

Research on the Construction and Development of Gene Perception Information Chain of Traditional Village Cultural Landscape Based on Visitors' Perception-Taking Pengjiazhai in Enshi Prefecture as an Example

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Abstract

As an important carrier of historical and cultural landscape resources, traditional villages are a key field for the synergistic evolution of traditional culture and cultural tourism industry. In-depth analysis of the formation mechanism and evolution logic of its cultural landscape gene perception information chain is of great theoretical value and practical significance to promote the holistic protection and innovative development of traditional villages' cultural landscape at the macro level. This study takes Pengjiazhai Village in Enshi Prefecture, a typical traditional village, as an empirical case, and based on the landscape gene theoretical framework, constructs an index system applicable to the identification and extraction of cultural landscape genes in this village, in order to deepen the cognitive dimension of the traditional village's cultural landscape in the perspective of tourists' perception. The study obtains primary data through questionnaires and uses SPSS statistical analysis model for quantitative analysis to refine the characteristics of tourists' perception of cultural landscape genes in Pengjiazhai Village. On this basis, the study constructs the information corridor of cultural landscape genes of Pengjiazhai Village from the dimensions of "protection and inheritance" and "activation and development", and puts forward a targeted implementation path. The results of the study are intended to provide scientific and precise strategic references for the sustainable development of the cultural landscape of traditional villages.

Keywords

Traditional villages, cultural landscape genes, tourist perception, perceptual information chain.

1. Introduction

Traditional villages, as the root carrier for the protection, inheritance and innovative development of Chinese outstanding traditional culture, are the core spatial unit for the cohesion of historical and cultural resources in villages, which contains multidimensional historical information and composite cultural landscape system [1]. The cultural landscape, as a manifestation of the historical continuity and regional uniqueness of traditional villages, in the process of rapid modernization and rural urbanization in China, is facing the reality of landscape fragmentation, increased risk of inheritance, and public cognitive bias, which directly leads to the phenomenon of destruction, mutation and even extinction of the cultural landscape, and has become a common challenge for the development of traditional villages. In order to realize the precise protection of traditional villages and their cultural landscapes, China has issued a series of policy guidance documents, which provide clear research guidance and practical paths for the protection, inheritance and sustainable development of traditional villages in the context of the new era [2].

Traditional village cultural landscape gene is a key factor to discover regional cultural information and restore regional cultural memory from the perspective of cultural geography, which has received extensive attention from academics in recent years. Overseas research on traditional village cultural landscape genes started earlier, mainly from the perspective of landscape morphology, geography, architecture and other aspects of its layout and landscape shaping [3]. Domestic research started relatively late but developed rapidly, and under the leadership of the research team led by Liu Peilin and other scholars who have been conducting theoretical research and practical exploration for many years, fruitful results have been achieved. The research mainly focuses on cultural landscape gene identification and extraction [5], map construction [6] and spatial characteristics [7] analysis and other aspects. In terms of research content, there are studies on both material cultural landscapes [8], such as residential features, street space, and architectural layout, and intangible cultural landscapes [9]cape gene information chain is a further deepening of the theory of cultural landscape gene, with cultural landscape information element, cultural landscape information point, cultural landscape information corridor and cultural landscape information network [10] four elements for the presentation of the traditional village protection and development of important guiding significance, and its construction and development has become the focus of the current stage of the study of traditional villages. The current research on the genetic information chain of traditional villages and cultural landscapes focuses on the identification method [11] and the construction of genetic genealogy [12], the interpretation of the elements[13] and the practical application for cultural tourism [14], which has a far-reaching impact on the protection of cultural heritage and tourism development of traditional villages and townships.

