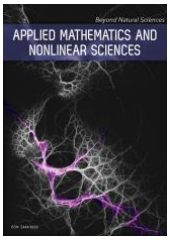

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Exploring the development of cultural and creative tourism under the perspective of ecological theory of tourism destination management

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Abstract

Because of the current problems of cultural and creative tourism in tourism destination management under the cultural theory perspective, this paper aims to explore the new development direction of cultural and creative tourism. This paper uses the gray-scale correlation method model to construct a correlation degree model, analyze the factors tourists consider in choosing tourist destinations, determine the weights of each influencing factor, and extract the main influencing factors. On this basis, combined with a questionnaire survey method, we analyze the market demand for cultural and creative tourism, tourists' satisfaction, and the existing problems of the cultural and creative tourism market and put forward suggestions for the problems. In terms of market demand, the highest percentage of tourists' motivation for tourism is to experience different cultures 60.55%, followed by relaxation 57.35% and appreciation of scenery 55.4%, which shows that the cultural tourism market has great potential; however, there are still many problems in the current cultural tourism, the most prominent being excessive commercialization and loss of cultural authenticity, which accounts for 75%, followed by high ticket prices, lack of creativity in products, however, the service level needs to be improved to 40%, indicating that all these problems need to be paid attention to. Cultural and creative tourism is a form of tourism preferred by tourists, and many problems still need to be further explored.

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1 Introduction

Since the reform and opening up, the demand for leisure tourism products has been growing due to the improvement of people's living standards, and the increase in cultural and creative tourism products make people not only pursue material satisfaction but more de-emphasize the spiritual level of abundance []-[2]. And the traditional sense of tourism has been difficult to meet the requirements of people for cultural and creative tourism, but also, from a certain point of view, to promote the cultural and creative tourism industry continues to move forward []-[4]. The cultural and creative tourism industry is a new industrial model developed in developing creative tourism, which is based on cultural heritage and integrated with unlimited human creativity to meet tourism consumption [5] directly. Cultural creativity permeates traditional manufacturing, services, and other tertiary industries []-[7]. The formation of the cultural and creative tourism industry and its related industries depends not only on the cultural and creative industries but also on the development of the local tourism industry. [8].

Literature [9] believes that creative cultural tourism refers to the integration of tourism resources, innovation of tourism products and forging of the tourism industry with the mindset and development mode of the creative cultural industry. Literature [10] believes that creative cultural tourism is a new concept of tourism industry development, which is the innovation and creation of traditional tourism industry development mode advocating the creative way of thinking to reshape the tourism industry development mode. Literature [11] believes that the cultural and creative tourism industry is a new industrial model developed by combining local culture and giving full play to unlimited human creativity in the development process of tourism. Literature []-[13] analyzes the possibility and development prospect of the creative industry for developing the tourism industry and analyzes the formation conditions of creative tourism from both supply and demand. The literature [14] points out that cultural and creative industries advocate innovation and individual creativity and emphasize culture and the arts supporting and driving their role in the economy. Literature [15] considers that the core value of cultural and creative industries lies in cultural contents and creative achievements, characterized by the realization or consumption of intellectual property rights as a kind of transaction that creates wealth for society and provides extensive employment in a new industrial form.

Literature [16] elaborated on the logical path of the development of the cultural industry to the cultural and creative industry and believed that the cultural and creative industry has been not only the high-end cultural industry but also the product of the mutual integration of culture, economy and technology, etc. It has broken the boundaries of traditional industries and realized the cooperation and reorganization of different industries and fields. Literature []-[18] made a more detailed study on the spatial clustering characteristics of cultural and creative industries and believed that the core area of cultural and creative industries is mainly concentrated in the city center and exists along with scientific research institutions; its peripheral industries provide auxiliary services for the core layer. Literature [18] considered that the main modes of cultural and creative industries to promote economic growth include three modes, such as resource transformation mode, value enhancement mode and structure optimization mode, and put forward many realization paths of cultural and creative industries under this mode.

Firstly, the axioms of the gray correlation analysis method model and several commonly used correlation algorithms, such as Dunn's correlation degree algorithm, generalized absolute correlation degree algorithm, and T-type correlation degree algorithm, are described. Secondly, the correlation algorithm is used to determine the correlation degree in gray correlation analysis and construct the correlation degree model. Then the correlation degree model is used to analyze the influencing factors of tourists' choice of tourist destinations, assess the influence weights of each influencing factor, and then conduct regression analysis and calculation of each factor to analyze tourists' preference for

destination choice. Finally, this paper combines a questionnaire survey and a literature review to investigate the market demand for cultural and creative tourism, the preference for tourist's activity choice, and the existing problems, and gives targeted improvement suggestions. It is hoped that the research of this paper can provide a reference value for the reform and innovation of cultural and creative tourism.

2 Gray correlation analysis method model

2.1 Gray correlation analysis method

The main analysis method of gray correlation analysis theory is to analyze the degree of correlation between the elements of the system. The basic idea of this analysis method is to replace the analysis of the whole infinite system with the discussion of local characteristics analysis. The key to the correlation analysis method is the analytical calculation of the correlation coefficient. The idea of its application is to find the correlation coefficient between the compared sequence and the optimal solution, then calculate the correlation degree matrix among the indicators by the correlation coefficient, and carry out the ranking of the correlation degree size, to derive the key factor indicators.

The gray correlation analysis method is easier to apply than traditional mathematical methods. It models and abstracts the goals of individual subjective ideas and opinions and can make the indicators of the object under study simple and clear from all aspects (in terms of model, structure, and relationships), so it can, in turn, make the precise and high requirements of the precise and rigorous traditional mathematical methods ambiguous and easy to understand. The advantages of gray correlation analysis, such as easy calculation, simple principle, ease to grasp, and no special requirements for the relationship between parameters, determine the great practical application value and scope of gray correlation analysis.

