The website of 5A scenic spots got the highest score, 17.29, which higher than the website of 4A scenic spots; The score of usability evaluation for the websites of 4A scenic spots is 15.94 and the score for the websites of 3A is 14.23. The standard language on the website of 5A scenic spots got the highest score, 5.95, which means it can be easily accepted by the visitors. The headlines on the websites of 3A scenic spots were same with the themes and it got the lowest score, 4.49, which means the users are not satisfied with such consistency. The headlines may mislead the visitors. The language used by the websites of 5A scenic spots are most standard.

About the design construction and design dimensionality of pages, the scores were lower universally. The websites average scores of 3A, 4A and 5A scenic spots were 1.64, 1.86 and 2.04 respectively. The part of disturbance term in 3A scenic spots got the lowest score, 1.33, which means for the website construction of 3A scenic spots, the visitors always disturbed by the contents outside the scenic spot propaganda. It included the bad information, such as advertisement. Among the contents of page design and structural dimension, in the scenic spots of 3A, 4A and 5A, the index score of disturbance content is the lowest. In this dimension, the readable index which has clear words and color got the highest score and the scores were 2.05, 2.27 and 2.45 respectively. But the websites of 4A and 5A scenic spots cannot reach the average score for all dimensions and they cannot accept by the people who browsed the websites. About such dimension, the score of official websites of 5A scenic spots was higher than the official websites of 4A scenic spots which was higher than the official websites of 3A scenic spots.

For the dimension of information structure, the average score for websites of 3A, 4A and 5A scenic spots were 2.23, 2.67 and 3.06 respectively. Webpage construction of 5A scenic spots was better than 4A scenic spots which was better than 3A scenic spots. On the official websites of 3A, 4A and 5A scenic spots, the image and text description got the highest scores (2.92, 3.36 and 3.81 respectively). 3A scenic spots usually do not update their website information timely, which made the tourists dissatisfied very much. The score is only 1.64. On the websites of 4A and 5A scenic spots, the index of providing the connection with the old address got the lowest score (2.13 and 2.45 respectively), which means the tourists cannot find the old address on the websites

easily and it would cause inconvenience for the tourists, when the address changed.

For the dimensions of user interface and navigation. The average score for websites of 3A, 4A and 5A scenic spots were 2.15, 2.46 and 2.68 respectively. On the websites of 3A scenic spots, the exact usable index of site search result got the lowest score, 1.82, which means when the sight-seers searched the information on the websites, their questions about route, ticket price, scenery features in the scenic spots cannot be solved totally. On the website of 4A scenic spots, color highlight index for the internal link which was browsed got the lowest score, 2.14, which means the websites did not mark the webpages browsed by visitors and it may make the visitors cannot distinguish the pages they have browsed.

### **The Influence to Tourists Caused by Website Expectation**

From the T test made by spss17.0, we can know for the websites of 3A scenic spots, there are no obvious differences for the visitors, after they browsed the websites compared with them before expectation. Their expectation before browsing usually higher than their expectation after browsing. Compared with the scenic spots of 4A and 5A, 3A scenic spots has lower popularity, which may make the differences are not obvious for the tourists, when they browsed the websites. But when they went to the scenic spots, the differences are obvious between their actual feeling and the expectation for the scenic spots, after browsing the websites. The score about the actual feeling usually is lower than the expectation for the scenic spots, after browsing the websites, which means we must enhance the construction for the scenic spots.

For the tourism websites of 4A scenic spots, there are obvious differences among the expectation to the scenic spots before browsing the websites, the expectation to the scenic spots after browsing the websites and the real feeling for visiting. After the tourists browsed the websites of scenic spots, they usually have higher expectation, which means the website of 4A scenic spots bring more expectation to the visitors and make them like to browse it. But their actual feeling cannot reach their expectation, which means we must enhance the entity construction for the scenic spots.

For the websites of 5A scenic spots, there are no obvious differences for the visitors, after they browsed the websites, compared with their before expectation. The scenic spots of 5A have higher popularity, so visitors expected more, before they browsed the websites, but after browsing the websites, they have a little disappointment, which means we must enhance the website construction for the scenic spots. But there are obvious differences between their actual feeling of visiting and the expectation after browsing. The feeling value is lower than the average expectation value after browsing. There may two factors which caused such situation: 1. the visit experience for the scenic spots cannot make the tourists satisfied, compared with the website propaganda for the scenic spots; 2. the scenic spots of 5A has higher popularity, so before the tourists browsed the websites, they have more expectation. According to the theory of inconsistent expectation, when people expected more, if their actual feeling has differences with their expectation, the scores made by people were lower than its practical value. Above two factors may all cause the actual satisfaction of tourists is lower than the expected value, after they browsed the websites.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Summarization and prospect**

This dissertation analyzed the usability and expectation of 3A,4A,5A tourist attraction website in Hainan and got the following conclusion.

(1) Total points of usability in 3A,4A,5A tourist attraction website are 62.10,71.20,79.24 respectively, which distribute the range from 61 to 80 and have a high-quality reputation among tourists. The usability satisfaction evaluation in 5A-rate tourists attraction are higher than that in 4A and 3A..

(2) The most favored part in tourist websites is linguistic dimension, which indicates that websites could advertise the tourist attraction without semantic ambiguity through languages. The entirety dimension gets the lowest mark, which indicates that the tourist attraction has not got the support of advanced tech, multilingual publicity and disadvantageous to construct the international island. Otherwise, detailed indexes such as, fewer unnecessary content, timely information updating, connected with other tourist website and accurate searching results need to be constructed.

(3) The expectation of tourists after browsing the website could affect the sightseeing quality. Tourists' sightseeing quality on Hainan scenic spot usually could not up to the expectation, side-fact states that the sightseeing construction have not reached the satisfaction of tourists and disparity existing between the expectation and practicability. The scenery need to be constructed urgently.

According the above conclusion, three suggestions on website construction of the South China Sea tourist attraction were given in this dissertation:

(1) Simplify the interface and improve the usability of the website. Much unnecessary content in website page could not only make users find the message they want in time, but affect their mood in browsing the website and cause the poor expression of the tourist attraction. Zhong Lina pointed that tourists are more willing to browse the website with suitable length and brief introduction, while at cross purpose, website designers pay much attention to the splendid web page to fuddle tourists with mass information. Tourists are more interested in browsing website with simplified and concise interface.

(2) Pay attention to the details in website design. Known from the data, the construction of Hainan tourist website didn't pay enough attention to the details. It was evaluated with low marks in clicked internal linking, proper navigation and suitable size images, which affected tourists' feeling in browsing the website.

(3) Look at the information transfer towards globalization. Lower marks in accurate searching results and untimely information update during the information transfer lead to the worse performance for tourists to get the information. Committed to construct international tourist island, Hainan tourist's websites are fail to give the support of browsing the page with various language and only with the Chinese permission, which is not helpful to transfer the information.

(4) To support the new tech and boost the tourists' appetite to browse the page. Lack the advanced the tech, which would make tourists feel immersive in scenery and deepen their understanding of tourist attraction, as well as enhance the travel desire.

(5) Enhance travel expectation and offer well reception services. To enhance the travel expectation of tourists in browsing the website, as well as the entity service. Higher expectation, higher service requirements put forward by tourists. Otherwise, tourists would be disappointed with the realistic experience in traveling and the satisfaction of tourist attraction.

In the paper, the study has some boundedness, for example, when calculating the index weight for the availability analysis of website, we should make a uniform standard to make the horizontal comparison and when making the investigation, we may be influenced by the subjective wishes of the respondents, so in future, for the usability study, the supplementary means of artificial intelligence can be added.

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