

ENVIRONMENTAL AND ECOLOGICAL PRESERVATION-ORIENTED TOURISM DEVELOPMENT OF THE INTANGIBLE CULTURAL HERITAGE OF GUANGXI, YUNNAN AND GUIZHOU ETHNIC MINORITIES

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ABSTRACT

The intangible cultural heritage of ethnic minorities in Guangxi, Yunnan and Guizhou is born and grows essentially basing local environmental protection. Doubling efforts in protecting the ecological environment is the key to enabling the live transmission of such non-material cultural heritage. To better preserve the environment in places inhabited by ethnic minorities, this paper probed into and verified the live transmission tourism development of the intangible cultural heritage of ethnic minorities in Guangxi, Yunnan and Guizhou, in virtue of the evaluation system built applying the dimensionless method. The results suggested that tourism development has improved the ecological environment of ethnic minority villages. Digitally, the utilization rate of clean energy and resource exceeded 85% and 76.8%, while the vegetarian coverage and afforestation area reached 45% and 137.4 hectares respectively. That made level 5 the impact of the intangible cultural heritage tourism development of ethnic minorities on the corresponding ecological environment, enabling joint development.

KEYWORDS

Ecological protection; Environmental protection; Intangible culture; Heritage tourism; Tourism development

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1. INTRODUCTION

With UNESCO's efforts to construct a complete system of world heritage and to include intangible cultural heritage into the category of world heritage, intangible cultural heritage has increasingly become a hot issue in practice [1-2]. In this discussion, tourism development has become the focus of attention, with some in favor and some against it. For example, at the World Congress on Safeguarding Intangible Cultural Heritage held in Suzhou, some scholars opposed the tourism development of intangible cultural heritage [3-4]. In today's rapid development of tourism, it is of great practical significance to drive the protection and inheritance of intangible cultural heritage by the development of tourism, and it has become an inevitable trend [5-6]. How to integrate intangible cultural heritage into the tourism attraction, and carry out scientific planning and development to solve the contradiction between them is an important issue worthy of in-depth study [7-8].

In recent years, there has been a dramatic increase in the number of applications for ICH in China, with a total of 45 ICH selected for inclusion in the United Nations ICH program and 1,382 selected for inclusion in the national ICH program until 2022 [9-10]. When the ICH is applied, the local tourism industry also goes to glory, on the one hand, the country wants the public to recognize the cultural value of the ICH, and on the other hand, the local government also wants to spread its proud cultural capital to gain profit [11-12]. However, the development of cultural heritage tourism has subconsciously affected the transmission and protection of NRMs [13]. Take the NRM projects in Guangxi, Yunnan and Guizhou minority regions as an example, although the local economy is not developed the people are simple, as the province with the largest number of minority groups in China, including many minority groups such as Zhuang, Yao, Miao, Dong and Huijing. Due to the backward economy, the local people also have a more traditional ideology, and some cultures and ideas have rich characteristics although they are closed [14-17]. However, with the development of the economy, driven by material interests, the simple local people lack awareness of the protection of NRMs, and the government has not introduced perfect protection measures, many NRMs are distorted and lose their original flavor in the process of tourism development [18].

Intangible cultural heritage is an intangible, living flow of cultural resources inherited by specific regions and ethnic groups from generation to generation using oral transmission. It is a unique, living, flowing cultural memory and historical witness [19-20]. Guangxi, Yunnan and Guizhou are multi-ethnic areas, and each ethnic minority has formed unique ethnic villages during their long historical development and created numerous intangible cultural heritages of ethnic minorities in this special geographical environment [21-22]. Strengthening the living heritage of the intangible cultural heritage of ethnic minorities is an important task to promote the traditional culture of ethnic groups and build villages with ethnic characteristics. The cultural ecological reserve reduces the multi-level and multi-faceted intangible cultural heritage tourism development and inheritance groups to specific cultural spaces from the natural and human ecological environment and does holistic protection. This is an

innovative concept and innovative initiative for tourism development and protection [23-25].

The regional characteristics of the intangible cultural heritage of Guangxi, Yunnan and Guizhou minorities play a significant role in their tourism development, and the regional flavor and rhythm can be better reflected. From the literature [26], the test results showed that the cognitive, affective and cultural experiences of cultural heritage tourism destinations positively influenced the environmental behavior of tourists. The literature [27] analyzes the coupling relationship between tourism resources and intangible cultural heritage to explore models for revitalizing or developing intangible cultural heritage. It also provides a useful reference for the integration of intangible cultural heritage and tourism development planning in other regions. The literature [28], through a study of the main motivations for tourism in South Tyrol, fascinates tourists with tangible and intangible aspects of South Tyrolean culture, such as architecture, traditional lifestyles, activities, customs, dress and language. The role played by cultural sustainability for the region has succeeded in preserving traditions, including aspects such as traditional language dialects and Latin. In literature [29], the first phase aimed to collect evaluation indicators affecting ICH skill learning and used semi-structured in-depth interviews to support these data. In the second phase, the convergence of value indicators influencing ICH skill learning was completed through questionnaires and statistical analyses. Factor analysis was conducted using SPSS software. Validation analysis was performed using Amos software for SEM (structural equation modeling). The literature [30] shows the temporal evolution of the gastronomic heritage literature parallel to the UNESCO cultural heritage initiative. The results show that most articles link gastronomic heritage to the sustainability of tourism destinations, with European case studies focusing more on sustainability than Asian studies. The contents and themes studied in the above literature are relatively focused, and the research mainly includes various aspects such as the value of NRM conservation management and conservation measures, the impact of tourism development on NRM, the staging and authenticity of NRM tourism, and the initial dynamics of NRM tourism [31-34].

