JOURNAL OF H&T www.johat.org

Mobile Information Services in Theme Park: Base on the Means and Model Perspective

Xuanyu Chen
Management School, Jinan University, China
Mu Zhang
Shenzhen Tourism College, Jinan University, China

Abstract

Considering on the development of information technology, mobile tourism information facility has become new trend in smart tourism. At present, most theories focus more on technical design and service mechanism, but less on whether mobile information services that provide for tourists in mobile circumstances could correspond with their needs. The authors take some theme parks, such as Splendid China Folk Village, Happy Valley and Window of the World in OCT as research samples. From the view of obtaining services, the authors creatively integrate mobile information services with experiences of tourists, and connect service perception with service distance. Therefore, the content analysis, qualitative analysis, statistical analysis and interview are used in this research project. The authors summarize key factors that affect mobile information service distance of scenic sites in mobile environment and that affect mobile information service perception of tourists, exploring how to make a consistent state between mobile tourist service distance in theme parks and service perception of tourists. Last, the means and model of mobile information service in theme parks are discussed. The result shows that this work would be an attempt of innovation for solving the academic issue that how to link mobile information service and tourists.

Key words: Mobile information services, Service perception, Service distance, Theme park

Introduction

Mobile tourism has become a powerful engine for the rapid development of tourism in 3G and 4G era and it has become a leading direction in reform of tourism with better satisfaction of tourists' personal needs, facilitating and improving their travel. The conception of mobile tourism services came into

being late and with the development of technology, its research field mainly covers three aspects--requirements verification and evaluation on service impact factors, technical design and platform construction, market development and marketing mode innovation. Nevertheless, present studies primarily focus on how to make a better combination between technology and tourism to enrich experiences of tourists and increase profits, but rarely on the question that whether hi-technology is able to meet market demand and satisfy tourists' needs for information services during their travel so as to start their journey without any delay. Researches on direct application of mobile tourism services and comments on their functions as well as market effect are rarely seen.

The definition of mobile tourism services varies and in mobile circumstance realization of MOBILE depends on how tourists perceive mobile tourism services and what they get because this kind of services, not only reflect the shift of places where tourism information is provided but more importantly show the accuracy of information and shortened esthetic distance between tourists and destinations. Therefore, at this time when technology develops rapidly and various hi-tech are being applied swiftly to tourism information services in great amount, simply taking into account experiences of tourists while they enjoy the services is not enough. Tourists' abilities to obtain mobile information services, which are called service perception distance, need to be considered as well to improve means and models of mobile tourism services which is user experience centered.

Literature Review

Previous Studies at Home and Abroad

The studies on mobile tourism information services by foreign scholars is far earlier than domestic scholars. In existing researches of tourism information services, besides the mode of mobile information services, information service preference, and crossed applications with other technologies (Harry, Christer, Francisco & Pirkko, 2007), foreign scholars also focused on the applications of mobile communication technologies in tourism, such as smart phones, PDA, impacts of the rapid developments of Internet on tourism recovery (Deng & Li, 2012) etc. In practice, foreign countries are also far earlier than domestic. In 2001, the European Union established a project named "User-friendly Personalized Mobile Tour Services", aiming to establish a unified tourism information system in Europe and comprehensively developed the technology of remote information processing. In 2006, Coppola resort in Pennsylvania imported the radio frequency identification wrist band system, realizing functions of the tourism consumer's self-pricing, vacation home exchanging and the mode of Tripit. In 2009, two companies from Britain and Germany developed a smart guide software, which could realize functions of “Augmented Reality” and planning routes intelligently. In 2012, Brussels launched a project named

"Identity City" (TAGTAGCITY), visitors could get relevant travel information by scanning QR-code. Singapore developed a plan named "Intelligent Nation 2015 Plan". In the sub-projects, "One-stop Registration Service" replaced the cumbersome registration procedures and realized the function of user identification ". Intelligent Digital Service System" made it possible for intelligent terminals to access one-stop information services (Liu L. N., 2003).

