



Leveraging Big Data Technology for the Development of Rural Cultural Tourism Infrastructure

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Abstract. In order to improve the development effect of rural cultural tourism products, this paper combines the wisdom of tourism to develop rural tourism cultural products. Moreover, with the guidance of big data technology, this paper combines the needs of data analysis of rural cultural tourism product development to improve the traditional big data algorithm, and proposes an improved whale algorithm. Simultaneously, this paper starts from the actual situation of rural cultural tourism to construct a rural cultural tourism product development system that can be used for intelligent analysis. In addition, guided by user needs, this paper uses user experience as an entry point to explore the needs of tourists for rural tourism information services, and builds user experience function modules in the system, and interprets the user experience process and consumption process in detail. Finally, this paper designs experiments for system analysis. The research results show that the system constructed in this paper can play a good auxiliary role in the development of rural cultural tourism products.

Keywords: Big data; rural culture; tourism products; development system; Tourism Infrastructure

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1 INTRODUCTION

China's rural cultural tourism originated in the 1980s. After entering the 21st century, with the vigorous development of China's new rural construction, rural cultural tourism has repeatedly climaxed and achieved gratifying achievements. The overall scale of China's rural cultural tourism development is large, and it spreads all over the country. Moreover, the theoretical research results are relatively fruitful, and there are a wide variety of products, and the new products have outstanding personalities. At the same time, the development model is rich and diverse and new models continue to appear, and the results are remarkable and the impact is far-reaching. Nevertheless, due to various factors, there are still many shortcomings in the development of China's rural cultural tourism, such as insufficient theoretical research, prominent undesirable development, monotonous management projects, low service quality, lack of management, unsound tourism industry chain, and environmental damage from time to time [13]. Moreover, there are still many

deficiencies in the domestic research on the indicator system, theory and method of evaluating rural cultural tourism resources and their development potential [10]. The blind development of rural cultural tourism in some villages not only wastes resources, but also often results in low efficiency and unsustainable industries [17].infrastructure development, the shortcomings and deficiencies in the sector can be addressed, fostering a more sustainable and successful rural cultural tourism industry.

Rural cultural tourism, as a new compound industrial model, has obvious advantages in optimizing the regional industrial structure and promoting local economic development. Rural cultural tourism can be well integrated with multiple industries such as agriculture, handicrafts, cultural and creative industries, and produce a strong industrial agglomeration effect. Therefore, it has become the first choice for most regions to implement rural revitalization strategies and develop tourism poverty alleviation. China's rural cultural tourism resources are rich, and many high-quality resources are gathered in poor villages with backward economic development. Therefore, the development of tourism has become an important measure of the government for poverty alleviation.

Due to the continuous development of social economy and the continuous enrichment of social products, consumers' consumption concepts have undergone earth-shaking changes, and consumers' needs have developed to a higher level. The traditional and single fancy travel mode can no longer meet the travel needs of tourists. Various types of distinctive themes, full-featured specialties, and in-depth new travel activities have attracted more and more attention and favor from tourists. Rural experience tourism came into being under this background. However, there have been many problems in the development of rural experience tourism. Many rural cultural tourism departments have difficulty distinguishing between sightseeing tourism and experience tourism. They have not given the correct positioning of rural experience tourism, and cannot proceed from the perspective of tourist experience demands and blindly pursue economy. Benefits blindly develop tourism resources and ignore the development of traditional non-material tourism resources. This makes the development of rural experience tourism difficult and is not conducive to the protection of traditional culture. Many villages face conflicts between tourism development and traditional cultural protection, and tourists are experiencing Feeling distortion in the process, unable to meet the demand of experience. In this context, the research on rural experience tourism emphasizes the importance of developing non-material tourism resources, and the development of rural cultural resources based on tourist experience is essential for rural experience tourism.

Tourism experience research has become one of the hot topics in foreign tourism academic research. However, the research on the development theory of rural experience tourism in my country is still in its infancy. This article is a research on the application of experience economy theory in regional tourism development, and it has certain significance for promoting the research of tourism experience theory in my country. This article uses big data technology to develop rural cultural tourism products, and uses big data technology to conduct data mining to effectively improve the development effect of rural cultural tourism products.

