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A Bibliometric Analysis of International Trade and Environment

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Uluslararası Ticaret ve Çevre Alanlarına İlişkin Bir Bibliyometrik Analizi

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Abstract

The aim of this study is to examine the scientific research literature on international trade and environment through bibliometric analysis. The Web of Science database was used for the study data, covering the period 1991-2023. The data were analyzed using VOSviewer 1.6.20 software. A cluster analysis was performed on the analysis results. According to the findings of the analysis, the most co-authored author is Manfred Lenzen, the most cited author is Thomas Wiedmann, the most co-cited author is John Barrett, and the three most used keywords are trade, China, and climate. The author with the highest link strength is Manfred Lenzen and the country with the highest number of co-citations is the United States of America. The journal with the highest number of publications related to the researched area is Ecological Economics. This study is of particular importance for researchers who want to gain a holistic perspective on international trade and environment by identifying key indicators in the scientific literature on international trade and environment.

Keywords: *Foreign trade, environmental consequences, VOSviewer, bibliometric analysis.*

Makale Bilgileri

Makale Türü: Araştırma Makalesi

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Öz

Bu çalışmanın amacı, uluslararası ticaret ve çevre ile ilgili yapılan bilimsel araştırma literatürünü bibliyometrik analiz yöntemiyle incelemektir. 1991-2023 dönemi kapsayan çalışma verileri için Web of Science veri tabanı kullanılmıştır. Veriler, VOSviewer 1.6.20 yazılımı kullanılarak analiz edilmiştir. Analiz sonuçları üzerinden bir kümeleme analizi gerçekleştirilmiştir. Analiz bulgularına göre, en fazla ortak yazarlık yapan yazar Manfred Lenzen, en fazla atıf alan yazar Thomas Wiedmann, en fazla ortak atıf alan yazar John Barrett ve en çok kullanılan üç anahtar kelime trade, China ve climate olmuştur. Ayrıca, bağlantı gücü yüksek olan yazar Manfred Lenzen ve en fazla ortak atıf alan ülke Amerika Birleşik Devletleri'dir. Araştırılan alanla ilişkili en çok yayın yapan dergi ise Ecological Economics'tir. Bu çalışma, uluslararası ticaret ve çevre konularında bilimsel literatürdeki temel göstergeleri belirleyerek uluslararası ticaret ve çevre alanlarına ilişkin bütünsel bir bakış açısı kazanmak isteyen araştırmacılar için özel bir öneme sahiptir.

Anahtar Kelimeler: *Dış ticaret, çevresel sonuçlar, VOSviewer, bibliyometrik analiz.*

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1. Introduction

International trade is one of the dynamics of economic growth and has increased significantly since the 1970s (Cepeda-López et al., 2019). As a result of these positive developments in the economy, the share of world trade in Gross Domestic Product (GDP) increased from 25% in 1970 to 37.6% in 1990, 50.5% in 2000 and 61.1% in 2011. Since 2010, world trade has been on a downward trend, further disrupted by the global COVID-19 pandemic. The pandemic caused the share of world trade in GDP to fall to 52.4% in 2020, returning to early 2000s levels. With the measures taken and vaccination campaigns, world trade entered a rapid upward trend and the share of world trade in GDP increased to 56.8% in 2021 and 62.6% in 2022, reaching the peak value of the 1970-2022 period (Our World in Data, 2024).

The interaction between trade sustainability and the environment has attracted the attention of many nations for more than a decade. This is because both foreign trade and the environment are critical to the prosperity of countries. With developments in global trade, it has become increasingly important to produce goods and services that aim to protect the environment and manage natural resources. Firms and households adapting to environmental policies have shifted towards environmental products and technologies, leading to an increase in demand for these products. These developments have markets for environmental products and increased exports. The relationship between trade and the environment has therefore become increasingly important in examining the achievement of climate goals.

There are almost no previous bibliometric studies on international trade and the environment in the literature, international trade and environmental issues are intertwined. Tian et al., (2018), conducted a bibliometric analysis focusing on emission-related flows related to international trade and used the Web of Science (WoS) database for the analysis. Özekenci (2023), used the WoS database to reveal how the academic literature on sustainable trade and green logistics has developed through bibliometric analysis. Kahveci (2023), conducted a bibliometric analysis of export performance using the WoS database. The only bibliometric study on international trade and environment in the literature is the study by Padhan and Bhat (2023), using the Scopus database, covering the years 2000-2021. There is no bibliometric analysis study using the WoS database on this subject. In order to fill this gap in the literature and to help advance the field, this study conducts a bibliometric analysis using data from the WoS database for the period 1991-2023 to reveal the relationship between international trade and environmental issues. This study determines the numerical course of studies on international trade and environmental issues over the years, the most active authors, journals, and countries, as well as the most co-authorship, co-cited authors, and the most frequently used keywords. Thus, in this study, the articles in the literature are analyses and the development of these two concepts together is tried to be revealed. The research questions to be answered through bibliometric analysis are as follows.

1. Annual publication trend in the field?
2. Countries with the most research in the field?
3. The most prestigious journals in the field?
4. The most active authors in the field?
5. The most active articles in the field?
6. The most frequently used keywords in the field?

The second section of the study introduces the conceptual framework, the third section outlines the methodology, the fourth section presents the findings, and the fifth section concludes the study.

2. Conceptual Framework

2.1. Trade and Environment Relationship

World trade volume grew by 4400% in the 1950-2023 period after the establishment of the GATT (WTO, 2024a). However, this rapid increase in world trade has also led to significant environmental problems.

