

Study on the Leisure Degree of Sports Park Landscape from the Perspective of Leisure Science — A Case Study of Dinghu District, Zhaoqing City

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Abstract: Taking the three main sports parks in Dinghu District, Zhaoqing City as the research objects, this paper constructs an evaluation system for the leisure degree of sports park landscapes (including three dimensions: subject, object, and medium) based on the perspective of leisure science and combined with the evaluation criteria of urban leisure degree. The research is carried out through methods such as field investigation and questionnaire survey. The results show that the sports parks in Dinghu District have problems such as few people on weekdays, inconvenient transportation, single landscape, insufficient leisure space, single function, lack of cultural integration, and few activity forms. To address these issues, this paper puts forward improvement suggestions from four aspects: matching multiple leisure motivations, connecting multi-disciplinary logics, respecting regional characteristics, and following the principle of efficiency and practicality. The purpose is to improve the leisure degree of sports parks, meet the leisure needs of residents, and provide references for the landscape design of similar sports parks.

Keywords: Leisure Studies, Sports Park, Leisure Degree Evaluation

1. Introduction

According to the latest data in China, by 2024, the Engel's coefficient of Chinese residents has dropped to 29.8%, and that of urban residents in particular has reached 28.8%. This data indicates that most families have stepped into the stage of affluence. All achievements related to cities are the creations of human leisure activities. Without public leisure spaces, a city will lose its vitality and vigor, as well as its soul and temperament. In fact, the history of a city is also a history of leisure culture; without the temperament of leisure, a city is just a shell made of reinforced concrete. Subsequently, from 2013 to 2019 (Note: The original text may have a chronological error; it is logically adjusted here), the number of parks increased by more than 10,000 in five years, with a year-on-year growth rate of approximately 100%. This fully shows that there is an urgent demand in China to improve the happiness index of residents. At this stage, the research results of leisure science in the direction of urban development can guide the improvement of the urban park design system to a certain extent [1].

Zhaoqing City is located in the central and western parts of Guangdong Province, adjacent to first-tier and new first-tier cities such as Guangzhou and Foshan. It has a superior geographical location and transportation conditions, as well as rich landscape tourism resources and historical and cultural heritage [2]. As a core development area of Zhaoqing City, Dinghu District aims to become a benchmark for the integrated development of industry and city. As an important part of the leisure life of urban residents, park green spaces have seen the successive construction of several parks of different types and sizes in recent years, such as Yanyang Lake Park, Zhaoqing Children's Park, and the New District Sports Center [3]. Among them, the main sports parks include Dinghu Sports Park, Dinghu District Sports Center, and Dinghu Sports Park (Note: It is suspected that there is a duplicate name in the original text; the translation is based on the original content). This paper will analyze the existing problems in the landscape design of sports parks in Zhaoqing City from the perspective of leisure science and put forward corresponding suggestions.

2. Construction of Evaluation Criteria for the Leisure Degree of Sports Park Landscape from the Perspective of Leisure Science

2.1 Overview of Leisure Science

First, "what is leisure". The core of leisure science lies in exploring the essence and value of leisure, as well as its impact on humans and society. In essence, leisure is not merely free time or recreational activities, but a kind of spiritual attitude and life state¹. For example, Pieper pointed out that leisure is a peaceful and tranquil spiritual state, and an opportunity and ability to be immersed in the creative process [4].

Second, "the basic components of leisure". The components of leisure refer to its basic characteristics, which can be sorted out through four aspects: process, group, history, and morality, and seven elements such as relaxation and entertainment are summarized. Among them, the free experience and activities are the sufficient and necessary conditions for determining leisure [5]. The value of leisure can be examined from four aspects: the humanistic value is reflected in meeting basic needs and adjusting psychology; the cultural value affects the individual's concept of leisure and the urban spirit; the social value includes economic, rights protection, and educational functions; the value selection needs to take a positive orientation to avoid abnormal and alienated leisure [5].

2.2 Evaluation Criteria for Urban Leisure Degree

The urban leisure development degree is the fundamental criterion for measuring a leisure city. It refers to the coordination degree of the development of the city's own leisure elements and the realization degree of leisure characteristics, and is the common embodiment of the maximization of the interests of the subject, object, and medium.

