Research on landscape planning of rural eco-tourism area based on network text analysis——Take the Longji Terrace Scenic Spot as an example

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Abstract. At present, with the development of rural tourism in full swing, the protection and renewal of rural eco-tourism landscape has become an important part of rural landscape planning and construction in the new era. From the perspective of tourists' perception, this paper takes Longji Terrace Scenic Spot in Guilin, Guangxi as an example, and uses ROST CM6 software analyzes tourists' landscape perception and characteristics from high-frequency vocabulary, semantic network and other aspects. Based on this, it finds out the existing problems in the current landscape planning of rural eco-tourism area, and puts forward planning suggestions. The purpose is to provide reference for the rational planning and allocation of rural tourism landscape, to improve the quality of life of rural residents, and to promote the construction of beautiful villages. The results show that: (1) high-frequency words indicate that tourists focus on human landscape and natural landscape; (2) the semantic network matrix takes "landscape", "Jiulong Wuhu", "Longji Terrace", "Jinkeng Dazhai" as the core; (3) tourists' perception of the landscape of Longji Terrace Scenic Spot focuses on terrace scenery, ethnic customs and specialties, mountain climbing ways and other aspects; (4) tourists' emotional evaluation of Longji Terrace Scenic Spot is mainly positive emotion, and relatively less negative emotion.

Introduction

With the in-depth implementation of the Rural Revitalization Strategy, higher-level new rural construction work has been carried out nationwide. In 2020, the No.1 document of the Central Committee pointed out that "we should do a good job in improving the rural settlement environment" and "promote the construction of beautiful homes". Under the background of the vigorous development of tourism, as an important tourism destination, the rural eco-tourism area established by relying on the local landscape characteristic ecological resources has become an urgent measure to promote the rural environment and create the rural landscape with regional characteristics. Rural landscape planning is a reasonable planning and design of natural and cultural environment, with the main purpose of improving people's quality of life and promoting economic development.

The research on rural landscape planning in western countries appeared as early as the middle of the 20th century in Europe and other countries. At present, a relatively complete theoretical and methodological system has been formed for the coordination of rural land use and urban green space[1], the protection of rural natural ecological value[2], and the planning of rural landscape. Landscape science has gradually become a research hotspot since the 1990s in China, and the research on

landscape planning has gradually started from city to countryside. The research of rural landscape planning focuses on planning and design[3], landscape evaluation, tourism development, but less on the analysis of tourism area landscape planning from the perspective of tourists' landscape perception. As an important participant and stakeholder of the tourism area, tourists can find the shortcomings of the current tourism area landscape through their perception of the rural eco-tourism area landscape. Rural landscape research is closely related to the national rural policy[4], and landscape planning is closely related to the sustainable development and ecological civilization of rural areas. Taking Longji Terrace Scenic Spot in Guilin as an example, this paper uses the word frequency analysis software of ROST CM6 to analyze the characteristics of tourists' landscape perception, establishes semantic network with the help of the research method of network text analysis, and puts forward planning suggestions for the problems existing in the current rural eco-tourism area landscape planning according to tourists' perception, so as to realize the harmonious unity and sustainable development of the rural eco-tourism area.

1 Data sources and research methods

1.1 Overview of research area

Longji Terrace Scenic Spot is located in Longji mountain, Pingan village, Longji Town, Longsheng County, Guilin, Guangxi, 22 kilometers away from the county seat and 80 kilometers away from Guilin city. Located between 109°32'E~110°14'E and 25°35'N~26°17'N, Longji terrace was built in the Yuan Dynasty. It has a history of more than 2300 years and can be called the original hometown of terraces in the world. Longji Terrace Scenic Spot has been developed since 1990s, integrating the traditional ethnic customs of Zhuang, Yao and other ethnic minorities. It was listed as the key point of national eco-tourism construction in 2016. From 2001 to 2018, the number of tourists increased from 36200 to 1454000, which can be a typical case of rural eco-tourism.

Rural landscape mainly includes natural landscape, cultural landscape and social landscape. The natural landscape of Longji terraces. The cultural landscape mainly includes Zhuang and Yao Minority buildings, ethnic customs and characteristics. Social landscape refers to the productive landscape mainly including agriculture, animal husbandry, forestry and fishing, such as bamboo rice, bamboo chicken, Longji liquor, Longji pepper, etc.

1.2 Data source and processing

In the era of network, more and more tourists are keen to share their journey in the forum. The content of online text is rich, and it is not easy to be affected by external factors, which can more truly reflect the tourists' experience. This study takes the online text as the research object and the tourists' landscape perception of Longji Terrace Scenic Spot as the research content, selects five online tourism websites with wide coverage and high network attention as the source of materials, and searches with "Longji terrace" as the key words. The search time is from January 1, 2017 to April 30, 2020. There are 4260 samples of tourists' comments, respectively: Mafengwo 75,Trip.com 1916,Qunar networks 2060,Lvmama 22,Tongcheng Elong 187. Delete the invalid comments such as "very good", "Pan Dao's service enthusiasm and praise", delete the elements such as numbers and punctuation marks, and standardize the same name to get 208918 words of text, which has certain stability and reliability.