The impact of trade on the environment and the impact of environmental policies on trade began to be discussed in the 1970s. The debates on the relationship between growth, social development, and the environment in the 1970s-1980s continued until the 1990s. During the Tokyo Round of Trade negotiations (1973-1979), participants assessed the extent to which environmental measures (in the form of technical regulations and standards) constituted barriers to trade. During the Uruguay Round (1986-1994), trade-related environmental issues once again came to the fore. In 1982, several developing countries expressed concern that products banned in developed countries for environmental hazards, health, or safety reasons would continue to be exported to them. At the 1982, ministerial meeting of the GATT, members decided to examine measures to control the export of domestically prohibited products (on the grounds of harm to human, animal, or plant life or health or to the environment). These developments led to the establishment of the Working Group on the Export of Domestic Prohibited Goods and Other Dangerous Substances in 1989. Thus, after the 1980-1990s, attention was drawn to pollution and other environmental problems and concerns shifted towards the global environment. In 1987, the World Commission on Environment and Development (WCED) coined the term "sustainable development" and prepared a report entitled "Our Common Future". In its report, the WCED identifies poverty as one of the most important causes of environmental degradation and argues that greater economic growth, supported in part by increased international trade, can generate the resources needed to combat what is known as "poverty pollution". In 1991, a dispute between Mexico and the United States revealed the links between environmental protection policies and trade. In 1992, the United Nations Conference on Environment and Development (UNCED), also known as the Rio "Earth Summit", emphasized the importance of trade's contribution to sustainable development and environmental efforts. On April 15, 1994, in Marrakech (Morocco), ministers signed the "Trade and Environment Decision" (WTO, 2024b). Türkiye is one of the founding members of the WTO, which became official on January 1, 1995 after the Marrakesh Agreement (WTO, 2024c; Republic of Türkiye Ministry of Foreign Affairs, 2024). The importance of trade's contribution to sustainable development and environmental efforts has been recognized in forums such as the 2002 Johannesburg Summit, the 2005 United Nations Earth Summit and the United Nations 2030 Agenda for Sustainable Development (WTO, 2024d). With more than 160 members representing 98% of world trade as of 2024, the WTO is the only global international organization dealing with trade rules between countries.

With the developments in global trade, there has been a shift towards the production of goods and services that aim to protect the environment and manage natural resources. International trade significantly affects carbon emissions. Therefore, many studies have focused on international trade and carbon emissions (Zhao et al., 2023: 5-6). Firms and households adapting to environmental policies have shifted towards environmental products and technologies, leading to increased demand for these products. These developments have expanded of environmental product markets and increased exports. For this reason, the relationship between trade and the environment has gained importance in studies on achieving climate targets.

Given that climate-related environmental changes will play a key role on the development of international trade and the global economy in the coming decades, it is important to understand the evolution of scientific publications related to international trade and the environment. Bibliometric analyses will make it possible to understand and evaluate the development and impact of the link between international trade and the environment. Bibliometric analyses help to identify the evolution, trends, and relationships of research areas by examining numerical data of studies in the literature.

As Donthu et al., (2020: 1-2) state, bibliometric analyses are used to understand the main trends in the research field and to identify gaps in the literature. These analyses are usually carried out through in-depth examination of data such as citations, keywords, relationships between authors, and a general summary of the literature is drawn by systematically classifying this data (Van and Waltman, 2014: 285).

2.2. Bibliometric Studies on Trade and Environment

The relationship between trade and the environment has been an important area of research, especially in understanding the dynamics between economic growth, trade policies, and environmental sustainability. The development of this field gained momentum in the 1970s when environmental awareness began to increase, and studies began to examine the effects of environmental policies and regulations on trade and to discuss the effects of trade on the environment (Padhan and Bhat, 2023: 1751).

Grossman and Krueger (1991), Copeland and Taylor (1995, 2001) examined, the impact of trade liberalization on the environment; Wiedmann et al., (2007), investigated the environmental impacts of internationally traded goods and services; Abdulai and Ramcke (2008) examined the change in the relationship between economic growth, international trade and environmental degradation; Wagner and Timmins (2009), Erdogan (2014), Cai et al., (2016), Huang et al., (2017), Ceylan and Toiha (2024) examined the effects of environmental regulations on FDI location choices or the effects of FDI on the environment; Hering and Poncet (2014), Zhang et al., (2020), Chen and Xu (2021), Duan et al., (2021), Cherniwchan, and Najjar (2022), Sun et al., (2023), Fabrizi et al., (2024), Wahab (2024), Song and Ding (2024) have investigated the interactions between environmental regulations and international trade flows (especially exports).

The relationship between environmental regulations and foreign trade has become an increasingly important issue. Environmental regulations play a crucial role in shaping industry and trade in line with a country's environmental policies and sustainability goals. Therefore, with an increasing number of researchers publishing papers on the relationship between trade and the environment, there is a need to systematically examine how academic research on these two concepts has evolved over time. Bibliometric analysis is a scientific research method that helps to systematically examine the quantitative data of studies, including articles and other publications published in a field. This method allows mapping the development of the field providing an overview, and contributes to gaining new insights by revealing gaps in the field (Adalı et al., 2024: 3; Gudekli et al., 2023: 6). As a result, bibliometric analysis makes it possible to qualify and quantify the research conducted by researchers and assess the scientific quality of specific researchers. This study examines the link between the concepts of international trade and the environment through bibliometric analysis. Therefore, the present study analyses academic publications in the field and attempts to explain how the concepts of international trade and the environment have evolved and evolved together.

3. Methodology of the Study

Bibliometric analysis is a powerful tool that provides a more in-depth examination of scientific research and important data. In recent years, it has been widely used especially to understand the evolution of research fields, identify current research trends and make strategic decisions (Chen et al., 2024: 3; Ongun and Çuhadar, 2024: 107; Kutlu, 2023: 100; Bahoo, 2020: 4). As a quantitative analysis method, bibliometric methods use bibliographic data such as citations, keywords, abstracts, titles, and references. In this way, they create structural patterns in scientific fields, making research areas more efficient and strategically guiding scientific communities, institutions, and individual researchers. Within these patterns, they use bibliographic data from common databases. These

methods provide a measure of objectivity in the assessment of scientific fields. The growing importance of this type of analysis lies in its ability to develop research strategies in a more targeted, effective and efficient way (Zupic and Čater, 2015: 430). They are an important tool to provide objectivity to the evaluation of scientific literature (Garfield, 1979: 359). It is concluded that as scientific work increases and becomes more complex and its role in society becomes more critical, it will become more difficult, expensive, and necessary to assess and identify the largest contributors. When used correctly, bibliometric analyses can bring a useful measure of objectivity to the evaluation process at a relatively low cost.

