Retraction

Retraction: Jilin Province’s All-for-one Tourism Based on Artificial Intelligence and Synergy Theory (J. Phys.: Conf. Ser. 1852 022036)

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The authors of the article have been given opportunity to present evidence that they were the original and genuine creators of the work, however at the time of publication of this notice, IOP Publishing has not received any response. IOP Publishing has analysed the article and agrees there are enough indicators to cause serious doubts over the legitimacy of the work and agree this article should be retracted. The authors are encouraged to contact IOP Publishing Limited if they have any comments on this retraction.

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Jilin Province's All-for-one Tourism Based on Artificial Intelligence and Synergy Theory

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Abstract. In modern society, the all-for-one economy is booming, and the economic level of the general public is also improving. After people have met their material needs, their spiritual needs are constantly increasing. Therefore, the tourism industry has achieved good development. As one of the important branches of system science, synergy theory is a discipline that studies the mechanism and law of orderly structure formed by open systems through the synergy between internal subsystems. It is the theoretical basis for constructing various systems and a method to solve complex system problems. Introducing synergy theory into all-for-one tourism research and studying all-for-one tourism development issues from a systematic point of view is of practical significance for solving various comprehensive and complex issues that have always occurred in the development of tourism. As the current hotspot of high-tech and new technology development, artificial intelligence technology has gradually been widely used in all aspects of social production and life, especially for the development and promotion of all-for-one tourism. Therefore, in the development of the global domain, increasing the application of artificial intelligence technology also has positive practical significance. Artificial intelligence technology can promote the development of all-for-one tourism to improve quality and efficiency, and bring tourists a brand new travel experience. This article discusses the application of artificial intelligence and synergy theory in the all-for-one tourism of Jilin Province, and explores a scientific, effective and sustainable tourism model. The experimental results show that all-for-one tourism with the introduction of artificial intelligence and synergy theory is more in line with the current pace of life and living habits of young people, which is bound to be positive and beneficial to promote the development of all-for-one tourism in Jilin Province.

Key words: Artificial Intelligence, Synergy Theory, Jilin Province, all-for-one tourism

1. Introduction

All-for-one tourism refers to a new concept and model of regional coordinated development in a certain area, with tourism as a dominant industry, which can drive and promote the coordinated
development of economic and social development. Its aim is to construct and operate a whole area as a fully functional tourist destination to realize the integration of the inside and outside of the scenic spot in order that everyone is a tourist image and a tourist environment is everywhere.

Tourism is one of the four pillar industries of Jilin Province. Jilin Province has sufficient tourism resources, including forest resources, humanistic tourism resources, etc., and has the reputation of "the magnificent mountains support the sky and the forests treasure treasures" [1]. However, the tourism industry of Jilin Province is a comprehensive industry that cross-regions, cross-industry, strong dependence, and fierce competition. There is no way out without joint development of tourism. The emergence of artificial intelligence provides a unique research perspective for solving the above problems [2]. Smart tourism includes links to all industries in the tourism industry, from destinations, transportation, hotels, and airlines to online travel websites, traditional travel agencies, and technical service providers. From the perspective of the scale of smart tourism, it clearly confirms the tourism industry's expectations for the largest market in Jilin Province. One of the highlights of ITB in 2018 is the increasing proportion of travel participants using artificial intelligence technology [3]. Globally, strengthening artificial intelligence technology has become a trend in traditional industries. The application of artificial intelligence technology in smart tourism is based on the deep integration of communication and information technologies, and the development of tourism products and services around tourists' independent participation and interactive experience [4].

There is currently no unified and clear conceptual definition of the term smart tourism based on artificial intelligence, but it is generally believed that smart tourism includes at least the Internet of Things, cloud computing, high-performance information processing, big data mining, and next-generation communication networks. Applications in planning and development, tourism experience, tourism industry development, tourism industry management, etc., these applications systematically integrate existing tourism physical resources and information resources, and serve the public, tourism companies, government agencies and other individuals more efficiently Or organization, formed a brand-new tourism format [5]. "Artificial intelligence technology" focuses on simulating certain human intelligent behaviors through computer software and hardware, involving theoretical research and technical practice of machine learning, knowledge acquisition and expression, information retrieval, logical reasoning, natural language understanding, intelligent robots, etc., It is widely used in various fields [6].

There are many kinds of artificial intelligence methods, and many are used in tourism demand forecasting. Although artificial intelligence methods have won people's favor with their advantages such as high efficiency and convenience, tourism forecasting trends are by no means the product of one or two artificial intelligence methods analysis [7]. There is absolutely no foolproof, highly accurate method in the field of tourism prediction. For the role of artificial intelligence methods in tourism prediction trends, a variety of methods must be combined to make multiple prediction models work together. Only in this way can the artificial intelligence method play the largest role in tourism forecasting and obtain the most accurate conclusion [8]. In artificial intelligence methods, each data model has its own unique role. When making travel forecasts, never separate the various models. Different situations should be considered and different methods should be used. In complex external situations, artificial intelligence methods should be combined, so that each model and each method can play the greatest role [9]. No one method is optimal. In order to obtain the most accurate forecast of tourism demand trends, not only do different analyses for different problems, use different methods, but also combine various methods, and choose suitable research Only in this way can we obtain more accurate tourism prediction conclusions [10].

