Review of China's Environmental Image in Recent Years—Visualization analysis based on CiteSpace

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Abstract: *Environmental issues are gradually extending beyond natural sciences to fields such as economy, politics and culture. As an important component of a country's "soft power", environmental image has also become a bargaining chip in the game of national comprehensive power discourse. This article uses the software CiteSpace as a research tool to visually analyze the core literature related to China's environmental image included in CNKI from 2010 to 2021, and to sort out and summarize its research focuses and frontiers. The results show that there have been abundant research results on national image in the academic community, but there is relatively little research on the specific issue of environmental image; Research often takes the interpretation of China's environmental image in the eyes of Western media as an analytical perspective, lacking comparative research on the differences between China's environmental image construction domestic and overseas; Ecological civilization, discourse power, and image construction are future research trends; Further exploration on how to build a harmonious and positive national environmental image is inspired.*

Keywords: environmental image; carbon peaking; carbon neutrality; CiteSpace

1. RESEARCH BACKGROUND

China's goal of reaching carbon peaking by 2030 and achieving carbon neutrality by 2060, proposed at the 75th United Nations General Assembly in 2020, has sparked heated discussions as soon as it was reported. carbon peaking and carbon neutrality are national strategies that will run through the next forty years. China's proactive response to global climate change as a major country is crucial for building a positive national environmental image. This urgent move to address global climate change has also become an important window to show China's international environmental image. At the same time, news reports from other countries also provide an opportunity to explore China's external environmental image. As climate change gradually moves from purely natural science and ecological issues to fields such as economy, politics, and culture, media coverage of environmental issues has transitioned from objective factual descriptions to broader and deeper fields. As an important component of a country's "soft power", the importance of studying the country's image is self-evident. At present, there are countless studies on national image, and what is the current status of research on the specific issue of "environment image"? Based on this, the article uses Citespace visualization analysis software to summarize the current research status of China's environmental image, in order to provide reference for further research on China's environmental image.

2. RESEARCH DESIGN

The software used in this article is CiteSpace6.1.R2. CiteSpace is a visualization analysis software developed by Chen Chaomei, a professor of computer and information science at Drexel University in the United States. This software can visualize and dynamically analyze massive literature from multiple perspectives. Its main principle is to help researchers understand the evolution, focuses, and frontiers of the research field by processing information such as the number of literature, authors, and keyword frequency.

2.1 Data collection

This article is based on the China National Knowledge Infrastructure (CNKI) database, with the theme of "National Image, Environment, and Environmental Protection". The search object is limited to papers published in core journals. After briefly browsing the titles and abstracts, articles that are not closely related to this study were excluded. Finally, 14 Chinese literature that meet the requirements of this study were selected.

2.2 Data processing

Select all included literature, download and export them in RefWorks format, and use CiteSpace (version 6.1.R2) for data processing of literature research. Convert the literature conversion data into a format that can be recognized by the software.

2.3 Data analysis

Firstly, use Excel software to conduct segmented statistics on the number of publications in each year, draw statistical charts, and fit a curve model to predict the number of publications to study its development trend; Visualize and analyze the knowledge graph of publishing institutions and keywords using CiteSpace software. Parameter settings for each panel: 1) Title slicing: From 2010 To 2021, set the Year Per Slice value to 1; 2) Node type: Select the data content to be analyzed. This study is divided into two settings, with the following options selected: institution and keyword; 3) Links: select Cosine algorithm for strength (node to node association strength algorithm); 4) Pruning: Select Pathfinder for knowledge graph network pruning method; The panel parameters in other areas are the default values.

3. RESEARCH RESULTS

3.1 Statistics of publication time

Statistical analysis of research literature on China's environmental image from the time of publication is shown in Figure 1. This article includes a total of 14 literature on visual analysis. Published since 2010, with a total of 2 articles; Only one article was published in 2013, 2014, and 2017; Two articles in 2019; 3 articles in 2020; The two recently published papers were in 2021. Among the few studies on China's environmental image, their references can be traced back to the 1970s, which coincided with the rise of Western research on environmental communication. It can be seen that the research on China's environmental image in the academic community started relatively late and lacked sufficient research. With the increasing rise of China and the intensification of global climate change, establishing a positive environmental image is crucial. There is still a very broad research space on the specific issue of "environmental image".

Figure 1

3.2 Statistics of research institute

The 14 articles included in this article are designed to be published by 12 publishing institutions, including the School of Journalism and Communication at Shanghai University, the Department of Political Science at East China Normal University, the School of Journalism and Information Communication at Huazhong University of Science and Technology, Jinan Engineering Vocational and Technical College, the School of Journalism and Communication at Zhejiang Media College, the School of Journalism and Communication at Hubei University, the Center for Foreign Cooperation and Exchange at the Ministry of Ecology and Environment, and the School of Journalism and Communication at Northwest University of Political Science and Law The Department of Foreign Languages at the City College of Xi'an Jiaotong University, the School of Foreign Languages at Xi'an Jiaotong University, the Shanghai Branch of the Nanjing Political College of the People's Liberation Army, and the School of Western Languages at Heilongjiang University, among which East China Normal University and Central China University of Science and Technology have conducted in-depth research on the issue of environmental image; The universities involved are mostly the School of Journalism and Communication, the School of Foreign Languages,

and the School of Political Science. From this, it can be seen that scholars' research on the issue of environmental image mainly focuses on ideological analysis reflected in the media environmental image of news and communication, the comprehensive national strength competition in the international political field, and written discourse.