In this study, WoS, one of the most popular databases, was preferred as the main source. WoS is a comprehensive citation database dating back to the 1900s and allows a wide range of scientific literature to be searched. WoS provides citations for a large number of journals, conference proceedings, books, and other academic sources (Li et al., 2010; Yiğit Açıkgöz and Çizmeli, 2023: 219). This database is used for many different purposes, such as evaluating the impact factors of scientific publications, exploring collaborative relationships, and tracking new trends in research fields. Therefore, WoS is an important resource for individuals engaged in scientific research and academic work (Lee et al., 2020: 368).

In the preparation of the study, the words international; trade OR commerc* AND environ* were used and the research area ‘topic’ was selected. The symbol '*' is used to exclude other words belonging to the word family such as commercial, environment, or environmental. The flow followed for the current analysis is summarized in Table 1. The literature review was conducted on December 1, 2024. Since the year was not yet completed at the time of the study, the literature for the year 2024 was excluded from the analysis and 1488803 results were reached. Regarding document types, this study focused only on articles. Books, book chapters, proceedings and reviews, although they may be relevant due to their importance and nature, were excluded from the analysis as they do not have direct impact indexes and are difficult to compare. Only journals indexed by WoS were selected. In the final stage, 67 studies remained.

Table 1. Flow Chart of Bibliometric Analysis

Source Database	WoS
Subject	International Trade and Environment
Research area	“topic”
Keywords	International; trade OR commerc* AND environ* n = 148803
Fast Result	Research Paper n = 11794
Years of Search	1991-2023 n = 10510
Document Type	Research Paper n = 10510
Search Field	Economics n = 70
WoS Indexing	SCI-Expanded, SSCI, ESCI indexed journals n = 68
Language of Publication	English n = 67
Data Accessibility	https://www.webofscience.com/wos/woscc/summary/423c8438-80fd-43b4-a184-bcb2970a8ffa-012f863c91/relevance/1
Date of Data Access	December 1, 2024

Source: Data from WoS database, Edited by the Author.

WoS equips researchers with trusted data, flexible solutions, and unbiased expertise to deliver innovative and impactful research results. With a deep research archive dating back to 1864, WoS is a trusted source of data from 9,000 organizations and more than 34,000 journals globally, across 254

subject categories (Clarivate, 2024). In this study, VOSviewer Online 1.6.20 software was used to visualize the results of bibliometric analysis with data from the WoS database. VOSviewer, which is widely used for analysing and visualizing scientific literature, is a free computer program. With VOSviewer, bibliometric networks such as co-authorship networks, citation networks and co-occurrence networks are created and visualized (VOSviewer, 2024). VOSviewer also offers text mining functionality that can be used to create and visualise concurrent networks of important terms extracted from a body of scientific literature (VOSviewer, 2025).

4. Results

The study aims to examine the development of the literature on international trade and the environment and research trends in this field. Data from the WoS database for the period 1991-2023 shows how the number of publications in this field has changed over time.

It is observed in Figure 1 that publications on international trade and the environment were quite limited between 1991 and 2003. Although there is a limitation in the literature in the 1991-2003 period, an upward trend is observed in the 2004-2009 period. Although the increase in the number of publications was zero in 2010, it shows an upward trend in the following years, despite small fluctuations in the 2011-2019 period. In this study covering the period 1991-2023, 61.19% of the articles were published in the period 2011-2023. This finding indicates that research on international trade and environmental issues has been on the rise in recent years. This increase may have been driven by countries' commitments to reduce carbon emissions and build a more environmentally friendly economy following international agreements such as the Paris Climate Agreement (2015). The 2020s have been a critical turning point for environmental sustainability and the development of environmentally friendly technologies.

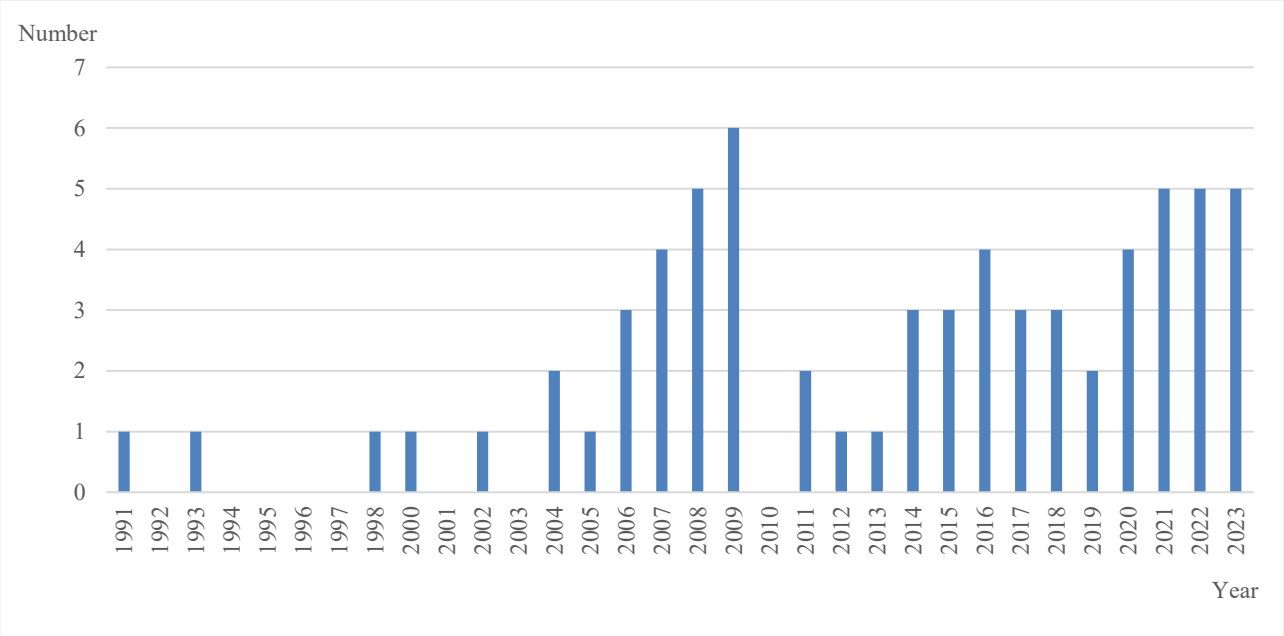

Figure 1. Number of Articles Published in WoS (1991-2023)
Source: Data from WoS Database, Edited by the Author.

