



## A Study on the Characteristics of Digital Fine Arts in the Natural Scenery and Local Ecology

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**Abstract.** This paper provides an in-depth analysis and study of the geographical natural scenery combined with the characteristics of fine arts in the local ecological environment. With the unique regional cultural characteristics as a clue, the process of dissemination, historical trajectory, and the overall presentation of artistic characteristics review history, analysis and combing of unique art historical environment beauty, the earlier development of East-West art exchange, in the development of watercolor painting, the exhibition as an opportunity to show the unique regional characteristics in the creation of the watercolor painting, and in the subjective feelings of the creator of watercolor painting. It analyzes the rural tourism landscape in theory and design under the perspective of ecological aesthetics at home and abroad and points out the importance of ecological aesthetics ideas to rural tourism landscape design. Secondly, the concepts of ecological aesthetics and rural tourism landscape are elaborated, and the morphological composition of rural tourism landscape is analyzed, and the current rural tourism landscape design is summarized as "distortion", "disorder", "false goodness", and "false goodness". The main reasons for these problems are analyzed, and the demand for ecological aesthetics in rural tourism landscape design is further summarized. Then, under the guidance of the theories and ecological aesthetics ideas, the feasibility of rural tourism landscape design is explored, and the technical route, design objectives, design strategies, landscape forms, and artistic techniques of rural tourism landscape design under the ecological aesthetics perspective are explored and studied respectively. Finally, the development trend of rural tourism landscape design under the ecological aesthetics perspective prospects and conclusions are drawn, pointing out that the application of ecological aesthetics ideas will provide a new round of theoretical guidance for rural tourism landscape design, making it more dynamic and attractive, and developing in a healthy direction.

**Keywords:** regional natural scenery; ecological environment; digital fine art features

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## 1 INTRODUCTION

As the pace of life accelerates and the pressure of people living in the city gradually increases, people urgently need such a way of travel to quiet their minds, relax and pay more attention to the quality of life and health. Based on the quality economic base, people are more willing to enhance their living environment during leisure time; they also pay more attention to the return of spirituality, seeking spiritual and emotional solace and enjoyment to improve their quality of life [18]. With the improvement of people's ability to transform nature, there are various problems of damaging the environment. In such a general environment, we try to awaken people's awareness of the need for eco-aesthetics in rural tourism landscape design to improve the overall visual image of rural tourism landscape and create a beautiful picture of man and nature in harmony. The article attempts to use ecological aesthetics-related ideas to guide the landscape design of rural tourism, providing new technical methods for the creation of its characteristics and making the landscape design of rural tourism more reasonable and standardized [13]. Based on the theoretical research of ecological aesthetics, and combined with the disciplines of landscape ecology, ecological ethics, landscape aesthetics, and landscape economics, ecological aesthetics ideas are used in the landscape design of rural tourism [4]. By studying the practical cases about the use of ecological aesthetics at home and abroad, we guide the design research of rural tourism landscape, further apply ecological aesthetics ideas to practice better, promote the protection and healthy development of rural tourism landscape, and provide new ideas and strategies for its design research [19].

With the warming up of Northeast Asia cooperation and China's Belt and Road strategy, the counties, and cities in the border area of Jilin Province have become an important economic region of Jilin Province, and its coverage includes "two areas and one mountain", namely Yalu River and Tumen River, and Changbai Mountain, the border mountain between China and North Korea [21]. It is one of the most important destinations for domestic border tourism and Korean-Russian tourism because of its rich tourism resources, outstanding ecological advantages, and unique border style and Korean folk customs. In a social sense, the problems and shortcomings in the current rural tourism landscape design are reflected on, and the real connotation of the rural tourism landscape is controlled scientifically and systematically. This is consistent with most contemporary urbanites who return to the countryside, go to nature, and cleanse their minds, and is beneficial for alleviating the pressure on nature and improving people's ecological aesthetic awareness [9]. At the same time, it can effectively improve the living and living conditions of residents and ecological and natural environmental conditions, and improve the quality of life. Finally, the development of rural tourism, can also enable all farmers to be employed nearby, increase their income, and promote economic growth, thus bringing ecological benefits, artistic benefits, and economic benefits, and achieving a multi-win situation.

The counties and cities have different levels of economic development, the degree of tourism development also belongs to different levels, and there is a large gap between tourism resources endowment and tourism market. Although there is some competition in the development in recent years, especially the establishment of Changbai Mountain Management Committee, which integrates the high-quality resources of Antu and Fusong counties and rapidly realizes the development of the Changbai Mountain region, the driving effect on other border counties and cities is not strong. From the viewpoint of theoretical innovation, the study of ecological aesthetics in China started late, mainly focusing on literature and art and other related fields, and there are still relatively few cases of studying rural tourism landscape design from the perspective of ecological aesthetic thought. In the research process, the first attempt to combine ecological aesthetics thought with rural tourism landscape design techniques has enriched the rural tourism landscape design system and broadened the application field of ecological aesthetics concept. From the point of view of application innovation,

the rural tourism landscape itself has the characteristics of ecological beauty and has greater practical feasibility. In the process of solving problems through design, we use ecological aesthetics ideas for preliminary analysis, innovatively study rural tourism landscape design strategies from ecological aesthetics' ecological natural view, ecological holistic view, ecological humanistic view, and ecological aesthetics, and turn these ideas into executable. It is a meaningful attempt for rural ecological construction.