The development of mobile information services in China can be divided into five phases: traditional mobile information services, mobile communication services, mobile value-added communication services and mobile Internet services (Mao, 2012). The applications of tourism information services shifted from "Golden Tourism Project (GTP)" to "Digital Tourism", and then to "Smart Tourism"(Noam & Michal, 2007). With the proposal of the concept of "Smart Tourism" in 2011, tourists` spontaneous triggering of tourism information services became the mainstream of tourism development. Tourists could use new technologies such as cloud computing, Internet of things, etc.,to perceive tourism resources and release information on their initiative; change the information searching behavior and tourism patterns via mobile Internet and mobile intelligent terminals. With the development of communication technologies, service modes of mobile information services have gradually progressed from simple user-oriented service mode, instant service mode and local service mode into subject mode, technical mode, content mode, service strategy, users-oriented service mode, instant service mode, location-based service mode and personalized service modes (Lin, 2014). The mode and form of mobile information services have increasingly considered technology applications and the needs of tourists in the classification. Based on the researches of mobile information service channels and service contents, domestic scholars targeted at application design after requirement verification and services impact factors evaluation. The common concept was to combine applications with geographic information systems, such as designing mobile information service application models based on B2C, designing mobile tourism information management systems based on Android platform with the utilization of GPS and Google map (Ma & Wu, 2007; Yang M., 2013), so as to get services like scenic site query, GPS position, photo upload and other services related to geographical position. In addition, some scholars aimed to design applications according to the research of interactive platform between tourists and enterprises, constructed middleware systems of enterprise mobile information service platforms to collect network resources intelligently (Harry, Christer, Francisco & Pirkko); established models to analyze key factors that affected tourists` personalized information services under mobile information scenario(Liu L., 2012; Lu, 2014);triedto establish personalized information service systems for mobile tourism. Also other scholars chose to design programs on the cooperation between commerce and travel. On the one hand, it

combined travel agencies with mobile operators to provide tourists with mobile information services, travel agencies could take advantages of mobile communication technologies to build a platform for new mobile tourism information services, expand their business and improve its service quality(Yang X. T., 2003); on the other hand, tourism destinations combined mobile tourism services, the era of big data and the micro intelligent carrier together, actively imported innovative service concept, technical applications, product functions, marketing models, etc. (Peng & Zhang, 2013).

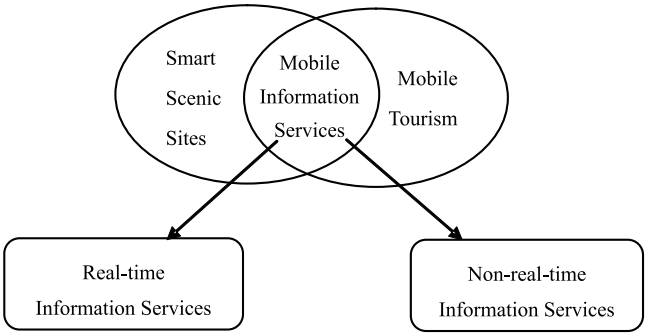
In summary, researches on mobile tourism services have become more abundant. Foreign studies on mobile information services mainly focus on the development of technologies without much attention to the user perspective; domestic studies on mobile Internet primarily focus on application and platform designs and how to perfect existing techniques for the user experience, commercial interests and resources integration. Studies on the mechanism of mobile information services need to be further improved. Compared with foreign countries, it is hard to promote and use information technologies in a large scale in China. In general, the researches on the channels of tourist perception of mobile services are very limited, and the researches on the mechanism of mobile information services need to be improved as well. In other related studies, the concepts like" User Satisfaction"or"User Perceived Value" can't fully embody problems related to services. Especially within a mobile tourism context, human and service distance have a close connection to mobile tourism and travel distance, the word "distance" is of great importance. However, service perception distance, which lacks of relevant study, is hard to be embodied. This study uses relevant theories of service quality evaluation to evaluate the mobile tourism information services, and give suggestions on the direction of the construction of mobile tourism information.

Definition

Mobile Information Services

Mobile information services generated in the process of moving in the tourist destination. From the aspect of applying technologies, mobile information services offer information services to users in mobile conditions through mobile, wireless information network and hand-hold mobile information terminals(Lin, 2014); from the aspect of information providers, mobile information services means that providers of mobile information services and tourism enterprises cooperate to provide services for tourists, and tourists can use mobile phones, wireless laptops, Pads and other mobile terminals to receive and share tourism information(Lu, 2014). In summary, under the background of smart scenic spots, this study gives the conception of mobile information services that is the process of the manager of smart scenic spots using mobile communication technologies and mobile terminal devices like mobile phones, wireless laptops, Pads and

Figure 1- Conceptual Graph of Mobile Information Services



other mobile terminal equipment to offer information services to mobile tourists and meeting various needs during the journey in the tourism destination.

