



Sustainable Development of Ecological Economy: A Scientometric Analysis

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Abstract. Ecological economy as a formal field of study began to develop in the second half of the 20th century, gaining momentum as environmental concerns and the limitations of traditional economic models became more apparent. Growing interest in topics such as ecological economy, sustainable development, and circular economy has led to noticeable changes in many interdisciplinary disciplines. In the organization of industrial upgrading at the same time, people slowly began to pay attention to the impact on the ecological environment. The study, based on 268 articles retrieved from the Web of Science(WoS) database between 1984 and 2023, provides comprehensive data and visual analysis of keywords related to "ecological economy". Literature measurement shows that publications have increased rapidly since 2004, covering many disciplines, such as economics, management, sustainable development studies, public health, energy, and other related significant fields. At the same time, research institutions in China, Malaysia, South Korea, the United States, and Saudi Arabia are prominent in their work in such disciplines.

Keywords: Ecological Economy; Sustainable Development; Ecological Environment; A Scientometric Analysis; Visual Analysis.

1 Introduction

With the increasing contradiction between ecological protection and social and economic development¹, the coordinated development of the economy, resources, environment, and society has become the core of promoting high-quality development². A new development mode of the green ecological economy has gradually become the main direction and trend of social and economic development, which needs to change from a resource-based economy³. Many scholars have conducted research on ecological economy in their respective fields. As a scientific development idea, the ecological economy is a new economic development model⁴. Green finance, as a kind of financial model can effectively promote the development of the global economy innovation, on the global ecology economy and environment is of great significance⁵. But by systematically for solid waste resources recycling can effectively relieve shortage of resources and environmental pollution⁶, can promote the sustainable development of ecological economy and green economy⁷. The

industry wants ecological protection and economic development to be two equally important goals, to accelerate the development of industrialization must carry on the green technology innovation⁸. Enterprises can reduce energy production costs through energy saving and emissions reduction⁹, and build a green ecological economy¹⁰.

Based on the academic point of view, we know that sustainability is an important part of the ecological economy. This article compiled 268 articles from the WoS database to discuss the sustainable development of the ecological economy and provides references for researchers by drawing key phrases and co-citing keywords.

2 Data and Methods

To obtain literature related to the ecological economy, the scientometrics analysis in this paper uses the Scientific Network (WoS) tool to conduct an "advanced search". Finally, the keywords and research areas are set as follows:

TS=("Ecological Economy")

Up to May 2023, a total of 268 articles (including SCI-EXPANDED、SSCI、A&HCI、ESCI). For exploratory analysis, the mapping was developed using VOSviewer and Bibliometrix.

3 Research Results

This section from the trend of the published literature and references, the top research institutions, keyword clustering, research topics and so on, in the form of chart to conduct a comprehensive analysis of relevant research results.

3.1 Annual Trends

Based on the export from the WoS database the number of publications on the subject began to appear in 1984, there were no publications on the subject from 1985 to 1994, the number of publications stabilized at a low level from 1995 to 2003, and the trend increased sharply after 2004. And it peaks in 2021, revealing a growing emphasis on the subject. From the VOSviewer chart, you can see that the keywords change from year to year, and in 2016, attention began to be paid to "ecological economy", and based on this research, many new fields have been derived. At present, the emerging research topics in ecological economy mainly include environmental control, ecological service systems, and geographic information systems. The study of the ecological economy will lead to more government policies that incorporate the principles of ecological economics, and governments and businesses can better understand the economic importance of maintaining healthy ecosystems.

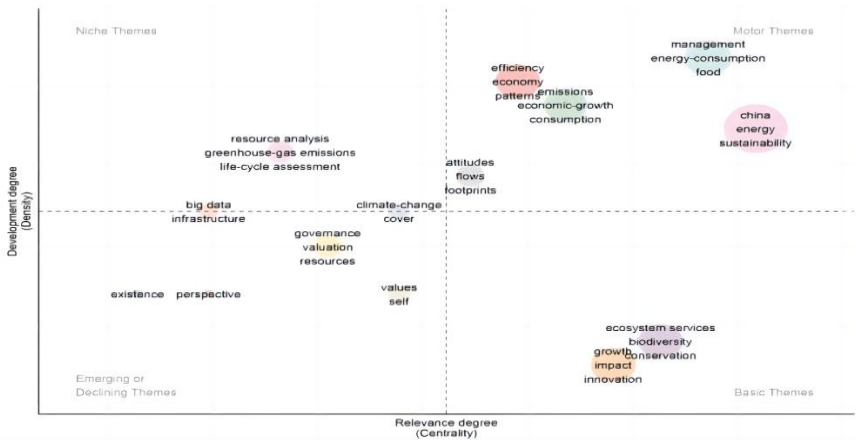


Fig. 4. Thematic Map

4 Conclusion

In this study, the topic of ecological economy is analyzed, and scientometrics results analysis indicate:

(1) Since 2004, the number of publications and citations on ecological economics has increased rapidly, with China, Malaysia, South Korea, the United States and Saudi Arabia playing an important role;

(2) Major publications coupling analysis reflects the interdisciplinary research topic, paper reference rate and the coupling of the literature were positively correlated;

(3) From the point of view of keyword cluster analysis, the main research contents include "ecological economy", "sustainable development", "circular economy" and "ecological civilization".

With the impact of climate change and energy consumption, there is a growing interest in the eco-economy, which involves combining economic goals with ecological sustainability to create a more balanced and resilient future. These findings will contribute to the sustainable development of the ecological economy.

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