Here, it can be understood in combination with the "experience economy". The core commodity of the pure experience economy is "experience", which enables consumers to have personalized memories rather than just products. Moreover, experience has the attribute of a commodity, and attention should be paid to categories such as virtual experience [5]. In the development process of leisure cities, this experience economy model is deeply integrated with urban construction and has become an important force promoting urban transformation¹. Currently, the development focuses more on economic indicators and hardware facilities. However, a leisure city not only needs basic elements such as high-quality ecology and facilities, but also requires citizens to have modern leisure concepts and lifestyles. This is because leisure culture is the fundamental factor affecting the development of urban leisure and the quality of life, and the experience economy is the key carrier to activate leisure culture and transform urban characteristics into consumable experiences [6]. By creating immersive cultural and tourism scenarios and personalized leisure services, cities can transform ecological resources and cultural heritage into competitive experience products, attract tourists while improving the quality of life of residents, and form a virtuous cycle of coordinated development between the experience economy and leisure cities.

The subject leisure degree focuses on urban residents and tourists, and is measured by the frequency and satisfaction of leisure activities. The frequency of leisure activities is reflected by indicators such as the average number of days tourists stay, per capita leisure consumption, per capita leisure consumption of residents, and the proportion of leisure trips in total trips, which reflects the activity level of leisure activities. The service industry complaint rate, the degree of residents' friendliness and civility, and the satisfaction with leisure experience measure the subject's recognition and sense of comfort with the leisure experience [7].

The object leisure degree focuses on the city's supply capacity and includes three aspects of indicators. The degree of urban economic development is based on indicators such as per capita GGDP (Green GDP), Engel's coefficient, and resident consumption index, which reflects the material basis for leisure activities. The optimization degree of the leisure industry structure is reflected by the proportion of the tertiary industry in GDP and the proportion of modern service industry in the tertiary industry, which reflects the support of the industry for leisure. The comfort of the leisure environment is evaluated from the natural environment (richness of leisure resources, maturity of products) and the humanistic environment (satisfaction with leisure services, degree of atmosphere influence) [7].

The medium leisure degree centers on the role of the government and includes the guidance degree of leisure concepts and the support degree of policies. The former takes the orientation of public will,

academia, media, and policies as indicators to measure the guidance of healthy leisure concepts to the subject. The latter reflects the guarantee of policies for the development of leisure through indicators such as the degree of urban-rural integration, the positioning of leisure development in the government work report, and preferential policies for leisure enterprises [7].

2.3 Criteria for the Leisure Degree of Sports Park Landscape Design

As a buffer zone between functional spaces such as urban buildings, streets, and residential areas, parks can affect the development degree of urban leisure from three dimensions to varying degrees. Similarly, the sports park landscape, which is the research object of this paper, is the most important part of the park and determines the leisure degree within the sports park. With reference to the evaluation criteria of urban leisure degree, the evaluation of sports park landscape can also be carried out from these three dimensions.

The subject leisure degree can focus on the experiencers, who can be local residents or foreign tourists. However, due to the more single function of sports parks, the criteria mainly refer to the subject's satisfaction with the leisure experience, the complaint rate of the park, and the frequency of return visits. The object leisure degree is measured from two major aspects: tangible (richness of landscape, accessibility of tourism, facilities, site adaptability) and intangible (coverage of all age groups, sustainability). The medium leisure degree is evaluated with reference to the involvement of the park's official and non-governmental organizations. Here, involvement can be understood as the maintenance cost and frequency of the park's facilities and greenery, the frequency of activities organized by social organizations in the park, and the openness and support of the government for the park's development. (As shown in Table 1.)

Table 1: Leisure Degree of Sports Park Landscape Measurement standard table

Leisure Degree of Sports Park Landscape	Dimension	Evaluation Indicators	Evaluation Factors
	Subject	Experiencers (local residents, foreign tourists)	Satisfaction with leisure experience, park complaint rate, frequency of return visits
	Object	Tangible	Richness of landscape, accessibility of tourism, facilities, site adaptability, etc.
		Intangible	Coverage of all age groups, sustainability
	Medium	Park officials, non-governmental organizations	Maintenance cost and frequency of the park's facilities and greenery, frequency of activities organized by social organizations in the park, openness and support of the government for the park's development

A mature park landscape leisure degree means that the leisure elements of the three dimensions have been fully developed, so as to maximize the satisfaction of the leisure needs of the leisure subject, promote the improvement of leisure methods, and ultimately form a more complete and sustainable sports park landscape.

3. Research on the Leisure Degree of Sports Park Landscape in Dinghu District and Improvement Suggestions

The subject and object leisure degrees of Zhaoqing City were evaluated through field investigation, questionnaire survey (As shown in Figure 1), and literature research methods.

3.1 Subject Leisure Degree

Unfixed field investigations conducted in the past month found that such parks in Dinghu District, Zhaoqing City have few people on weekdays, and the number of people only increases during holidays or when there are specific competitive events. Especially the areas outside the competition halls are basically empty. Questionnaire surveys were conducted in the three main sports parks in Dinghu District on weekends. A total of 200 questionnaires were distributed, and 156 valid questionnaires were collected. Among the respondents, 90% were local residents, and the remaining foreign tourists mainly came for competitions or business trips.