From the aspect of the timeliness of information, if the information can arrive the destination from the source within information lifetime expectation, we call it real-time information (Jiang, 2012). Based on this theory, during the journey in smart scenic spots, if all kinds of real-time tourism service information can be transmitted to tourists within information lifetime expectation through mobile communication technologies, we call it real-time mobile information services of the smart tourism destination; conversely, if all kinds of tourism service information of the real-time changes can`t be transmitted to tourists within information lifetime expectation, we call it non-real-time mobile information services of the smart tourism destination.

Service Perception and Service Distance

As for service perception, according to the basic theory of cognitive psychology, Gronroos suggested that service perception depends on the contrast between tourist`sexpectation of the service quality and the real perception of the service quality level. Ma Yaofeng et al divided the content of tourism service perception into: tourist`s feeling on guide services, catering, shopping, communication, entertainment, transportation, hotel and other contents. As for service distance, most previous studies defined service distance as actually geographical range of services, which make litter sense when it comes to smart scenic spots under the background of mobile information services. On the one hand, such service distance includes the geographical range that all kinds of mobile information services cover in the smart scenic spots; on the other hand, service distance should include the psychological perception distance formed by how tourists use mobile information services in smart scenic spots, i.e. what is the convenient degree of using different mobile information service channels.

Methodology

Content of Research

Based on the two dimensions — tourist perception process and tourists` perception target, this research set "service perception" and "service distance" as key factors, which can explore: how do the scenic spot enterprises make their own mobile information services known by tourists and market; how to match mobile tourism information services with tourist demands extending service distance. Then build up a service chain to connect scenic spots with tourist services, which can meet tourists` real-time needs.

Under the background of mobile information services, the service perception of tourists is composed of three stages: the formation of perceived expectation, the formation of actual perception and the formation of perception gap. While evaluating the service distance of smart scenic spots and the gap between service perception and service distance, the evaluating indicators of service perception not only include the content of mobile information services(including real-time mobile information services and non-real-time mobile information services), but also should consider the effect of the mobile information services as a kind of service itself, such as service coverage, service access speed and convenient degree of the service, i.e. the ability of various channels to provide tourists with mobile information services. In summary, the research of mobile information service evaluation system is carried out from two aspects: the content of mobile information service and the mobile information service itself (i.e., all sorts of channels). Two interdependent dimensions, content and channel, consist of the mobile information service evaluation system.

Table Ⅰ- Research Model of Mobile Information Services

			Service perception of tourist		
			Expectation for mobile information service	Actual perception about mobile information service	Contrasts between expectation and reality
Service Distance in Smart Scenic Sites	What mobile information services contain	Real-time			
		Non-real time			
	How mobile information services are obtained	Range			
		speed			
		convenience			

Methods of Research

First, according to the content analysis method, built a preliminary frame work of mobile information services of series scenic spots in OCT. Then, by interview method and qualitative analysis (Nvivo8 software) method, the authors make

qualitative analysis on the network text and in-depth interview data and conclude the key factors which affect the service distance of scenic spots. Meanwhile, the authors design a questionnaire about mobile service software according to impact factors of the service distance, analyze and conclude the key factors which affect the service perception of tourists by using Statistic Package for Social Science (SPSS). Finally, combining the key factors which determine the service distance of scenic spots and the key factors which effect the service perception of tourists, the authors analyze the mode and mechanism of existing mobile information services to improve the involvement of mobile services and optimize the tourist experience of mobile tourism, enhance abilities of information services in order to strength the core competence of the scenic spots.

Based on the research framework, the authors make the following hypothesis.

H1: For the content of mobile information services in the smart scenic spots, tourist`s service perception to real-time mobile information services is significantly worse than the non-real-time mobile information services.

During the collecting of network texts, the authors find that all scenic spots focus on the establishment of WeChat official accounts, so this study focuses on WeChat official accounts while analysis the channels of mobile information services. This study mainly focuses on the relativity between WeChat official accounts and satisfaction of service channels as well as service contents. The authors make the following hypotheses:

H2: WeChat official accounts are related to the satisfaction of all kinds of mobile information service contents and will be the key channel to be developed.

H3: WeChat official accounts are related to satisfaction of all kinds of mobile information service channels and will be the key channel to be developed.