2 RELATED WORK

The literature [4] defined rural cultural tourism as a tourism method that uses rural scenery and activities as tourist attractions and urban residents as the target market to meet the needs of tourists for entertainment, knowledge, and return to nature. This definition emphasizes the attraction, target market and function of rural cultural tourism, but ignores that invisible folk customs and rural culture are also important resources for the development of rural cultural tourism activities.

The literature [15] defined rural cultural tourism as a tourism method that obtains economic and social benefits by satisfying the needs of tourists for leisure, seeking knowledge and returning to nature, which takes rural and rural areas far away from the city as a destination, takes the unique natural and cultural landscapes of the countryside as tourist attractions, and takes urban residents

as the main target market. This definition makes a relatively comprehensive definition of rural cultural tourism, but ignores the experiential function of rural cultural tourism. The literature [16] made a unified provision for the concept of rural cultural tourism, and believed that China's rural cultural tourism must include at least the following content: (1) it uses farmers as the main body of small-scale operations to reflect the folk custom characteristics of living in farmhouses, eating farmhouse meals, doing farmhouse work, and enjoying farmhouse pleasures; (2) it takes the unique rural folk culture as its soul to improve the taste and richness of rural cultural tourism; (3) the target market of rural cultural tourism is mainly positioned as urban residents, and the products should satisfy the urban residents' desire to enjoy the rural scenery and return to simple folk customs.

The literature [20] put forward the concept of experiential tourism, and believed that experiential tourism is an inevitable trend in the development of global tourism. Moreover, it put forward the concept that experiential tourism is accompanied by the emergence and development of experience economy, and that experiential tourism is the most important change in the tourism industry. The literature [1] defined "experience tourism" and summed up 15 principles of event planning for experience tourism. The literature [7] also did a part of research on experiential tourism, and defined rural experience tourism as a process that occurs in rural areas, where tourists can take a long time to fully participate in the real production and life of the country, and experience the differences between urban and rural areas and the comprehensive cultural characteristics of the country. The literature [9] believed that rural experience tourism is a form of rural experience tourism that provides a "story" that meets the sensory and emotional needs of tourists for food, housing, transportation, shopping, entertainment, and travel, and participates in traditional and new agricultural technology practices, which takes the agricultural resources of rural areas as the basis, and takes rural eco-tourism as the theme, and uses pastoral landscape, agricultural production and operation activities and rural unique human landscapes as scenes to attract tourists to watch, relax, study, shop, and vacation, and it takes creating beautiful memories for tourists as its core demand. The literature [5] believed that rural experience tourism has the characteristics of difference, participation, authenticity and challenge. Literature [8] started from the production and consumption factors of tourism experience and summarized the experience elements of rural experience tourism into five parts: experience, scene, event, immersion and impression.

The literature [3] believed that rural experience tourism refers to tourism activities carried out in rural areas to provide tourists with sensory and emotional needs such as food, housing, transportation, shopping, entertainment, and travel, and it is designed and developed using the resources of the countryside, requires active participation of tourists, and takes the creation of beautiful memories for tourists as the core, and the developers and operators completely stand in the perspective of tourists' needs.

The literature [18] summarized the content of rural cultural tourism in the past five years abroad, mainly including rural cultural tourism supply, planning, demand, management, social influence and stakeholders. The literature [21] summarized the hot issues of foreign research in the past two decades. There are six main aspects: gender issues in rural cultural tourism, stakeholders, development strategies, relationship, influence, supply and demand with sustainable development. The literature [14] summarized the previous methods and proposed that empirical analysis is the mainstream of foreign research. Among them, two research methods, quantitative analysis and social survey, have also been widely adopted, so that the research results have better reliability.