4.1. Co-authorship Analysis

Scientific collaboration, which has become a fundamental feature of academic research, plays an important role, especially in solving complex and multidisciplinary problems. Closer and continuous cooperation between researchers who try to find solutions to problems with different perspectives and

methods accelerates scientific development and provides more effective and comprehensive results. The results of bibliometric analysis confirm that collaboration between researchers in different countries and geographies has increased since the 1980s (Aksnes and Sivertsen, 2023).

In the co-authorship analysis, which shows the collaboration between researchers, a network visualization was created with the criteria of at least 1 publication and 0 citations (Figure 2). This threshold is met by all 150 authors. As a result of the analysis, 2 clusters, 11 links and a total link strength of 34 were identified. In the co-authorship analysis, which shows the total strength of a researcher's links with other researchers, Manfred Lenzen ranks first with a total link strength of 10 (676 citations and 2 articles). Erik Dietzenbacher, Dabo Guan, Michael L. Lahr, Bart Los, Ferran Sancho, Ferran Sancho, Sangwon Suh and Cuihong Yang rank second with 7 total link strengths (20 citations and 1 article) and Thomas Wiedmann ranks third with 3 total link strengths (1333 citations and 2 articles). The researchers who wrote the most articles are Manfred Lenzen (2 articles, 676 citations and 10 total link strength) and Thomas Wiedmann (2 articles, 1333 citations and 3 total link strength). In addition, it was determined that 11 authors had no connection with the research topic in the analysis. This can be explained by the fact that researchers have focused more on studies revealing the relationship between international trade and the environment in recent years due to the negative effects of the climate crisis.

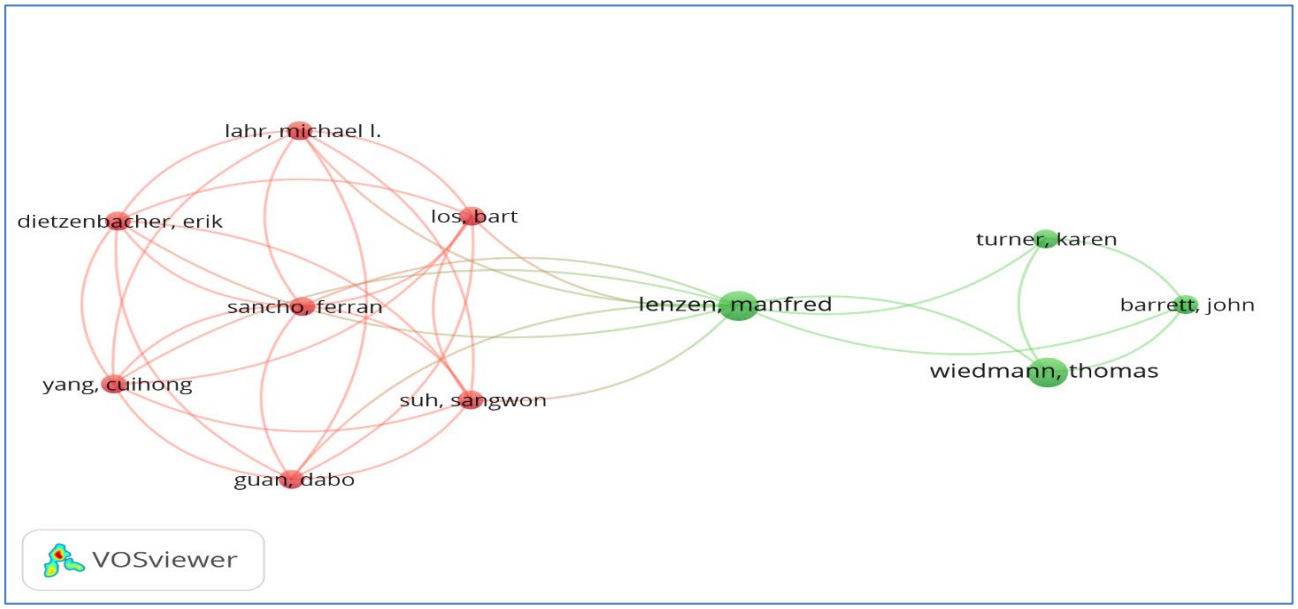

Figure 2. Co-authorship Authors Visualization
Source: VOSviewer Analysis Result.

4.2. Author Citation Analysis

Prestigious journals usually go through a rigorous peer-review process and are considered to have high standards in the scientific world. Publishing in journals with prestigious indexes and receiving high citations has a significant impact on a researcher's academic career.

To visualize the author citation analysis, a criterion of at least 1 publication and 1 citation was set. In the analysis, 143 out of 150 authors met this criterion and 2 clusters and 34 links were created by 11 authors (Figure 3). According to the author citation analysis result, Thomas Wiedmann is the most cited author with 1333 citations (2 articles, 1333 citations and 3 total link strength). Brian R. Copeland and M. Scott Taylor come second with 1318 citations (1 article and 2 total link strengths) and Emily Lancsar and Jordan Louviere come third with 1097 citations (1 article and 0 total link strengths). Thomas Wiedmann and Manfred Lenzen are the authors with the highest number of publications in the field of research, with 2 publications each. However, despite having the highest

number of publications, Manfred Lenzen ranks seventh in the ranking according to the number of citations (676 citations).