## 2 CURRENT STATUS OF RESEARCH

With the in-depth development of the research work, the research theories on the design of cultural architecture form gradually present diversified characteristics, which makes us have a profound understanding of the research on the design concept of cultural architecture form [11]. The emergence of theories on the locality of cultural architecture as well as the functional space has provided an important theoretical basis for the study of cultural architecture form. However, it should be noted that the creative concept of the design of cultural architectural forms in cold landscapes has not been highlighted and explained, and the specific analysis process still focuses on the analysis of examples of cultural architectural form design in scenic areas, without building a corresponding theoretical system. Therefore, this paper is very necessary to study [10]. The composition of the cold landscape area is seen to be mainly involved in two aspects: scenic area and humanistic area [20]. In essence, this is the definition and description of the nature of a certain area, reflecting the value significance of the area [6]. For the area, it reflects both the local climatic conditions and topographical features and shows the local history and culture, and the cultural architecture involved in it should also reflect the above-mentioned elements [5].

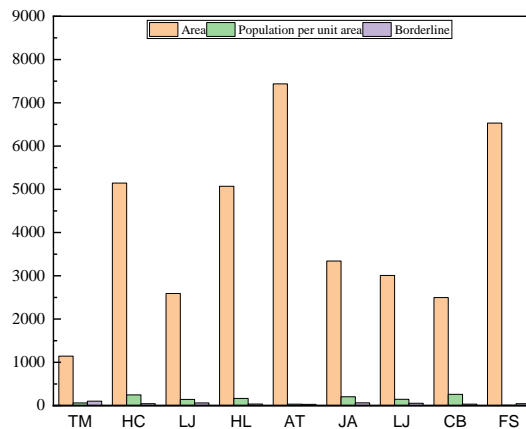
Rural tourism landscape design guided by ecological aesthetics is designed to create a harmonious, unified, and poetic landscape space that not only protects the natural environment but also delights people's spirit. Specifically, rural tourism landscape design under the guidance of ecological aesthetics is to use ecological aesthetics thinking to carry out overall ecological planning and design of rural tourism landscape space. Ecological aesthetic thinking will give guidance to rural tourism landscape design from both theoretical and practical levels [7]. Theoretically, through the theoretical ideas, basic connotations, and research contents of ecological aesthetics to guide the formation of rural tourism landscape design ideas and concepts; practically, through the ecological aesthetic values, expressions, and harmonious system to establish the technical route, design objectives, design strategies, design elements and artistic techniques of rural tourism landscape in the ecological aesthetics perspective [12]. Wu has argued for an aesthetic experience of the landscape based on the perspective of ecological aesthetics [15]. South Korea then launched a large-scale new rural movement on how to protect rural agricultural land, how to coordinate urban-rural land competition, and how to preserve traditional rural landscapes, which has played a positive role in promoting the construction of ecological cities and the harmonious development of rural people and nature in the world in the future [14].

To sum up, there is a certain depth of research on landscape design in the ecological aesthetics perspective at home and abroad, and relevant research results have been achieved, but the cases of rural tourism landscape research from the ecological aesthetics perspective are not comprehensive and systematic enough, and further research is needed. This paper combines the actual situation of China's countryside and makes some meaningful exploration on the construction method of China's rural tourism landscape in the ecological aesthetics perspective, which provides a relevant theoretical reference for later scholars to study rural tourism landscape design in the ecological aesthetics perspective.

### 3 REGIONAL NATURAL SCENERY COMBINED WITH THE ECOLOGICAL ENVIRONMENT IN THE ANALYSIS OF ART FEATURES

#### 3.1 Jilin Province Regional Natural Scenery Study

The border area of Jilin Province studied in this paper mainly includes 6 cities and 3 counties: Ji'an City, Linjiang City, Tumen City, Longjing City, Hunchun City, Halong City, Fusong County, Antu County, and Changbai Korean Autonomous County, among which Hunjiang District is not included in this study because of the difficulty in obtaining data [16]. The study area has a total area of 36,762.75 square kilometers, a borderline of 1438.7 kilometers, 10 border crossings, and the unique natural resources of "two rivers and one mountain": The Tumen River, the Yalu River, and the Changbai Mountain. The Tumen River originates from the eastern foot of the main peak of Changbai Mountain Range on the border of China and North Korea, and flows through four counties of Halong, Longjing, Tumen, and Hunchun, and is injected into the Sea of Japan at the border of Russia and North Korea, of which the section of the river on the border of China and North Korea is 510 kilometers long [22]. The Yalu River originates at the southern foot of Changbai Mountain in Jilin Province and is the border river between China and North Korea. It flows through Changbai Korean Autonomous County, Linjiang City, and Ji'an City in Jilin Province and flows into the Yellow Sea near Donggang in Liaoning Province. It is located in the southeast of Baishan City, Jilin Province, where the north, west, and south slopes are located in China and the east slope is located in North Korea. The highest peak in China is Baiyun Peak, with an altitude of 2691 meters, as shown in Figure 1.