To summarize, although existing studies have focused on the identification of the explicit features of traditional villages' cultural landscape genes, their manifestation patterns and evolution patterns, and have conducted in-depth discussions on the overall structure and development mode of the information chain, the systematic research on the protection, inheritance, activation and development of the constituent elements of the information chain of the cultural landscape genes, which is based on the intuitive cognition and experience of the tourists, is still insufficient. Tourist perception, as a holistic cognition and emotional feedback formed when the tourist subject experiences the cultural qualities, landscape imagery and regional customs in a specific tourism environment, compared with the research perspective focusing on the perception of local residents under the framework of "subject-object duality", as a subjective interpretation and value judgment of the objective landscape, it is very important for cracking the prevailing problems in the development of the cultural landscape of traditional villages and villages. As a subjective interpretation and value judgment of the objective landscape, it has a significant role to play in solving the dilemmas of lack of identity, weak participation, and dissolution of uniqueness that commonly exist in the development of traditional villages and cultural landscapes. Tourist perception is not only the core factor for analyzing the logic and evolution mechanism of the genetic information chain of traditional villages and cultural landscapes, but also the key driving force for the innovative development of traditional village cultural tourism industry. Based on this, this study takes Pengjiazhai Village, a typical traditional village in China, as an empirical object, and relies on the cross-analytical framework of landscape gene theory and tourism cognition theory to construct a cultural landscape gene perception chain of traditional villages from the perspective of tourists, and based on the analysis of the degree of perception of tourists to the identified cultural landscape genes, constructs a two-category perception information chain, namely, "protection and inheritance-activation and development" and "protection and inheritance-activation and development". "Based on the analysis of tourists' perceptions of the identified cultural landscape genes, we construct two types of perception information corridors, with a view to

providing an innovative research paradigm and an operable strategy path for the protective development of traditional villages and the integration of culture and tourism in China.

2. The content framework of the information chain of cultural landscape gene perception of traditional villages

2.1. Connotation analysis of tourist perception and cultural landscape gene perception information chain

The construction of the information chain of cultural landscape gene perception provides an innovative path for the systematic analysis of tourist perception, while tourist perception is the core basis for the construction of the information chain of cultural landscape gene perception, and the two form an interactive relationship of mutual influence and two-way empowerment. On the one hand, under the background of rapid development of information society, the influence factors of tourists' perception present a complex pattern of dynamic iteration under the multi-dimensional coupling of cognitive level, personal experience and surrounding information environment [14]. On the other hand, tourists are the main group and service object of traditional village cultural landscape perception, so tourists' perception of traditional village cultural landscape is an important basis for cultural landscape gene identification and extraction, and the consistency and difference of the construction of the information chain between tourists' perception and traditional village cultural landscape gene perception directly affects the development of the traditional village cultural tourism.

The information chain of cultural landscape gene perception of traditional villages combines the theory of tourists' perception with the information chain of cultural landscape genes, and its components are based on the content of the information chain of cultural landscape genes, which is integrated with tourists' perception of culture, and includes four elements: the information element of cultural landscape perception, the information point of cultural landscape perception, the information corridor of cultural landscape perception, and the information network of cultural landscape perception. The cultural landscape gene perception information chain is an important process of transforming cultural landscape genes from abstract to concrete, from hidden to manifest, from discrete to combined [15], and at the same time, it is an important way to restore the historical memory of traditional village cultural landscape, construct landscape information carriers, and manifest the image of traditional cultural landscape. Among them, the cultural landscape perception information element refers to the unique landscape characteristics and historical memory of the traditional village cultural factors, marking the development vein of the traditional village cultural landscape, which is the core element of constructing the cultural landscape gene perception information chain, and is the intrinsic embodiment of the historical and cultural value of the traditional village. Cultural landscape perceptual information point is the material carrier of cultural landscape perceptual information, carrying the historical imprint of the traditional village cultural landscape, and is the basic unit for constructing the chain of cultural landscape gene perceptual information, and is the characteristic attribute of traditional village cultural protection. Cultural landscape perception information corridor is the spatial linear combination of cultural landscape perception information points, connecting the inheritance nodes of traditional villages' cultural landscapes, and it is the key link to build the cultural landscape gene perception information chain, and it is the expression of the integration of traditional villages' culture and tourism. Cultural landscape perception information network is the interweaving and integration of cultural landscape perception information corridor, showing the multi-dimensional perspective of traditional village cultural landscape, the connotation interpretation of building cultural landscape gene perception information chain, and the action guide for the overall development of traditional villages.

2.2. Construction and Development Framework of Information Chain for Gene Perception of Cultural Landscape of Traditional Villages

In the process of constructing the genetic perception information chain of traditional village cultural landscape from the perspective of tourists' perception, the identified and extracted cultural landscape perception information elements and cultural landscape perception information points are summarized and classified on the basis of tourists' direct perception. Those with a higher degree of perception are cultural landscape perception subject information elements and information points, which are connected to form a cultural landscape perception information corridor focusing on protection and inheritance, while those with a lower degree of perception are cultural landscape perception attached information elements and information points, which are connected to form a cultural landscape perception information corridor focusing on activation and development [16]. The two types of information corridors are intertwined and integrated to form a cultural landscape perception information network, and ultimately construct a four-dimensional linkage of traditional village cultural landscape based on the "cultural landscape perception information element (core) - cultural landscape perception information point (origin) - cultural landscape perception information corridor(axis)-cultural landscape perception information network (network)" perceived by tourists. Gene perception information chain [17]. On this basis, taking the protection and inheritance and activation development as the starting point, based on the cultural landscape genes of different perception levels, we focus on creating distinctive cultural landscape perception information corridors to realize the comprehensive development of the cultural landscape gene perception information chain of traditional villages.

