

RESEARCH ON THE APPLICATION OF MOBILE E-COMMERCE IN ECOTOURISM

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Tourism is a comprehensive industry with strong relevance which has a profound connection with many industries of the national economy. As a coordinated result between human being and nature, ecotourism is being loved by more and more people. It has huge developing potentiality. Research on ecotourism can also promote ecological protection and sustainable development of the economy, which is an effective way to realize the harmonious development of economy and ecology. Due to the wide area, growing of self-help tour mode, the traditional e-Commerce is difficult to manage and provide suitable service in entire course of a tour. Tourists are most concerned about how to obtain information in the process of tourism, collect evidence in a timely manner, ensure the safety of them, improve service quality and meet personal satisfaction. Mobile E-Commerce is an expansion of E-Commerce with using portable wireless devices, and Mobile E-Commerce can provide personal service at any time in any place through wireless net. Mobile E-Commerce makes it possible that e-Commerce move with movable people. This article analyzes the necessities and superiorities of Mobile E-Commerce in ecotourism. Mobile E-Commerce can realize mobile information management, mobile marketing, mobile consumer relationship management etc. in ecotourism. First, the application of mobile e-commerce in ecotourism is investigated and evaluated with PEST analysis method. Then, through the analysis of Specific application mode of mobile e-commerce in ecotourism. Finally, it concludes that tourism is the most suitable product for mobile e-commerce, and the combination of the two can better promote the development of ecotourism and improve economic benefits.

Key words: Tourism, Ecotourism, E-commerce, Mobile E-commerce, Tourism E-Commerce, Management

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1 Introduction

With the people's health importance growing as a way of recreation, ecotourism has become the fashion pursuit of tourism. Advantage of mobile e-business is obviously in development of ecotourism. With the current mobile Internet technology matures, mobile e-commerce applied to the whole process of ecotourism resources can bring vitality to the development of ecotourism.

With the continuous development of the tourism industry, APP service platforms for tourism have begun to appear. Intelligent terminals can provide tourists with information services anytime and anywhere and We usher in the era of smart tourism. Tourism APP is a mobile application that can provide users with travel product booking, information query, mobile payment, positioning, navigation and other travel service functions, which can meet users' travel consumption anytime and anywhere.

There are different versions in China's APP market. The existing tourism apps include reservation, tour guide, sharing and tools. Scholars' research on tourism apps mainly focuses on the level of type classification, information service quality and application technology design. In terms of application technology and technical evaluation of tourism apps, Li li (2014) introduced the main content and functions of the current urban tourism APP, including GPS navigation and map guidance, scenic spot introduction and route design, product recommendation and review. Liu DanYao (2015) took the android system as the platform to design and implement five functional modules, including the main interface, travel notes, destination, personal center and search, in the travel guide APP.

Shen Hong (2014) divided tourism apps into comprehensive service apps that provide more service types and more comprehensive contents and single service apps that focus on single service functions according to the number of service types that tourism apps can provide. Likyoung (2014) introduced the UTAUT model into the research on user acceptance behavior of

mobile tourism APP, combined the characteristics of mobile information technology and tourism service, added individual innovation and perceived risk, and constructed the user acceptance behavior model of mobile tourism APP. As can be seen from the literature review, there are relatively few studies on the application of tourism from the perspective of ecotourism and user experience. With the development of rural tourism and leisure tourism, mobile e-commerce should study the application of mobile e-commerce in eco-tourism from the perspective of users and combination with the characteristics of ecotourism.

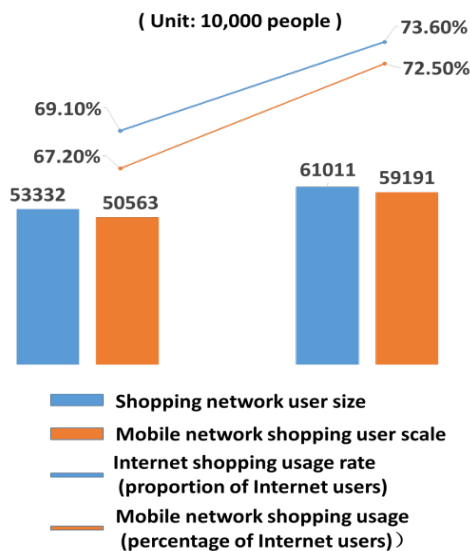
Ecotourism, as a kind of human activity based on nature, is being favored by more and more people. With the development of ecological parks and ecological resources, ecotourism develops rapidly. However, due to the feature of ecotourism including natural and diverse terrain, environmental learning motivation, environmental protection behavior requirements and the continuous development of self-service tourism mode, traditional e-commerce is difficult to provide appropriate services to meet the various needs of ecotourism. At the same time, mobile e-commerce, as a new form of e-commerce, is more and more favored by tourism users due to its own advantages.