The questionnaire survey shows that among local residents, more than 80% only want to come on weekends or holidays, and their destinations are basically the sports venues; few people stay and rest in the landscape green areas. More than 90% choose private cars (including ride-hailing and self-driving) as their means of transportation. Only about 30% of them want to come frequently, and their purpose is for specific sports events, mainly the elderly and children.

Park Satisfaction Questionnaire

Are you? Tourist ☐ Resident ☐

Your age group? 0—18 ☐ 18—55 ☐ 55—80 ☐

Which means of transportation do you often choose to come here?

Motor vehicle (private car, ride-hailing) ☐ Bus ☐

Non-motor vehicle (electric bike, bicycle, motorcycle) ☐ On foot ☐

How often do you come to the park?

Weekends and holidays ☐ Frequently ☐

What is your main activity in this park?

Sports ☐ Walking ☐

Chatting ☐ Accompanying children ☐

Regardless of other factors, which of the following parks are you willing to visit frequently?

Yanyang Lake Park ☐ Dinghu Sports Park ☐

Zhaoqing Children's Park ☐ Bilian Lake Park ☐

What's the reason?

Better scenery ☐ More complete facilities ☐ More abundant entertainment activities ☐

Others ☐:

What are the reasons why this park does not attract you to visit frequently?

Figure 1: Park Satisfaction Survey

Through the questionnaire survey, the main reasons are summarized as follows: 1. Inconvenient transportation: The park is far from densely populated areas, resulting in inconvenient transportation. 2. Single landscape: Few people choose the sports park as a daily leisure and walking place; most people choose parks with more comprehensive functions. 3. Insufficient leisure space: It is not suitable for chatting with friends.

3.2 Object Leisure Degree

Dinghu District has rich landscape resources and historical and cultural heritage [1], and the existing sports parks have certain advantages in terms of landscape resources. However, there may be the following shortcomings: the leisure functions are relatively single, mainly focusing on traditional viewing and simple leisure functions, and lacking characteristic leisure projects and sports facilities for different groups of people; the integration of culture is insufficient, failing to fully integrate the local Duan inkstone culture and Song Dynasty culture into the park landscape design [8], resulting in low cultural recognition of the landscape; the completeness and humanization of leisure facilities need to be improved, such as insufficient fitness facilities for the elderly, and the safety and interest of children's amusement facilities need to be strengthened. The landscape design of some sports parks may have unreasonable layout of leisure spaces, which cannot meet the diverse leisure needs of residents.

3.3 Medium Leisure Degree

The facilities and greenery inside and outside the venues are regularly maintained by special personnel, but the vegetation basically remains unchanged throughout the year. The venues, especially Dinghu Sports Center, host relatively frequent activities, but they are basically large-scale sports competitions organized by the government. Occasionally, non-governmental organizations rent the venues, but only for relatively large-scale activities. There is a lack of small-scale activities and diversity of activities, and the activities are basically common sports competitions.

3.4 Improvement Suggestions

3.4.1 Matching Multiple Leisure Motivations and Covering Multi-level Groups

1) Subdividing functions according to leisure motivations: Urban planners or designers should divide functional areas based on the six motivations of "recreation and relaxation, interpersonal communication, exercise and fitness, exchange and discussion, exploration of new things, and pursuit of challenges". This measure is intended to avoid functional confusion.

2) Considering all age groups: Designers should allocate corresponding spaces for children (exclusive playgrounds), young and middle - aged people (composite sports venues), the elderly (elderly - friendly facilities), and family groups (parent - child landscapes) to eliminate usage limitations.

3.4.2 Taking Leisure Science as the Core and Connecting Multi-disciplinary Logics

1) Penetrating the essence of leisure: When designing a sports park, we need to focus on the leisure characteristics of "non-utilitarianism, physical and mental pleasure, and free discretion". We should downplay competitiveness, add more leisure spaces (such as shaded rest areas around sports courts), and integrate sports with relaxation.

2) Combining landscape and ecological theories: We also need to adhere to the principle of "ecology first": retain native tree species, introduce additional seasonal flowering plants to create a seasonal landscape, and construct artificial water features (such as a central water feature and rainwater collection ponds) that balance both functionality for recreation and ecological benefits.

3.4.3 Respecting Topography and Regional Characteristics and Maximizing Space Value

1) Terrain Adaptability Design: For instance, we can leverage terrain elevation differences to create distinctive spaces during landscape design.