2. Method

2.1 Put forward the necessity and feasibility of tourism coordinated development

Coordination is an inevitable requirement for the development of modern tourism. Synergy theory tells us that the efficiency of the system depends on the internal subsystems or the synergy within the
subsystems. Within the tourism system, the various subsystems coordinate and cooperate with each other and work towards a common goal, which will produce a synergy effect of 1+1>2. On the contrary, if the internal subsystems of the system friction, resist, and conflict with each other, it is difficult for each subsystem to play its original role, causing the entire large system to fall into a state of chaos. The purpose of tourism development is sustainable development. Synergy theory is the theoretical basis of coordination and sustainable development, and coordinated development is a virtuous cycle of synchronization, cooperation and collaboration among the various subsystems of the system. Although some scholars believe that there are many shortcomings in the study of synergy theory, it will be limited when it is used to explain social phenomena. But the author believes that it is very reasonable to explain the problem of coordinated development of tourism. As we all know, the six elements of tourism activities "eating, housing, transportation, traveling, shopping, entertainment" involve many departments, and the research on it also involves many disciplines. The interaction and coordinated development of these different departments and related disciplines promote the integration process and development of the tourism industry.

2.2 Explore the development advantages and directions of artificial intelligence in all-for-one tourism
Artificial intelligence is a very important new technological revolution for every company in tourism. Because computing power has made rapid progress, computing power algorithms have also made rapid progress. The huge amount of data accumulated in the Internet and mobile Internet era has also changed from before. Has changed dramatically. For example, voice recognition will not necessarily be manual in the future. Image recognition, face check in, face check in, unmanned hotels, low-speed unmanned vehicles, etc., will have very fast applications in scenic spots; and intelligent marketing There are earth-shaking changes in smart recommendations and other aspects.

2.3 Design of all-for-one tourism route recommendation function based on artificial intelligence
First, the feature vector \( A=(\text{age}, c*\text{gender}) \) of each user is established according to the user’s registration information. Since gender is only divided into "0" and "1", the gender parameter needs to be multiplied by the coefficient \( C \) to enhance the similarity of this parameter. Impact. Then establish the scenic spot vector \( B=(x_1, x_2, x_3, ..., x_i, ..., x_l) \), \( x_i \) indicates whether the scenic spot \( i \) is visited, \( x_i \) is 1 means visited, \( x_i \) is 0 means not visited.

\[
\begin{align*}
\text{r} &= \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2} \sqrt{\sum_{i=1}^{n}(y_i - \bar{y})^2}} \\
\text{d} &= \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} \\
d &= |x_1 - x_2| + |y_1 - y_2|
\end{align*}
\]

Then calculate the similarity between users according to the user feature vector. \( X_i, j, X_i, j \) is a coefficient between -1 and 1, which is used to indicate the degree of similarity between two users. The larger the coefficient, the greater the similarity. As shown in formula 4-1, it is the calculation formula for calculating the Pearson correlation, where \( x_i \) and \( y_i \) represent the two columns of the feature vector \( A \), that is, the age and gender of the user. According to the size of \( X_i \), \( j \), the user can be filtered out. Similar user clusters \( U_k \) (\( k \) represents the size of the set).

The weighted sum of all the elements in the set \( U_k \), the recommended vector \( C=(x_1, x_2, x_3, ..., x_l, ..., x_m) \), and then sort the vector \( C \) to get the system recommended travel route.

2.4 Reliability evaluation of questionnaire based on Cronbach's alpha coefficient
The reference standard for questionnaire reliability evaluation: It is related to the number of questions, and the Cronbach alpha coefficient of the questionnaire is usually required to be greater than 0.8. If the \( \alpha \) coefficient is greater than 0.8, it means that the internal consistency is excellent, the \( \alpha \) coefficient is between 0.6 and 0.8, which means the reliability is good, and the coefficient is lower than 0.6, which means it is poor. Select samples for estimation, and the algorithm formula shown below can be
obtained:

\[ Y = \frac{X - X_{\text{min}}}{X_{\text{max}} - X_{\text{min}}} \quad (4) \]

\[ p(a|b) = \frac{p(b|a)p(a)}{p(b)} \quad (5) \]

A combined analysis of the teaching effect in the questionnaire found that the Cronbach’s \( \alpha \) coefficient was 0.926, and the sub-item analysis found that the Cronbach’s \( \alpha \) coefficient was 0.645-0.823, both greater than 0.6, indicating that the questionnaire has good reliability.