EMPIRICAL STUDY Ⅰ :Study on factors that affect mobile information service distance

Research Areas

First of all, the authors conduct a survey about the development of the information construction of the series scenic spots in OCT. Through the official data and the user's online comments, the authors find that the three major theme parks have developed online systems for reservation and marketing. As for services of PC terminals, the mobile service contents on official websites are comparatively comprehensive, covering the basic information like activity timetable, transportation, accommodation, ticket management, etc. but lacked of feedbacks of real-time information to different degrees; As for services of mobile terminals, the design of official APP is relatively simple: the official APP of Windows of the World only offers voice explanation; the official APP of China

Culture Folk Village and Happy Valley are all outsourced identically with single-function. They all fail to provide tourists mobile information featuring their own specialties, as targeted applications are lacked of attractions and product viscosities. Yet three scenic spots all have WeChat official accounts, the non-real time mobile information like introductions about scenic spots and tourism activities is more comparatively comprehensive.

Qualitative Analysis

Construction of System

Afterinterviewing three enterprises, the authors acquire 5 interview recordings and 1investigation report. Then the authors importoriginal dates into Nvivio 8, encode the dates after initial processing. While encoding the authors establish free nodes. In the analyses of free nodes, the free nodes are gradually shifted to other types of tree nodes in order to make the owner-member relationship between nodes more clear and build a mobile information service evaluation system in smart scenic spot, displaying the relevancy of its related nodes through the model.The evaluation system is shown in the Figure 2,3 and 4:

Figure 2- Mobile Information Services

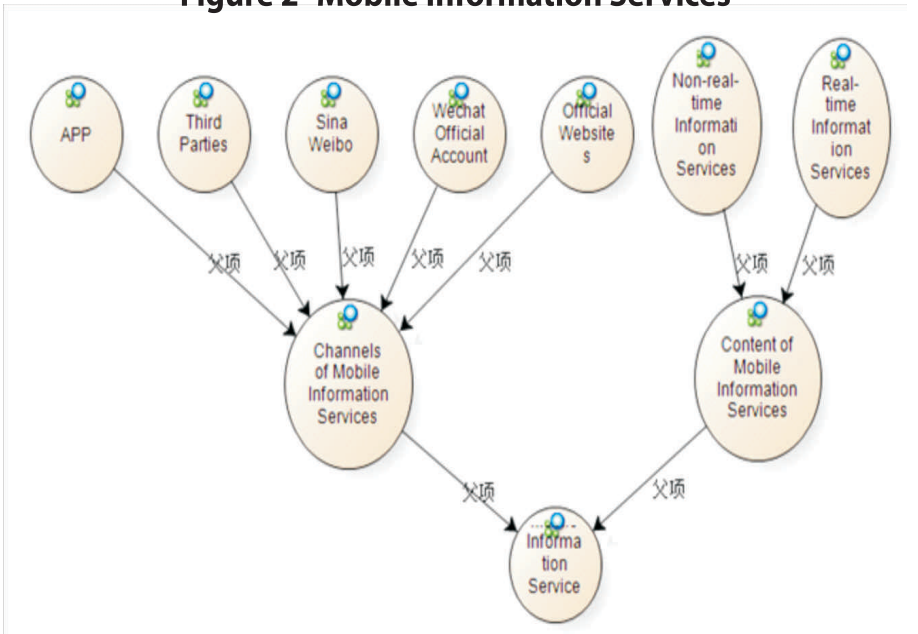


Figure 3- Non-real-time Information Services

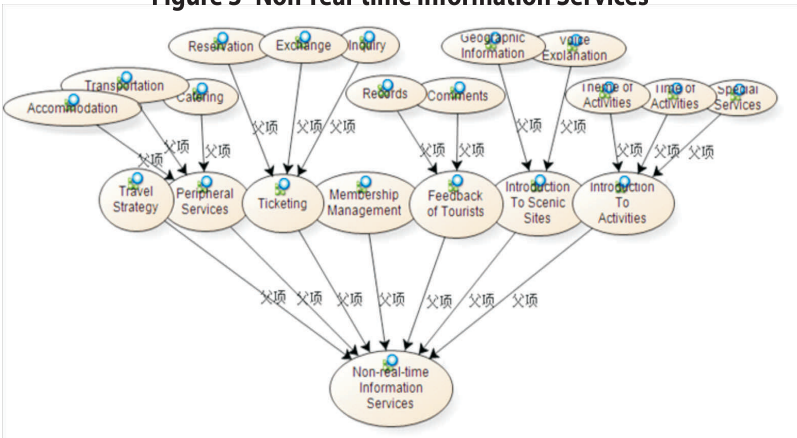
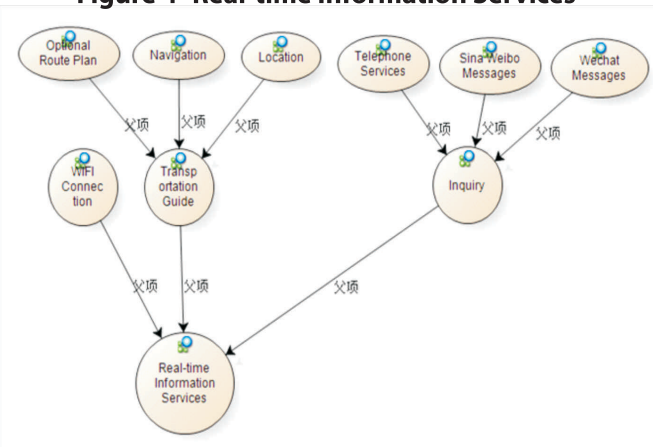