2) Regional Cultural Integration: For sports parks in Zhaoqing, local cultures such as Duan Inkstone Culture and Song Dynasty Culture can be incorporated into the landscape design

3.4.4 Principle of Efficiency and Practicality: Optimizing Spaces and Facilities to Improve Usage Frequency

1) Maximizing space utilization: If there are vacant plots within the planned project area, designers should make the best use of these idle spaces by converting them into weekend camping sites. This will attract more residents and visitors from further afield.

2) Improving the completeness of supporting facilities: Designers need to adjust and improve outdoor sports scenarios based on the needs of different groups, and add activity areas for children and the elderly. The entire park should be fully accessible with barrier-free hardware to facilitate movement within the park. Facilities should be allocated according to the service radius: toilets should be installed every 400 meters, trash cans every 200 meters, medical stations should be set up near high-intensity sports areas, 3 parking lots (with 47 parking spaces) near entrances and venues, and additional bicycle rental points and energy supply stations should be provided.

4. Conclusion

Based on leisure science and drawing on the evaluation criteria system of urban leisure degree, this study constructs an evaluation system for the leisure degree of sports park landscape including three dimensions (subject, object, and medium) for the first time. The subject focuses on the satisfaction of experiencers, the object covers tangible facilities and intangible coverage, and the medium focuses on the involvement of official and non-governmental organizations. This provides a new analytical

framework for the research on the leisure degree of sports parks and fills the gap in the systematic evaluation of sports park landscapes from the perspective of leisure science.

Through on-site investigations and questionnaire analysis of the three sports parks in Dinghu District, Zhaoqing City, the core problems of the current leisure degree of the parks are identified: at the subject level, there are few people on weekdays, and the number of people only increases during holidays or events. Residents are unwilling to come frequently due to inconvenient transportation and single landscape; at the object level, the leisure functions are single, the integration of culture is insufficient, and the facilities are not humanized enough; at the medium level, the activities are mostly large-scale competitive events organized by the government, and there is a lack of small-scale and characteristic activities.

The improvement strategies proposed based on the problems have strong operability. Subdividing functional areas according to leisure motivations and considering the needs of all age groups can accurately match the diverse leisure demands of residents; integrating the essence of leisure with ecological and landscape theories can balance sports and relaxation and enhance the ecological and landscape value of the park; integrating regional culture, utilizing idle spaces, and improving supporting facilities can enhance the characteristics and practicality of the park.

In the future, the construction of sports parks can refer to the evaluation system and improvement path of this study, focus on leisure needs as the orientation, promote the transformation of sports parks from "sports venues" to "comprehensive leisure spaces", further improve the happiness index of residents' lives, and contribute to the development of urban leisure culture and the construction of livable cities. At the same time, this study has limitations such as a narrow sample range. In the future, the research area can be expanded to deepen the research on the differences in the leisure degree of sports parks in different types of cities.

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References

- [1] https://www.stats.gov.cn/sj/zxfb/202302/t20230203_1900530.html
- [2] Zhang, Y. (2016). *Analysis and development research on the green space landscape pattern of Zhaoqing, a landscape city in Guangdong (Master's thesis)*. Beijing Forestry University, Beijing.
- [3] Wen, P. F., Li, Y. C., Sun, F., & Li, Y. J. (2019). Research on the development countermeasures of sports tourism in Zhaoqing during the post-provincial games period. *Journal of Zhaoqing University*, 40(2), 60-64. <https://doi.org/10.13698/j.cnki.cn36-1346/c.2019.02.014>
- [4] Ma, H. D., & Liu, E. (2001). A review of Western leisure studies research. *Studies in Dialectics of Nature*, 17(5), 45-49. <https://doi.org/10.1000-8934.2001.05.011>
- [5] Pang, X. Q. (2016). Several theoretical issues in the study of leisure science. *Zhejiang Social Sciences*, (3), 110-119+159-160. <https://doi.org/10.14167/j.zjss.2016.03.019>
- [6] Ma, H. D., & Liu, E. City, livable city and urban temperament: Cities from the perspective of leisure science. <https://www.cnki.net/kcms/detail/11.5254.C.20220928.1630.002.html>
- [7] Chen, M. (2010). Study on the evaluation criteria of leisure cities based on leisure science. *Social Scientist*, (3), 89-92. <https://doi.org/10.1002-3240.2010.03.022>
- [8] Liang, Z. G. SWOT analysis of tourism industry development in Zhaoqing. (Document content exceeds limit, specific source information not fully available).
- [9] Li, X. L. (2022). *Landscape planning and design of sports parks from the perspective of leisure science: A case study of Banan District Sports Park in Chongqing (Master's thesis)*. Kunming University of Science and Technology, Kunming.