2.1.1 The four axioms of gray correlation

The four axioms of gray correlation, the basis of gray correlation analysis, are described below.

Let $X_0 = \{X_0(1), X_0(2), \ldots X_0(n)\}$ be a sequence of system features and:

$$X_1 = \{x_1(1), x_1(2), \cdots, x_1(n)\} \tag{1}$$

$$X_i = \{x_i(1), x_i(2), \cdots, x_i(n)\} \tag{2}$$

is a sequence of related factors. Given a real number $\gamma(x_0(k), x_i(k))$, if real number $\gamma(X_0, X_i) = \frac{1}{m}\sum_{k=1}^{m}\gamma(x_0(k), x_i(k))$ satisfies the following four points.

1) Normative $0 < \gamma({}^{m}(X_0, X_i) \le 1, \gamma(X_0, X_i) = 1 \Rightarrow X_0 = X_i$;

2) Holistic for that there is $X_0, X_i \in X = \{X_s \mid s = 0,1,2,\cdots,n; n \ge 2\}$, $\gamma(X_i, X_j) \ne \gamma(X_j, X_i), i \ne j$;

3) Even-pair symmetry for $X_0, X_i \in X$, there are:

$$\gamma\left(X_i, X_j\right)=\gamma\left(X_j, X_i\right) \Leftrightarrow X=\left\{X_i, X_j\right\};$$

4) The smaller the proximity $\left|x_0(k)-x_i(k)\right|$, the larger $\gamma\left(x_0(k), x_i(k)\right)$; then $\gamma\left(X_0, X_i\right)$ is said to be the gray correlation between X_0 and X_i, and $\gamma\left(x_0(k), x_i(k)\right)$ is the number of correlation between X_0 and X_i at k. The conditions (1), (2), (3) and (4) are the four axioms of gray correlation.

2.1.2 Research on the application of the gray correlation analysis method

The applied research of gray correlation degree includes the following three analyses. They are factor analysis, solution decision, and advantage analysis, which are generalized from the mathematical point of view.

1) Factor analysis

   Factor analysis is the key to system analysis by humans. When we study a system (general abstract system, such as an ecosystem, social system, education system, or economic system), we will encounter many factors, and first of all, we need to figure out what factors there are and which aspects of these factors are primary and secondary, what factors play a key role in the development of things, and which aspects have no or little influence on the development of things. These problems can be solved by using the gray correlation analysis.

2) Scenario Decision Making

   There are many successful cases of using gray correlation analysis for program decision-making. In many designs, especially in engineering design, we have to propose the optimal design solution to make the best use of human, material and financial resources in practical applications and achieve the ideal state of making the best use of the resources. If we use gray correlation analysis, we first determine the reference sequence (the ideal implementation plan) and determine whether the designed plan is optimal by calculating the magnitude of the correlation between the design plan and the ideal plan. The magnitude of the correlation between the design solution and the ideal solution indicators is used to determine the degree of correlation between the two methods. According to this theory and the actual maximum constraints, select the most reasonable design solution and then reasonably adopt and implement it.

3) Strengths analysis

   There are multiple sequences of characteristic behaviors and related factors of the system, and such an association analysis is called dominance analysis. Using the gray correlation matrix, the system characteristics or related factors can be analyzed for dominance, and the optimal factors can be judged by comparing the factors in each row and column of the constructed gray correlation matrix. Dominance analysis is widely used in many research fields.

2.2 Several typical correlation degree algorithms

Professor Deng Julong proposed the gray system theory and the computational method in terms of gray correlation theory. After years of theoretical research and practical application, the gray correlation analysis method has achieved satisfactory results today through continuous improvement

and development. The method has no strict requirements on data sample size, no need for typical mathematical or statistical distribution laws, and a small calculation volume. And it analyzes according to the development pattern and trend of things, and the analysis results match the results of other qualitative analysis methods. Therefore, the uniqueness and practicality of gray correlation and the reliable evaluation results determine that it is bound to develop better.

Several typical correlations are described below.

Let the sequence of system characteristic behaviors be:

$$X_0 = \{X_0(1), X_0(2), \ldots X_0(n)\} \tag{3}$$

The correlated factor behavior sequence is:

$$X_i = \{X_i(1), X_i(2), .. X_i \text{ º } \}\}, i = 1, 2, \ldots n \tag{4}$$

2.2.1 Deng's correlation

The first model constructed to calculate the gray correlation is Dunn's correlation, which satisfies the four axioms of gray correlation and focuses on the magnitude of Dunn's correlation by the distance between points. The Dunn's correlation between X_i and X_0 is calculated as follows:

$$\gamma(X_0, X_i) = \frac{1}{n}\sum_{k=1}^{n}\gamma(x_0(k), x_i(k)) \tag{5}$$

Among them:

$$\gamma(x_0(k), x_i(k)) = \frac{\min\limits_i \min\limits_k |x_0(k) - x_i(k)|}{|x_0(k) - x_i(k)| + \rho \max\limits_i \max\limits_k |x_0(k) - x_i(k)|} \tag{6}$$

In the above equation, $|x_0(k) - x_i(k)|$ is called the absolute difference between k moments X_i and X_0; ρ is the resolution factor, $\rho \in [0,1]$.

2.2.2 Generalized absolute correlation

The generalized absolute correlation reflects the degree of association mainly by the absolute increment of two series, using the formula that reflects the generalized absolute correlation with X_0 as:

$$\gamma_i = \frac{1 + |S_0| + |S_i|}{1 + |S_0| + |S_i| + |S_i - S_0|} \tag{7}$$

$$|S_0| = \left|\sum_{k=2}^{n-1} x_0^0(k) + \frac{1}{2}x_0^0(n)\right|, |S_i| = \left|\sum_{k=2}^{n-1} x_i^0(k) + \frac{1}{2}x_i^0(n)\right| \tag{8}$$

$$\left|S_i - S_0\right| = \left|\sum_{k=2}^{n-1}\left(x_i^0(k) - x_0^0(k)\right) + \frac{1}{2}\left(x_i^0(n) - x_0^0(n)\right)\right| \tag{9}$$

X_0^0 and X_i^0 are the zeroed images at the beginning of the sequence.