The literature [11] proposed that the fundamental motivation for the development of rural cultural tourism lies in the following three points. The first is to promote the adjustment of the industrial structure in agriculture, the second is to mobilize the surplus rural labor force to the greatest extent, and the third is to ensure the sustainable development of rural areas. The literature [6] believed that the fundamental driving force that triggers rural cultural tourism is the deep rural complex, which is embodied in the rural complex and family-loving complex of the Chinese people. The literature [2] believed that the demand for rare "green" elements is the essential need for rural

cultural tourism. The literature [19] analyzed rural cultural tourism from the perspective of supply and demand, and proposed that the adjustment of agricultural industrial structure and the development of urbanization have promoted the rapid development of rural cultural tourism. The literature [12] believed that the reasons for the development of tourism in rural areas are divided into internal and external factors: the pursuit of difference and escape from reality are internal needs, and the pollution of the urban environment is the external inducement.

3 IMPROVED DATA MINING OPTIMIZATION ALGORITHM FOR RURAL CULTURAL TOURISM DATA

This paper conducts cultural tourism data mining by improving the whale algorithm. First, this paper analyzes the calculation process of the algorithm.

1. Genetic Algorithm (GA)

Genetic algorithm is a random search optimization method derived from the evolutionary laws of the biological world, which simulates the evolutionary process and genetic mechanism of biological evolution in the natural world. The genetic algorithm selects individuals according to the fitness function determined in advance, and then selects individuals with good fitness through the three operators of selection operation, crossover operation and mutation operation, and removes individuals with poor fitness, so that new groups that are more adaptable to the living environment can be found.

For the selection of fitness, this paper takes the average square error between the actual value and the predicted value as the fitness function, and the algorithm formula is as follows:

$$F(i) = \frac{1}{n} \sum_{i=1}^n (f(x_i) - y_i)^2 \quad (1)$$

In the above formula, $f(x_i)$ represents the actual value, y_i represents the predicted value, and $F(i)$ represents the fitness value of the i -th individual. The fitness value of an individual is inversely proportional to the adaptability. If the adaptability is strong, the fitness value is small, so the smaller the fitness value, the better.

1. Select operation

The selection operator is applied to the population, and the main purpose is to inherit the new individual generated by the optimized individual to the next generation or directly to the next generation. The wheel selection method is used here, in which the selection probability of each individual i is $P_s(i)$, and its mathematical expression is as follows:

$$P_s(i) = f_i / \sum_{i=1}^n f_i \quad (2)$$

Among them, n represents the size of the population, k is a constant, and f_i is the reciprocal of the fitness value.

First, each individual i is formed into a gambling wheel with an area of 1 according to their respective probability function $P_s(i)$. If $p_1 + p_2 + \dots + p_{i-1} < r \leq p_1 + p_2 + \dots + p_i$, (where r is a random variable in the range of $[0,1]$), then the individual i is selected. The smaller the fitness value of an individual, the higher its adaptability, and the greater the probability that the individual will be selected.

However, individuals with large fitness values also have the opportunity to be selected to maintain the diversity of the population.

2. Crossover operation

In the genetic algorithm, the crossover operator plays a central role.

The first step is to pair the selected priority individuals separately, and then use the probability P_c to perform the crossover operation. The crossover probability P_c is compared with a randomly generated number. If the value of the probability P_c is greater than the randomly generated number, the crossover operation will be performed, otherwise, it will be returned directly.

At a certain time k , if it is assumed that two individuals x_k^i, x_k^j ($i \neq j$) start to cross, then at time $k+1$, two new individuals after crossover will be generated, respectively:

$$x_{k+1}^i = mx_k^i + (1-m)x_k^j \quad (3)$$

$$x_{k+1}^j = mx_k^j + (1-m)x_k^i \quad (4)$$

In the above formula, m is a real variable, and it is randomly generated in the range of $[0,1]$.

3. Mutation operation

The mutation operator can change certain gene values on individual strings in the population. The mutation probability P_m is used to perform mutation on each individual x_k^i and x_k^j that have performed the crossover operation:

$$x_{k+1}^i = \begin{cases} x_k^i + u, & F(x_k^i + u) < F(x_k^i) \\ x_k^i, & \text{otherwise} \end{cases} \quad (5)$$

Among them, u is a random number on $[x^U - x_k^i, x^V - x_k^i]$ and satisfies a uniform distribution, and x^U and x^V are the upper and lower limits of the search area, respectively.