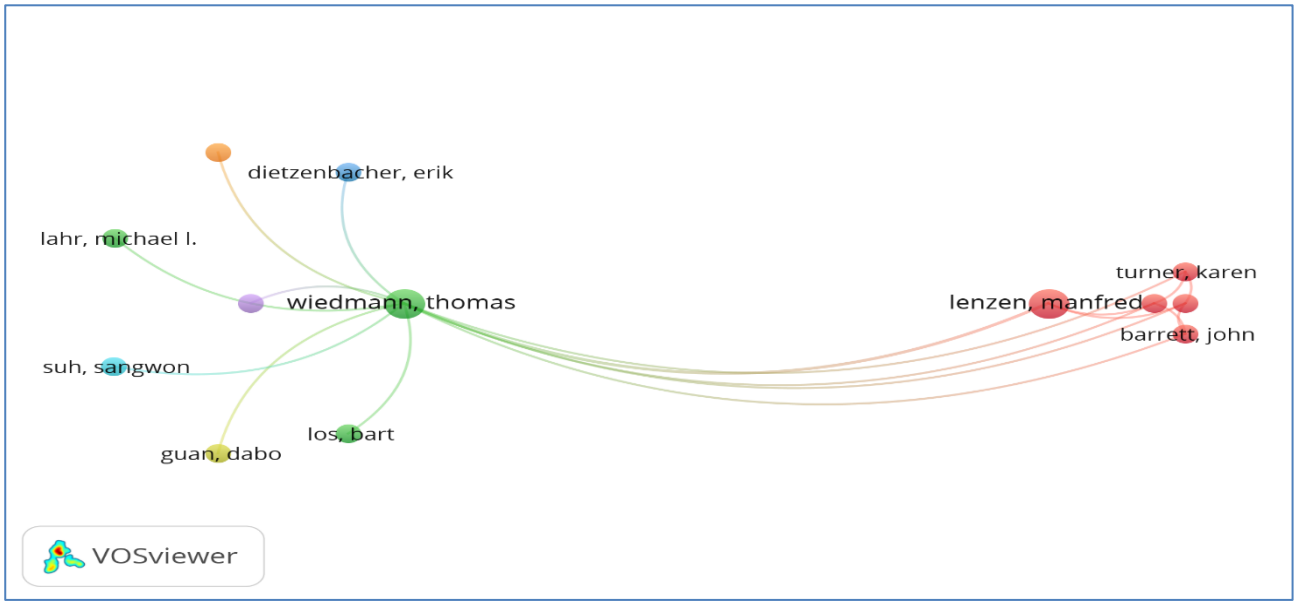

Figure 3. Citation Authors Visualization
Source: VOSviewer Analysis Result.

4.3. Co-Citation Cited Authors Analysis

Being highly cited is an important indicator of a researcher's influence and contributions in the scientific world. Co-citation analysis of cited authors is an important tool for understanding scientific collaboration and interaction between authors (Perianes-Rodriguez et al., 2016; Surwase et al., 2011).

The visualization of the authors' co-citation analysis is presented in Figure 4. In the Vosviewer application, the minimum number of citations recommended for co-citation analysis is 17. 4 Four of 4760 authors meet this threshold. According to the result of the analysis, 3 authors, 1 cluster, and total link strength was determined as 41, while the 17-cited author named Manfred Lenzen was excluded from the cluster by the VOSviewer application because he had a link strength of "0". The most co-cited authors are John Barrett (20), Kym Anderson (19) and Brian R. Copeland (17). These findings indicate that the prominent authors in this field have a strong relationship with each other in terms of their research topics and the fact that these authors are frequently cited together indicates that the intellectual interaction between them is high.

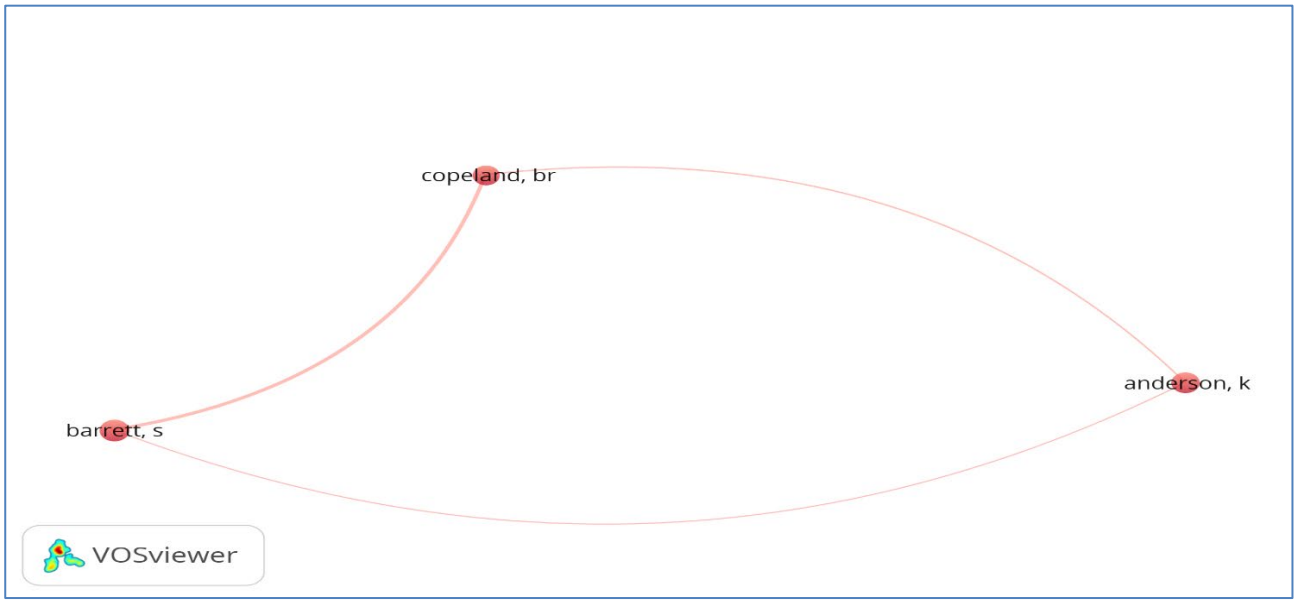

Figure 4. Co-Citation Authors Visualization
Source: VOSviewer Analysis Result.

4.4. Citation Country Analysis

It is a well-known fact that research, development, and innovation play a central role in the economic development of countries. Therefore, countries contribute to the advancement of science through scientific research, both in terms of quantity and productivity (Rodríguez-Navarro, and Brito, 2022: 2872). The country that ranks first numerically in scientific publications is the USA (TÜBİTAK, 2025).