3. Study area and data sources

3.1. Research Area

Pengjiazhai is located at the northern foot of Wuling Mountain, belonging to Shadogou Town, Xuanen County, Enshi Tujia and Miao Autonomous Prefecture, Hubei Province, in the upper reaches of the Youshui River. Up to now, there are more than 50 households and nearly 300 residents in the village, all of whom are Tujia. With a history of more than 200 years, Pengjiazhai is a typical Tujia village, preserving the basic characteristics of Tujia settlements in terms of settlement structure, economic activities, social patterns and cultural activities. The core landscape - Tujia footstools group is one of the best-preserved Tujia residential communities in the West E Mountain area. There are 23 existing wooden structures, which are of the piercing and semi-dry-rail type, without a single nail or a single rivet, and all of them are connected by traditional techniques such as mortise and tenon, piercing and other subtle connections. These footstools are built according to the topography of the mountain slopes, skillfully utilizing the topography of the mountains and rivers and the surrounding natural environment to form a unique spatial layout of "occupying the sky without occupying the ground" and "the sky is flat and the ground is not flat", which visually creates rich spatial levels and contrasts of light and darkness, and is a combination of beauty of form, space, layers and contours. In 2013, Pengjiazhai was honored to be listed in the seventh batch of national key cultural relics protection units. In recent years, the local Pengjiazhai ancient hammock group as the core, in accordance with the national 5A level tourist attractions quality standards, dedicated to building Pengjiazhai tourist attractions. The scenic spot takes architectural art and Tujia culture as the soul, takes traditional village and tourism as the carrier, and has built a revitalized, dynamic and regenerated Tujia pan-museum, which vividly reproduces and displays the original production and living scenes of Tujia people. The scenic area covers a number of attractions such as the Tourism Distribution Center, Juggling Street, Mokok Corridor Bridge, Moxiao Building, Sherpa Fields, Dixian Bridge, and Stranger's Blossom, etc., which combines the

multi-functionality of Tujia cultural research, architectural art display, international academic exchange, farming culture experience, immersive performance, recreation and leisure vacation, etc., and it has already become a brand-new landmark of Enshi Prefecture's culture and tourism, attracting tourists from all sides to come to explore the charm of the unique Tujia culture. Therefore, it is more representative and persuasive to choose Pengjiazhai as the case study of the construction and development of the information chain of genetic perception of traditional village cultural landscape.

3.2. Data Sources

The data of this study mainly come from literature collection, field research and model analysis. Among them, the literature is mainly collected through online texts and physical books, including local history records of local villages and towns, village renovation and renewal planning texts, and traditional villages in Hubei Province, which are used as references to supplement the content of the field research. The field research information comes from the author's field visit to Pengjiazhai, through field visits, questionnaires, conversation records and filming video data and other research methods to collect information on the cultural landscape genes of Pengjiazhai village. Subsequently, the information obtained from the research was summarized and organized with the information provided by the local government and the information collected from the literature, and finally the questionnaire data was analyzed with the help of the statistical analysis software SPSS25.0 and the cultural landscape genes perception score model, which lays a more solid foundation for this study.

4. The construction and development of Pengjiazhai Village cultural landscape gene perception information chain

4.1. Identification and extraction of cultural landscape genes in Pengjiazhai Village

According to the content of the "Guiding Opinions on Effectively Strengthening the Protection of Traditional Villages in China" combined with the results of field research, with the help of the principles and methods of landscape gene identification and extraction [18], the cultural landscape elements of Pengjiazhai Village are classified into two major categories, namely, material cultural landscape genes and intangible cultural landscape genes according to the material form. Combined with the classification and integration analysis of scholars' literature [14,15,18], three major identifying factors and nine identifying indicators of spatial form, traditional architecture, and environmental features were screened from the perspective of material cultural landscape genes, and three major identifying factors and nine identifying indicators of religious beliefs, folk activities, and traditional crafts were screened from the perspective of intangible cultural landscape genes. At the same time, the identification index system of cultural landscape genes of Pengjiazhai Village, which is "identification factor-identification index-identification carrier-identification result", is established to identify and extract the cultural landscape genes contained in Pengjiazhai Village as a whole. The identification results show that the cultural landscape genes of Pengjiazhai Village mainly include spatial form culture, Tujia culture, environmental landscape culture, clan inheritance culture and traditional folk culture as its cultural landscape perception information elements.