2.2.3 T-shaped correlation

T-shaped correlation is mainly based on the closeness of the relative change characteristics of two time series characterizing things to calculate the gray correlation degree of things or factors. For discrete time series, if two time series have the same increment or small difference in the time interval, their T-correlation coefficients in a certain time period are large; conversely, the T-correlation coefficients are small, and the T-correlation coefficients of two time series are calculated by the weighted linear combination of the coefficients between each time period Δt_k. The T-correlation between X_0 and X_i is calculated by the formula:

$$\gamma\left(X_0, X_i\right) = \frac{1}{b-a}\sum_{k=2}^{n}\Delta t_k \cdot \xi\left(t_k\right) \tag{10}$$

Where $\xi\left(t_k\right) = sng(\Delta y_0(t_k)\cdot\Delta y_i(t_k)\cdot\frac{\min\left(\left|\Delta y_0\left(t_k\right)\right|,\left|\Delta y_i\left(t_k\right)\right|\right)}{\max\left(\left|\Delta y_0\left(t_k\right)\right|,\left|\Delta y_i\left(t_k\right)\right|\right)}$, $\xi\left(t_k\right)=0$ (when $\Delta y_0\left(t_k\right)\cdot\Delta y_i\left(t_k\right)=0$),

$$\Delta y_i = \left\{\left(x_i\left(t_k\right) - x_i\left(t_{k-1}\right)\right) / \left(\frac{1}{n-1}\sum_{k-2}^{n}\left|x_i\left(t_k\right) - x_i\left(t_{k-1}\right)\right|\right), k = 2,3,\ldots n\right\}, i = 0,1,2,\ldots m \tag{11}$$

2.2.4 Gray slope correlation

The basic idea of gray slope correlation is similar to that of T-correlation, where T-correlation is in the form of composition ratio and slope correlation is in the form of composition difference, and the basic form also differs to reflect the relative characteristics from different perspectives. For discrete data series, the proximity of the slopes of the curves of the two-time series at the corresponding periods is used to reflect the proximity of the curves. If the slopes of the curves are equal or nearly equal, the slope correlation coefficient of the two is large, and vice versa, it is small. The slope correlation between X_0 and X_i is calculated by the formula:

$$\gamma_i = \frac{1}{n-1}\sum_{k=2}^{n}\frac{1}{1+\left|\frac{x_0(k)-x_0(k-1)}{x_0(k)} - \frac{x_i(k)-x_i(k-1)}{x_i(k)}\right|} \tag{12}$$

2.2.5 Type B association

To comprehensively describe the differences, similarities and similarities between things in the development process, the B-type correlation degree is proposed, and the B-type correlation degree is calculated by applying the overall displacement difference, overall first-order slope difference and

overall second-order slope difference according to the characteristics of things in the development process. The formula for calculating the B-type correlation degree of X_0 and X_i is:

$$\gamma_i = \frac{1}{1+\frac{1}{n}d_{ij}^{(0)}+\frac{1}{n-1}d_{ij}^{(1)}+\frac{1}{n-2}d_{ij}^{(2)}} \tag{13}$$

Among them:

$$d_{ij}^{(0)}(t) = \sum_{k=1}^{n}\left|x_i(k)-x_0(k)\right| \tag{14}$$

$$d_{ij}^{(0)}(t) = \sum_{k=1}^{n}\left|x_i(k+1)-x_0(k+1)+x_0(k)\right| \tag{15}$$

$$d_{ij}^{(2)}(t) = \sum_{k=2}^{n-1}\left|\left[x_i(k+1)-x_0(k+1)-x_0(k+1)\right]-2\left[x_i(k)-x_0(k)\right]+\left[x_i(k-1)-x_0(k-1)\right]\right| \tag{16}$$

The above research results not only enrich and improve the theoretical system of the gray correlation analysis method but also further provide a reliable theoretical foundation for the application research of the gray correlation analysis method, and these theories lay a solid foundation for the study of the practical application phenomena of social, economic and natural systems.

By reading previous scholars' research results, we know how to construct the correlation degree in gray correlation analysis and its idea. There are two main aspects: One is to construct the correlation degree from the perspective of the similarity of the shape of the series curve and the similarity of the development trend; on the other hand, to construct the correlation degree by the criteria of the development process of two series and the intersection of their orders of magnitude. In addition, two aspects can be considered together to construct the correlation degree model, but both are considered in similarity and proximity.

2.3 Generalized analysis of data dimensionless processing methods

In many studies, the units of the original data series indicators are different, of different orders of magnitude, and different magnitudes, so comparative scientific analysis cannot be performed, leading to unreasonable analysis results. In the process of gray correlation analysis, dimensionlessization of data is the basis and an important step of system evaluation, only unified units can be evaluated in the same platform for reasonable system analysis, and comparative analysis of indicator series without dimensionlessization is unreasonable, which directly affects the accuracy of correlation analysis, so dimensionlessization of data columns is the premise and key of system analysis.

Assuming that the characteristic sequence of the system is $X_i = \{x_i(r)\}, i = 0,1,2,\ldots$, which denotes n units in the analysis and evaluation system, and r denotes r indicators in the i th unit, which is also taken as $1 \le k \le r$, several common dimensionless methods are listed below.