Figure 4- Real-time Information Services



The mobile information service evaluation system contains four hierarchies. In the first hierarchy, the evaluation system is divided into two parts--channel and content, and all contentsare dependent on channels.

In the second hierarchy, channelsare composed of official APP, WeChat official accounts, Sina Weibo, official website and third parties; the contentsare composed of real-time mobile information services and non-real-time mobile information services.

In the third hierarchy, non-real-time mobile information services include ticketing, scenic spots introduction, introduction of activities, travel guide, peripheral services, membership management and feedback of tourists, seven tree nodes in total; while real-time mobile information services include WIFI connection, transportation guide and inquiry, 3 tree nodes in total.

In the fourth hierarchy, in the range of official APP non-real-time mobile information services, ticketing, introduction of scenic spots, introduction of activities, peripheral services, feedback of tourists, these five nodes respectively

establish their own child nodes, 13 nodes in total; in the range of real-time mobile information services, traffic guide and inquiry, these two tree nodes respectively establish their own nodes, six child nodes in total.

Analysis of tree nodes

As for channels of mobile information services, nodes of official APP shares 24.83% coding reference points, while the third parties share 14.38%, official websites share 17.3%, WeChat official accounts shares 24.83%, Sina Weibo shares16.63%. The figure shows that the percentages of coding reference points of official APP and WeChat official accounts are much higher than that of Sina Weibo, websites and third parties, which indicates that scenic spots pay more attention to the development of hand-hold mobile terminal than PC terminal.

As for contents of mobile information services, nodes of non-real-time mobile information services share 76.77%,while real-time mobile information services only share 23.23%. In the analysis of the real-time mobile information services, WIFI connection shares 47%, traffic guide shares 46%, inquiry only shares 7%. In the analysis of non-real-time mobile information services, considering the purpose of earning profit, scenic spots put member management (21%) and ticket management (8%) in an important position. Excluding these activities operated for profits, scenic spots introduction (4%), activity introduction(14%), and travel guide (42%) all these mobile information services for spreading scenic cultural altogether share 60% of non-real-time mobile information services .Moreover, peripheral services as to attract tourists to scenic spots share 7%, and feedback of tourists only shares 4%.

Analysis of node matrix

Setting the features of mobile information services as row vector and channels of mobile information services as column vector, the authors establish a query and generate a matrix, and the row percentage of the matrix is the feature trend of ch channel.ea The matrix indicates that the five informchannels of mobileation services all slant on non-real-time mobile information services, whose proportion is over 70%. The proportion of WeChat official accounts in non-real-time mobile information services surpassed 80% to the top.

Setting the features of mobile information services as row vector and channels of mobile information services as column vector, the authors establish a query and generate a matrix, the column percentage of the matrix is the channel trend of the content. The matrix indicates that in the range of the two kinds of mobile information services (real-time, non-real-time), WeChat official accounts occupies a great proportion (34.69%, 44.1%), while the third parties makes up the least (8.16%, 7.08%).

EMPIRICAL STUDY Ⅱ：—— The Factors that Affect Mobile Information Service Perception

For the tourists travel in scenic spots in OCT, 450 questionnaires are issued and 435 are taken back with the valid callback rate of 96.67%. Among the tourists, 414 of them have visited at least one scenic spot in OCT. Without missing date, the rate of valid questionnaires is 95.2%.