2. Whale Optimization Algorithm (WOA)

Whales have a relatively unique bubble net predation behavior, as shown in Figure 1. Inspired by observing the predation behavior of whales, a new meta-heuristic algorithm, namely, whale optimization algorithm, is proposed. The whale will begin to spiral upward along the spiral path below the school of fish. In this process, a large number of bubbles will be released to form a barrier to prevent the school of fish from leaving its predatory range. Then, the whale will accelerate its ascent and eat the school of fish to complete its hunt. Based on the predation behavior of this bubble net, a whale optimization algorithm is finally derived.

The main idea of the whale optimization algorithm is to solve the target problem by imitating the predation behavior of whales. The algorithm includes three phases: the predation phase, the spiral update position phase, and the random search phase. The specific content of each stage is as follows:

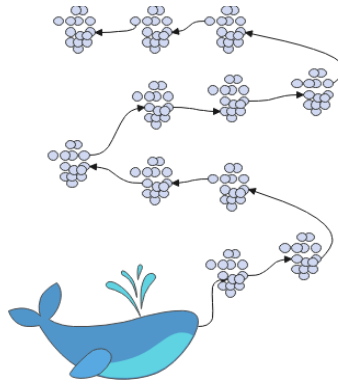


Figure 1: Bubble net predation behavior.

Stage 1: Encircle and predator stage.

Whale optimization algorithms usually assume that the individual closest to the group is the prey, and then other whales in the group will start to update their positions and shrink to surround the optimal individual's position. This stage can be expressed by the following formula:

$$X(t+1) = X_p(t) - A \cdot |C \cdot X_p(t) - X(t)| \quad (6)$$

In the formula, $X(t)$ represents the position vector of the whale, t represents the current iteration number, $X_p(t)$ represents the position vector of the prey, and A and C are coefficient vectors respectively. The relationship between A and C is as follows:

$$A = 2a \cdot r - a \quad (7)$$

$$C = 2r \quad (8)$$

In the formula, r represents a random vector on the interval $[0,1]$. With the gradual increase in the number of iterations, a will decrease from 2 to 0, that is:

$$a(t) = 2 - \frac{2t}{t_{\max}} \quad (9)$$

Among them, t_{\max} represents the maximum number of iterations. WOA simulates the behavior of the whale group gradually approaching the prey through the continuous decrease of the value of the vector a , and finally completes the predation stage.

Phase 2: Spiral update position phase.

This stage is derived from the bubble attack behavior of whales. In this stage, it swims in a spiral manner to achieve the purpose of local optimization of the whale. The mathematical model of this stage is shown in the following formula:

$$X(t+1) = X_p(t) + D \cdot e^{bl} \cdot \cos(2\pi l) \quad (10)$$

Among them,

$$D = |X_p(t) - X(t)| \quad (11)$$

The above formula is the best distance between the individual whale and its prey. l represents a random variable in the interval $[-1,1]$, and b represents a constant coefficient. In the hunting process of whales, in order to achieve simultaneous shrinking and encircling and spiraling, the probability p ($p \in (0,1)$) is set for shrinking encirclement. In the optimization process, when $|A| < 1$, the probability p of the group selection shrinkage encirclement and spiral walk is the same, both are 0.5, so as to perform shrinkage encirclement and spiral walk. The specific mathematical model is shown in the following formula:

$$X(t+1) = \begin{cases} X_p(t) - A \cdot |C \cdot X_p(t) - X(t)|, p < 0.5 \\ X_p(t) + D \cdot e^{bt} \cdot \cos(2\pi l), p \geq 0.5 \end{cases} \quad (12)$$

Stage 3: Random search stage.

Whales randomly walk through $|A|$ to search for prey. When $|A| > 1$, the whale will randomly search for the prey and update the position according to the position of the reference whale, so that the global search ability of the individual whale can be improved. Its mathematical model is:

$$X(t+1) = X_{rand}(t) - A \cdot |C \cdot X_{rand}(t) - X(t)| \quad (13)$$

Among them, $X_{rand}(t)$ is the position vector of the whale randomly obtained in the current group.