2 Analysis of landscape perception of tourists in Longji terrace

2.1 Statistical analysis of high frequency words

Import the collected effective comment data into the text file, use the data analysis software developed by Professor Shenyang of Wuhan University and widely recognized by ROST CM6 for word frequency analysis, manually exclude "inside", "local", "one" and other words unrelated to the research topic of this paper, and then get high-frequency words. It can be found from high-frequency words that there are many nouns, mainly including place names and scenic spots. Verbs reflect the activities in tourism. Adjectives mainly reflect the feelings of tourists

to terraces or scenic spots. The high-frequency vocabulary is classified by coding method, and the landscape element framework of tourist experience is constructed (Table 1). It can be found that tourists pay most attention to the "terraced fields", "cableway", "Jinkeng Dazhai" and other human landscapes. The natural landscape mainly includes "rice", "Golden Buddha top", "rain" and "fog". It can be seen that the weather factors perceived by tourists have an impact on the landscape experience. Tourists to "tickets", "bamboo rice" and "irrigation" in the social landscape "Performance" and so on are more interested. They pay more attention to "mountain climbing" and "cableway" on the way to travel, and they have different views. Many tourists mentioned that the landscapes they see in the two experience ways are also different. Tourists have more positive emotions in the objective impression of Longji terrace. More negative impressions focus on rainy weather, "high price", "hard road", "queuing" and poor service of the travel agency.

Tab.1 The classification and frequency of tourism landscape perception(clssified by category)

Main categories	Subcategories	Word
Natural landscape (3587/18.2%)	Plants (201)	Rice (112); Rape flower (14)……
	Special attractions (1521)	Jinfo Ding (178); Qixing Banyue (127);Jiulong Wuhu(87)……
	Others (1865)	Rain (327); fog (251); sunrise (142); weather (136)……
Cultural landscape (6737/34.2%)	Village (1403)	Jinkeng Dazhai (602), Pingan Zhuangzhai (411), Huangluo Yaozhai (110)……
	Building (1061)	Cableway (736); Observation deck (170); Flagstone road (31)……
	Others (4273)	Terraces (2221); Zhuang nationality (127); Tourist guide (150); Yao nationality (103); National costume (26)……
Social landscape (2166/11.0%)	Food (289)	Bamboo Rice (140); Rice wine (26); Bacon (20)……
	Material form (524)	Tickets (202); Hotel (175); Inn (75)……
	Social behavior (453)	Irrigation (180); Performance (90); Harvesting (71); Transplanting (36)……

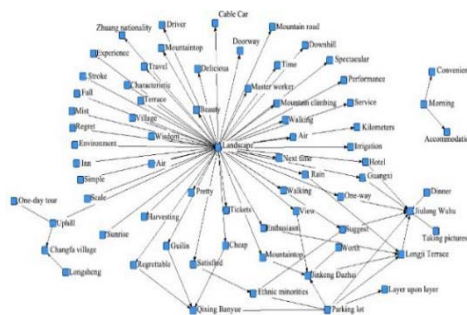| Tourists' behaviors and feelings (6095/31.0%) | Tourism activities (2169) | Climbing (736); Walking (187); Driving (183); Taking photos (114); Queuing (98)…… |
| | Objective impression (3861) | Beautiful (592); Spectacular (486); Worth (277); Shocking (162); Hard to walk (75)…… |
| | Subjective feelings (65) | Happy (93); Regrettable (69); Regrettable (69); Satisfied (67)…… |

2.2 Semantic network analysis of high frequency words

High frequency lexical analysis can only reflect the characteristics of things in their main fields, not the semantic connection of phrases and the deeper structural relationship of texts. Therefore, using the semantic network analysis function of the ROST CM6 software, the semantic network diagram of the comments on the Longji Terrace Scenic Spot is constructed (Figure 1). The arrow pointing between high frequency words indicates the semantic connection between them, and the thickness of arrow indicates the close degree of semantic connection between them. As can be seen from Figure 1, the semantic network matrix of high-frequency words takes "landscape", "Jiulong Wuhu", "Longji Terrace" and "Jinkeng Dazhai" as the core, and other characteristic words radiate around. Although "terraced fields" and "Longji terraced fields" occupy the first place in high-frequency vocabulary, the semantic relationship between "landscape" and other words is more and closer, indicating that tourists are most impressed with the landscape of Longji terraced fields. Terraces, hiking, etc. are in the secondary core position. Through reading and refining tourists' comments on Longji terrace, it can be found that tourists' perception of the landscape of Longji terrace focuses on the terrace scenery, ethnic customs and specialties, mountain road conditions, selection and landscape differences of climbing ways, landscape differences in different seasons, landscape differences in different weather, etc. Tourists' perception of the landscape of Longji terraces is generally positive. The reasons for the "regret" and "pity" in the comments are mainly due to the poor landscape effect caused by the unsuitable weather and season, as well as the poor service of travel agencies and other external factors. It is worth noting that the frequency of "next time" in the text is 88, indicating that many tourists have plans to revisit.