For the country attribution analysis, at least 1 country and 1 attribution criterion were preferred. In the analysis, 32 out of 34 countries meet this threshold and 10 countries and 4 clusters, 15 links and 21 total link strengths are obtained. When the most cited country is evaluated, the UK ranks first with 11 articles and 2881 citations; Australia ranks second with 7 articles and 2584 citations; and the USA ranks third with 26 articles and 2356 citations (Figure 5). In terms of the number of articles, the USA ranks first with 26 articles, the UK ranks second with 11 articles and Australia ranks third with 7 articles. The US has shown its success in the ranking of the number of scientific publications in studies related to international trade and the environment.

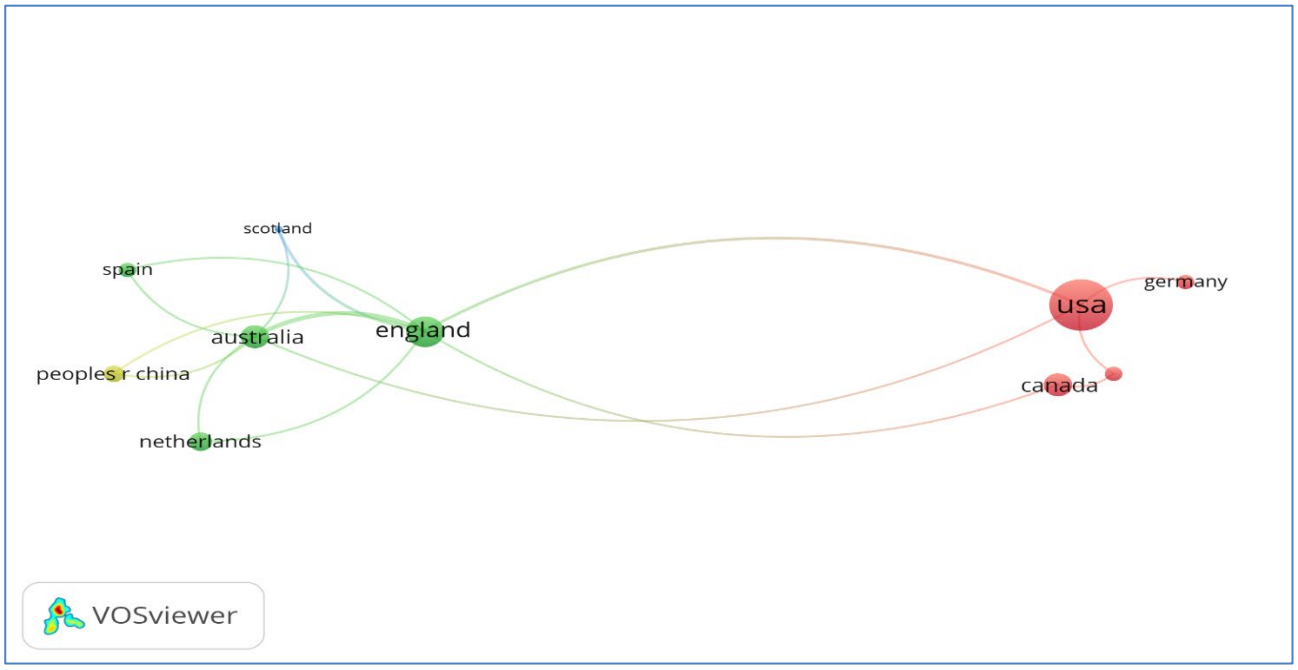

Figure 5. Citation Country Visualization
Source: VOSviewer Analysis Result.

4.5. Citation Source Analysis

For the source citation analysis, which reveals the importance of a scientific source in the field, threshold values of at least 1 publication and 1 citation were selected, and 47 sources were analyzed. As a result of the analysis, 44 clusters and 2 linkage strengths were obtained. The journals with the highest number of publications related to the study topic, international trade and environment are Ecological Economics (with 7 publications), World Trade Review (with 4 publications) and Food Policy (with 3 publications), and World Development (with 2 publications) (Figure 6). When the most cited journals are evaluated, Ecological Economics ranks first with 1566 citations (7 publications), Journal of Economic Literature ranks second with 1097 citations (1 publication), Pharmacoeconomics ranks third with 1097 citations (1 publication) and World Development ranks fourth with 1072 citations (2 publications). The journals with the highest number of publications related to international trade and environment are Ecological Economics (with 7 publications), World Trade Review (with 4 publications) and Food Policy (with 3 publications) and World Development (with 2 publications).