Analysis on Mobile Information Service Channels

Usage of tourists

Before visiting the scenic spots, tourists prefer to search information through official websites (52.7%) and third parties(52.2%), while the usage of official APP is the least(only 14%);while visiting the scenic spots, tourists prefer to search information through WeChat official accounts (29.2%), whereas third parties hold the least proportion (14.5%). It is noting that, no matter before visiting (15.9%) or while visiting (20%), a part of tourists don`t apply any channels to search information. It means that they either do not search information or they use unofficial channels for information searching, which makes the tourism spots to lose a large number of potential visitors.In addition, except official APP, the user number of all other channels diminishes respectively during the visiting, while the decline of official website and the third partiesare the most obvious.

Evaluation of tourists

Table 2- Descriptions of Mobile Information Service Channels

	Before visiting		While visiting	
	Satisfaction rate（%）	Dissatisfaction rate（%）	Satisfaction rate（%）	Dissatisfactio n rate（%）
Official websites	45.8	5.8	39.7	**14.5**
Sina Weibo	46.3	**19.7**	37.9	10.5
Official APP	38.7	14.0	37.4	10.0
WeChat official accounts	**48.4**	12.8	**49.0**	8.6
Third parties	38.6	5.7	46.5	6.7

Before visiting, the satisfaction rate of WeChat official accounts is the highest (48.4%), but all satisfaction rates of different channels don`t reach a half. The highest rate of dissatisfaction is Sina Weibo (19.7%), but all dissatisfaction rates of different channels are not very high, indicating that a large number of tourists take neutral attitudes on evaluating various channels. While visiting, the satisfaction rate of WeChat official account number is still the highest (48.4%). The satisfaction rates of WeChat official accounts and third party increase, whereas other channels all decrease in different degree; the dissatisfaction rate of official websites (14.5%)is the highest, only the dissatisfaction rates of official

websites and the third parties rose.

One reason for this rise is that the dissatisfaction rates of official websites and third parties are the lowest before visiting, actual perception couldn`t meet high perceived expectations, widening the perception gap. Another reason is that the mobile information services which provided by official websites and third parties are mainly non-real-time, which couldn`t meet tourists' increasing needs of real-time mobile information services while visiting.

Tourist`s Evaluation on Mobile Information Service Channels in General

General evaluations on mobile information service channels of scenic spots consist of service coverage, service access speed and convenient degree of the service. According to data analysis: (a) All tourists could more or less obtain the information they want, and 71.29% of tourists think most of the information can be searched, meanwhile only 5.94% of tourists think most of the information can`t be searched. (b) Only less than half (45.55%) of tourists believe that the service access speedis swift, nearly half (44.06%) of tourists are neutral, 10.4% of tourists consider that the speed is relatively slow. (c) only half (52.47%) of tourists believe that the process of obtaining information is convenient, 37.62% of tourists are neutral, 9.9% of tourists feel that the search process is more cumbersome.

Analysis on the Content of Mobile Information Services

Table 3- Differences between Demanding and Gaining Situations in the Content of Mobile Information Services

	The mobile information services that expected while visiting		The mobile information services that gained in official channels while visiting		Equality rate between the expecting and the gaining mobile information services
	Average	Standard deviation	Average	Standard deviation	Rate (%)
Wireless link	.8261	.37949	.3237	.46844	29.47
Location and its sharing	.3816	.48638	.1884	.39151	**12.08**
Navigation	.4638	.49929	.1981	.39903	**12.56**
Instructions of the optimal visiting routes	.6957	.46069	.3188	.46659	26.09
Inquiry center	.4976	.50060	.4589	.49891	25.12
Average					**21.06**
Ticket information	.3864	.48753	.4396	.49694	21.26
Admission ways	.2705	.44477	.3816	.48638	16.91
Geographic information andopening time of scenic sites	.4783	.50013	.4300	.49567	28.99
[illegible]	.5314	.49962	.3768	.48517	24.15
Route plan	.6667	.47197	.3961	.48968	30.92
Public facilities	.6715	.47024	.5169	.50032	**41.06**
Peripheral services	.5169	.50032	.2657	.44224	18.36
Average					**25.92**

In real-time mobile information services, the highest equality rate between the expecting and the gaining is WIFI connection(29.47%), the lowest two are location and its sharing (12.08%) and navigation (12.56%), and the average rate is 21.06%; in the non-real-time mobile information services, the highest equality rate between the expecting and the gaining is public facilities (41.06%), the lowest is admission ways (16.91%), and the average rate is 25.92%. It is obviously seen that the average rate of non-real-time services is higher than that of real-time services, which indicates that tourists who expect to obtain real-time mobile information services acquire much more non-real-time mobile information services instead during their actual visiting. The statistics can partly prove that H1 is correct.