2 Review of Literature

2.1 The development of E-commerce

The rapid development of e-commerce in China is mainly reflected in the following aspects: the market scale continues to grow, the industrial support continues to improve, the pace of online and offline integration is accelerated, and the pace of cross-border e-commerce is accelerated.[1] According to the 43rd statistical report on the development of Internet in China, by the end of 2018, the number of shopping users in China will reach 610 million, with an annual growth rate of 14.4% and the usage rate of Internet users 73.6%.[2] After the rapid development of the network consumer market has gradually entered the stage of upgrading the quality of the development, supply and demand at

both ends of the "double upgrade" is becoming a new round of driving force for industry growth. On the supply side, the integration of online and offline resources is accelerated, and new models such as social e-commerce and quality e-commerce are constantly enriching consumption scenarios, driving the transformation and upgrading of the retail industry. On the demand side, the trend of consumption upgrading remains unchanged and the characteristics of consumption stratification become increasingly prominent.



Network shopping, mobile shopping user scale and usage rate

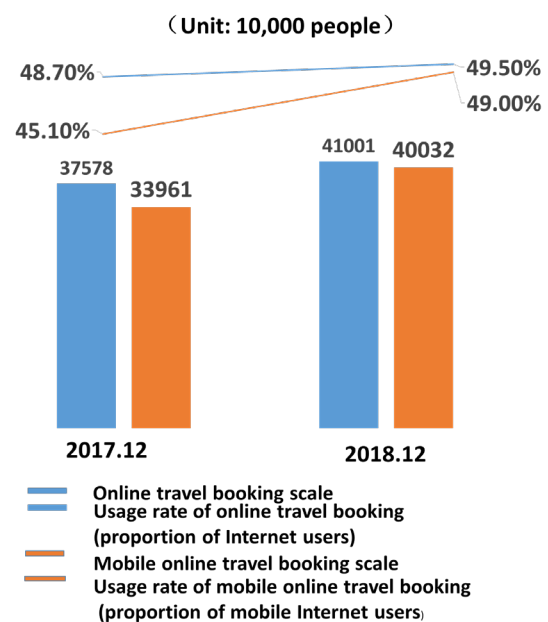
2.2 The development of e-commerce in Tourism

There are five main stages in the development of tourism e-commerce in china. The first stage is the beginning stage; The second stage is the initial stage, which is marked by the establishment of Ctrip.com and combines network technology with traditional tourism to form a new business model. The third stage is the development stage, marked by the listing of Ctrip.com in the United States, which is the turning point of the rapid development of China's tourism e-commerce service level. The fourth stage is the improvement stage, which solves the bottleneck of online payment with the emergence of Alipay and WeChat. The fifth stage is the new exploration stage. With the rise of mobile online tourism platforms, WAP and APP are used to realize the interactive connection of tourism products and services. [3]

According to the statistics of the national tourism administration on the number of tourists in the first half of 2018, the number of domestic tourists was 2.826 billion, an increase of 11.4% over the previous year, the number of inbound tourists was 69.23 million, an increase of 0.4% over the previous year, and the number of outbound tourists reached 71.31 million, an increase of 15% over the previous year.[4] The number of domestic tourists accounted for more than 90 percent of the total number of tourists. Tourism revenue reached 2.45 trillion Yuan in the first half. Thus it can be seen that tourism e-commerce is being accepted by more and more people, and there is still a lot of room for the development potential of tourism e-commerce.