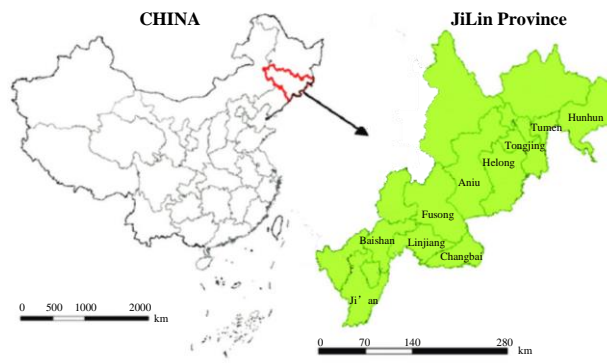


**Figure 1:** Basic situation of border counties and cities in Jilin Province.

The border counties and cities in Jilin Province have their unique tourism scenery due to their geographical location. Ji'an City is located in the middle and lower reaches of the Yalu River and has the world cultural heritage of Goguryeo King City, King's Tombs, and noble tombs, and the beautiful Wuyu Peak and the Yalu River scenery of the border river between China and North Korea as the representative of the border style; Linjiang City is the political, economic and cultural center of the upper reaches of the Yalu River and was once named "the most beautiful county in China", with Linjiang City is the political, economic and cultural center of the upper reaches of the Yalu River, and has been named "China's most beautiful county", with the former site of the "Four Protection Linjiang" Battle Command, the site of the abdication of the pseudo-Manchukuo Emperor Puyi, and the former residence of Chen Yun, which are patriotic education bases. It is located on the right bank of the Yalu River and is opposite to five counties of one city of the Democratic People's Republic of

Korea across the Yalu River. In addition, Changbai Korean Autonomous County is a place where the Korean people live together, so you can enjoy the rich Korean flavor and taste the Korean cuisine. Antu County is known as "the first county under Changbai Mountain", and the world-famous Changbai Mountain is located in the county. With dense forests and many rivers, Antu County is like a natural oxygen bar and has a good ecological environment. Not only does it have natural scenery such as Changbaishan Tianchi, waterfalls, and underground forests, but it also has folklore and humanistic scenery such as Changbaishan Temple and the first village of Korean folklore [8]. Fusong County is located at the western foot of Changbai Mountain, and the scenic area of the western slope of Changbai Mountain is located in Fusong County; meanwhile, Fusong is known as the hometown of Chinese ginseng, with the Chinese Ginseng Museum, and the "China Fusong Changbai Mountain Ginseng Cultural Festival" held every year attracts domestic and foreign tourists to visit, and the important activity of Changbai Mountain Scaling Festival has been listed in the important event of Changbai Mountain Ginseng Festival has been listed as a national-level intangible cultural heritage. Hunchun is located in the lower reaches of the Tumen River, the easternmost city in Jilin Province, and the only city in China located at the border between China, Russia, and North Korea, connected to Russia and North Korea, and across the sea from South Korea and Japan. Tumen is located at the eastern foot of the Changbai Mountain Range and downstream of the Tumen River, across the river from Steadysong County in North Hamjeong Province, North Korea, where visitors can enjoy the scenery of Nanyang, North Korea from the Tumen River Park. Yongjeong and Horyong are both home to Korean people, so you can experience not only the Korean culture but also the North Korean landscape across the Tumen River, which is a combination of Korean ethnicity and border exoticism.

The first manifestation in the rural tourism landscape dominated by natural landscapes is agricultural tourism-led rural tourism. The originality of the local rural experience is the characteristic of agricultural tourism. As mentioned before, due to the different natural factors, China has a rich and colorful agricultural productive landscape, which provides a good basis and conditions for rural tourism. People can go to the countryside to appreciate the natural beauty of different crops and pick pure and natural crops. Agricultural tourism-based rural tourism is highly participatory and experiential. The agricultural landscape, as the most basic constituent element of the countryside, is suitable for the tourism development model of most of the countryside in China. This site was originally a field, and the designer kept the site texture intact during planning and design, combined with local crops, and designed an eco-agricultural garden that fits the local environment. This eco-agricultural garden does not carry out any major work, but completely uses lines and local crops to create a beautiful field scene, so that visitors can enjoy and experience a different kind of field scene, as shown in Figure 2.