1) Initialization method: The first number of each data column $\boldsymbol{x_i(1)}$, divided by the other numbers $\boldsymbol{x_i(k)}$, is calculated using the following treatment as a guideline $\left\{\frac{x_0(k)}{x_0(1)}\right\},\left\{\frac{x_1(k)}{x_1(1)}\right\},\cdots,\left\{\frac{x_i(k)}{x_i(1)}\right\}$;

2) Meaning method: divide the mean of each series $\overline{X_i}=\frac{\left(\sum_{k=1}^{m}x_i(k)\right)}{m}$ by the other numbers $x_i(k)$ so that the original data column changes to $\left\{\frac{x_0(k)}{\overline{x_0}}\right\},\left\{\frac{x_1(k)}{\overline{x_1}}\right\},\cdots,\left\{\frac{x_i(k)}{\overline{x_i}}\right\}$;

3) Translational method: i.e., add a constant $a_i(i=1,2,\ldots n)$ to each data column, so that the original data column changes to $\{x_0(k)+a_0\},\{x_1(k)+a_1\},\{x_i(k)+a_i\}$;

4) Maximization method: i.e., the minimum value of each data column $\min\left(x_i(k)\right)$ divided by the other numbers $x_i(k)$ makes the original data column into $\left\{\frac{x_0(k)}{\min\left(x_0(k)\right)}\right\},\left\{\frac{x_1(k)}{\min\left(x_1(k)\right)}\right\},\left\{\frac{x_i(k)}{\min\left(x_i(k)\right)}\right\}$;

5) Minimization method: that is, the maximum value of each data column $\max\left(x_i(k)\right)$ divided by the other numbers $x_i(k)$ so that the original data column changes to $\left\{\frac{x_0(k)}{\max\left(x_0(k)\right)}\right\},\left\{\frac{x_1(k)}{\max\left(x_1(k)\right)}\right\},\left\{\frac{x_i(k)}{\max\left(x_i(k)\right)}\right\}$;

6) Subjective qualitative dimensionless method: In analyzing the object, the object's goodness is ranked, and the rank of the analyzed object is determined. In this case, it is called the subjective qualitative dimensionless method.

The above are only a few dimensionless calculation methods. There are many methods to unify the units in the actual research system, but also, according to the characteristics of the studied object indicators and the different methods of mathematical and statistical calculation to choose different formulas for calculation conversion, the chosen formula must make the converted data indicators can accurately reflect the laws of the development of real things. A dimensionless method is only an auxiliary tool of the research method, which is realized to serve other theories better, and also for more convenient research operations and analysis, so we should choose the method that is as simple as possible and easy to implement as the standard.

2.4 Comparison of grey systems with other uncertainty methods

Probability statistics, fuzzy mathematics, and gray system theory are the three most commonly used methods for studying uncertainty systems. Their common point is the uncertainty of the research object. The differences between the three are summarized and listed in Table 1 below.

Table 1. Comparison of the three uncertainty methods

Project	Grey systems	Probability statistics	Fuzzy Mathematics
Research objects	Information-poor uncertainty	Stochastic uncertainty	Cognitive uncertainty
Base set	Grey hazy set	Cantor set	Fuzzy sets
Methodological Basis	Information coverage	Mapping	Mapping
Approach	Grey sequence operator	Frequency statistics	truncated sets
Data requirements	Arbitrary distribution	Typical distribution	affiliation knowable
Focus	inner meaning	Connotation	epistasis
Objectives	Realistic laws	Historical Statistical Patterns	cognitive expression
Characteristics	Small sample	Large samples	empirically-based

3 Results and Analysis

3.1 Analysis of tourists' destination choice preferences in tourism destination management

In this paper, a gray correlation method model was used to analyze the destination preferences and satisfaction of tourists, who were involved in a wide range of activities that could be divided into six major categories: sports activities (golf, sailing, other water activities, hunting, hiking or adventure activities), culture, gastronomy, amenities (spas, theme parks, casinos, clubs and dance halls), daily travel and family visits. The distribution of overall satisfaction is shown in Table 2. The values of the variable "overall tourist satisfaction" were recorded as 0-4, with satisfaction levels 9 and 10 on the Likert scale (i.e., levels 3 and 4 on the recorded variable) accounting for about 48% of the overall results, while level 8 (level 2 on the Likert scale) had the highest number of participants (35%). To explore how tourists choose their destinations, this paper analyzes the data variables, and the distribution of individual variables is shown below.

Table 2. Overall visitor satisfaction

Initial Likert scale level	Recorded Received Rating	Frequency of observations	Percentage
1-6	0	43743	3.6
7	1	1678 7	12.3
8	2	48535	35.6
9	3	38554	21.4
10	4	27533	27.1
	Total	150372	1 00.00

The distribution of the variables is shown in Table 3, where the main variables that influence tourists' destination choice are destination characteristics, travel characteristics (use of tools such as the Internet to plan package trips tours), destination activities, etc. All these variables are direct factors, reflecting both the role of destination attributes discussed in this paper and the important role of culture and the composition of tourists.

Table 3. Distribution of variables

Variables	Data					
Visitor Composition Structure	Gender		Age		Income	
	Man	45.5%	<24	18.2	Low	5.7%
			25-44	34.5	Moderate	35.8%
	Women	55.5%	45-64	36.4	Better	23.4%
			>65	19.9	Very good	11.7%
	Level of education			Job		
	Primary	12.5%		Active	55.2%	
	Intermediate	45.6%		Retired	21.3%	
	Advanced	41.9%		Students	23.5%	
Tour Features	Companionship		Package tours		Use of tools to arrange tours	
	Solo Travel	15.2%	Yes	75.4%	Yes	58.6%
	Couples	49.2%				
	Families	23.7 %	No	24.6%	No	41.4%
	Friends	12.9%				
Destination characteristics	Bali			34.8%		
	New Zealand			20.8%		
	Hainan			14.5%		
	Harbin			18.5%		
	Vietnam			11.4%		
Destination Activities	Sports activities			13.59%		
	Cultural Activities			62.1%		
	Facilities			35.6%		
	Gastronomic activities			93.74%		
	Escorted Tours			41.74%		
Destination Loyalty	Number of previous visits to the destination					
	0			15.6%		
	1-3			20.5%		
	4-9			22.59%		
	More than 10			41.4%		