Fig. 1 Semantic network matrix diagram of high-frequency vocabulary

3 Problems in landscape planning of rural eco-tourism area

3.1 Problems of human settlements and lack of standardization of infrastructure construction in scenic spots

In the rural eco-tourism area, the landscape of infrastructure construction such as buildings, roads, rest areas and public toilets is the basic principle of the construction of the tourism area. In addition to being an important material landscape in the scenic area, it is also the material conditions of production and life that local residents need to improve. In the comment text, many tourists mentioned the problems such as "tired walking and mountain climbing, good physical strength to choose mountain climbing", "rugged mountain road", "the health work of the scenic spot can not keep up with", which indicated that the Longji Terrace Scenic Spot lacked standardization in terms of infrastructure and health environment management.

3.2 Planning depth, lack of excavation of local history and culture

Rural eco-tourism area is rooted in specific land and natural resource conditions, each piece of land has its own characteristics. The understanding of rural eco-tourism landscape can not only stay in the visual level of spatial form, but also should understand and deeply tap the significance of its existence. Longji terrace is rich in natural and human resources and has a long history, but the depth of tourism development is far from enough. Most tourists stay in the shallow level of tourism, farming culture, long hair culture and other characteristics of culture have not been in-depth excavation and promotion.

3.3 Tourism project problems, lack of consideration of landscape versatility

The multi-function of landscape plays a decisive role in rural landscape planning. First of all, there are abundant ethnic resources in Longji Terrace Scenic Spot, but most of the tourists' activities are limited to climbing the mountain to enjoy the terrace scenery, tasting special food, watching the performance of yaozhai, etc., and there are

few ethnic minority activities matching with it; secondly, as the important stakeholders of the tourist destination, the interaction between tourists and local residents is less; thirdly, the interaction between rice crops The growth is cyclical, and the weather in the southwest mountainous area is unpredictable. In addition to terracing, there is an urgent need to develop other tourism projects to enrich the landscape diversity.

4 Tourism planning strategy of rural eco-tourism landscape

4.1 Use big data to supplement and improve traditional planning and design evaluation

Under the background of digitalization, the rise of big data technology enables landscape planning to complete the research of multi-scale, multi-dimensional and multi-granularity landscape space problems with the help of software tools. In this regard, the scenic spot can use big data technology to carry out reasonable flow limiting and diversion measures to improve the quality of tourism; implement the construction of digital scenic spot, use GPS positioning system, electronic tickets and other digital settings to establish tourism safety information management platform; use gravity model, nuclear density and other methods to plan the landscape spatial structure, road system, infrastructure and plant landscape Improve.

4.2 Improve infrastructure and reconstruct landscape space

With the flow of people brought by rural tourism, in order to protect the ecological integrity of rural eco-tourism landscape to the maximum extent, reconstruction of rural eco-tourism landscape space to meet the needs of tourism development has become the top priority. Strengthening the infrastructure and environmental health management of rural eco-tourism area can fully mobilize the local people and increase the employment of farmers; encourage the scenic spot company or local government to provide funds to improve the road facilities and health conditions, promote the implementation of the toilet revolution; place multi-level and diversified rest in the footpath Rest place, add a rest place with interaction, leisure and experience functions; repair and maintain the ancient, high cultural and artistic value buildings; demolish and destroy the buildings that have lost cultural, artistic and historical value.

4.3 Enrich landscape diversity and expand tourism projects

At present, terraces are the core ornamental elements of tourists in Longji Terraces Scenic Spot, and most of the tourism activities are around the terraces landscape. However, due to the periodicity of rice crop growth and the meteorological characteristics of the southwest mountainous region, it may also have an impact on tourists' viewing experience. It can be improved by enriching the multi-functional landscape, creating plant communities with scattered layers and distinct seasons with ecological methods, establishing agricultural ecological demonstration park, national handicraft experience Museum, etc. Thus, the rural eco-tourism area can realize the organic combination of ecology and benefits, improve plant habitat, and form a green and pleasant rural living environment.

5 Conclusion

Taking Longji Terrace Scenic Spot as an example, from the perspective of tourists' perception of landscape, this paper puts forward the existing problems and solutions in the landscape planning of rural eco-tourism area, aiming to coordinate the relationship between the landscape object and the perception subject of rural eco-tourism area, effectively solve the practical problems, and provide reference and reference for the planning of rural eco-tourism area.

Acknowledgements

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