The following table describes the satisfactions of the content of mobile information services:

Table 4- Descriptions of the Content of Mobile Information Services

	Min	Max	Average	Satisfaction rate（%）	Dissatisfaction rate（%）
Wireless connection	1.00	5.00	2.8261	**30.0**	**38.6**
Location	1.00	5.00	3.1256	31.9	22.7
Navigation	1.00	5.00	3.3043	41.3	17.4
Instructions of the optimal visiting routes	1.00	5.00	3.4541	49.3	15.9
Inquiry center	1.00	5.00	3.7585	**61.4**	**5.8**
Average				**42.78**	**20.08**
Ticket information	1.00	5.00	3.5362	**55.3**	**8.2**
Admission ways	**2.00**	5.00	3.6377	58	8.2
Geographic information and opening time	**2.00**	5.00	3.7536	60.9	6.3
Activities' introduction and searching	1.00	5.00	3.6232	57.5	9.7
Route plan	1.00	5.00	3.5942	55.6	9.7
Public facilities	**2.00**	5.00	3.7971	**65.3**	**3.9**
Peripheral services	1.00	5.00	3.5169	56.6	9.7
Average				**58.46**	**7.96**

In real-time mobile information services, tourists are most satisfied with the artificial inquiry, which has the highest satisfaction rate(61.4%) and lowest dissatisfaction rate (5.8%).Yet tourists are most dissatisfied with WIFI connection, which has the lowest satisfaction rate(30%) and highest dissatisfaction rate (38.6%), and the extreme dissatisfaction proportion adds up to 14.5%. The average satisfaction rate of the real-time mobile information services is 42.78% and the dissatisfaction rate is 20.08%. In non-real-time mobile

information services, tourists are most satisfied with public facilities, which has the highest satisfaction rate (65.3%) and the lowest dissatisfaction rate (3.9%), tourists are most dissatisfied with ticket information, which has the lowest satisfaction rate (55.3%) and highest dissatisfaction rate(8.2%).Among all the items, no one feels extreme dissatisfied with admission ways, geographic information and timetable, public facilities situation. The average satisfaction rate of real-time mobile information services is 58.46% and dissatisfaction rate is only 7.96%.

The satisfaction rate of real-time mobile information services is significantly lower than that of non-real-time mobile information services, while the dissatisfaction rate of real-time mobile information services is much higher than that of non-real-time mobile information services. This result happens to coincide with the analysis of equality rate between the expecting and the gaining. *H1: "For the content of mobile information services in the smart scenic spots, tourist`s service perception to real-time mobile information services is significantly worse than the non-real-time mobile information services." is correct.*

Correlation Analysis

Correlation between WeChat and the satisfaction of various mobile information service contents

The authors apply ANOVA(Analysis of Variance) to WeChat and the satisfaction of of various mobile information service contents. It is shown that Significance of all items is 0(<0.05) except that the Significance of inquiry center is 0.03. The significant difference between samples proves the positive relations between WeChat official accounts and the satisfaction of various mobile information service contents, and WeChat official accounts will be the key channel to be developed. *H2: "WeChat official accounts are related to the satisfaction of all kinds of mobile information service contents and will be the key channel to be developed." is correct.*

Correlation Analysis

Correlation between WeChat and the satisfaction of various mobile information service channels

The authors apply ANOVA analysis to WeChat and the satisfaction of various mobile information service channels. Among all the evaluations of various mobile information service channels, it is shown that the Significance of service coverage rate is 0.213(>0.05), not without a significant difference, which means that the construction of WeChat official accounts doesn`t have an influential effect on service coverage. On the contrary, the Significance of service access speed and convenient degree of the service are both 0(<0.05), showing the significant difference, which means that the construction of WeChat official accounts greatly influences service access speed and convenient degree of the service. *H3: "WeChat official accounts are related to satisfaction of all kinds of mobile information service channels and will be the key channel to be developed." is partly correct.*

Results

Based on enterprises interview and analysis of tourists' using conditions on mobile information services, the authors study the relativity between the service distance of scenic spots and tourists` service perception, hence summarize the key factors which determine service distance of scenic spots and tourists` service perception. Comparing key factors of service distance with that of service perception, the authors find the gap of service distance of scenic spots and tourists` service perception.