Tourism e-commerce is a business system centered on network, based on tourism information base and electronic commercial bank, using the most advanced electronic means to operate tourism and its distribution system [5]. Tourism e-commerce

is the use of advanced technology in the tourism industry for a variety of trading activities. Tourism e-commerce is one of the important contents of tourism management information system. Tourism e-commerce is characterized by integration, vivid image, personalization, low operating cost, wide range of users, no time and space restrictions, and closer relationship between suppliers and consumers than traditional business model. The characteristics of tourism products determine that tourism is one of the most suitable industries for the development of e-commerce. E-commerce has changed the traditional tourism mode, promote the development of ecological tourism. China's tourism e-commerce sites from 1996 began to appear, at present, have certain ability of tourist information website has more than 5000, more than 300 professional tourism website, mainly including regional website, professional web sites and web portal travel channel [6]. Although e-commerce has only been used in the tourism industry for a few years, its development momentum is very strong. As of December 2018, the number of online travel booking users reached 410 million, up 34.23 million from the end of 2017, a growth rate of 9.1%. The proportion of Internet users who booked air tickets, hotels, train tickets and travel and vacation products online was 27.5 percent, 30.3 percent, 42.7 percent and 14.5 percent, respectively. Among them, the user scale of booking tourism and vacation products grows the fastest, with a growth rate of 35.5%.



User scale and usage rate of online travel booking and mobile online travel booking

So developing tourism e-commerce can improve the competitiveness of ecotourism, prosper market, and promote the standardization of ecotourism industry.

2.3 Research progress of ecotourism

Compared with traditional mass tourism, ecotourism strives to achieve a sustainable balance among economic interests, social culture and environment. Ecotourism is a tourism system generated under the guidance of "sustainable development". Ecotourism is characterized by frugality and environmental protection [7]. In essence, it requires tourists and tourism to be responsible for the environment so as to protect tourism resources.

The environmental protection of ecotourism runs through all aspects of tourism. Ecotourism has a professional, and high scientific and cultural connotation. It is reflect the strong professional requirement in tourist facilities, tourism projects, the design and management of tourist routes. It is require visitors quickly return to nature, spiritual enjoyment and satisfaction. Ecotourism inspire and promote awareness of the tourists to love and protect nature, and consciously to protect the environment. Ecotourists are tourists of a higher level who have the ability to appreciate, explore and understand nature and local culture [8].

In order to have competitive advantages in the global tourism market, it is very important that the tourism planning in the network era should be integrated with the planning of information technology. Many new technologies are converging Web pages, Internet, APP and GIS technologies [9]. They are playing an important role in the ecotourism and tourism e-commerce system. The convergence of technologies will improve services in the travel market, making it possible to publish, share on the Internet. This fully explained important influence of the Internet technology to the traveling e-commerce system. The integration of various new technologies, such as Web, GIS technology, XML business Web page design technology, virtual reality, special security guarantee of network business transaction and strong link network integrated open system, is an important technical support platform for ecotourism e-commerce [10].

Although the traditional ecotourism operation mode can solve the service mode of small and medium-sized group tourism, it still lags behind the powerful international competitors. Contemporary tourism needs to meet the diversified needs and individual needs of tourists in the information age with broad historical vision. Ecotourism mobile e-commerce centering on mobile Internet emerges at the right moment, providing more and more ecotourism customers with personalized, more choices, more preferential prices and efficient mobile services of green tourism products. The e-commerce network of mobile ecotourism consists of green transportation suppliers, green hotel suppliers, green hotel suppliers, local travel agencies, tourist destination travel agencies and online environmental educated tourists, etc. The entire business process includes providing information to eco-travelers, booking travel deals, providing green services at the destination, and all necessary payments. Eco-tourism mobile e-commerce system is indeed a cooperative body of business organizations that constitute the tourism value chain based on the network and it has a broad prospect of development [11].

In addition to the entry of ecotourism products into the mobile Internet and the establishment of their own home page or APP, measures should be taken to attract botanists, birders, wildlife enthusiasts, butterfly enthusiasts, photographers and other visitors with special interests, and strive to be included in the ecotourism related websites. While giving full play to the advantages of the traditional travel agency-centered ecotourism service mode, the new technology is utilized to carry out the marketing of

the mobile e-commerce mode of ecotourism centering on the mobile Internet. The combination of the two is bound to become the mode of operation of ecotourism in the future, in order to adapt to the critical period of ecological tourism and conform to the second wave of e-commerce, strive to achieve the sustainable development of tourism, and promote China's tourism to realize the grand goal of leaping from a world tourism power to a world tourism power.