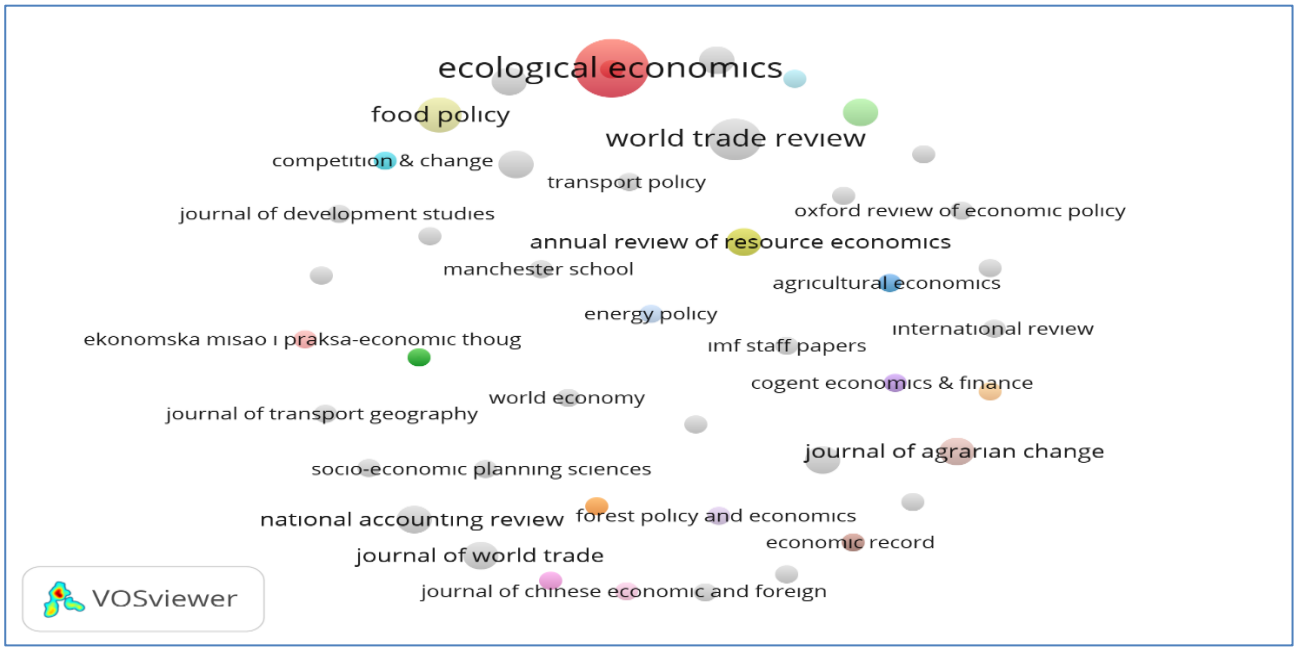

Figure 6. Citation Source Visualization
Source: VOSviewer Analysis Result.

4.6. Bibliographic Coupling of Authors

Bibliographic coupling are two concepts used to describe the reciprocal relationships in a citation network. Author matching analysis is an important technique often used in academic research and literature reviews. This technique is used to analyze the extent to which authors in a particular research field collaborate with each other, which authors are prominent, and which authors are key figures on a particular topic (McCain, 1990: 433). Connectivity between authors is determined by the number of citations to the same works. The more two authors cite the same publication, the stronger the bibliographic match between the publications (Van Eck and Waltman, 2014).

The bibliographic match analysis visualization of the authors is presented in Figure 6.

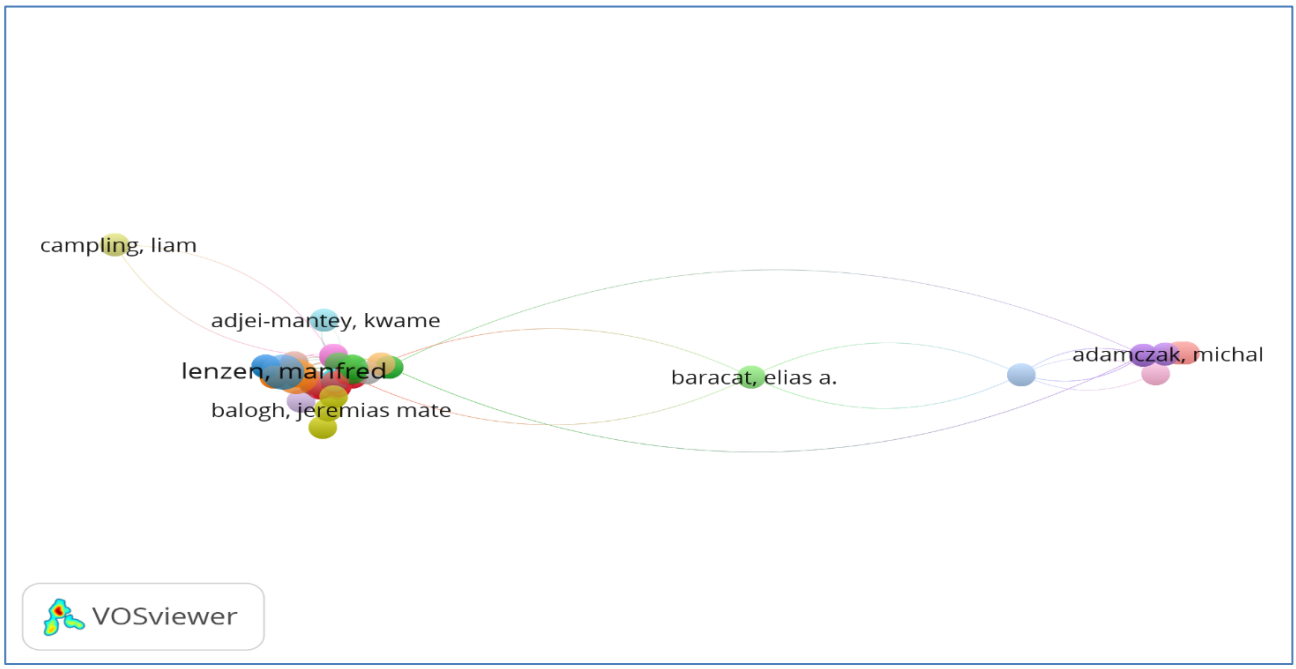

Figure 7. Bibliographic Coupling of Authors Visualization
Source: VOSviewer Analysis Result.

For the analysis, 150 authors who met the thresholds of at least 1 publication and 0 citations were identified. As a result of the analysis, 19 clusters, 594 links and 14950 total link strength were obtained from 112 authors. Manfred Lenzen ranked first with 1300 total link strength (2 publications and 676 citations). Then Heider Al Mashalah, Elkafi Hassini, Angappa Gunasekaran, Deepa (Mishra) Bhatt ranked second with 928 total link strength (1 publication and 52 citations) and Erik Dietzenbacher, Manfred Lenzen, Bart Los, Dabo Guan, Michael L L Lahr, Ferran Sancho, Sangwon Suh, Cuihong Yang ranked third with 902 total link strength (1 publication and 20 citations).

4.7. Analysis of Co-Occurring Keywords

Keywords, which are important markers that provide insight into the main content of a study, are used to indicate key points about the research topic (Lulu et al., 2023). The analysis of keywords, which usually consist of 3 to 5 (sometimes more) words in a study, contributes to the identification of research topics that are popular both in the past and today (Pesta et al., 2018).

In the study on international trade and environment, 232 keywords were used. The keyword analysis using VOSviewer is visualized in Figure 8. It can be seen from Figure 8 that the three most used keywords in the studies on international trade and environment in the period 1991-2023 are trade, China, and climate change. The presence of China as a keyword in the WoS database may be related to the large number of scientific studies on the environment in China in recent years.