**Figure 2:** Geographical location of border counties and cities in Jilin Province.

When digital media and mobile clients gradually enter people's daily life, the distance between time and space is narrowed, so that information from a distance can reach the eyes at a very fast speed, whether it is creation materials or completed works, effective information can be obtained in a timely and efficient manner, and traditional painting exhibitions and publications can no longer meet people's needs for rapid communication. When traditional exhibitions and publications no longer meet people's needs for rapid communication, digital media communication and academic exchange are not only limited to the traditional interactive communication between the same place but can also achieve rapid communication and exchange between different places at the same time. When the rapid transmission of images and information is relatively convenient, the content and subject matter of creation become broader and the speed of acquisition is faster, because the travel time for communication and learning in other places is eliminated, and the scope of direct experience is expanded [3]. The creators of watercolor paintings are no longer confined to physical exhibitions, and the development of self-media has enabled the completed creations to be directly transformed into one-to-many and many-to-many forms of communication through digital media. Through the expansion of the radius of vision, the creative thinking and creative consciousness of the painter are widened, which is conducive to the international trend of creative content and subject matter.

The city of Chian is rich in mountainous resources, and its natural landscape has formed a unique urban foundation. Historically, the first important factor that the Goguryeo people considered when choosing the location of their capital city was the mountainous conditions. Therefore, most of the places where the Goguryeo people lived were rugged and sloping, especially in the plains, and the poor geological conditions led to a relative lack of soil, which affected urban construction and agricultural production. However, this way of building a city also has its advantages, the warring Goguryeo nation has a strong defense strength because of this special topography. The advantage of relying on the timing and location was important for the relatively weak Koguryo people. From another point of view, the unique mountain environment provides a natural good atmosphere for the construction of landscape space. The Goguryeo plain city of Netcong is located on a plain on the right bank of the middle Yalu River, with the Yalu River to the south and the Tonggu River on the west bank, which flows from the north to the south and enters the Yalu River on the west side of Netcong. In terms of geography, this is the natural condition for the development of Goguryeo, which is very superior to the mountains and water.

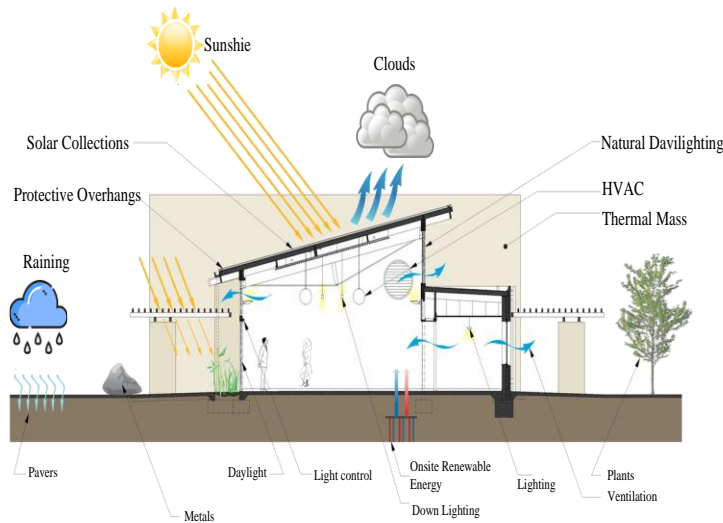
The choice of natural landscape environment is rooted in traditional Chinese culture. The beautiful landscape scenery can create the ideal effect of the urban landscape. In terms of theory and practice, it is very important to show the nature of natural aesthetics, for the construction of the cultural landscape of Ji'an Goguryeo is to pay attention to the harmonious beauty with the overall natural landscape of the city, creating a unified and orderly environment of urban and natural textures. This gives the cultural connotation and spiritual connotation to the naturalness of the city and reflects the natural laws in line with heaven and earth. In the general environmental conditions, the layout of the landscape space depends more on the natural environment around the city.

### **3.2 Analysis of Fine Art Features in Ecological Environments**

Road landscape design, the road as a whole lack of ecological planning and design, arbitrary development of land, road surface arbitrary hardening, and the lack of road drainage system; road hardening arbitrarily also led to the reduction of the area of native natural vegetation communities, biological habitat destruction, the destruction of the ecological balance of the road; road vegetation seasonal phase with a simple, visual rhythm is not strong; road functional zoning is not obvious, both sides of the vegetation community is sparse, and not conducive to the survival of species; road level design is not in place, mechanized farming roads and residential roads shared, largely affecting the lives of villagers; lack of corresponding road landscape configuration, the lack of rural context [17].

River landscape design, serious pollution of water resources, residents' daily life sewage discharge, coupled with the lack of sewage facilities in the river, the river water cycle flow is not smooth; the lack of destruction of the riverbank landscape, so that the river self-purification ability becomes weak; river ecosystem damage, landscape continuity suffered a fault; due to human destruction of the river buffer zone landscape vegetation degradation, the landscape corridor break in a certain degree affects the spread of species, the cut off the biological habitat and hindered the ecological regulation system of the river; the hard interface paving of the river buffer zone brings difficulties to the environmental regulation of the river. The growth of surface plants achieves a uniform visual effect to a certain extent but indirectly destroys the ecological regulation system of the river.