Regression analysis was then conducted on each of the underlying variables; the results are shown in Table 4. Comparing the results shows that the overall level of satisfaction with tourism appears to influence destination choice, meaning that tourists with high satisfaction are more likely to choose a destination. Other factors associated with increasing the likelihood of destination choice include retirement (for those with lower time constraints), couple companionship, higher income levels, non-inclusive travel, and participation in activities such as sports and gastronomy. In this case, using the Internet to plan a trip does not seem to have a significant impact. How all variables affect the behavior of tourists, the distance of the destination, the age of the tourist and the type of accommodation chosen are the main factors driving this process. In the composition of the tourist, the age (time limit and travel cycle) and occupational status (retirement) are important; “travel characteristics” are important in terms of accommodation (sub-apartment); “destination characteristics” play an important role in destination choice, and some activities (gastronomy) contribute to the degree of destination choice in certain places.

Destination attributes and tourism characteristics appear to be the main factors influencing destination choice. Destination attributes and destination image are the key factors influencing tourist choice. Destination management remains very important, and once the other factors in the model are controlled for, destination fixed effects robustness regressions are reflected in the data. Information about the vacation experience plays a critical role in influencing visitor satisfaction. The Internet, software packages and all the tools available in the tourism market that help to meet tourist expectations can increase tourist satisfaction. Internet communication technologies, applications and social networking sites are strong drivers of satisfaction, helping to improve knowledge of the destination and providing visitors with the opportunity to self-plan and travel. Finally, tourist characteristics of the tourist, the culture of the source and the activities of the destination are also relevant variables.

Table 4. Results of regression analysis

Variables		Regression coefficient	Standard error	Z-value	N-value
Place of origin	Guangzhou	0.068	2.13	4.167	0.000
	Guangxi	-0.159	1.446	-8.101	0.004
	North East	-0.067	1.455	-3.91	0.000
	Nanjing	-0.789	0.0596	-35.55	0.000
Gender	Female	-3.58	2.0464	-17.42	0.000
	Male	-2.1833	3.378	-64.59	0.000
Age	Under 24	-2.048	0.072	-32.07	0.000
	25-44 years old	0.128	0.2333	1.445	0.001
	45-64 years old	-1.595	0.04647	-38.3	0.000
Income level	Elementary	1.35	3.1916	2.445	0.000
	Intermediate	--2.556	0.023	-12.68	0.000
	Upper	-0.183	0.009	-6.2556	0.000
Level of education (above secondary)	Primary	0.1641	5.455	10.453	0.000
	Moderate	-0.156	0.027	-5.9499	0.000
	High	-0.0329	1.4566	-2.79	0.000
Employment status	Working	0.344	-0.025	2.896	0.000
	Retired	-0.4427	0.0792	3.666	0.000
	Student	-2.22	0.0835	5.89	0.871
Type of companionship	Traveling alone	0.082	0.0153	4.012	0.000
	Friends	0.029	0.018	0.156	0.000
	Couples	0.153	1.566	10.61	0.001
	Family companionship	0.156	0. 668	3.5531	0.001
Package tour or not	Yes	0.154	0.128	5.4405	0.002
Use of internet	Yes	-0.015	0.625	-9. 215	0.000
Accommodation	Hotels	-1.459	0.021	5.42	0.000
	Flats	0.4633	0.0394	-6.324	0.000
Destination	Bali	-1.6759	0.01	2.252	0.024
	New Zealand	0.049	0.027	22.87	0.000
	Hainan	0.483	0.0053	-25.3	0.000

	Harbin	-0.467	0.057	-4.473	0.000
	Vietnam	-0.176	0.0285	4.7254	0.907
Type of activity	Sports activities	0.0033	0.017	-3.985	0.000
	Cultural Activities	-0.926	0.008	1.1978	0.236
	Facilities	0.0135	6.7855	-2.734	0.006
	Gastronomic Activities	-0.041	0.021	4.655	0.000
	Average Daily Spending	0.6845	0.032	6.7316	0.000

3.2 Exploration of cultural and creative tourism development

This paper uses questionnaire analysis to investigate the current situation of cultural and creative tourism development. 1,000 questionnaires were sent online, 850 were returned, and 815 were left after eliminating unqualified questionnaires, with an effective rate of 81.5%, and the survey was conducted for the general tourism group from December 15, 2021, to January 15, 2022.

3.2.1 Analysis of cultural and creative tourism consumption experience

Cultural and creative tourism per capita consumption Cultural and creative tourism per capita consumption is an important indicator to evaluate the revenue situation of cultural and creative tourism destinations. After the survey and analysis of tourists' revisit, the results as shown in Table 5 Cultural and creative tourism expenditure table shows: the per capita consumption of tourists in 100-500 yuan accounts for 23.87%; in 500-1000 yuan accounts for 43.40%; in 1000-2000 yuan accounts for 12.28%; in 2000-3000 yuan has 6.04%; in 3000-5000 yuan accounted for 6.87%; in 5000 yuan and above accounted for 5.54%. The per capita consumption of cultural and creative tourism in the range of 500-1000 accounts for 43.4%, which shows that the income of cultural and creative tourism is considerable.

Table 5. Cultural and creative tourism expenditure table

Per capita spending on cultural and creative tourism	Proportion
100-500	23.87%
500-1000RMB	43.40%
1000-2000RMB	12.28%
2000-30,000RMB	6.04%
3000-5000RMB	6.87%
RMB 5000 and above	6.54%

The satisfaction of the visual experience of cultural and creative projects is shown in Table 6. The most intuitive feeling of participating in cultural and creative experience projects is that the vast majority of people feel satisfied, and only 14% of people say they are dissatisfied or very dissatisfied, which shows that the degree of innovation of cultural and creative tourism creative products and the degree of pleasure of making tourists is relatively high.