4 RURAL CULTURAL TOURISM DEVELOPMENT MODEL BASED ON BIG DATA TECHNOLOGY

The theory of cultural communication is one of the important topics of anthropological research, and it plays a very important role in the changes of rural cultural tourism culture. Tourism is not only an economic activity, but also the main way of interaction between people, and it is also a very important way for culture and culture to collide and spread. People are the carriers of culture and the disseminators of culture. When people come to a place to travel, they will bring their own culture. At the same time, they will be influenced by the local culture and take away the local culture, so as to realize the exchange and exchange of culture and culture. Fusion. The development of rural cultural tourism in Yuanjia Village mainly uses the unique phenomenon of Guanzhong culture to attract tourists from all over the country. It is a process of tracing and restoring the culture, so as to spread and inherit Guanzhong culture and make the impression of Guanzhong culture. Deep into the hearts of the people. The conceptual diagram of the development status of rural cultural tourism proposed in this paper based on the improved data mining algorithm is shown in Figure 2.

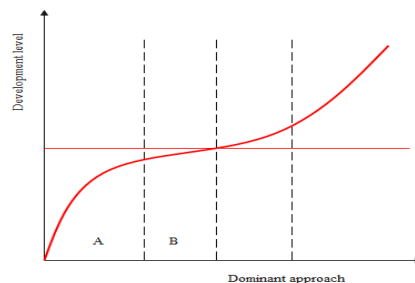


Figure 2: Conceptual diagram of the development status of rural cultural tourism.

This system is divided into three layers: the first layer is the target layer, which is the ultimate goal to be achieved by this research, that is, the construction of a rural cultural tourism cultural system. The second layer is the criterion layer, which sorts out all relevant indicators. The third layer is the indicator element layer, that is, the combing of the construction concept of the cultural factors that constitute rural culture and tourism. The logical relationship between the upper and lower levels of this system is a completely independent structure, as shown in Figure 3.

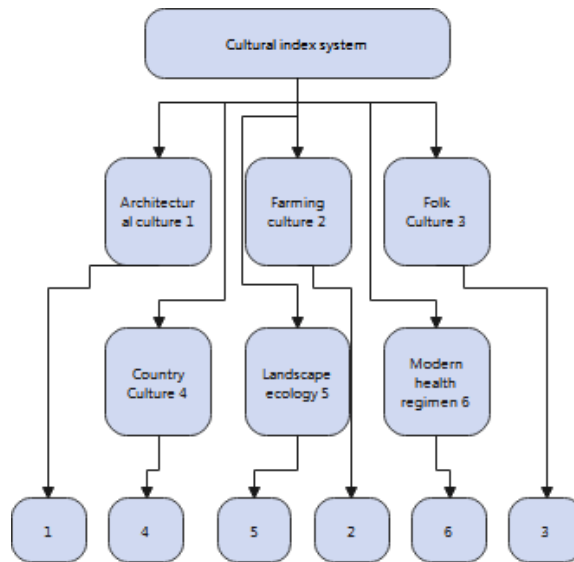


Figure 3: Hierarchical relationship diagram of rural cultural tourism cultural system.

The user experience honeycomb model is a conceptual model that has received much attention. Now this model is used as a basis to analyze the characteristics and influencing factors of user experience, thereby helping to establish a tourist quality evaluation system model. The seven model elements of the traditional user experience honeycomb diagram are interrelated and mutually influencing. The design emphasizes the value and usability of the product, and uses the content and functions of the service to improve user satisfaction and usefulness, establish a good reputation, and increase user stickiness. . In order to comply with the trend of the travel service industry towards individualization and personalization, combining the advantages of the popularization and comprehensiveness of mobile Internet information, and building a customized experience and timely and effective access to information based on relevant factors such as users' essential characteristics and interests Network environment, and propose a smart tourism experience evaluation system that improves user participation and meets travel needs, the cellular network diagram of rural cultural tourism user experience is shown in Figure 4.

