

Research Advances and Insights on Trade Liberalisation Based on CiteSpace Analysis

Xueliang Xu^{1,a,*}, Chunhui Dong^{1,b}, Wenyan Li^{1,c}

¹Foshan University, Foshan, Guangdong, 528000, China

^axxl1996929@163.com, ^b498474748@qq.com, ^c2806941152@qq.com

*Corresponding author

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Abstract: With the unfolding of globalization, there is a trend of trade liberalization in the world today. Trade liberalization has also become a major research hotspot in recent years. This paper presents a statistical analysis and summary of the literature related to trade liberalization research in the WOS database from 2000 to 2022 through the use of keyword co-occurrence networks, cluster analysis and emergent word analysis in visualization software (CiteSpace), in order to provide reference and support for theoretical research innovation in trade liberalization research.

1. Introduction

Trade liberalisation refers to the process of a country gradually deregulating trade, reducing tariff and non-tariff barriers to trade, actively participating in international competition and building free trade relations with other countries around the world [1]. In order to promote the optimization of trade liberalization at the academic and practical levels, this paper uses CiteSpace software to analyze the development stages and research progress of trade liberalization, explore its research trends and hotspots, so as to map out the development of trade liberalization research, with a view to providing a relatively objective and valuable reference for subsequent scholars' research on trade liberalization.

2. Data Sources and Research Methodology

The Web of Science Core Collection contains over 12,000 high-impact academic journals and is widely recognised by the international academic community for its authority and importance. The search was conducted on 15 April 2023, using the Web of Science Core Collection as the database, with "Subject='trade liberalization' AND Language='English'" as the search criterion, covering the period 2000-2022, to search for results related to trade liberalisation research. Non-research literature such as research reports and book reviews were excluded, resulting in a sample of 183 documents, including journal articles, conference papers, and analysed literature from monographs (or proceedings).

Citespace is a software for data mining and visualisation developed by Professor Chao-Mei Chen, a Chinese-American academic. The main function of the software is to visualise keyword co-occurrence, clustering and emergence, author and institutional collaboration, and to visualise

research knowledge associations, hotspots and evolutionary processes in the field [2]. In this paper, the software CiteSpace version 6.2.R2 (64-bit) was used to process the samples. Its keyword analysis and visualisation and statistical functions were used to visually determine the research hotspots, evolutionary lines and trends of trade liberalisation. The following steps were taken: a time span of 2000-2022 was chosen, a single time partition of 1 year was selected, the Top50 per slice parameter was chosen and the relevant data were analysed.

3. Analysis of research findings

3.1 Analysis of the development history of the research literature

From Figure 1, it can be seen that the number of studies on trade liberalisation from 2000 to 2003 was relatively small and the understanding of the concept of trade liberalisation was still in its infancy. From 2008 to 2012, the research on trade liberalisation reached a period of steady development, with a more stable amount of research literature. From 2013 onwards, the research literature on trade liberalisation grows gradually, which marks the widespread attention of scholars on trade liberalisation. The research literature reaches a maximum of 16 articles in 2022, and the research enters a popular period. To sum up, the topic of trade liberalisation has continued to see new research directions and results in recent years, in line with social and economic development and strong policy support. Therefore, trade liberalisation will remain a research hotspot in the coming years, and there is still a vast research space to be explored.

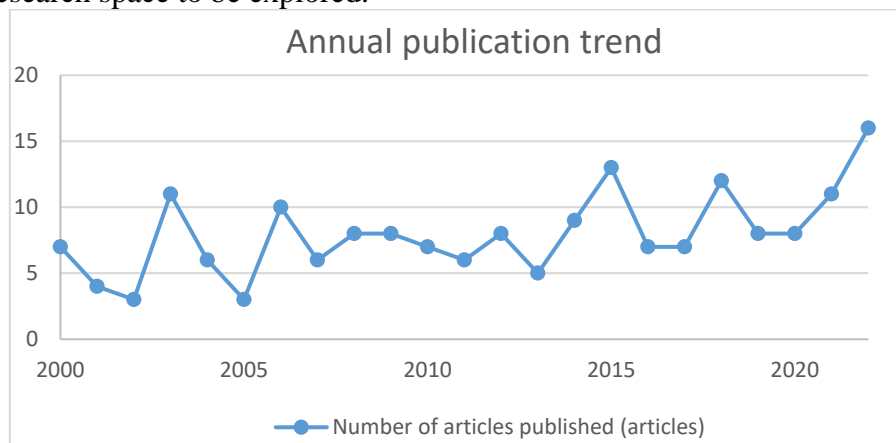


Figure 1: Number of articles published

3.2 Keyword analysis of the research literature

Keywords are a high level summary of the topic of the article, and their frequency, relevance and prominence can reveal the research hotspots, internal links and importance of the field. Keyword analysis can visually present the knowledge structure of the research field and explore hot issues, thematic directions and research trends [3].