Table 6. Visual experience of cultural and creative projects

Options	Percentage of
Very satisfied	25%
Satisfied.	43%
Fair	20%
Dissatisfied	10%
Very dissatisfied	4%

The revisits of travelers are shown in Table 7:42.23% of those who made 2 or fewer revisits; 23.95% of those who had revisited 3 times; 14.33% of those who had revisited 4 times; 15.95% of those who had revisited 5 times; and 6.54% of those who had revisited 6 or more times. This shows that the revisit rate of tourists is not high. After the field survey, it was found that the low revisit rate was due to the lack of sustained attraction of tourism resources and the need to strengthen the innovation of tourism product items.

Table 7. Traveller revisit table

Travelers revisiting	Proportion
2 times or less	42.23%
3 times	23.95%
4 times	14.33%
5 times	15.95%
6 times and above	6. 54%

3.2.2 Motivation analysis of cultural tourism

Travel motivation is a subjective condition for a person to go out and travel, including the traveler's motivation in terms of physical, cultural, and social interaction, status and prestige. Factors affecting travel motivation include external factors and individual psychological and personal factors. The study of consumers' travel motivation is the key for the tourism industry to comprehensively understand consumers' needs, accurately segment the market, launch tourism projects that meet the target market's needs, and increase market share. The data on tourism motivation is shown in Figure 1. The tourism purpose and motivation of tourists mainly include: experiencing special folk culture; relieving stress, relaxing; experiencing beautiful natural scenery; experiencing different lifestyles; showing their literary temperament and personality; observing and learning, art exchange, looking for inspiration and gathering with friends to enhance their feelings, etc. The structure and content of market demand also gradually change from traditional tourism, such as sightseeing, to new fashionable tourism, such as cultural and creative tourism. The structure and content of market demand are gradually changing from traditional tourism to new and fashionable ways such as cultural and creative tourism. The motivation of tourists is often multifaceted, and the overall results show that viewing natural scenery, experiencing cultural and creative projects, and experiencing local customs are the main motivations of tourists. The more frequent ones are 57.35% for relaxation, 44.59% for experiencing different lifestyles, 55.4% for enjoying the scenery, 60.55% for experiencing different cultures, 29.8% for artistic exchange and 25.35% for increasing travel experience.

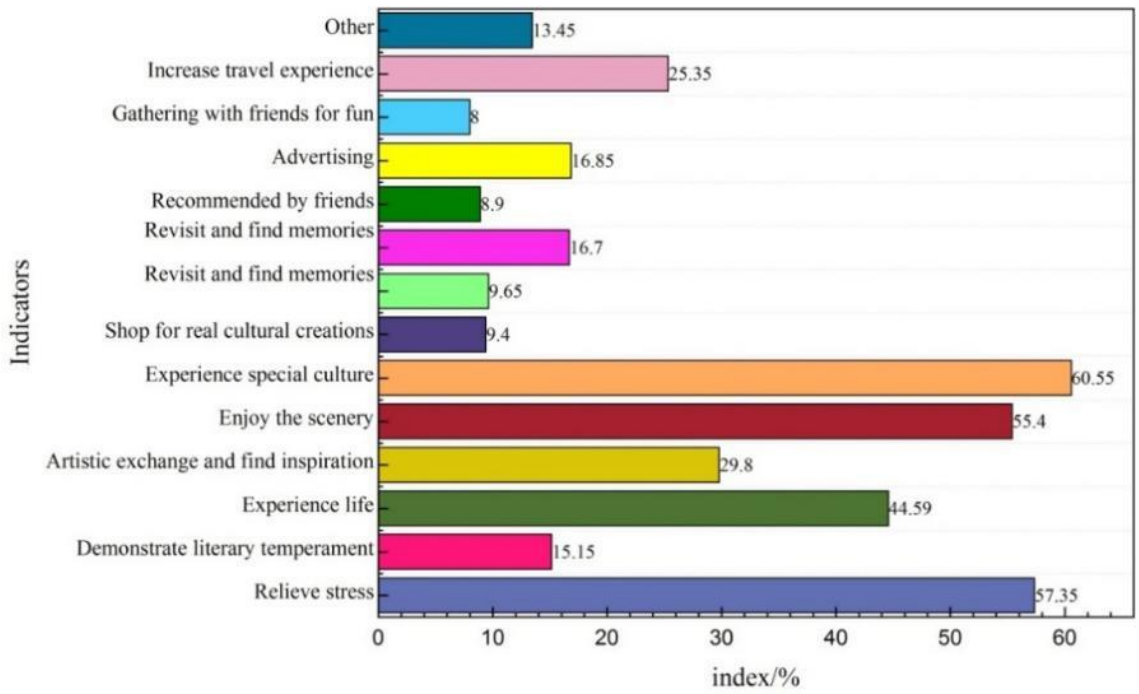

Figure 1. Motivation for travel

3.2.3 Analysis of the attractiveness of cultural and creative tourism

The types of cultural and creative tourism products and activities mainly include cultural and creative tourism commodities, ethnic, cultural tourism performance activities, ethnic cultural and creative characteristic inn or bed and breakfast products, ethnic cultural and creative characteristic food products, creative bars and other leisure and entertainment products and other creative products and activities, etc. The evaluation of cultural and creative tourism products is shown in Figure 2, and more tourists participate in the basic aspects of food and accommodation, such as ethnic culture and creative characteristics of inn or lodging products and ethnic culture and creative characteristics of gourmet products, accounting for 64.87% and 72.35% respectively; 66.32% and 79.69% of tourists learn about culture and experience scenery of scenic spots; while buying cultural and creative tourism commodities and watching ethnic culture and tourism performing arts Products are relatively small, accounting for 45.5% and 56.46% respectively; creative experience bars and other leisure and entertainment products accounted for the smallest proportion of tourists, accounting for 36.33%. Therefore, cultural and creative tourism development should pay attention to the design of tourism commodities, innovation of performing arts products and marketing of creative bars, etc., integrate local characteristics and deeply explore local cultural characteristics.