In terms of landscape imagery, rural tourism landscape with obvious individuality and locality can leave a deep impression and form imagery. Those landscapes that can be seen everywhere without any regional characteristics will not be remembered and impressed. There are a lot of incestuous scenes in the rural landscape, urbanization of landscape, westernization of architecture, gradual loss of village landscape context, only pay attention to the "addiction of form", but ignore the regional landscape imagery, so that the lineage of the rural landscape is difficult to inherit and develop, as shown in Figure 3.



**Figure 3:** Characteristics of the eco-aesthetic perspective.

The study of the technical route of rural tourism landscape design based on ecological aesthetic thought is to implement ecological aesthetic thought into the design process of rural tourism landscape based on the correct understanding of rural tourism landscape design level, which should be different from the design procedure of traditional rural tourism landscape. The design concept should incorporate the eco-natural, eco-whole, eco-humanistic, and eco-aesthetic ideas of eco-aesthetics, and be designed according to the regional characteristics and local culture, following the situation and the local conditions. The whole design process should follow the goodness into nature, follow the construction, pay attention to the use of technical means, pursue sustainable development, and avoid the phenomenon of destruction before treatment; seek the meaning with the image, find the missing beauty in the rural tourism landscape construction, and create a poetic landscape; finally realize the harmony of heaven and man, and poetic habitat painting, which is also

the goal of ecological aesthetics. Based on the above analysis, this paper summarizes the technical route of rural tourism landscape design under the perspective of ecological aesthetics.

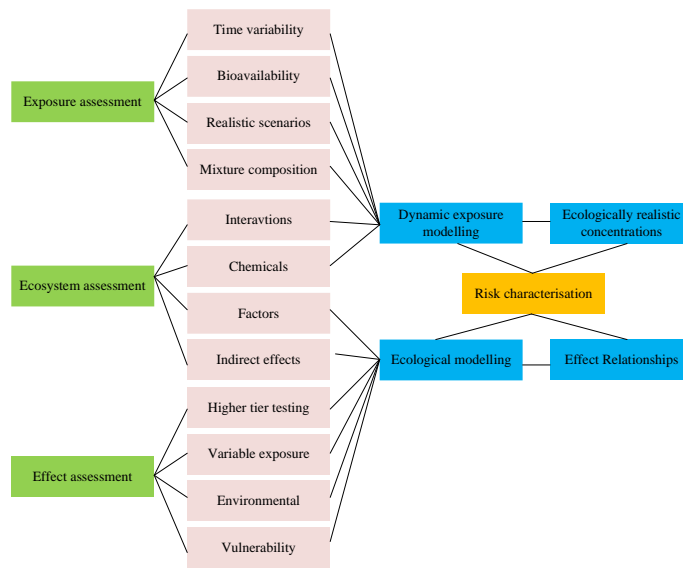
The landscape design of rural tourism under the perspective of ecological aesthetics should first take the ecological existentialist view of ecological aesthetics as the fundamental starting point, and based on respecting nature and following nature, combine different natural ecological conditions of the site, propose corresponding protection and restoration strategies, let nature do its work, maintain the dynamics of the site, focus on the dynamic balance of the ecosystem itself, and truly realize the natural ecological value of rural tourism landscape Function. The realization of landscape objectives in rural tourism landscape design requires designers to be good at using a variety of artistic means to set the scene and create a highly ornamental landscape for people. Ecological aesthetics emphasizes the harmonious overall existence of man and nature, so we should grasp the aesthetic significance of the visual aesthetics of the landscape [2]. The spatial layout of plants should be coordinated, and the color and seasonal phase of trees should be naturally coordinated. To reflect the characteristics and levels of rural tourism landscape, attention should also be paid to the use of classical configuration forms, to achieve the landscape goal of the visual beauty of rural tourism landscape.

The ecological crisis that emerged in the development of the village tourism landscape is closely related to people's aesthetic concepts and ecological consciousness. Eco-aesthetics promotes the popularization of people's ecological awareness and the strengthening of aesthetic consciousness from the ecological and aesthetic perspectives. It helps people to correctly understand the natural ecological environment, protect the natural environment, have a healthy natural lifestyle, and then establish correct ecological values and aesthetics to guide the completion of rural tourism landscape design, achieve the survival goal of a healthy lifestyle in harmony with heaven and man, and build a community of destiny between man and the ecological environment.

Whether it is urban impression sketching or watercolor creation of high mountains and flowing water, the geographical features expressed are full of the life scenes of the creator of watercolor painting, the natural scenery of the white mountains and black waters, the cold temperate zone plants and the color changes of urban buildings in all seasons are also indispensable expressions, both the dry branches of deciduous trees falling snow and the still green cedars. The geographical characteristics of the cold-temperate zone give the creator of watercolor paintings a special moment of creation, a long and short winter, long being the law of time and short being the amplification of the creator's aesthetics. The warm sun at dusk and the silent cold snow after the harvest are precisely contradictory beauty. The coldness of the snow and ice cannot be melted by the sunset, but the warm sunset brings hope to melt the cold. The formation of the characteristics of Jilin regional watercolor painting is not only dependent on the climate characteristics, no city's beauty is alone, the development of humanities is closely related to the regional climate, as shown in Figure 4.