4.2. Tourist perception analysis of cultural landscape genes in Pengjiazhai Village

4.2.1. Research Methods

Questionnaire survey and analysis: The questionnaire of this study focuses on tourists' overall perception of Pengjiazhai Village's cultural landscape genes, develops the Pengjiazhai Village

cultural landscape genes tourists' perception measurement scale, and analyzes tourists' perception of the five major cultures identified as spatial morphology culture, Tujia culture, environmental landscape culture, clan inheritance culture, and traditional folklore culture as the information elements of Pengjiazhai Village's cultural landscape perceptions. The measurement table adopts a 5-point scale, with "5" indicating "very agreeable", "4" indicating "more agreeable", "3" indicating "more agreeable", "4" indicating "more agreeable", and "3" indicating "more agreeable". "5" means 'strongly agree', '4' means 'relatively agree', '3' means 'agree', '2' means 'disagree', '1' means 'agree', '2' means 'disagree', and '3' means 'agree'. and "1" means "strongly disagree". The authors went to Pengjiazhai Village on May 1-3 and October 1-4, 2024 to conduct two random sample questionnaire surveys on tourists, the questionnaire was filled out under the authors' guidance, and older tourists were asked to fill out the questionnaires on the authors' behalf. A total of 218 questionnaires were distributed in this survey, 212 were recovered, and 200 valid questionnaires were sorted out, with an effective rate of 94.3%, and the data were statistically analyzed with the help of statistical analysis software SPSS25.0.

Cultural landscape genes perception score model: in order to quantitatively study the visitor perception of cultural landscape genes in Pengjiazhai Village, this paper introduces the cultural landscape genes perception score model [19] on the basis of the aforementioned Pengjiazhai Village cultural landscape genes visitor perception measurement scale to calculate the score of each cultural landscape gene. The formula is as follows:

$$S_{i\text{感}} = \sum_{i=1}^m \sum_{j=1}^n A_{ij} / S$$

Where $S_{i\text{感}}$ denotes the perceived score value for the i th cultural landscape gene; A_{ij} denotes the perceived score value for the j th perceptual element of the i th cultural landscape gene; $m=9$; $n=6$; $i=1, 2, 3, \dots, m$; $j=1, 2, 3, \dots, n$; S denotes the number of people who filled out the questionnaire.

Questionnaire reliability and validity test: questionnaire reliability is a metric analysis of the degree of reliability of each item of the scale, reflecting the degree of consistency of the results of the questionnaire, which is usually expressed by the Cronbach's coefficient, with a value greater than 0.7 indicating good reliability. The Cronbach's coefficient of this questionnaire was calculated by SPSS 25.0 to be 0.863, which is higher than 0.7, indicating that the questionnaire reliability in this study is good. Validity refers to the degree of validity of the questionnaire measurement, and the validity of the scale is generally verified through the KMO test and Bartlett's spherical test, with a KMO value above 0.7 indicating good validity, and the closer the Bartlett's spherical test significance level is to 0, the higher the correlation is. Calculated by SPSS22.0, the KMO value of the scale is 0.855, which is higher than 0.7, and the p value of Bartlett's spherical test is 0.000, which indicates that the questionnaire validity of this study is good.

4.2.2. Tourist perception score of cultural landscape genes in Pengjiazhai Village

Through the above calculation and analysis, the tourist perception score of cultural landscape genes in Pengjiazhai Village (Table 1) was obtained, and the results show that tourists have a high degree of perception of the information elements of street pattern, traditional houses and natural artificial landscape in Pengjiazhai Village, with the perception scores of 3.11, 3.47, and 3.17, respectively, which corresponds to the information elements of cultural landscape perception as the spatial form culture, the culture of the Tujia ethnic group, and the environment and landscape culture, respectively. The tourists' perception of the information elements of clan belief and traditional skills is lower, with perception scores of 2.69 and 2.64, corresponding to the cultural landscape perception information elements of clan inheritance culture and traditional folklore culture, respectively (Fig. 1). Based on this, it can be determined that the spatial form culture, Tujia culture and environmental landscape culture of Pengjiazhai

Village are the main information elements of cultural landscape perception, and the clan inheritance culture and traditional folk culture are the attached information elements of cultural landscape perception.