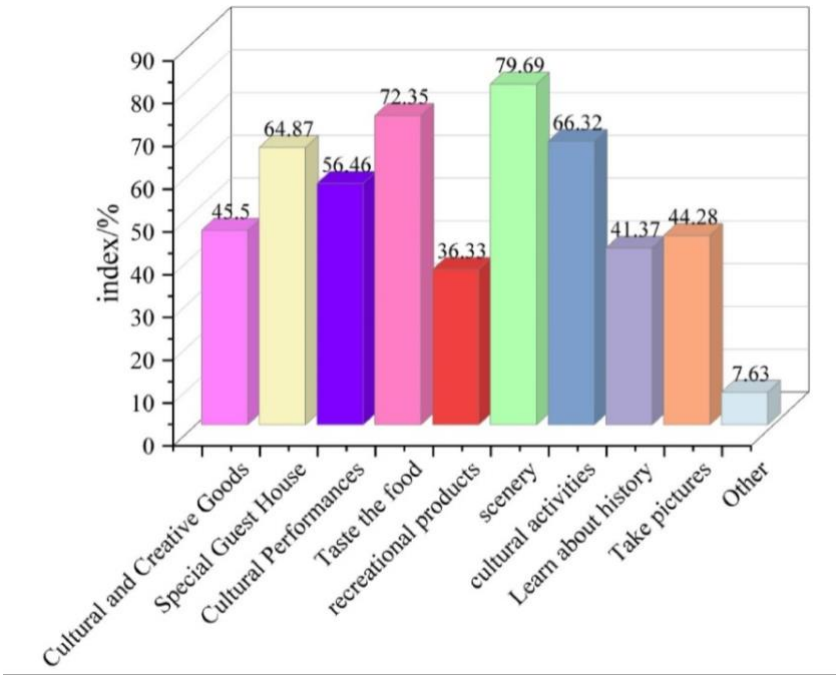

Figure 2. Evaluation of cultural and creative tourism products

In cultural tourism, other factors also affect tourists' choice besides the product, such as environmental factors, traffic situation, etc. Then, the factors that affect tourists' choice of cultural tourism are analyzed. The evaluation of cultural tourism indicators is shown in Figure 3. Among the indicators that tourists evaluate as very good, local characteristics, entertainment, product creativity, artistic features, and cultural connotation get the top five rankings, 70.5%, 75%, 78.65%, 80.45%, and 70.15%, respectively; the bottom five rankings are transportation conditions, technological content, service level, participation experience, and product diversity, in that order. They account for 48.35%, 63.32%, 50.15%, 60%, and 57.35%, respectively. This shows that in the development of cultural and creative tourism, local characteristics, product culture and creativity, regional architecture and regional culture are highly evaluated by tourists, but the traffic conditions and service level still need to be improved. Among the indicators rated as good by tourists in the questionnaire survey, artistic features, product cultural creativity, and entertainment rank high, and the indicators ranking low are traffic conditions and service level, etc.

In general, from the tourists' evaluation of cultural and creative tourism, we can see that the current cultural and creative tourism development based on cultural creativity to promote cultural and creative tourism is doing very well, and there are few negative evaluations, 78.88% of those who evaluate the product creativity as good or very good; 74% of those who evaluate the entertainment as good or very good; 60% of those who evaluate the participation experience as good or very good; thus, it can be seen that the cultural and creative The cultural and creative products and the local cultural and artistic features tapped in the tourism development have basically been well received by tourists to a certain extent.