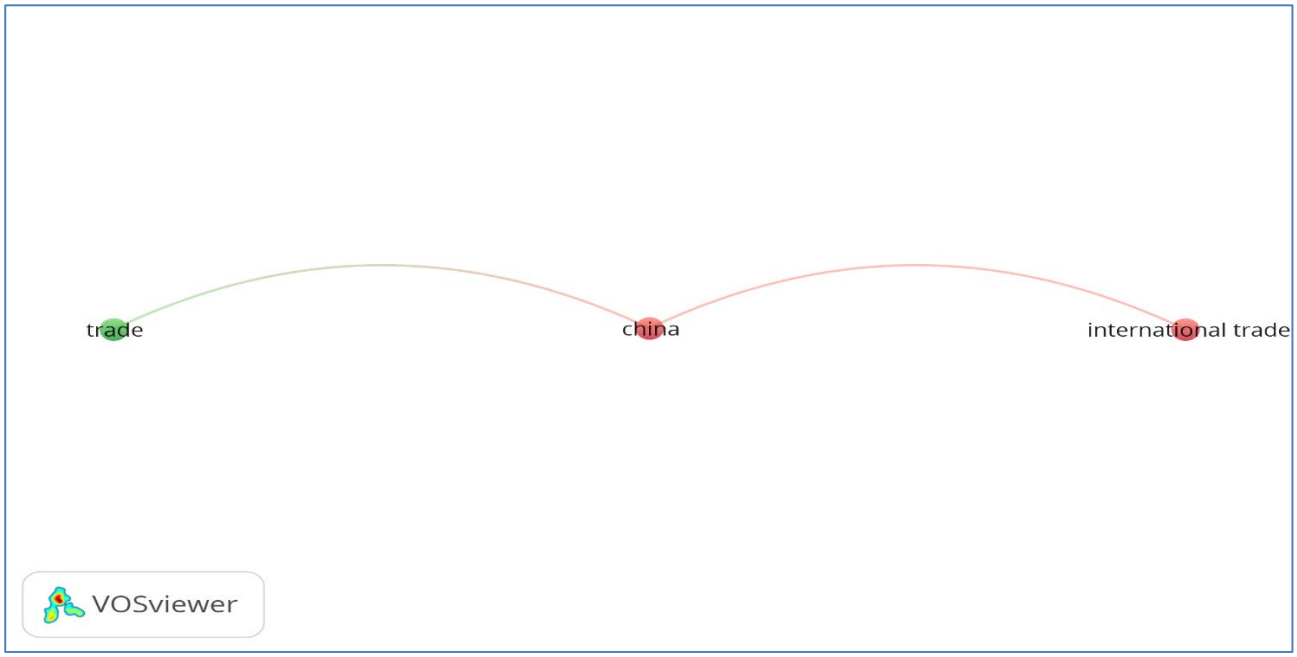

Figure 8. Analysis of Co-Occurring Keywords Visualization
Source: VOSviewer Analysis Result.

The results of the study demonstrate a high degree of similarity to the results of Padhan and Bhat (2023), who used different bibliometric techniques on international trade and environmental issues, on the number of publications (increase), the most cited country (USA), and the most used keyword (China), using the Scopus database covering the years 2000-2021. However, while the most cited author in this study is Thomas Wiedmann, it is M.A. Cole in Padhan and Bhat's (2023) study. While the journal with the highest number of publications in this study is Ecological Economics, Ecological Economics ranks third in Padhan and Bhat's (2023) study.

5. Conclusion

WTO members have long recognized that global environmental challenges need to be addressed in a coherent manner across international institutions. The rationale for this is that environmental issues are not confined by national boundaries. International trade and the environment are directly related to the global economy and are two important areas that influence each other. While international trade refers to the exchange of goods and services between countries, the environment is an important factor that regulates and shapes the effects of this trade.

In this study, a bibliometric analysis was conducted with the data on international trade and the environment in the WoS database for the period 1991-2023. The search terms international; trade OR commerc* AND environ* were selected for the study, and the analysis was conducted with 67 research articles published in English in SCI-Expanded, SSCI, ESCI indexed journals among 10510 research articles in the field of economics. The results show that the number of articles published in the field of international trade and environment has an increasing trend in the period 2006-2009 and especially in the period 2011-2023. The Kyoto Protocol (2005), which clarified the steps to be taken to combat climate change, and the 21st Conference of the Parties to the United Nations (UN) Framework Convention on Climate Change in Paris (2015), where, for the first time, all nations agreed to work together to combat climate change (UN, 2024). Furthermore, Manfred Lenzen has the highest number of co-authors. The most cited authors are Thomas Wiedmann, followed by Brian R. Copeland and M. Scott Taylor in second place. The third most cited authors are Emily Lancsar and Jordan Louviere. The top three authors with the highest number of co-citations are John Barrett, Kym Anderson and Brian R. Copeland. The three most used keywords are trade, China and climate. The author with the highest link strength is Manfred Lenzen and the top three countries with the highest number of co-citations are the USA, the UK and Australia. The top three journals with the highest number of publications related to the researched area are Ecological Economics, World Trade Review and Food Policy, respectively.

This study provides quantitative measures and indicators of research performance in the fields of international trade and environment. In conclusion, the findings of the study provide important information for academics and policy makers to understand the current situation and to determine future strategies correctly. Academics can use the findings of the analyses to collaborate, expand their networks and interact more. Policy makers, on the other hand, can learn about the areas of research focus and issues of critical importance for societies. Policy makers can then use the findings of these analyses to identify areas of research that need to be prioritised. Through bibliometric analyses of international trade and environment, academics and policy makers can gain more in-depth knowledge. Thus, both groups can make more informed, strategic and effective decisions. In addition, the findings of the analyses can increase the interaction between academics and policy makers, and can lead to a more harmonious and efficient development of scientific research and social policies.

The limitations of this study are that only English articles in the WoS database were preferred, and indexed journals such as SCI-Expanded, SSCI and ESCI were selected. Google Scholar and Scopus databases can be included in future studies. In addition, it may be possible to evaluate different global perspectives by including publications in languages other than English in the analysis. In terms of diversifying the types of publications, the scientific scope of the research can be expanded by including other scientific academic studies such as books, book chapters and conference proceedings indexed outside SCI-Expanded, SSCI and ESCI.

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