3. Experiment

3.1 Experimental investigation object
In order to better understand the feasibility of the sustainable development of Jilin Province's all-for-one tourism combined with artificial intelligence and synergy, this article selected domestic and foreign tourists from a certain scenic spot in Jilin Province to conduct interviews and questionnaires. There are 50 domestic tourists and foreign tourists. As shown in Table 1, after a simple explanation of relevant knowledge, a questionnaire on their attitudes towards the development of artificial intelligence and synergy in Jilin Province's all-for-one tourism development was conducted. After receiving relevant feedback, they can be further improved on artificial intelligence and synergy in Jilin Province. The feasible implementation plan of all-for-one tourism, understand the current situation of the development of all-for-one tourism in Jilin Province using artificial intelligence and synergy theory, solve the current possible problems, and study the application of artificial intelligence and synergy theory in the development of all-for-one tourism in Jilin Province Path and method. This study is aimed at domestic and foreign tourists in a scenic spot in Jilin Province. Actively understanding the mass feedback of artificial intelligence and synergy theory in the development of tourism in Jilin Province is an important step to promote the rapid and stable development of tourism in Jilin Province.

| Questionnaire issuance and recovery | Domestic tourists | Foreign tourists | Total-
|------------------------------------|------------------|-----------------|-------|
| Issue                              | 50               | 50              | 100   |
| Recycle                            | 48               | 49              | 97    |
| effective                          | 47               | 48              | 95    |
| Efficient                          | 94%              | 96%             | 95%   |

3.2 Experimental design scheme
This study is about the views of domestic and foreign tourists in a certain scenic spot in Jilin Province on the feasibility of artificial intelligence and synergy theory in the development of Jilin Province's all-for-one tourism. The interviewees’ basic understanding of this issue, and comparing the feedback from the two types of tourists. The comparison method and the variance method were used for analysis, and then the "Attitudes towards the Development of Artificial Intelligence and Synergy Theory in Tourism in Jilin Province" survey was distributed to tourists. A total of 100 questionnaires were
distributed, 95 of which were valid questionnaires. The two groups of questionnaires were collected and summarized and sorted out to understand the attitudes of domestic and foreign tourists to the development of artificial intelligence and synergy theory in Jilin Province. This article conducts data analysis and word processing on the response of the questionnaire. Although the questionnaire can learn a lot of information, there are also situations where the information is insufficient or incomplete. Therefore, on the basis of the questionnaire, this article also uses the literature research method, the purpose is to more comprehensively and accurately understand the masses' artificial intelligence and synergy theory in Jilin Province's all-for-one tourism development issues and analyze and discuss.

4. Results

4.1 Exploring the survey results in combination with relevant big data

Figure 1. The number of domestic and foreign tourists received by Jilin Province from 2014 to 2019. It can be seen from Figure 1 that Jilin Province's all-for-one tourism is mature and large. Under the background of "One Belt One Road", international-friendly cooperation and exchanges are becoming more frequent, and international tourism business is also increasing. As a major tourism country, my country has many historical sites and cultural landscapes. The number of tourists received has increased year by year, and the tourism market has continued to expand. In the 2017 government work report, Premier Li Keqiang mentioned "all-for-one tourism" as the hot word of the two sessions. Since the beginning of this century, Jilin Province's tourism has developed rapidly, and the income it created has increased year by year. Jilin Province has sufficient tourism resources, including forest resources, humanistic tourism resources, etc., and has the reputation of "the magnificent mountains support the heavens and the forests are treasures". Not only has seven 5A-level scenic spots and 45 4A-level scenic spots, but Jilin Province also borders Russia and North Korea. The beautiful scenery attracts countless Russian and North Korean tourists, and stimulates the development of the regional economy of Jilin Province. Jilin Province spans the five major water systems of the Yalu River, Tumen River, Liaohe River, Songhua River and Suifen River. Water resources are also quite abundant, forming a good ecological environment and tourist attractions. With these excellent conditions, Jilin Province’s tourism industry can attract a lot of domestic Foreign tourists.
Figure 2. Attitudes of domestic and foreign tourists towards the development of artificial intelligence and synergy theory in the tourism industry of Jilin Province

It can be seen from Figure 2 that whether it is domestic tourists or foreign tourists, most of them support the development of artificial intelligence and synergy theory in Jilin Province's all-for-one tourism. Among them, domestic tourists account for about 2/3 and foreign tourists about 1/2. Among them, tourists with a neutral attitude accounted for about 1/5 of domestic tourists and 2/5 of foreign tourists. However, there are also a small number of people who oppose it. Domestic tourists account for about 1/10 and foreign tourists 1/10. This shows that most tourists agree with the advancement of the tourism industry, and a small number of people may be more satisfied with traditional tourism. Industry, not enough understanding of all-for-one tourism combined with artificial intelligence.

5. Conclusion

In summary, with the continuous development of artificial intelligence technology, the application of artificial intelligence in real life has become more and more mature, and the application of artificial intelligence in modern tourism will also become a new development trend. The application of a variety of artificial intelligence methods in Jilin Province's all-for-one tourism has relatively revealed the nature and laws of tourism development, so that the tourism industry can better understand the economic nature of its development. Currently, many artificial intelligence methods have achieved desirable results in the tourism industry. However, for the future development of all-for-one tourism, it is still necessary to demonstrate its advantages and combine economic means. This can predict tourism demand more scientifically and promote the healthy development of tourism in the whole region.

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