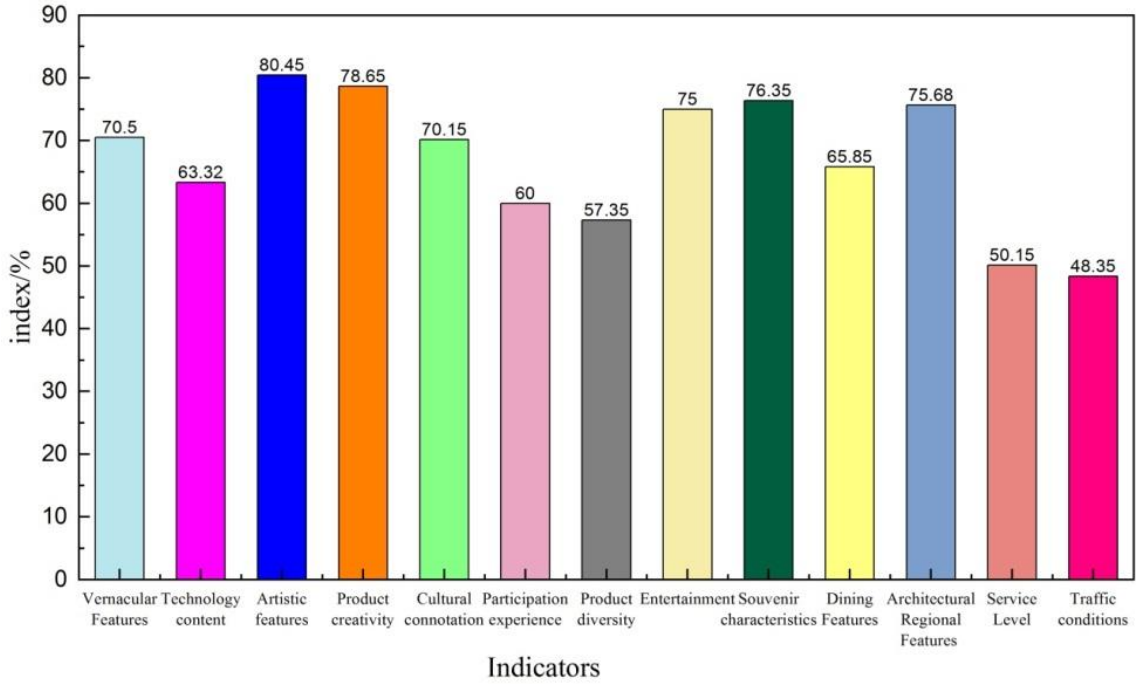

Figure 3. Evaluation of cultural tourism indicators

3.2.4 Problems of the cultural and creative tourism industry

Although cultural and creative tourism is now emerging, and many tourists prefer cultural tourism, there are also many problems, such as excessive commercialization and a lack of cultural authenticity. In this paper, we collect feedback from the questionnaire for statistics, and the results are shown in Figure 4. Tourists believe that the problems of cultural and creative tourism development are: excessive commercialization and loss of cultural authenticity; high ticket prices for tourism performances; homogenization of products and lack of innovation; less participation and experience of tourists; counterfeiting and fraud in tourism stores; noisy and disorderly overall environment; insufficient cultural connotation mining; tourism infrastructure services including toilets to be improved; creative talents and service quality to be enhanced etc. Among the more prominent problems are excessive commercialization and loss of cultural authenticity, accounting for 75%; high ticket prices for 43.08%. The lack of creative products accounts for 38.5%. The level of service needs to be improved by 37.5%, the lack of participation accounted for 32.45%, and the existence of cultural and creative goods fraud in stores accounted for 32.56%. The deep-seated reasons include the rapid development of the modern economy since the rapid development of tourism in the 21st century, traditional cultural protection is under pressure, so there will be problems such as loss of cultural authenticity, and modern society does not pay enough attention to tourism product innovation and does not focus on product innovation and facility upgrading.

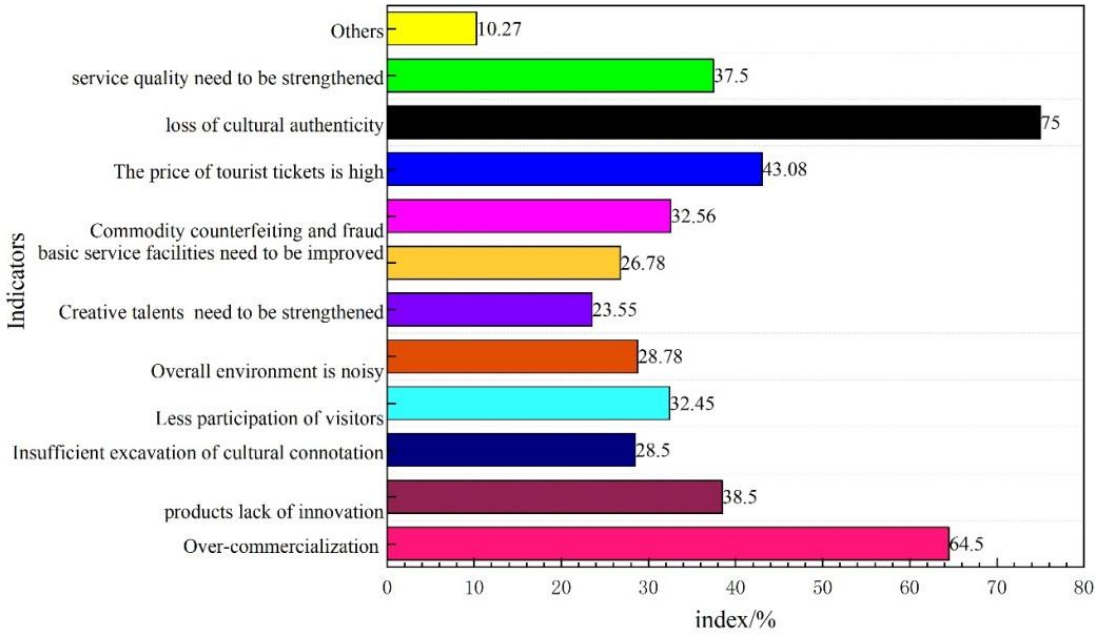

Figure 4. Problems

4 Conclusion

From the perspective of tourism destinations under the cultural ecology theory, this paper combines gray correlation analysis and questionnaire survey to study the current situation of cultural and creative tourism and the remaining problems in tourism development and proposes countermeasures to promote the healthy development of cultural and creative tourism. The following conclusions are mainly drawn:

1) Tourism development mode (mainly from the development support and operation aspects to summarize), from the development support of tourism development mode can be summarized as: based on traditional resources, the introduction of cultural and creative projects to develop cultural resources + cultural and creative leading the creative-led development model. Increase the deep excavation of cultural resources and the innovation of cultural and creative goods, and innovative business models, and strengthen the management of the business.

2) Problems in developing cultural and creative tourism: infrastructure needs to be strengthened; service level needs to be improved; single product type and insufficient innovation; scattered attractions and overall planning need to be strengthened; marketing channels are not rich enough. The corresponding solutions are as follows: improve the infrastructure construction related to cultural and creative tourism; strengthen the training of talents and improve the service level of practitioners; explore the development of cultural and creative tourism projects and introduce diversified development modes; strengthen the overall planning and create core scenic spots; and innovate the marketing mode. Deeply explore the cultural connotation of local characteristics, carry forward the spirit of traditional culture, promote the integration of products and culture, and de-commercialize; strengthen the management of scenic spots, combat fraud, and improve the quality of services; improve the participation of tourists in activities and the entertainment of activities; and strengthen the integration of artistic features in tourism projects.

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