The design elements of the user experience model are variable and comprehensive, and will be continuously upgraded and optimized according to the development of space and time. The traditional user experience model was proposed before web 2.0 matured, so to be precise, the user experience model diagram is the web experience model of web 2.0. With the gradual maturity and widespread popularization of information technology in the web2.0 era, and the concept of web3.0 has emerged one after another, the design elements of service experience have added more human features.

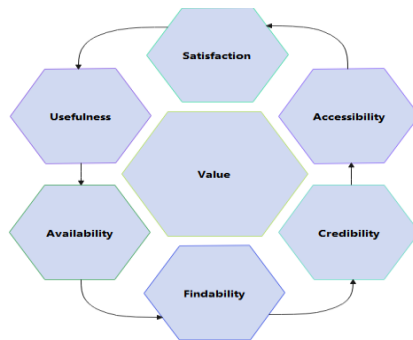


Figure 4: Cellular network diagram of rural cultural tourism user experience.

Therefore, on the basis of this model, combined with the technical requirements of modern development and deep-level experience requirements, the design elements are expanded, combined with the characteristics of the web2.0 and web3.0 network technology eras to supplement interactivity and intelligence. Sexual design elements. The evolution of the user experience model is shown in Figure 5.

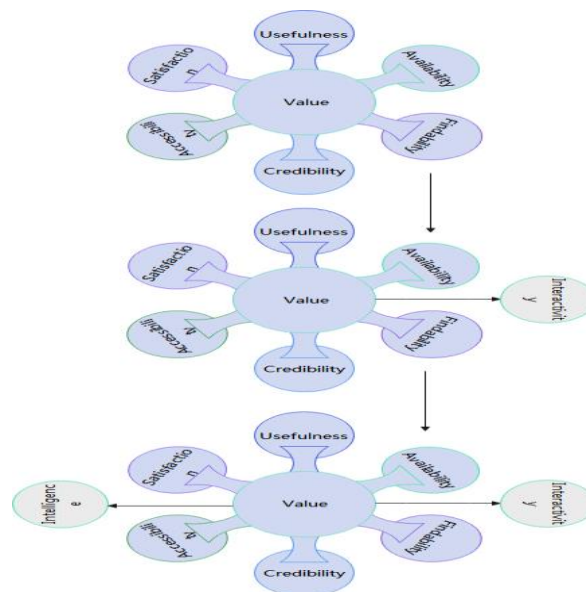


Figure 5: Evolution of the user experience model.

With the rapid development of smart tourism, various travel service platforms have been updated and improved, but most travel applications only analyze and solve route planning and booking payment before travel, as well as comments and sharing after travel. Therefore, how to meet the information service needs of the whole travel process in one stop has become the main problem faced by the network information service system. According to the time and space sequence of tourists' travel, user needs are divided into five stages, namely: travel dream, travel plan, booking

payment, travel review and sharing. According to user needs, a tourism consumption model is built, as shown in Figure 6:

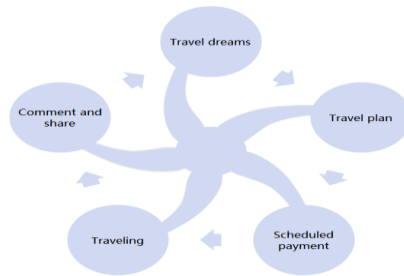


Figure 6: Tourism consumption model.

According to the needs of tourists' experience, this paper focuses on pre-departure (information browsing, route planning, booking and payment), during travel (smart parking, e-ticketing, virtual tour, e-guide), and post-travel (sharing and evaluating travel services) as the main line to develop ideas. In view of the experience needs of tourists at different stages, it can be seen that from the town to the rural cultural tourism, three levels need to be exposed: urban scene, network service scene and rural scenic scene. Therefore, the rural cultural smart tourism information service system based on user experience includes three different information service platforms. That is, network information service platform, urban infrastructure service platform and scenic spot infrastructure service platform. Among them, their relationship with tourists is shown in Figure 7.