3.2.1 Analysis of basic research areas

As shown in Figure 2, a total of 420 nodes, 1,476 links and a network density of 0.0168 were obtained from the keywords. Larger nodes and font sizes indicate higher keyword frequency, and thicker links indicate stronger links between two keywords [4].

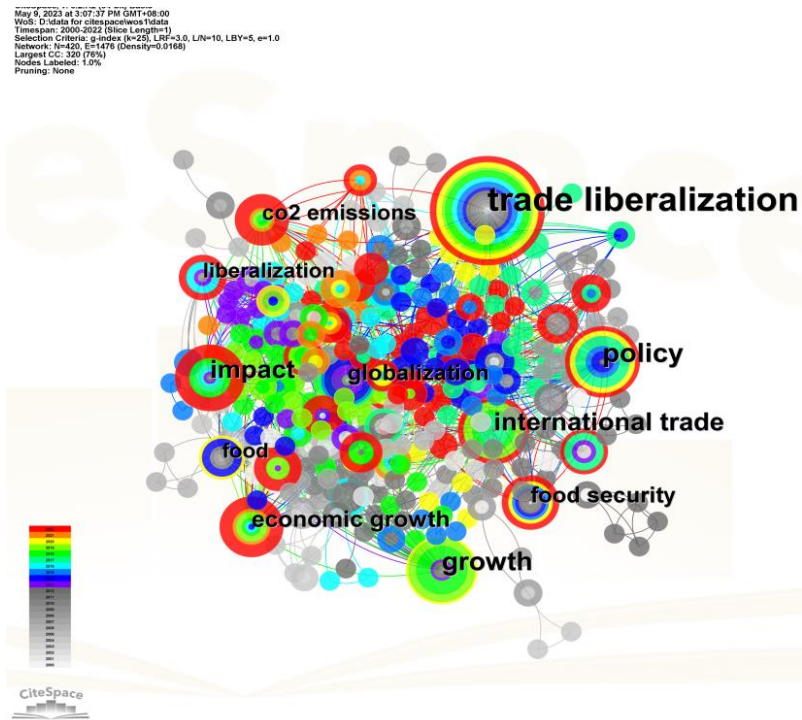


Figure 2: Keyword co-occurrence network mapping

The most influential related network is centred on "trade liberalization", which has the greatest impact on the outward network; the key words that appear frequently are international trade, policy, impact, globalization. The keywords that appear frequently are international trade, policy, impact, globalization, food security, economic growth, etc. These keywords have a high centrality and play an important role in the knowledge network. The analysis shows that these important keywords are closely linked to the content of "trade liberalisation" itself and are the basic elements of the study of "trade liberalisation".

3.2.2 Analysis of phased frontier research areas

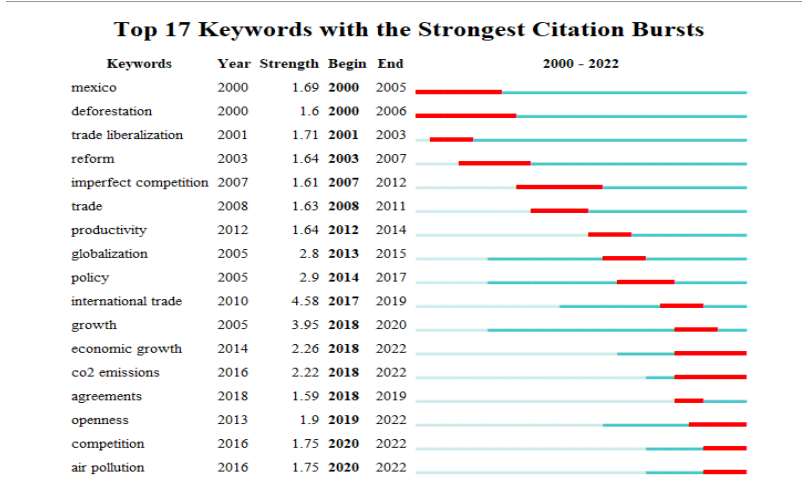


Figure 3: Keyword emergence map

The emergent terms are key terms that have suddenly increased in keywords or have grown

significantly in frequency of use over a certain period of time, and the emergent terms can be used to demonstrate the phased frontier research area of trade liberalisation [5-6].