The intangible cultural heritage of Guangxi, Yunnan and Guizhou ethnic minorities is the crystallization of the wisdom of the people in their production life for thousands of years, with a long history and deep cultural heritage. It is passed down from generation to generation, formed in a certain natural and cultural background, has a unique living soil and cultural ecological space, and is a living culture attached to a special individual or group, a specific region or space. This paper constructs a tourism development model based on the current situation of the intangible cultural heritage of Guangxi, Yunnan and Guizhou minorities, and uses the dimensionless method to construct an evaluation system to study the environmental and ecological protection of intangible cultural heritage tourism development of Guangxi, Yunnan and Guizhou minorities. The aim is to achieve a win-win situation in the joint development of the intangible cultural heritage of Guangxi, Yunnan and Guizhou minorities and ecological protection. In this way, the sustainable development of the intangible cultural heritage

of Guangxi, Yunnan and Guizhou minorities can be achieved and the intangible cultural heritage of the minorities can be prolonged in its original ecosystem.

2. ENVIRONMENTAL AND ECOLOGICAL PROTECTION OF INTANGIBLE CULTURAL HERITAGE TOURISM DEVELOPMENT MODEL

2.1. CURRENT SITUATION OF THE INTANGIBLE CULTURAL HERITAGE OF GUANGXI, YUNNAN AND GUIZHOU MINORITIES

Located in the hinterland of southwest China, Guangxi, Yunnan and Guizhou is a multi-ethnic area and each minority group has formed distinctive villages with different styles during their long-term production and living process. Among the 345 "Villages with Minority Characteristics in China" announced by the National People's Committee, Guangxi, Yunnan and Guizhou have 167 villages with minority characteristics, accounting for 48.4% of the total number of villages. The distinctive minority villages are rich in the intangible cultural heritage of minority groups. For example, the Lusheng stomping tang in Yubu Village, Buling Tun, Xiangfen Township, Rongshui Miao Autonomous County, Liuzhou City, Guangxi Province, the A-xi jumping moon in Hongwan Village, Xiyi Township, Takeo Village Committee, Mile County, Yunnan Province, and the Duzhu floating in Datong Township, Ethnic Village, Zunyi City, Chishui City, Guizhou Province. The following table shows several batches included in the national list [35].

Table 1. List of the intangible cultural heritage of ethnic minorities in Guangxi, Yunnan and Guizhou

Category	Project name (declared unit)
Folk literature	Miao guge (Huangping County), Kedao (Shibing County), Yang Asha (Miao and Dong Autonomous Prefecture), Zhulang niangmei (Rongjiang County), Miao Jiali (southeastern state of Guizhou Prefecture)
Folk music	Dong dage (Liping County), Dong pipa song (Rongjiang County, Liping County), Miao folk song (Miao flying song) (Leishan County), Lusheng music (Dong Lusheng, Miao Mangtong Lusheng) (Danzhai County)
Folk dance	Miao Lusheng dance (Jinji dance, Long-shirt dragon dance, Rolling mountain pig) (Leishan County, Danzhai County, Guiding County), Wooden drum dance (Anti-row Miao wooden drum) (Tai County), Copper drum dance (Leishan County)
Traditional drama	Dong opera (Liping County)
Folk art	Miao embroidery (Leishan County), Dong embroidery (Jinping County)
Traditional handicraft	Miao batik technique (Danzhai County), Miao Lusheng making technique (Lei County), Miao silver forging technique (Leishan County), Miao brocade weaving technique (Majiang County, Leishan County), Maple printing and dyeing technique (Majiang County), Xijiang thousand-house miaozhai hanging foot building construction technique (Leshan County)
Traditional Medicine	Miao medicine (bone and snake injury therapy, Jiujiu tea medicine production process) (Leishan County, southeastern state of Guizhou Miao and Dong Autonomous Prefecture), Dong medicine (passing yellow medicine production process) (southeastern state of Guizhou Prefecture), Buyi medicine (Yi liver herb production techniques) (Guiding County)
Traditional Folklore	Miao sister festival (Taijiang County), Dong sama festival (Rongjiang County), Miao dokki dragon boat festival (Taijiang County), Miao new year festival (Danzhai County, Leishan County), Dong new year (Rongjiang County), Miao drum collection festival (Rongjiang County, Leshan County), Song festival (48 Zhai song festival) (Tianzhu County), Moon festival (Liping County), Miao rock-cutting custom (Rongjiang County), Dong costume (southeastern state of Guizhou Prefecture), Statute custom (Dong Model Covenant) (Liping County)

2.2. TOURISM DEVELOPMENT MODEL OF THE INTANGIBLE CULTURAL HERITAGE OF ETHNIC MINORITIES IN GUANGXI, YUNNAN AND GUIZHOU

For the situation of intangible cultural heritage resources of ethnic minorities in Guangxi, Yunnan and Guizhou, a tourism development model is designed from the following six aspects, as shown in Figure 1.