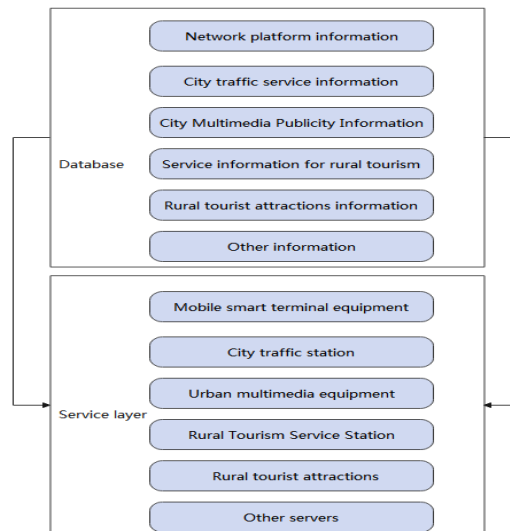


Figure 7: The relationship diagram of the service terminal of rural cultural smart tourism.

5 ANALYSIS OF THE EFFECT OF THE DEVELOPMENT SYSTEM OF RURAL CULTURAL TOURISM PRODUCTS BASED ON BIG DATA TECHNOLOGY

This article combines big data technology to construct a rural cultural tourism development system, and takes a county as an example to verify the effect of the system. In actual research, this paper

mainly collects a variety of rural cultural tourism data from the county, and inputs these data into the system as input data, and uses this system to perform data processing to verify the system's ability to mine rural cultural tourism data. On this basis, this paper evaluates the rural cultural tourism product development capabilities of the system constructed in this paper. Through experimental research, the system's tourism data mining capabilities for rural cultural tourism are shown in Table 1 and Figure 8.

<i>NO.</i>	<i>Data analysi s</i>	<i>NO.</i>	<i>Data analysi s</i>	<i>NO.</i>	<i>Data analysi s</i>
1	93.0	24	84.5	47	93.9
2	94.5	25	80.9	48	94.9
3	89.9	26	84.0	49	93.4
4	92.5	27	91.8	50	93.5
5	94.9	28	85.2	51	88.2
6	94.1	29	90.5	52	85.9
7	93.0	30	85.5	53	91.7
8	89.4	31	81.5	54	92.5
9	90.2	32	79.5	55	81.0
10	90.8	33	82.3	56	80.4
11	95.0	34	94.1	57	89.9
12	85.6	35	90.3	58	93.6
13	81.3	36	81.2	59	83.2
14	94.5	37	86.1	60	86.8
15	93.5	38	90.7	61	90.3
16	80.0	39	88.5	62	84.1
17	81.3	40	94.6	63	91.7
18	93.3	41	89.3	64	92.6
19	89.5	42	79.9	65	83.3
20	84.4	43	87.5	66	93.4
21	95.0	44	92.9	67	81.3
22	89.5	45	88.2	68	82.1
23	84.6	46	92.6	69	91.1

Table 1: Statistical table of the effect of the system constructed in this paper on data mining of rural tourism cultural data.

From the above research results, the rural cultural tourism product development system based on big data technology constructed in this paper can effectively conduct rural cultural tourism data mining. On this basis, and analyze the effect of the system constructed in this paper on the development of rural cultural tourism products, the results are shown in Table 2 and Figure 9.

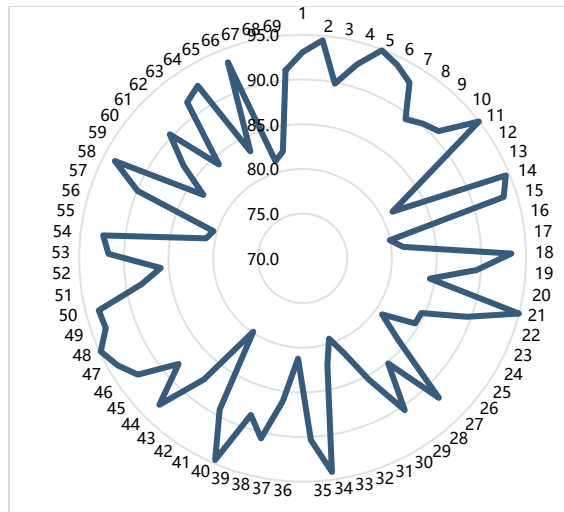


Figure 8: Statistical diagram of the effect of the system constructed in this paper on data mining of rural tourism cultural data.

