

## 파이썬 데이터 시각화를 이용한 라오허 국립공원 관광객 인식 연구

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### Liaohu National Park based on python data visualization Visitor Perception Study

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#### ● 요 약 ●

National park is one of the important types of protected area management systems established by IUCN and a management model for effective conservation and sustainable use of natural and cultural heritage in countries around the world, and it assumes important roles in conservation, scientific research, education, recreation and driving community development. This study takes Liaohu National Park in China, a typical representative of global coastal wetlands, as a case study, and uses python technology to collect travelogues and reviews of visitors from Mafengwo.com, Ctrip.com, Go.com, Meituan.com and Dianping.com as a source, and the text spans from 2015 to 2022. The results show that wildlife resources, natural landscape with river and sea, wetland ecology and fishing and hunting culture of northern China are fully reflected in the perceptions of visitors to Liaohu National Park. However, there is still much room for improvement in terms of supporting services and facilities, public education and tourists' experience and participation in Liaohu National Park. In this paper, we use python data visualization technology to study the public perception of wetland wildlife as the theme, and grasp the satisfaction, spatial distribution, activity content and emotional tendency of the public in the process of wetland wildlife as the theme, so as to better promote the Liaohu National Park to better carry out the public experience while strictly adhering to ecological protection, and to provide the Liaohu National Park with a better opportunity to This will provide scientific basis for the Liaohu National Park to play a better role in ecological civilization construction and education of ecological civilization awareness.

키워드: Liaohu national park, python, web text analysis, data visualization

#### I. Introduction

National park is one of the important types of protected area management systems established by the IUCN and a management model for the effective conservation and sustainable use of natural and cultural heritage in countries around the world, and they assume the functions of conservation, scientific research, education, recreation and driving community development. Under

the premise of conservation, the resources in the area are utilized in a sustainable and non-consumptive manner, driving and radiating the development of the surrounding communities, and providing the public with nature education and recreation experience sites. Up to now, China has launched national park system pilots for Sanjiangyuan, Northeast Tiger and Leopard,

and Giant Panda, involving several provinces. As the process of national park system pilot construction continues to advance, a large number of potential public visitors will get to know, enter and experience representative national parks, nature reserves and nature parks, and visit various nature reserves, and their demand to provide rich experience products for the public will continue to expand.

## II. Theoretical Research

### 1. National Park

In the International Union for Conservation of Nature's protected area classification management system, national parks belong to Class II nature reserves, which are land or marine areas that provide scientific, educational, recreational, and leisure opportunities for the public in order to protect ecological integrity and exclude development that is in conflict with conservation objectives.

### 2. Visitor Perception

Visitor Perception is the study of the image of a tourist region from the perspective of the tourist, and it is mostly conceptualized by scholars from many countries at the level of psychological cognition. Hunt, Crompton et al. consider tourism perception as a perception, feeling, emotion and general impression formed by the individual tourist of a tourist place. Huang Zhenfang et al. consider tourism perception as the sum of impressions based on the tourist's perception and experience of the tourist place. Cheng Jinlong et al. considered tourism perception as the overall, abstract and generalized cognition and evaluation of tourist places, which can reflect the overall product characteristics and comprehensive quality level of tourist places. Gunn called the impressions formed by tourists before the field visit as primary perception images and the impressions formed after the field visit as induced perception images according to the different sources of information. Fakeve et al. on the basis of the previous studies Baloglu et al. proposed that tourism perception consists of three dimensions: cognitive perception, affective perception and overall perception, and this concept has been accepted by many scholars.

## III. Study area and research methods

### 1. Overview of the study area

Liaohe National Park is a typical representative of coastal wetlands in the world, and was listed in the UNESCO List of Wetlands of International Importance in 2004; it was named as one of the "Six Most Beautiful Marsh Wetlands in China" by China National Geographic in 2005. In 2013, it was named as one of the "Top Ten Charming Wetlands in China" by CCTV, and in 2022, it was included in the second batch of "International Wetland Cities" by the Secretariat of the Convention on Wetlands.

### 2. Analysis method

Using ROST Content Mining software, we extracted high-frequency words from the web text and analyzed the satisfaction, spatial distribution, activity content, services and facilities, and emotional tendency of the public in the tourism experience of Liaohe National Park through the classification and ranking of high-frequency words. Meanwhile, the keyword co-occurrence matrix of the previous step is input into Gephi software, and the visualization analysis function of Gephi is used to generate the "tag cloud map" of tourism experience in Liaohe National Park, explore the semantic structure and correlation among key high-frequency words, and form the semantic network of public tourism experience with Liaohe National Park as the theme. The semantic network map of the public's tourism experience based on the theme of Liaohe National Park was formed, and the sentiment analysis software of ROST Content Mining was used to analyze the satisfaction and emotional state of the public's experience.

## IV. Conclusions

This study is a useful attempt and exploration to enrich the connotation and theoretical innovation of public experience in Liaohe National Park, summarize the public experience model that fits the natural resources and human characteristics of coastal wetlands, guide the orderly planning and construction of Liaohe National Park, and provide experience reference for other types of nature reserves. This time, python technology is used to collect data from four most representative tourism websites in China, which has strong persuasive power because of the comprehensive perceptual content and balanced geographical distribution involved in data visualization.

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