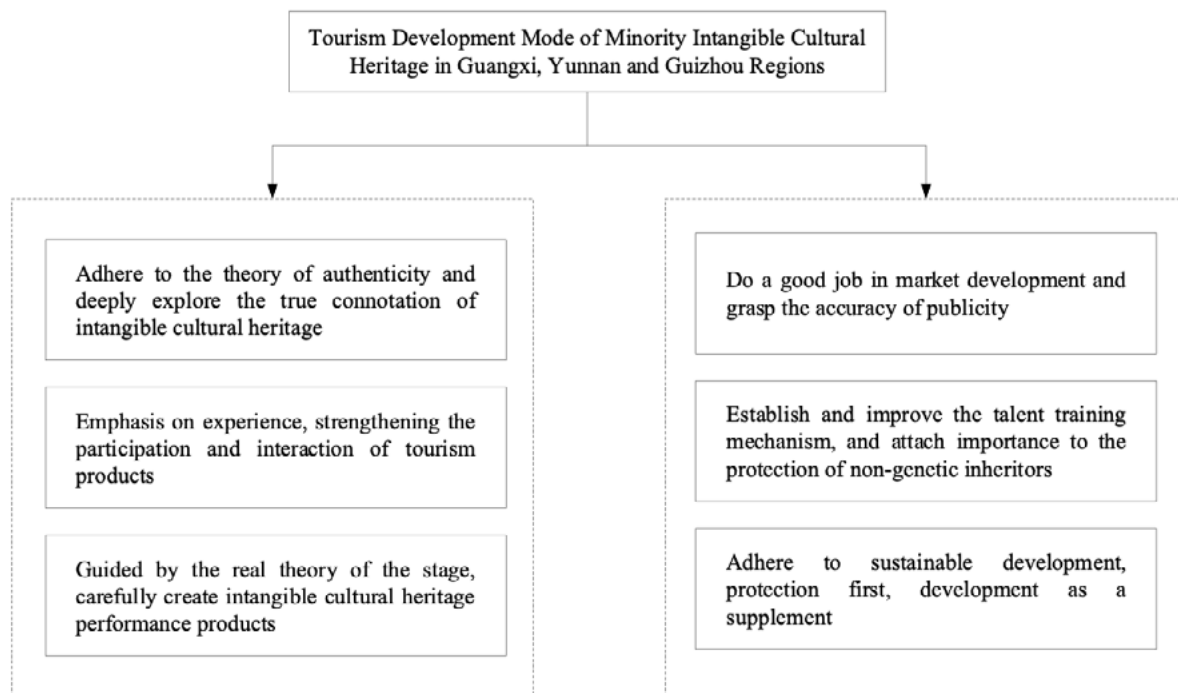


Figure 1. Tourism development model of the intangible cultural heritage of ethnic minorities in Guangxi, Yunnan and Guizhou regions

Adhere to the theory of authenticity and deeply explore the true connotation of intangible cultural heritage. In the process of continuous development and change of human civilization, unique living habits and lifestyles make each nationality accumulate different national cultural heritages due to different characteristics of their natural social and ecological environments, forming the cultural diversity of intangible cultural heritage [36]. Guangxi, Yunnan and Guizhou are both large ethnic minority provinces, and their ethnic intangible cultural heritage has the advantage of ethnic cultural uniqueness and diversity, but in the process of tourism development, the intangible cultural heritage of ethnic minorities faces many opportunities and challenges. Its ethnic and cultural uniqueness and diversity reflect the unique human capacity for innovation and the solid foundation for group interaction and never-ending human well-being. The intangible cultural heritage of ethnic minorities must strictly follow the principle of comprehensive and authentic protection. In the process of tourism development, only by adhering to the theory of "authenticity" and tapping the real connotation can the vitality and attractiveness of the tourism products of the intangible cultural heritage of ethnic minorities be consistent with the pursuit of the original development trend while pursuing the original tourism ecology. Only with real and unique local characteristics can we bring tourists high-quality satisfaction and help establish tourism brands.

Focus on experience and strengthen the participation and interactivity of tourism products. Guangxi, Yunnan and Guizhou minority intangible cultural heritage tourism development, add experiential links. Instead of limiting tourists to just taking pictures in tourism activities, they should also allow them to join them and experience them to truly meet the needs of different tourists. Developers can implement targeted

marketing strategies in their development, study the demand experience of tourists, improve the type of tourism experience, and carry out marketing programs from the country, culture and other aspects. Rich product structure and excellent product quality can enhance the core competitive advantage of tourism products in the tourism era and obtain better and wider economic benefits.