Table 1: Tourist perception scores of cultural landscape genes in Pengjiazhai village

Cultural Landscape Perception Information Meta	Perceptual elements	perceptual score	total	perceptual identity					
				Degree of preservation	Location Distribution	functional role	cultural value	emotional identity	experience
Cultures of spatial forms	Site selection for villages	3.03	18.17	3.17	2.85	3.08	2.93	2.98	3.17
	Street and lane layout	3.11	18.66	3.25	3.26	3.12	2.92	3.22	2.91
Tujia Culture	Traditional residential house	3.47	20.81	3.59	3.69	3.54	3.33	3.32	3.36
	Public historical buildings	3.10	18.62	3.31	2.70	3.15	3.24	3.16	3.08
Environmental culture	Natural artificial features	3.17	19.03	3.25	3.19	3.28	3.21	2.94	3.17
Clan Heritage Culture	Clan belief	2.69	16.15	2.51	2.58	2.70	2.65	3.10	2.62
	Folk tales	2.72	16.34	2.59	2.57	2.53	3.02	2.58	3.05
Traditional Folk Culture	Traditional skills	2.69	16.12	2.57	2.54	2.75	2.63	3.06	2.58
	Manual craftsmanship	2.64	15.83	2.58	2.54	2.52	2.82	2.81	2.56
Average value		2.96	17.74	2.98	2.88	2.96	2.97	3.02	2.94

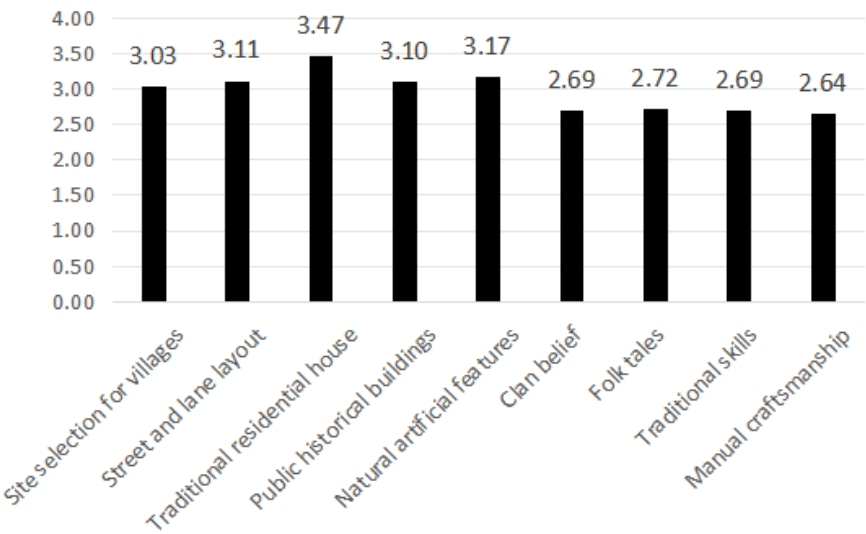


Figure 1: Differences in tourists' overall perception of cultural landscape genes in Pengjiazhai Village

4.3. The construction of Pengjiazhai Village cultural landscape gene perception information chain

Based on the traditional village cultural landscape gene perception information chain construction and development framework and Pengjiazhai Village cultural landscape genes of the tourists' perception analysis, can be identified Pengjiazhai Village cultural landscape perception of the main body of information elements and cultural landscape perception attached to the information element, and information elements as the core of the information elements connected to the corresponding information points to form information corridors and information networks.