<i>N</i>	<i>Tourism</i>	<i>N</i>	<i>Tourism</i>	<i>N</i>	<i>Tourism</i>
<i>O</i>	<i>Developm</i>	<i>O</i>	<i>Developm</i>	<i>O</i>	<i>Developm</i>
.	<i>ent</i>	.	<i>ent</i>	.	<i>ent</i>
1	81.0	2	74.3	4	83.5
2	78.3	2	77.2	4	77.6
3	76.3	2	75.9	4	74.3
4	75.7	2	77.6	5	75.3
5	81.9	2	72.5	5	80.8
6	79.8	2	80.1	5	80.7
7	80.4	3	76.7	5	77.6
8	80.5	3	74.5	5	78.3
9	81.8	3	72.5	5	79.5
10	79.4	3	72.4	5	79.2
11	83.8	3	77.2	5	83.0
12	77.1	3	82.8	5	78.4

1		3		5	
3	75.5	6	81.5	9	77.1
1		3		6	
4	72.2	7	76.7	0	81.3
1		3		6	
5	83.1	8	79.9	1	83.4
1		3		6	
6	77.1	9	72.9	2	72.2
1		4		6	
7	77.4	0	72.5	3	72.8
1		4		6	
8	78.9	1	79.6	4	77.9
1		4		6	
9	80.5	2	74.6	5	75.1
2		4		6	
0	77.1	3	73.5	6	74.8
2		4		6	
2	75.5	4	73.5	7	78.5
1		4		6	
2	80.6	5	73.2	8	72.4
2		4		6	
2	78.1	4	81.9	6	73.5
3		6		9	

Table 2: Statistical table of the effect of the system constructed in this paper on the development of rural cultural tourism products.

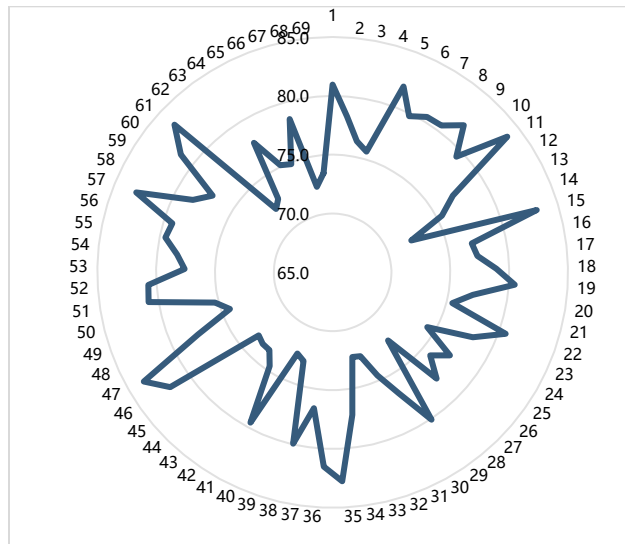


Figure 9: Statistical diagram of the effect of the system constructed in this paper on the development of rural cultural tourism products.

From the above research results, it can be seen that the system constructed in this paper can play a good auxiliary role in the development of rural cultural tourism products, help improve the

development of rural cultural tourism products, improve the effect of rural cultural tourism, and promote local economic development.

6 CONCLUSION

At present, the tourism industry has achieved vigorous development driven by other industries, and the development of the tourism industry has driven the development of other industries. Therefore, the development of the tourism industry is of vital importance to the economic development of our country. At the same time, under the policy background of building a new socialist countryside, the development of rural tourism has practical significance. In recent years, certain achievements have been made in the development of rural tourism, but with the impact of urbanization, rural tourism has also lost its rural nature and authenticity. Therefore, refining the experience elements in rural tourism is very important for rural tourism. This article combines big data technology to develop rural cultural tourism products, combines the actual situation to improve the big data algorithm, and builds system functions on this basis. Moreover, this paper starts from the actual situation to construct the system function structure, and through experiments to study the performance of the system constructed in this paper. From the research results, the system constructed in this paper can play a good auxiliary role in the development of rural cultural tourism products, and help to improve the development of rural cultural tourism products.

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