Craft non-traditional performance products with stage authenticity theory as a guide. Stage authenticity theory" on the one hand can avoid the impact of tourists on the fragile local culture and ecosystem, avoid cultural changes and a series of problems, and maintain the traditional cultural origin and integrity. On the other hand, to meet the experience of tourists from other places in real life, the traditional culture, folk customs, and lifestyle in tourist destinations are kept in their connotation on an authentic basis [37]. And through artistic processing and creation, it creates tourism performing arts products that tourists can see and hear. Interact with visitors at the front desk to make them feel that what they see and experience is real, and then create a tourism experience. On the one hand, reduce the demonstration effect brought by visitors to the destination community. On the other hand, the pride of the local population is aroused, and new elements of traditional crafts, dances, costumes, etc. are added to the tourism product so that it can continue in a new and continuous form and be accepted by modern tourists. The application of "staged authenticity theory" to the development of actual performances helps to minimize the impact of cultural commercialization, maintain the objective authenticity of the original culture, and achieve sustainable and healthy development.

Do a good job of market development and grasp the precision of publicity. Guangxi, Yunnan and Guizhou are multi-ethnic provinces with rich and unique cultural charms. Expand product marketing and market segmentation of customers through clear market positioning of tourists. Targeted design of tourism projects and active guidance of residents to participate in the preservation, and thus tourism development. In cooperation with tourism developers, operators and government, and residents, we will attract a large number of tourists and experts and scholars curious about the country's culture to visit and study here through powerful and well-known domestic and foreign travel agencies and tourism reception departments.

Establish a sound talent training system and pay attention to the protection of non-genetic inheritors. First, through the development of the corresponding system, establish and improve the retention, attract outstanding tourism talent protection incentive mechanism for the protection of Guangxi, Yunnan and Guizhou minority intangible cultural heritage development services to provide manpower support, adhere to the principle of local talent and tourism professionals are given priority to hire and do a good job protection work. Secondly, the source of protecting art and culture is to protect the heirs. It is necessary to strengthen the importance of inheritance protection, provide financial support, actively establish cultural heritage, strengthen social education and school education, raise the social value of the status of the heirs, and make more people more aware of the protection of non-heritage.

Adhere to sustainable development, protection as the main, and development as a supplement. To achieve the sustainable development of tourism, protection should be the first task, not only limited to the protection and development of external culture, but more importantly, the protection of its living environment, especially for its history, culture and emotional information should be strengthened to protect. Tourism resources and the environment are closely linked, and the healthy development of tourism will be seriously affected if either of them is destroyed.

3. TOURISM DEVELOPMENT MODEL IMPACT EVALUATION INDICATORS

The first target layer indicators of the evaluation index of the ecological environment of ethnic minority villages are comprehensive evaluation indicators. The second layer of domain layer indicators is classified as evaluation indicators. The third layer of sub-indicator layer indicators are single evaluation indicators. We decompose the categorical indicators in the minority village ecological environment evaluation index system into several sub-indicators, to form a well-structured recursive structure. So far, we have constructed an index system of 5 aspects and 10 individual indicators of the ecological environment of minority villages. As shown in Table 2.

Table 2. Framework table of impact evaluation index system

Target layer	Domain Layer	Sub-indicator layer
Ecology	Air quality	Air pollutant prevention and control in Ethnic Minority Villages
		Clean energy utilization in ethnic minority villages
	River and lake water quality	Sewage and wastewater treatment in ethnic minority villages
		Drinking water safety in ethnic minority villages
	Soil quality	Soil improvement in ethnic minority villages
		Soil pollution prevention and control in ethnic minority villages
	Greening level	Vegetation coverage of ethnic minority villages
		Forest planting and protection in minority villages
	Garbage disposal	Centralized garbage removal and harmless treatment in minority villages
		Scientific classification and resource utilization of garbage in minority villages

Each evaluation index in the ecological environment evaluation index system of minority villages reflects the construction status of the ecological environment of minority villages from different sides, but to reflect the overall status of the ecological environment construction of minority villages, it is necessary to make a

comprehensive assessment of the above evaluation indexes. The factors (dimensions) affecting the ecological environment level x are the following five, air quality, water quality of rivers and lakes, soil quality, greening degree, and garbage disposal. They are denoted by English small letters x_1, x_2, x_3, x_4, x_5 respectively. That is, $x = (x_1, x_2, x_3, x_4, x_5)$.

Air quality mainly examines two factors: prevention and control of air pollutants in ethnic minority villages and clean energy use in ethnic minority villages. They are denoted by English small letters x_{11}, x_{12} respectively. That is, $x_1 = (x_{11}, x_{12})$.

The water quality of rivers and lakes is mainly examined by two factors: sewage treatment in minority villages and drinking water safety in minority villages. They are represented by English small letters x_{21}, x_{22} respectively. That is $x_2 = (x_{21}, x_{22})$.

Soil quality mainly examines two factors: soil improvement in minority villages and soil pollution prevention in minority villages. They are denoted by English small letters x_{31}, x_{32} respectively. That is, $x_3 = (x_{31}, x_{32})$.