With regard to the three types of cultural landscape perception main information elements (core) of Pengjiazhai Village, namely, spatial form culture, Tujia culture and environmental

landscape culture, it is possible to construct the information corridor (axis) of Pengjiazhai Village's cultural landscape protection and inheritance perception, which mainly focuses on protection and inheritance, and lead the cultural protection, inheritance and cultural and tourism development of Pengjiazhai Village with the core main culture. First of all, the spatial form of culture as the main perceptual information element connects the "footstools" and other perceptual information points (origin), and the spatial form of the succession of human habitation culture passed down from generation to generation collides to form a spatial genes-based perception corridor of the relationship between people and the land. Secondly, the perceptual information element of Tujia culture connects the perceptual information points such as Yingliugong Ancestral Temple and Land Temple, and creates a perceptual corridor of Tujia culture based on architectural genes by combining the advantages of the origin with the exquisite craftsmanship of traditional architecture. Finally, the perception corridor of environmental features is built based on the unique natural and artificial features of Pengjiazhai Village by linking Pingjiachi, Pengjiazhai and other perception information points with the perception information element of environmental features culture.

With regard to the two types of cultural landscape perceptual attachment information elements (core) of Pengjiazhai Village, we can construct the Pengjiazhai Village Cultural Landscape Activation and Development Perceptual Information Corridor (Axis) focusing on the activation and development of Pengjiazhai Village to activate the cultural development of Pengjiazhai Village with its profound cultural connotations. First of all, by the clan heritage culture this perception attached to the information YuanTiMa faith culture, Peng's family training and other perceptual information points (origin), based on the deep literary heritage to build a clan culture perception corridor based on clan genes. At the same time, by the traditional folk culture, the perception of the attached information elements in series with the dance Liuzi opera, Gaoqiang songs and other perceptual information elements, based on folk art and nostalgia memories to create a traditional crafts based on the folk gene perception corridor. On this basis, the protection and inheritance and activation of the development of the two types of information corridors intertwined and fused to build a cultural landscape perception information network (network), and ultimately formed a four-dimensional linkage of "nucleus-point-axis-network" Pengjiazhai Village Cultural Landscape Gene Perception Information Chain.

4.4. Development of Pengjiazhai Village's Cultural Landscape Gene Perception Information Chain

From the above composition of the cultural landscape gene perception information chain of Pengjiazhai Village, the cultural landscape gene perception information corridor contains cultural landscape perception information elements in the village, connects the cultural landscape perception information points in the village, and intertwines to form the cultural landscape perception information network of the village, which is the most important link in the cultural landscape gene perception information chain of Pengjiazhai Village, and it is capable of better realizing the preservation, inheritance, activation and development of the cultural landscape genes in the village. It can better realize the protection, inheritance, activation and development of the cultural landscape genes in the village. Therefore, the development of the cultural landscape gene perception information chain of Pengjiazhai Village will focus on the development of two types of cultural landscape gene perception information corridors, namely, protection and inheritance and activation and development.

4.4.1. Pengjiazhai Village Cultural Landscape Protection and Inheritance Perception Information Corridor

(1) Spatial gene perception corridor of human-land relationship

Pengjiazhai Village is built on the mountains and lives by the water, with many undulations and few large flat and open areas, and the residents build houses in the form of hanging footstools.

At the same time, Pengjiazhai villagers have since ancient times formed the values of harmonious coexistence between man and nature and the excellent family style of cultivation and study, and gradually derived the natural culture of land and water integration and the culture of good manners and righteousness of human habitation, which is an excellent demonstration of balanced and harmonious human-land relations in the production and life of the laboring people, and it should be better preserved and inherited. Visitors can realize the protection and inheritance of the genes of the spatial form of Pengjiazhai Village by understanding the village culture from the shallow to the deep and from the inside to the outside, and by learning the experience of harmonious coexistence between human beings and heaven, earth and nature.

(2) Architectural genes of Tujia culture perception corridor

The unique traditional architecture of Pengjiazhai Village is an important part of the village. Whether it is the traditional houses or the public historical buildings, their architectural colors are dominated by the original color of wood and the greenish-black color of the tiles, and the whole presents a simple and natural tone, and the designs of doors, windows, balustrades and other parts of the buildings are decorated with bright colors such as red and green, which all clearly reflect the stylistic characteristics of the Tujia architecture. Therefore, with the native advantages of the Tujia culture of Pengjiazhai Village, the protection and inheritance of the Tujia cultural genes of Pengjiazhai Village can be further realized.

(3) Corridor for Perception of Landscape Characteristics of Environmental Genes

Unique natural features and rich artificial features are the physical expression of the environmental features of Pengjiazhai Village, which can bring direct visual impact and deep perceptual impression to the tourists. Therefore, based on the principle of historical and cultural memory, taking Longtan River and Miaocun Langjie as the core, and linking farmland, water ponds, Qiyuan Guanyuan Lotus and other landscape points, we have created a corridor for perceiving the landscape features with the characteristics of the regional environment of Pengjiazhai Village. Visitors can return to nature in depth, gain a sense of identity and belonging, and feel the charm of traditional landscape culture, which is conducive to better realizing the protection and inheritance of the environmental landscape cultural genes of Pengjiazhai Village.