Although from the principle of social research, the larger the sample size, the more complete the type of sample included, the more comprehensive the study, but the actual study requires a lot of human, material, and financial resources, and the more prominent the error brought about by random sample selection. In the survey research, the appropriate sample size can quickly and effectively complete the research work. Therefore, how to determine the sample size is the premise of the survey research [1]. In the more authoritative sociological sample size determination procedures, the type of research subjects, the degree of heterogeneity within the research system, and the precision required for the research are directly affected by the calculation of the sample size. In addition, theoretical values need to be referenced and compared to empirical capacities to determine the final sample size. The sample size calculation process requires first determining the research precision, preset confidence coefficients, and predicting the overall variance based on the research content, determining the calculation formula, and finally comparing the empirical capacity to determine and adjust the final sample size.





**Figure 4:** Feature determination procedure.

Interactive landscape refers to the formation of interaction with the landscape through the participation of the crowd to enhance the deep understanding and emotional communication of the landscape, which can use tactile and visual systems to mobilize people to participate in the landscape. In terms of tactile sensation, different landscape elements such as temperature, elasticity, and hardness are used through interactive landscape devices to enrich people's tactile experience; in terms of vision, multimedia technology is used to realize virtual scenery tours, cultural information introduction, and other functions to make the process of cultural experience easy and convenient. In general, the interactive landscape enables the active participation of the experiencers and increases the possibility and enthusiasm of the visitors to have a cultural experience in the green space of the town.

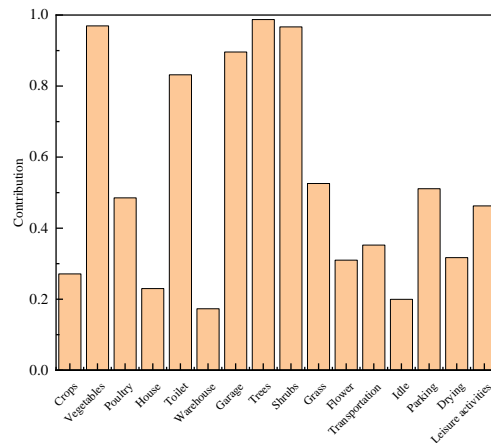
## 4 ANALYSIS OF RESULTS

### 4.1 Geographical Scenery Perception Results

Over time, history has left a colorful chapter in the Jilin region, with the fishing and herding peoples who lived for generations and the ruins of the city walls left by the Jin Shangjing, as well as a considerable number of literati exiled to Jilin during the feudal rule, bringing with them the advanced culture and technology of the Middle Kingdom, all of which cannot be ignored. At the beginning of the last century, a special historical opportunity brought the tranquil land of Jilin into a wonderful collision with the culture of the West, which rapidly grew into a proliferation of embassies of various countries, a sharp increase in the number of expatriates, and a consequent boom in commerce and education. Schools were founded, hospitals were opened, churches were built, restaurants, galleries, cafes, bakeries, flour mills, etc. The times often brought unprecedented cultural and economic prosperity, and the convenience of transportation and excellent tolerance made Harbin quickly become a big stage for expatriates from various countries to show in turn, while the local culture and Western culture produced a form of mutual integration and mutual absorption of communication. The superior geographical location and the special form of exchange in the historical background

make the cultural heritage of the Jilin region deeply branded with the mark of expatriates, especially Russian expatriates. In the creation and teaching of painting, the marks of the Russian system can still be seen vaguely, more obviously in oil and watercolor painting. In specific watercolor paintings, the creators usually have a background of academic study and are influenced by Russian sketching education and have strong modeling ability, and they attach relative importance to the shaping of forms in watercolor paintings. The Northeast region has a common civilization origin and the importation and integration of various cultures, and in modern times the Northeast region has formed a diversified Kanto culture. The primitive minority groups in the Northeast left behind a rich cultural deposit, and the Middle Kingdom culture that broke through the Kanto brought advanced human resources to the farming in the Northeast.

The design of cultural experience system in green space of ice and snow town based on cultural experience is a whole set of the system including extraction of cultural experience theme, design of cultural experience landscape, design of cultural experience facilities and organization of cultural experience activities. Among them, the extraction of cultural experience theme is carried out from two steps of cultural resources excavation and investigation of tourists' cultural demands; the design of cultural experience landscape includes cultural landscape expression and cultural atmosphere treatment; in the design of cultural experience facilities, cultural experience venues with a sense of experience and attraction, cultural experience vignettes emphasizing interaction with visitors, comprehensive and convenient guide signs with reasonable layout are set; in the design of cultural experience, activities Respect the visitors' emotions and needs, and form a dynamic experience of cultural themes, such as holding events, exhibition activities, performance evenings, etc., as shown in Figure 5.