The degree of greening mainly examines two factors: the vegetation coverage of minority villages and the planting of trees and forestry in minority villages. They are denoted by English small letters x_{41}, x_{42} respectively. That is, $x_4 = (x_{41}, x_{42})$.

Waste treatment mainly examines two factors: centralized waste removal and harmless treatment in minority villages and scientific separation and resource utilization of waste in minority villages. They are represented by English small letters x_{51}, x_{52} respectively. That is, $x_5 = (x_{51}, x_{52})$.

Let the sample point data of the factors (dimensions) affecting the ecological environment - the secondary index of the statistic be x , then we specify its calculation formula as:

$$x \begin{cases} 1, & \text{when } x_i = 2 \\ 2, & \text{when } 10 < \sum_{i=1}^5 x_i \leq 20 \\ 3, & \text{when } 20 < \sum_{i=1}^5 x_i < 30 \\ 4, & \text{when } 30 \leq \sum_{i=1}^5 x_i < 40 \\ 5, & \text{when } 40 \leq \sum_{i=1}^5 x_i \leq 50 \end{cases} \quad (1)$$

According to the above model, the quantitative evaluation criteria of the ecological environment construction of minority villages are set. When $x_m = 1$, it means the ecology of the minority village is poor. When $x_m = 2$, it means the ecological environment of the minority village is poor. When $x_m = 3$, it means that the ecological environment of the minority village is average. When $x_m = 4$, the ecological environment of the minority village is good. When $x_m = 5$, the ecological environment of the minority village is very good.

4. RESULTS AND ANALYSIS

Seven ethnic minority villages in the Guangxi, Yunnan and Guizhou ethnic areas were randomly selected and the constructed intangible cultural heritage tourism development model was applied. Using the designed impact evaluation index system, the ecological and environmental impacts of the development model on different villages were examined, and the obtained evaluation results are shown in Figure 2.

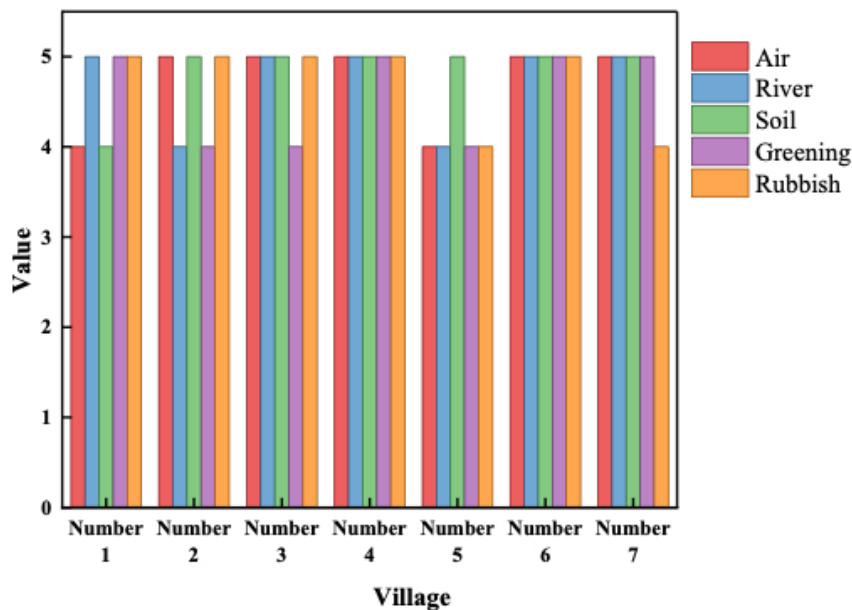


Figure 2. Schematic diagram of the impact assessment of the tourism development model of the intangible cultural heritage of Guangxi, Yunnan and Guizhou minorities on the ecological environment

According to the quantitative evaluation standard of the ecological environment of minority villages, it is clear that the ecological environment of village No.1 is well constructed. The survey found that the village actively builds a "green farmhouse park", gives full play to the geographical advantage of leaning on the mountain and facing the river, strengthens various infrastructure construction, and provides diversified convenient services for tourists. The vitality and attractiveness of intangible cultural heritage tourism products of ethnic minorities are in line with the trend of tourism development while pursuing the original tourism ecology. Since the quantitative evaluation levels of air, river, soil, greenery and garbage of the ecological environment of this village cottage reached 4, 5, 4, 5 and 5 respectively. Therefore the ecological environment level of this village cottage reached a high standard.

The ecological environment of village No. 2 is better constructed. The survey found that the village is solidly promoting precise poverty alleviation and precise poverty eradication. With the development of special tourism as the focus, we actively create a famous tourism village, ecological village, and cultural village. In particular, the county and township leaders attach great importance to ecological and environmental

protection work. Through the use of clean energy, environmental pollution is reduced and energy utilization is improved. And the villagers are guided to use chemical fertilizers, pesticides and mulch scientifically. This minimizes the possibility of pollution to the village's ecological environment and makes the village's ecological environment construction effective. According to the quantitative evaluation standards of the ecological environment of the minority villages, the quantitative evaluation levels of air, river, soil, greenery and garbage of the village ecological environment have reached 5, 4, 5, 4 and 5 respectively.