4.4.2. Pengjiazhai Village Cultural Landscape Activates the Development of Perception Information Corridor

(1) Clan Culture Perception Corridor of Clan Gene

Pengjiazhai Village has a profound clan culture, and the story of the Pengs' search for their roots and settlement has not only played a great role in promoting the development of the village, but also exerted a far-reaching influence on the local community through their sense of searching for their roots and settlement. As a result of urbanization and the accelerated pace of people's lives, clan relations have gradually faded out of people's lives. Therefore, based on the cultural connotation of clan beliefs and with the Tima beliefs as the core, a corridor of clan culture perception is created in which clan beliefs are alive and well. By creating a classroom for youth education and research, and infecting tourists with virtual classrooms and historical scenarios, it activates and develops and inherits clan cultural genes while awakening people's historical memories of the clans.

(2) Traditional Crafts Perception Corridor of Folklore Gene

For thousands of years, Pengjiazhai Village has a long history of folk art and culture, with all kinds of traditional arts and cultural activities, non-heritage culture and many specialty food shops. However, with the development of the intelligent era, the traditional handmade crafts have been gradually replaced by industrialized production, and thus many traditional cultures only remain in the historical records and are seldom perceived by people intuitively. Therefore, in order to retain the "nostalgia" memory of tourists, with folk architectural skills, traditional

opera and music as the core, and Xuanen Juggling and Pendulum Dance as the landscape points, to create a traditional craft cultural perception corridor to activate folk culture. Through the intelligentization and digitization of cultural elements, the image symbols and theatrical movements in the non-heritage culture will be visualized, activating and developing the traditional craft culture genes while enriching the landscape space of Pengjiazhai Village, and driving the development of traditional folk culture.

5. Conclusion and Discussion

Traditional village cultural landscape carries the rich historical information accumulated over thousands of years of excellent traditional Chinese culture, records the development and evolution of traditional villages, and is an important display window for the integration and development of culture and tourism, which is of great significance to the inheritance and development of excellent traditional Chinese culture and the construction of a strong socialist cultural country. The current research of traditional village cultural landscape genes lacks the experience and evaluation of traditional village cultural landscape for the main perception group “tourists” during the tourism experience. Based on this, with the help of landscape gene theory, this paper constructs the cultural landscape gene perception information chain of Pengjiazhai Village from the perspective of tourists' perception, and focuses on the classification and development of its cultural landscape gene perception information corridor. The results show that: ①Pengjiazhai Village's cultural landscape genes mainly include spatial form culture, Tujia culture, environmental landscape culture, clan inheritance culture and traditional folk culture. ②Tourists' perception of cultural landscape genes such as street pattern, public historical buildings and natural artificial landscape in Pengjiazhai Village is higher, while the perception of cultural landscape genes such as folk stories and traditional skills is lower. Based on the identification and extraction results of cultural landscape genes in Pengjiazhai Village and the analysis of tourists' perceptions, it is possible to construct two types of perceptual information corridors for the protection and inheritance of cultural landscape genes and activation and development, and organize and integrate them to form a cultural landscape genes perceptual information network, and ultimately constitute a four-dimensional linkage of “nucleus-point-axis-network” of cultural landscape genes in Pengjiazhai Village. The final structure is “core-point-axis-network” four-dimensional linkage of Pengjiazhai Village cultural landscape gene perception information chain. Pengjiazhai Village can realize the protection and inheritance and activation of its cultural landscape by constructing and developing cultural landscape protection and inheritance perception information corridors such as human-land relationship perception corridors, Tujia culture perception corridors, and landscape features perception corridors, and cultural landscape activation and development perception information corridors such as clan culture perception corridors and traditional crafts perception corridors.