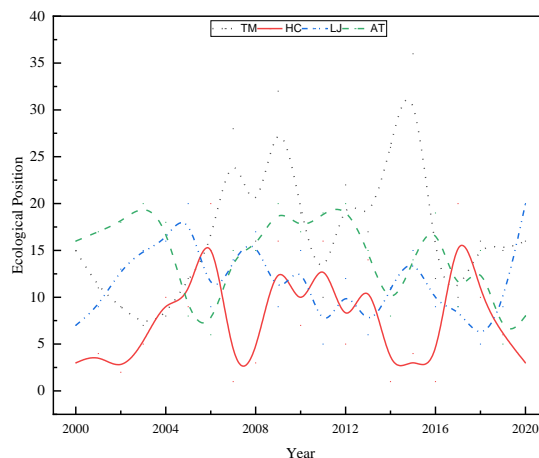


**Figure 5:** Function type and configuration rate.

Due to natural climatic conditions, road and building layout, regional customs, and other factors, the village courtyard in the cold northeast region is mainly rectangular in plan with a narrow north-south shape, and the ratio of the long side to the short side is usually between 2:1 and 4:1. As the main building in the courtyard, the residence is often located in the core of the courtyard, combined with the functional layout of the courtyard to form three types of front-end, back-end, and center. Among them, the front-end type divides the south-facing courtyard space into a small area, and the front-end layout only occurs when the topography and space are restricted, so it is rare, accounting for about 5%-10%; the center type is more common, accounting for about 70%-80%, and the residence is often located in the center of the courtyard to the north; the back-end type is often found in the courtyard of farmers with large planting needs, accounting for about 10%-20%. South-facing courtyard space is abundant. The different locations of the residences affect the layout of the

accessory buildings and the spatial and functional division of the courtyard. The analysis of the building plan of different sizes shows that the village dwellings in the northeastern cold region have a single function and confusing functional partitioning. The bedroom is the core of the daily activities of rural residents, and because most of the residences were built long ago, there is a lack of independent living and dining rooms in the plan, so the bedroom becomes the main space carrying the functions of rest, dining, meeting, and entertainment, etc. There is a problem of overlapping and juxtaposition of behavioral units, i.e., the same space in the building has different functions and requirements for use at different times or in different areas.

From the perspective of the road system in the scenic area, the road system in the scenic area can be divided into three main layers. The first layer of the road system is the carriageway, the carriageway in the scenic area is paved with cement, and the traffic is convenient to meet most of the basic traffic needs, with safety tips and signs in special locations. For example, rails are built at places with large mountain drops, and warning signs are placed. In places where the road slope is large or changes direction, there are also placed signs to play a role in navigation, while always reminding people to pay attention to safety. The second layer of the road system is the pedestrian path, which runs through the entire Wunifeng National Forest Park and can meet the traffic demand in the scenic area, combining the natural environment around the road, using different paving materials and construction techniques, designed as a characteristic landscape road. The third layer of the road system is the walking path, which is set up as a supplement to the first two layers of the road system. For example, in the place where the mountain terrain is large, there are hiking paths paved with native stone or wood as paving materials, which not only supplement the need for traffic function in the scenic area but also increase the fun of visiting in the scenic area and enhance the vitality of the road system in the park, as shown in Figure 6.

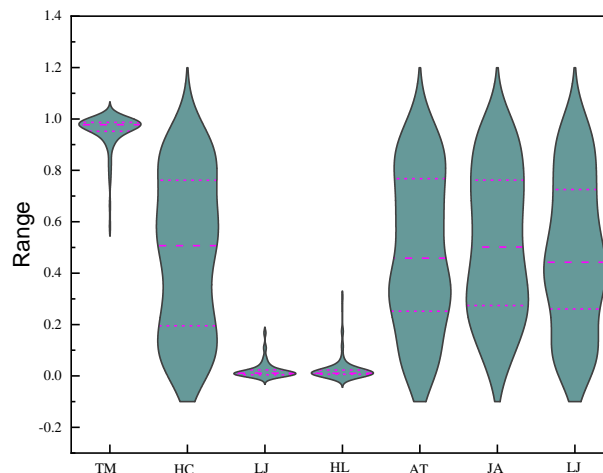


**Figure 6:** Map of changes in the dimensional ecological position of tourism resources in border counties and cities.

The variation of tourism economic dimensional position varies among border counties and cities in Jilin Province, and the reasons for this are closely related to the volatility and vulnerability of tourism, as well as to the importance and policies of local governments. For example, Linjiang is a city with industry as the mainstay industry, and tourism accounts for a low proportion of the city's GDP. However, the overall trend of the line graph shows that the trends of the tourism economy dimensional ecotone and the tourism resource dimensional ecotone are similar, indicating a positive relationship between the tourism resource status and the tourism economy to some extent.

## 4.2 Results of Geographical Art Features

To analyze the ecological position relationship among border counties and cities in Jilin Province more clearly, this study used SPSS20.0 data processing software, using the square Euclidean distance as the spatial scale, using systematic clustering and inter-group connection method to cluster analysis of nine border counties and cities in Jilin Province, and combined with the results of cluster analysis, using GIS software to classify the nine border counties and cities in Jilin Province into four classes. In this paper, we mainly analyze the 2016 and 2011 counties. In this paper, we mainly analyze the clustering results of 2016 and the average value of 2011-2020 to highlight the functional status and stable state that each county and city has in the development process over a long period, as shown in Figure 7.