The ecological environment of village No. 3 is very well built. The survey found that the village and the surrounding villages are jointly building a pilot project of rural revitalization, "Qing Hua Field Complex", and strengthening infrastructure construction around the project, designing tourism projects and actively guiding residents to participate in the protection of the intangible cultural heritage of ethnic minorities, to develop tourism and make the village look significantly better. In recent years, the village has also achieved good results in the creation of national unity and progress, with a simple and beautiful countryside and a harmonious village. According to the quantitative evaluation standards of the ecological environment of the minority villages, the quantitative evaluation levels of air, river, soil, greenery and garbage of the village's ecological environment are 5, 5, 5, 4 and 5 respectively.

The ecological environment of village No. 4 is very well constructed. The survey found that the village, as a well-preserved village with Tujia characteristics within Wufeng County, has received strong support from the county and township governments for its development. By continuously improving the village infrastructure, protecting the unique ethnic culture, and promoting rural tourism, the village has initially formed a benign development situation in which industrial revitalization and ecological environment construction synergize and promote each other. And we insist on sustainable development, mainly protection, supplemented by development, to promote the sustainable development of intangible cultural heritage tourism of ethnic minorities. According to the quantitative evaluation standards of the ecological environment of the minority villages, the quantitative evaluation levels of air, river, soil, greenery and garbage of the village ecological environment are 5, 5, 5, 5 and 5, respectively.

The ecological environment construction of village No. 5 is better. The survey found that in recent years, Lichuan City vigorously promote new urbanization and the pace of village and town integration construction accelerated. The village cottage is 18 kilometers away from the urban area, 318 National Highway through the village, and is located in the Tenglong Cave scenic area and Enshu Grand Canyon tourist highway node. The construction of roads to the village, communication, water supply and drainage facilities, and increasing the renovation of dilapidated houses, make it very convenient for tourists to travel, entertain and shop. The quantitative evaluation grades of air, river, soil, greenery and garbage of the village's ecological environment are 4, 4, 5, 4 and 4 respectively. Therefore, the ecological environment of the village is in good condition.

The ecological and environmental construction status of village No. 6 is very good. The survey found that the village has renovated the facades of some of the dwellings to create a tourist attraction. So that its overall appearance can be beautified. Continuously improve the village sanitation public facilities, with sorted garbage cans, and increase the number of garbage removal. Arranging a person in charge of the care, to realize the centralized treatment of wastewater and garbage. The construction of tourism facilities is actively improved to enhance the tourist experience of visitors. According to the quantitative evaluation grade standard of the ecological environment of the minority villages, the quantitative evaluation grades of the village ecological environment of air, river, soil, greenery and garbage are 5, 5, 5, 5 and 5 respectively.

The ecological environment construction status of village No. 7 is relatively good. The survey found that the village plants tea to increase land water storage, improve the soil environment of the land, to create a green mountain forest overall appearance, the village relies on the tea industry as the leading vigorously promote the development of rural tourism resources, has achieved certain economic benefits. At present, the tea industry has a good radiation-driven ability, relying on the geographical advantage of the mountains and rivers, to drive the development of the village tourism economy. According to the quantitative evaluation standards of the ecological environment of the minority villages, the quantitative evaluation levels of air, river, soil, greenery and garbage of the village ecological environment are 5, 5, 5, 5 and 4, respectively.

5. DISCUSSION

The development history of the minority villages has undergone a unique baptism of human history. Therefore, the history, culture and local characteristics of minority villages are unique, and in the process of their development and construction, they should also maintain local characteristics, combine local cultural heritage and natural environment, and protect the original local landscape. We integrate new ideas and thoughts based on the existing minority cultures to make the environment of minority villages more beautiful and culturally rich. The ecological environment needs to work not only on ecological and environmental protection but also on the cultural environment to provide more nourishment for the spiritual life of the villagers. This makes their cultural identity and pride grow. The purpose of this paper is never to stop at the construction of the index system itself, but to extend the application of this index system to the ecological environment construction of minority villages. The purpose of this paper is to apply this index system to the ecological environment of minority villages and to realize the development of intangible cultural heritage tourism under ecological environment protection.

6. CONCLUSION

This paper analyzes the current situation of intangible cultural heritage of Guangxi, Yunnan and Guizhou minorities and constructs a tourism development model to protect the ecological environment. The model was constructed by using the dimensionless method of mathematical statistics to verify the impact of the tourism development model of the intangible cultural heritage of Guangxi, Yunnan and Guizhou minorities on the ecological environment, and the following conclusions were drawn:

1. Realizing the development of intangible cultural heritage tourism of Guangxi, Yunnan and Guizhou minorities in the context of environmental and ecological protection. Relying on the cultural connotation and characteristic landscape of ethnic minorities, we plan beautiful villages according to local conditions and deeply explore and use local ecological and environmental protection knowledge to improve the ecological environment of ethnic minority villages. So that the ecological evaluation level of villages No. 3, No. 4 and No. 6 maintains a high level with a grade of 5.
2. By adhering to the people-centered concept and giving full play to the role of villagers in the construction of the ecological environment of minority villages, we create a good atmosphere in which everyone cares about the environment and everyone participates in environmental protection. To enhance the comprehensive function and environmental level of minority villages, to explore and utilize local ecological knowledge, to protect the ecological environment of minority villages in a multifaceted and coordinated manner, to use resources rationally and to improve the utilization rate of resources, so that the ecological environment of villages No. 2 and No. 5 is better constructed with a grade of 4.
3. By constructing the ecological environment evaluation index system of minority villages, we adhere to the people-centered concept and enhance the comprehensive function and environmental level of minority villages. To make the vitality and attractiveness of intangible cultural heritage tourism products of ethnic minorities consistent with tourism development while pursuing the original tourism ecology. It makes the ecological environment of village No. 1 better and makes the ecological environment evaluation grade 5.
4. In the process of tourism development, we insist on the theory of "authenticity" to explore the real connotation, so that the vitality and attractiveness of intangible cultural heritage tourism products of ethnic minorities will be consistent with the original development trend while pursuing the original tourism ecology. Based on the ecological environment construction status of No. 7 village, the ecological evaluation level is maintained at 4. Continue to promote the construction of the ecological environment of minority villages, so that the ecological protection of minority villages and the tourism of minority intangible cultural heritage can be developed together.

REFERENCES

- (1) Tavares, D. S., Alves, F. B., & Vásquez, I. B. (2021). The Relationship between Intangible Cultural Heritage and Urban Resilience: A Systematic Literature Review. *Sustainability*, 13.
- (2) Yuan, C., Gan, L., & Zhuo, H. (2022). Coupling Mechanisms and Development Patterns of Revitalizing Intangible Cultural Heritage by Integrating Cultural Tourism: The Case of Hunan Province, China. *Sustainability*, 14.
- (3) Lonardi, S., & Unterpertinger, Y. (2022). The Relevance of Intangible Cultural Heritage and Traditional Languages for the Tourism Experience: The Case of Ladin in South Tyrol. *Sustainability*, 14.
- (4) Yan, W. J., & Chiou, S. C. (2021). The Safeguarding of Intangible Cultural Heritage from the Perspective of Civic Participation: The Informal Education of Chinese Embroidery Handicrafts. *Sustainability*, 13.
- (5) Radosavljevi, U., & Ulafi, I. K. (2019). Use of cultural heritage for place branding in educational projects: The case of Smederevo and Golubac fortresses on the Danube. *Sustainability*, 11.
- (6) Tzima, S., Styliaras, G., Bassounas, A., & Tzima, M. (2020). Harnessing the potential of storytelling and mobile technology in intangible cultural heritage: A case study in early childhood education in sustainability. *Sustainability*, 12.
- (7) Margarita, & Gascón. (2018). Legacies of space and intangible heritage: Archeology, ethnohistory, and the politics of cultural continuity in the Americas - Edited by Armstrong-Fumero, Fernando and Gutierrez, Julio Hoil. *Bulletin of Latin American Research*, 37(5), 626-627.
- (8) Lan, T., Zheng, Z., Tian, D., Zhang, R., Law, R., & Zhang, M. (2021). Resident-tourist value co-creation in the intangible cultural heritage tourism context: The role of residents' perception of tourism development and emotional solidarity. *Sustainability*, 13.
- (9) Su, X., Li, X., Wu, Y., & Yao, L. (2020). How is intangible cultural heritage valued in the eyes of inheritors? Scale development and validation. *Journal of Hospitality & Tourism Research*, 44(5), 806-834.
- (10) Tan, S. K., Lim, H. H., Tan, S. H., & Kok, Y. S. (2020). A cultural creativity framework for the sustainability of intangible cultural heritage. *Journal of Hospitality & Tourism Research*, 44(3), 439-471.
- (11) Wendt, J. A., Grama, V., Ilie, G., et al. (2021). Transport Infrastructure and Political Factors as Determinants of Tourism Development in the Cross-Border Region of Bihor and Maramure. A Comparative Analysis. *Sustainability*, 13.
- (12) Wu, C. H. (2021). A Study on the Current Impact on Island Tourism Development under COVID-19 Epidemic Environment and Infection Risk: A Case Study of Penghu. *Sustainability*, 13.
- (13) Trii, I., Teti, S., Privitera, D., et al. (2021). Perspectives on Sustainable Tourism Development in the Hotel Industry—A Case Study from Southern Europe. *Sustainability*, 13.
- (14) Grilli, G., Tyllianakis, E., Luisetti, T., et al. (2021). Prospective tourist preferences for sustainable tourism development in Small Island Developing States. *Tourism Management*, 82, 104178.