References

- [1] YANG Liguowu, WU Xufeng, HU Yali. Evaluation of Inheritance Degree of Knowledge System of Intangible Cultural Landscape Gene in Traditional Villages: A Case Study of Tongdao County[J]. Journal of Natural Science of Hunan Normal University, 2023, 46(3): 23-31.
- [2] LI Bohua, ZHENG Shinian, LIU Peilin, et al. Pattern Language of the Spatial Arrangement of Traditional Villages: A Case Study of Zhangguying Village[J]. *Scientia Geographica Sinica*, 2019, 39(11): 1691-1701.
- [3] Sauer C O. *Morphology of Landscape*[M]. Berkeley: University of California Press, 1974.
- [4] Griffith T. *Environment, village and city: A genetic approach to urban geography; With some reference to possibilism*[J]. *Annals of the Association of American Geographers*, 1942, 32(1): 1-67.

- [5] PENG Ke,LUO Kai.Identifying Flow of Landscape Genes in Traditional Village: A Case Study of Huangdu dong Cultural Village in Tongdao[J].Journal of Hengyang Normal University(Natural Science),2020,41(6): 19-25.
- [6] LIU Peil in.On Construction and Utilization of ChineseTraditional Settlements Landscape's Genetic Map[D].Beijing: Peking University,2011.
- [7] YANG Ligu,HU Yali,HU Jia.Characteristics and Mechanisms of Landscape Gene Spatial Recombination in Traditional Villages: Taking Huangdu Dong minority village as an example[J].Journal of Hengyang Normal University(Natural Science),2022,43(3): 21-28.
- [8] ZHANG Zhenlong,CHEN Wenjie,SHEN Meitong,et al.Research on Resident Perception and Inheritance of Spatial Gene of Traditional Villages in Suzhou: A Case of Luxiang Village[J].Urban Development Studies,2020,27(12): 1-6.
- [9] YANG Ligu,HU Yali.Production and Inheritance of Intangible Cultural Landscape Gene in Traditional Villages: A Case Study of Huangdu Village in Tongdong Autonomous County[J].Economic Geography, 2022,42(10): 208-215.
- [10] FENG Yan,ZHANG Hanxue,WANG Dongmeng,et al.Study on the Characteristics of Traditional Villages in Xinyang Mountain Area Based on Landscape Gene Information Chain: A Case Study of Maopu Village in Xin County[J].JiangsuAgricultural Sciences,2021,49(14): 175-183.
- [11] HUANG Qinshi,ZHU Xigang,CHEN Chuwen.Research on the Landscape Genetic Code and Derivation Model of Traditional Settlement: Taking Nanxi River Famous Scenic Site as an Example[J].Chinese Landscape Architecture, 2016,32(10): 89-93.
- [12] YIN Zhiyi,LI Jingqi.Identification and Mapping of Landscape Gene in Historic and Cultural Villages and Towns: A Case Study of Dayuwan Village, Huangpi District[J].City Planning Review,2023,47(3): 97-104,114.
- [13] YANG Xiaojun,FANG Chuanshan,WANG Yiyi.Construction of Gene Information Chain and Automatici Dentification Model of Traditional Village Landscape: Taking Shaanxi Province as an Example[J].Geographical Research,2019, 38(6): 1378-1388.
- [14] WANG Qiang,ZHANG Yufen,LONG Xiaoyi,et al.Analysis on the Tourism Experience Model of Huangling Traditional Village in the Perspective of "Landscape Gene"[J]. Journal of Jiangxi Science & Technology Normal University,2019(3): 71-80.
- [15] LI Bohua,LIU Min,LIU Peilin,et al.Research on the Characteristics of Traditional Village Style from the Perspective of Landscape Genetic Information Chain: A Case Study of Shanggantang Village[J].Human Geography, 2020,35(4): 40-47.
- [16] CAO Shuaiqiang,LI Min.Traditional Settlement Landscape Image Guest Rating Based on Perception: Take the South Town as a case[J].Yunnan Geographic Environment Research,2015,27(1): 22-30.
- [17] LI Xiaoying, MU Jinyao.Construction and Development of Cultural Landscape Genetic Information Chains of Traditional Villages based on the Perspectives of Tourists[J]. South Architecture, 2024(9): 58-67.
- [18] ZOU Cheng,XUAN Jin,YANG Junning,et al.Construction and Feature Analysis of LandscapeGene Information Chain in Xiamei Ancient Village atthe Starting Point of the Tea Road[J] .Chinese Landscape Architecture,2023,39(2):96-102.
- [19] YANG Ligu,HU Yali,WANG Jianhua.Perception Character and Influencing Factors of Landscape Genes on Nanyue Ancient Town[J].Resource Development & Marke,2014,30(12):1517-1520.