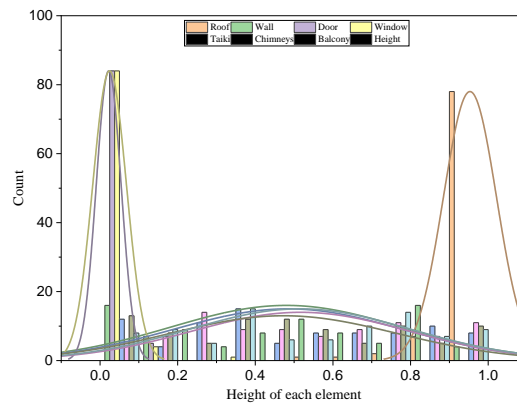


**Figure 7:** Ecological site clustering spectrum map.

Specifically, the three have higher scores in the three dimensions of the tourism economy, social environment, and tourism resources, which account for greater weight. From the viewpoint of the tourism economy, because of the advantages of tourism resources, the tourism revenue and number of people in the three counties and cities are higher than other counties and cities, tourism competitiveness. The second category includes Antu, which ranks fourth in terms of ecological position. Although Antu has a high ecological position score in tourism resources and tourism economy dimension, it does not have an advantage in the social environment dimension, so the overall ecological position value score is in the middle, and it occupies an important position in the tourism development of border counties and cities in Jilin Province. The third category includes Heilong and Linjiang, with ecological positions ranked 5th and 6th, and their advantages in all four dimensions are not obvious, which ultimately leads to their overall ecological position in the middle and lower positions. The fourth category includes Tumen, Longjing, and Changbai, with relatively close tourism integrated ecological position values. Tourism resources are at a disadvantage in the entire Jilin border counties and cities, and the level of social and environmental development is not high, leading to a low integrated ecological position value.

The fusion and symbiosis in rural tourism landscape design mainly refer to the contrast of two or several different things placed in the same environment, so that they achieve organic fusion in a state of contrast, the whole in harmony, in the change and unity to achieve fusion and symbiosis. The artistic expression of the art of integration and symbiosis is strong and the visual effect is

obvious. Due to the specificity of the geographical environment of the rural tourism landscape, the artistic technique of fusion and symbiosis is widely used in the rural tourism landscape. The integration and symbiosis in rural tourism landscape design mainly include the following ways: to establish a continuous landscape axis with a sense of harmony as a whole to achieve integration and symbiosis; to repair the landscape that has been damaged in the countryside through landscape ecological design means but pay attention to the remedial effect needs to be coordinated with the original environment; to the existing function and layout structure of the landscape is not reasonable. For the existing landscape with unreasonable function and layout structure, the design should be coordinated in terms of form and use function; the landscape ecological design is adopted to restore the integration and symbiosis of the overall landscape appearance of the countryside, as shown in Figure 8.



**Figure 8:** The range of height characteristics of each building element.

Comprehensive analysis shows that the overlap value of tourism integrated ecological position of 9 counties and cities in the border area of Jilin Province is high but lower than the overlap value of the ecological position of each dimension of tourism, and the overlap value between counties and cities near is generally high, although the high overlap value does not necessarily mean that fierce competition will occur, the possibility of competition is still relatively large. In the future development, the counties and cities should actively seek tourism cooperation in the nearby regional counties and cities, turn competitive disadvantages into cooperative advantages, integrate regional advantageous tourism resources, conduct overall marketing, and promote the common development of regional tourism.

## 5 CONCLUSION

By studying the points of ecological aesthetics thought and rural tourism landscape design, the necessity of combining the two is proposed. The rapid development of urbanization has brought great challenges to the rural tourism landscape and put the rural ecosystem on the verge of collapse, which makes the rural tourism landscape in need of ecological aesthetics. Through an in-depth study and analysis of ecological aesthetics, it is pointed out that the basic connotation of ecological aesthetics thought under today's ecological civilization society includes four major aspects. The possibility of ecological aesthetics thought to solve the rural tourism landscape design is fully affirmed, which paves the way for the following exploration of the rural tourism landscape design strategy under the ecological aesthetics perspective. The ecological position measurement system

of tourism in the border area of Jilin Province based on ecological position theory is constructed, and the four dimensions of tourism resources, tourism economy, social environment, and ecological environment are proposed to be measured and analyzed in the light of the actual situation of the county and city. The ecological position of nine border counties and cities was calculated by applying the ecological position posture theory, and the evaluation found that the ecological position values of nine border counties and cities varied significantly, among which Ji'an and Hunchun were always at the top of nine border counties and cities in Jilin Province, followed by Antu and Fusong counties, and five counties and cities in Changbai, Heilong, Longjing, Tumen, and Linjiang had lower ecological position rankings. The ecological position overlap of the nine border counties and cities in Jilin Province was calculated by using the ecological position overlap theory, and it was found that the ecological position overlap of the nine border counties and cities by dimension was at a high level, and the possibility of competition was higher.

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