3 Results and discussion

3.1 Analysis between Ecotourism and Mobile E-commerce based on PEST

A good macro environment is the premise for the establishment and development of tourism. It is the basic condition for the survival and development of tourism in a country or region. Therefore, we use PEST analysis to analyze the Politics, Economy, Society and Technology in the tourism industry in the application of mobile e-commerce in Ecotourism.

(1) Political

China's tourism has experienced the initial stage, the development period, the expansion period and the upgrading period, from the past small tourism, medium tourism into the era of big tourism. With the promotion of the national "Belt and Road" initiative, beautiful rural construction and other measures, the future tourism investment environment continues to improve. At the national level: first of all, the views of the «State Council of the CPC Central Committee on the implementation of the Rural Revitalization Strategy explicitly» put forward the "implementation of quality projects for leisure agriculture and Ecotourism, and the creation of a number of demonstration villages and towns with characteristic co-tourism and excellent routes." To create green eco-environmental protection of eco-tourism industry chain. Secondly, the «3th five-year Plan for Tourism Development» issued by the State Council also requires that "through the development of rural tourism, the development of leisure agriculture and Ecotourism should be promoted. 2018 China's beautiful rural leisure tourism promotion activities to promote leisure agriculture and rural tourism boutique attractions to the whole society And put forward to base on leisure agriculture and rural tourism high-quality project, carry out leisure agriculture and rural tourism upgrade action. Ecotourism is ushered in a strategic opportunity period of transformation and upgrading in the new era. At the regional level: the State Council issued incorporated tourism into the planning, providing better policy support for the rapid development of tourism in cities. At the same time, it also provides a broader platform for the development and expansion of tourism industry

(2) Economic

The rapid development of the economy is the foundation and prerequisite for the development of tourism. The GDP in 2018 was 90.03 trillion Yuan, an increase of 6.6% over 2017. With the rise of GDP, residents' income will also increase. And when residents' income increases, people's spending on tourism will also increase.

Characterization data of China's economic growth and Ecotourism development from 2010 to 2018
(Unit: hundred million Yuan)

Year	Ecotourism income	Gross regional income
2010	4.67	48.27
2011	5.53	50.01
2012	4.58	50.71
2013	7.39	73.93
2014	8.43	75.71
2015	7.89	80.63
2016	8.15	81.60
2017	8.89	84.46
2018	9.03	90.03

Source: China Statistical Yearbook

As can be seen from the chart, the development of ecotourism has a significant role in promoting economic growth. While the country vigorously implements the construction of a conservation-oriented society and an environment-friendly society, tourism plays a significant role in promoting GDP growth. At the same time, the development of the economic brings vitality to the development of tourism, and provides a good economic basis for the development of tourism.

(3) Society

With the acceleration of urbanization, the rapid economic growth and the continuous development of tourism have played a great role in promoting. China's urbanization is in a period of accelerated development. The fast-paced way of life has brought great pressure to people. More and more people will choose to return to natural life and enjoy the fun of nature. The rapid development of science and technology, but also promote the convenient means of travel. Various holidays and holidays in China have also become boosters of tourism development, and the State Council has drawn up a series of holidays, giving people more leisure time. For example: mid-Autumn Festival, Dragon Boat Festival, National Day, Spring Festival, etc.

(4) Technology

Science and technology is a double-edged sword, the development of tourism can't be separated from the support of science and technology. In the information age, scientific information technology brings more opportunities to the development of tourism. At the same time, the invention and application of more software make it convenient for people to search for tourism information, and inject new vitality into the development of tourism. In terms of education, there are 2000 universities across the country that specialize in tourism management. There are also many universities in China, so as to cultivate more tourism. Elite talents, for the high-quality and rapid development of China's tourism industry to provide the protection of talents.

China has solid basic network resources. In recent years, the number of apps has surged, and the scale of fiber broadband users has become larger. The development of cloud computing, big data and 5G and other technologies has brought great vitality to the tourism industry.