From the key factors which determine service distance of scenic spots, (1)Contents: scenic spots provide 6 real-time mobile information services and 13 non-real-time mobile information services .Non-real-time mobile information services are significantly more than real-time mobile information services, scenic spots should strengthen real-time mobile information services of all channels, especially increase the development of traffic guide and reduce the dependence of the inquiry function to optimize tourists` real-time experience in mobile tourism. (2)Channels: the scenic spots offer official APPs, We Chat official accounts, Sina Weibo, official websites and third parties, in total five channels .Scenic spots should put more emphasis on the development of hand-hold mobile terminals (including official APP and WeChat official accounts), particularly accelerate the construction of real-time mobile information services in WeChat official accounts and achieve the independent operation of the WeChat platform. In addition, scenic spots only get a neutral evaluation on service coverage, service access speed and convenient degree of the service because of the lack of information communications with tourists.

From the key factors which impact the tourists` service perception of scenic spots, (1)Contents: the demand of real-time mobile information services is significantly higher than non-real-time mobile information services, but the service perception of real-time mobile information services is significantly worse than the non-real-time mobile information services .WIFI connection is the one that dissatisfies tourists most among real-time mobile information services, and ticket information is the one that dissatisfies tourists most among non-real-time mobile information services. (2) Channels: tourists prefer PC terminals before visiting and prefer hand-hold terminals while visiting. In order to improving tourists` service perception of channels, scenic spots should pay more attention to the development of WeChat official accounts and official APPs. As a whole, under the background of mobile information services, service coverage of mobile information reaches the standard, but service access speed and convenient degree of the service aren`t enough for standard. (3) Relativity: for the contents of mobile information services, WeChat official accounts significantly influences the satisfaction of mobile information services. For the channels of mobile information services, WeChat official accounts doesn`t have an influential effect on service coverage but greatly influence service access speed and convenient degree of the service.

From the gap between service distance of scenicspots and tourists`

service perception, if scenic spots want to improve service perception of mobile information services, they should pay more attention to the requirements and evaluations during the tour. The improvement could be carried out in two aspects: (1) Change the existing mobile information service system: generally speaking, it's to increase the proportion of real-time mobile information services by the reformations of channels. In addition, although many scenic spots plan to focus on the development of WeChat official accounts and temporarily abandon official APPs, but there is still a rising dependence on the official APP. Specifically speaking, the scenic spots should conduct an emphasized project to respectively build the contents of mobile information service in different channels, according to tourists` preference of different channels and different mobile information services before visiting. As for hand-hold mobile terminals, the real-time mobile information services like traffic guide should be emphasized, and the non-real-time mobile information services like member management should be decreased. (2) Improve the satisfaction of existing mobile information services: in the development of new real-time mobile information services, scenic spots should ensure the quality of existing mobile information services, such as implementing the using condition of WIFI connection, improving ticket services, etc. Furthermore, although the construction of WeChat official accounts significantly affects the satisfaction of mobile information services contents, access speed and convenient degree of the service, but it has little impact on service coverage. Thus scenic spots couldn`t just rely on the construction of WeChat official accounts platform to improve the satisfaction of mobile information services. As a system, the improvement of the whole satisfaction of mobile information services should be based on the characteristics of the tourism time axis, the construction of mobile information services channels and the arrangement of mobile information services contents, as well as works of both offline equipment and online apps.

Discussion

From the aspects of service distance and service perception, the authors study the mobile information service systems of series scenic spots in OCT. Nevertheless, it only analyzes the pathand mode of the existing mobile information services and offers some improving measures, but doesn`t put forward a new pattern of mobile information services and testify it. In the future research, it is possible to design a new pattern of mobile information service system especially for series scenic spots in OCT. Moreover, considering that most of scenic spots` APPs lay stress on marking rather than improving tourist`s experience in the mobile scenario, it is possible to combine more technologies like LBS, GIS to design new application systems and deepen mobile services. Mobile services could lay more stress on the closeness between scenic spots and tourists, the tourists` experience and the convenience of using modern information technologies.

Acknowledgment

This study was sponsored by the OCT Enterprises Co. Foundation: Smart Tourism Attractions Construction Research: Path Selection, Technical Architecture and Application System.

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About the Authors:

Xuanyu Chen, master student of Management School in Jinan University. She is engaged in research on smart tourism and ecological tourism.
Email:chenxuanyu_95@163.com.

Mu Zhang, PhD, professor and associate dean of Shenzhen Tourism College in Jinan University. Heengaged in researches on geography geographical information system eCommerce in tourism, and teaching of tourism management etc.
Email:zhangmu@163.com.