- (15) Spina, L. D., & Giorno, C. (2021). Cultural Landscapes: A Multi-Stakeholder Methodological Approach to Support Widespread and Shared Tourism Development Strategies. *Sustainability*, 13.
- (16) Zhou, W., Duan, Y., Zhang, Y., et al. (2021). Effects of foliar selenium application on growth and rhizospheric soil micro-ecological environment of *Atractylodes macrocephala* Koidz. *South African Journal of Botany*, 137, 98-109.
- (17) Nie, S., Wang, A., & Yuan, Y. (2021). Comparison of clinicopathological parameters, prognosis, micro-ecological environment and metabolic function of Gastric Cancer with or without *Fusobacterium* sp. *Infection. Journal of Cancer*, 12(4), 1023-1032.
- (18) Zhang, Y., Chen, M., Zhao, Y. Y., et al. (2021). Destruction of the soil microbial ecological environment caused by the over-utilization of the rice-crayfish co-cropping pattern. *Science of The Total Environment*.
- (19) Cheng, K., He, K., Fu, Q., et al. (2022). Assessing the coordination of regional water and soil resources and ecological-environment system based on speed characteristics. *Journal of Cleaner Production*, 339, 130718.
- (20) Yu, X., Shen, T., Kang, X., et al. (2021). Long-term phytoremediation using the symbiotic *Pongamia pinnata* reshaped soil micro-ecological environment. *Science of The Total Environment*, 774, 145112.
- (21) Dong, Y. (2021). A Multi-Criteria Evaluation of the Urban Ecological Environment in Shanghai Based on Remote Sensing. *ISPRS International Journal of Geo-Information*, 10.
- (22) Mitchell, C. J. A., & Shannon, M. (2018). Exploring cultural heritage tourism in rural Newfoundland through the lens of the evolutionary economic geographer. *Journal of Rural Studies*, 59, 21-34.
- (23) Melis, C., & Chambers, D. (2021). The construction of intangible cultural heritage: A Foucauldian critique. *Annals of Tourism Research*, 89(12), 103206.
- (24) Tanasijevi, I., & Pavlovi-Laeti, G. (2020). HerCulB: content-based information extraction and retrieval for cultural heritage of the Balkans. *The Electronic Library*, ahead-of-print(ahead-of-print).
- (25) Tavares, D. S., Alves, F. B., & IB Vásquez. (2021). The Relationship between Intangible Cultural Heritage and Urban Resilience: A Systematic Literature Review. *Sustainability*, 13.
- (26) Cheng, Z., & Chen, X. (2022). The Effect of Tourism Experience on Tourists' Environmentally Responsible Behavior at Cultural Heritage Sites: The Mediating Role of Cultural Attachment. *Sustainability*, 14.
- (27) Yuan, C., Gan, L., & Zhuo, H. (2022). Coupling Mechanisms and Development Patterns of Revitalizing Intangible Cultural Heritage by Integrating Cultural Tourism: The Case of Hunan Province, China. *Sustainability*, 14.
- (28) Lonardi, S., & Unterpertinger, Y. (2022). The Relevance of Intangible Cultural Heritage and Traditional Languages for the Tourism Experience: The Case of Ladin in South Tyrol. *Sustainability*, 14.
- (29) Yan, W. J., & Chiou, S. C. (2021). The Safeguarding of Intangible Cultural Heritage from the Perspective of Civic Participation: The Informal Education of Chinese Embroidery Handicrafts. *Sustainability*, 13.

- (30) Aka, S. (2020). A conceptual model to increase the visibility and usage of cultural heritage objects: The case of UNESCO's Memory of the World list. *Digital Scholarship in the Humanities*.
- (31) Tzortzi, J. N., Guaita, L., & Kouzoupi, A. (2022). Sustainable Strategies for Urban and Landscape Regeneration Related to Agri-Cultural Heritage in the Urban-Periphery of South Milan. *Sustainability*, 14.
- (32) Jehlika, J., & Culka, A. (2021). Critical evaluation of portable Raman spectrometers: from rock outcrops and planetary analogs to cultural heritage – a review. *Analytica Chimica Acta*, 339027.
- (33) Merino-Aranda, A., IL Castillejo-González, Velo-Gala, A., et al. (2021). Strengthening Efforts to Protect and Safeguard the Industrial Cultural Heritage in Montilla-Moriles (PDO). Characterisation of Historic Wineries. *Sustainability*, 13.
- (34) Winkler, A., Contardo, T., Lapenta, V., et al. (2022). Assessing the impact of vehicular particulate matter on cultural heritage by magnetic biomonitoring at Villa Farnesina in Rome, Italy. *Science of The Total Environment*, 823, 153729.
- (35) Garrido, I., Erazo-Aux, J., S Lagüela, et al. (2021). Introduction of Deep Learning in Thermographic Monitoring of Cultural Heritage and Improvement by Automatic Thermogram Pre-Processing Algorithms. *Sensors*, 21(3), 750.
- (36) Bertrand, L., Thoury, M., Gueriau, P., et al. (2021). Deciphering the Chemistry of Cultural Heritage: Targeting Material Properties by Coupling Spectral Imaging with Image Analysis. *Accounts of Chemical Research*, 2021.
- (37) Atkins, R., Johnson, S., Pontes, M., et al. (2022). Socio-Demographic and Coping Correlates and Predictors of Depressive Symptoms Among Low-Income and Ethnic Minority Mothers At-Risk. *Clinical Nursing Research*, 31.