3.2 Specific application mode of mobile e-commerce in ecotourism

Through into the specific characteristics of ecotourism, the effective integration of e-commerce and ecological tourism development activities, from mobile electronic commerce throughout the range of application in the development of ecological tourism, the first is to provide mobile information service to tourists. Then it is in the process of participation in ecotourism, tourists can through own mobile terminal, and gets some services

related to their own position, such as mobile tour guide and navigation services. Of course, in this process, the elements of the tourists to participate in tourism activities are also rich, and to provide tourists with corresponding navigation and security assistance service, Thus promoting the convenience of the whole tourism activities.

In the whole process of ecotourism development, the use of mobile e-commerce model can improve the marketing management, to achieve targeted customer marketing. Of course, with the continuous enrichment and improvement of mobile payment functions, the use of mobile banking or other mobile payment means simplifies the financial activities of the whole ecotourism activities and improves the development efficiency of ecotourism. And want to be in the process of ecological tourism development, good application of the electronic commerce mode, you need to fully prepare technology research and development and application, such as wireless application technology, IP technology and Bluetooth technology, and in the customer management work, want to combine the application of mobile e-commerce, build a new mode of customer relationship, improve the application efficiency.

In addition, it is necessary to actively contact mobile operators to build a mobile e-commerce platform model that meets the needs of the entire ecological tourism construction, and improve the e-commerce model by innovating the characteristics of tourism business, so as to improve the overall operating efficiency of enterprises. At present, there are three application modes of mobile e-commerce in ecotourism: first, large enterprises supported by mobile service providers based on wireless and Internet technologies; second, PDA devices of destination tourism companies; third, small and medium-sized tourism enterprises based on SMS. It is hoped that the adoption of new business models will lead to greater popularity of ecotourism.

4 Conclusion

While the economy is developing rapidly, it has brought good development opportunities to Ecotourism. This paper takes Ecotourism as the research object and uses the econometric method to analyze and study the relationship between the relationship between the development of mobile e-commerce and the growth of ecotourism and draws the following conclusions:

4.1 Play the leading role of the government

Because the government has a considerable advantage in possession of information resources, it is the hub of various market information, distribution center, therefore, the government should further strengthen the role of information guide, integrate various resources, speeding up the ecological tourism mobile e-commerce standard system construction, encoding standard, tourism information resources classification and related technical

standards, establishing database of national ecological tourism resources, so the whole industry can get a quick update and information transfer, realize the tourism resources sharing. We will accelerate the integration of national and provincial tourism resources and establish a comprehensive information service platform for national and regional tourism mobile e-commerce. It guides and influences the strategic orientation of enterprises in various links of mobile e-commerce, effectively allocates the resources of mobile business market, and thus drives the sound development of the whole industry.

4.2 Build a specialized ecotourism application

It is particularly important to develop ecotourism mobile e-commerce and establish featured tourism websites and ecotourism apps. The application of ecotourism is personalized, humanized and internationalized, which are the three directions of the application of ecotourism. The ecotourism application should establish a tourist information base, including the name, age, occupation, hobbies, income, residence and previous consumption records of tourists in the company. At the same time, a characteristic tourism application should also establish a good customer relationship system, using the interactive network to build up a communication platform between tourism enterprises and customers [7]. The establishment of such a humanized platform is conducive to understanding customer needs and reflecting humanistic care. On the one hand, ecotourism enterprises can adjust the price of ecotourism products and open up tourism routes according to the demand. On the other hand, the unique natural

scenery, historical landscape and local customs of each region are attracting a large number of tourists at home and abroad. As the application of ecotourism, international standards or established business language should be used to provide information as far as possible. Make it a business platform of tourism facing the world and serving the whole world.

4.3 Enhance network security awareness

Ecotourism enterprises should strictly implement the national provisions on information network security, improve information network transaction security organizations and regulations, and ensure the reliable operation of the network [9]. The implementation of information network security and confidentiality education, enhance their security awareness, improve the technical level of network security protection, prevent the occurrence of leaks, prevent "hacker attack", protect the privacy and property security of Internet users, so that the Internet users have confidence in network security, only in this way it is easier to carry out tourism e-commerce

Based on the current mobile e-commerce model in the ecotourism development in the process of concrete application situation, we can see that the advantages of application of this model is able to adapt to the rapid development of ecotourism, and to provide the whole tourism electronic commerce development the new space, at the same time in the process, it can not only realize the efficient utilization of ecotourism resources, more adapt to and meet the specific requirements of consumers.

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