Figure 2

3.3 Analysis of research focuses and evolution status

According to keyword clustering analysis, statistics show that national image, Western media, discourse power, ecological civilization, international communication, environmental image, public, United Nations, China, and peaceful development rank in the top ten, indicating that environmental issues have surpassed the initial natural science and ecological fields, becoming a microcosm of a country's environmental image, carrying the accumulation of domestic and foreign public awareness and impression of the country. The image of China as a responsible major country is widely recognized in China, while the environmental image portrayed by Western media is vastly different. The main reason for this phenomenon is that a country's handling of environmental issues has extended to economic, political, cultural, and diplomatic fields through international communication, becoming a game field for the country's comprehensive power discourse; Previous literature on environmental image research has been based on reports from the United Nations Climate Change Conference as a typical source of material. The image of China as a responsible major country and a country that follows the path of peaceful development has not yet been recognized in the Western world, and the West's environmental image of China is mostly negative. Scholars such as Xu Minghua (2020) selected India, which is also a developing country in the East, as a reference country for comparative analysis of data on haze issues on the Google News platform. The study found that India was granted the privilege of "rationalizing environmental pollution" due to its close political connection with the West, while China's environmental issues were stylized into a clearly conflicting political framework. With China's increasing emphasis on the protection of the ecological environment and the dissemination of ecological civilization ideas, there has also been some improvement in China's environmental image in the West. Scholars such as Shen Chenyu (2018) systematically analyzed the reports on China by three mainstream British media during the 2013-2017 Climate Conference, and found that British media's reporting attitude towards China's environmental image changed significantly in 2016, with the time node shifting from previous destroyers of ecological civilization into active actors in environmental governance and playing an indispensable role in promoting climate negotiations.
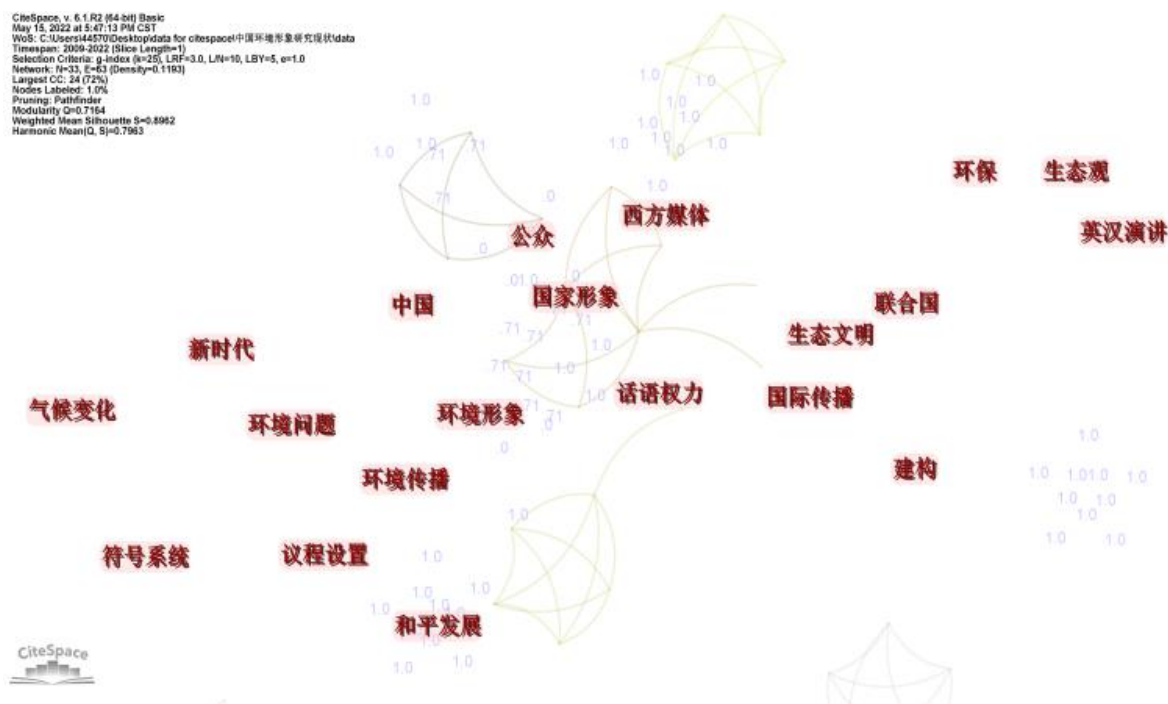
Figure 3

4. CONCLUSION

In summary, previous studies on environmental issues have mostly analyzed them from the perspective of international politics or journalism, with even fewer studies introducing critical discourse analysis; The content of the exploration is typically based on news reports related to China during the Climate Change Conference, and half of the few literature uses pure or qualitative analysis research methods, which also leads to a natural flaw in the subjectivity of interpretation in related research. China's carbon peaking and carbon neutrality is a crucial part of improving global climate degradation. In the eyes of Western media, the commitment made by the "largest carbon emitter" at the 75th United Nations General Assembly in 2020 will inevitably trigger sensational reports. However, there is currently little research on the media discourse of this major event; The existing literatures mostly take the interpretation of China's environmental image in the eyes of Western media as the analytical perspective, and there is little comparative research on the differences of China's environmental image construction domestic and overseas. If the theory of critical discourse analysis combined with corpus linguistics can be used to analyze the news discourse of "carbon peaking and carbon neutrality" related to China's environmental reporting, it can update the current academic understanding of China's environmental image. The addition of the advantages of corpus quantitative analysis can obtain more objective and clear data, and using the current hot topic of "carbon peaking and carbon neutrality" as the research content to update the academic understanding of China's environmental image also has certain reference significance.

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