As shown in the Figure 3, a total of 17 emergent terms were obtained for trade liberalization research. Among them, "trade liberalisation" has an impact cycle from 2001 to 2013. China's accession to the WTO in 2001 was accompanied by strong reforms on trade liberalisation, so the moment of China's accession is often considered a shock. 2007-2012 saw imperfect competition receive significant academic attention and become a frontier of research in this area. 2020-2022 saw the emergence of competition in the global study of increased trade liberalisation. Competition is representative of the global research on enhanced trade liberalisation.

3.2.3 Analysis of stages of research development and thematic directions

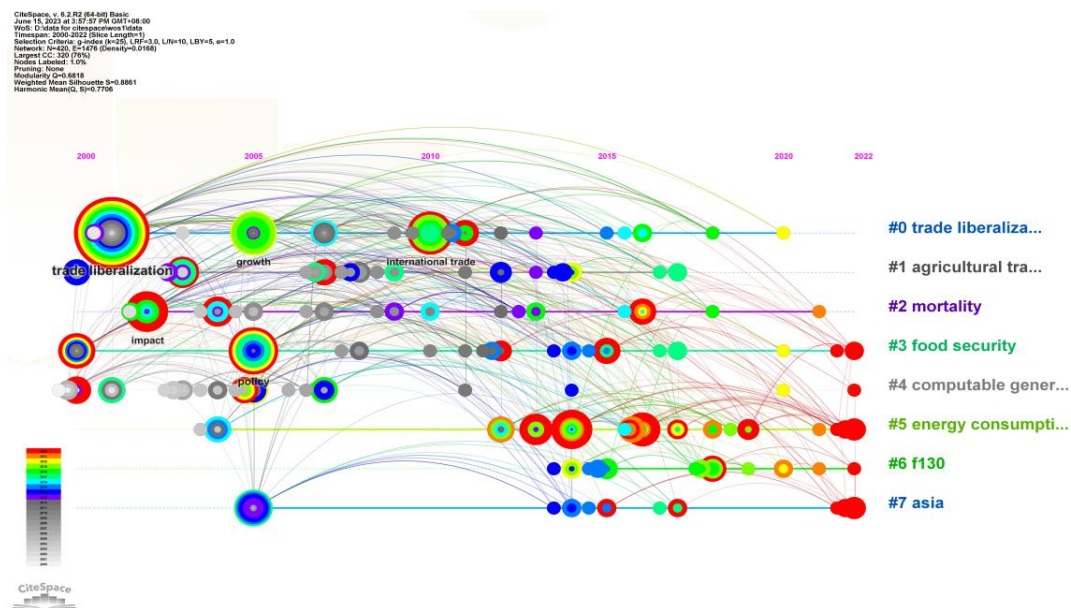


Figure 4: Keyword Timeline View

Clustering analysis of keywords means summarising and grouping keywords to show which ones belong to the same research direction [7-8]. Cluster analysis was carried out on the field of trade liberalisation to produce a clustering and timeline map of keywords in the field of trade liberalisation from 2000-2022 (Figure 4), which has a cluster module value of $0.6818 > 0.3$ and an average profile value of $0.8861 > 0.7$, which can be considered a significant cluster structure and reasonable clustering results [9-10].

Analysis of the clusters and their related information leads to the following conclusions. The keywords in the five clusters from cluster #0 to cluster #4 have a certain temporal relationship with each other, indicating that there is a certain continuity in the research intensity of this cluster. The keywords in the three clusters from Cluster #5 to Cluster #7 do not form an obvious time line between each other, and the time relationship is weak, indicating that this cluster is only a phase of research hotspot, and the research enthusiasm is less sustainable. In 2001, cluster #0 on the topic already appeared and had a high number of publications, indicating the continued interest of scholars in this research.

4. Conclusions and outlook

This study uses CiteSpace software to produce a knowledge map related to trade liberalisation research, and analyses the trade liberalisation research literature from 2000 to 2022 to reveal the

current situation, progress and hotspots of trade liberalisation research, and draws the following conclusions.

First, judging from the number of publications in trade liberalisation research literature, research in this field has gone through the stages of mapping, starting and developing, and generally shows a trend of growth. Trade liberalisation will continue to be a hotspot for research in the coming years, and there is more room for research. Secondly, from the perspective of the frontier hotspots of trade liberalisation research, each period of research in this field has a corresponding research hotspot content, leading the subsequent research in this field. Thirdly, in the study of trade liberalisation, theories are used to promote the development of practice, and trade liberalisation has gradually become an important part of the global economy and trade. To sum up, trade liberalisation research presents a strong vitality, and in the future research process, it should break through disciplinary boundaries and conduct interdisciplinary cross-research. At the same time, we should pay more attention to research hotspots, advocate innovation and continuously expand the breadth and depth of research.

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