

Green Accounting Research in Sustainable Development Goals: VOSviewer Analysis

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Abstract

Today businesses are increasingly prioritizing environmentally friendly production in line with sustainability goals, bringing the concept of 'Green Accounting' to prominence. The aim of this study is to examine green accounting studies published in the Web of Science database which include sustainable development goals to reveal the current trend and guide researchers by identifying deficiencies. Within the scope of the study a total of 27.406 publications were reached in the Web of Science database between 1985-2024 on 28.08.2024 regarding the concept of green accounting. Out of these, 189 publications focused on green accounting studies related to sustainable development goals. It was observed that the most of the publications were written in 2021 with 22. The 3rd target related to "healthy individuals" was the most common topic (with 85 publications). According to the VOSviewer analysis result; Hodder, Rebecca K, O'brien, Kate M, Tzelepis, Flora, Wolfenden, Luke and Wyse, Rebecca J are in the first place among the authors with the most of the publications and citations. It was seen that they have 5 publications and 146 citations. Türkiye is in the 16th place with 4 publications and 302 citations in published studies. Green accounting is important for the future of the world and research on the subject should be increased.

Keywords: Accounting, Sustainable Development, Green Accounting, Web of Science, VOSviewer

Sürdürülebilir Kalkınma Hedeflerinde Yeşil Muhasebe Araştırmaları: VOSviewer Analizi

Özet

Günümüzde işletmeler sürdürülebilirlik hedefleri kapsamında çevre dostu üretime yoğunlaşmış olup, "Yeşil Muhasebe" kavramı ön plana çıkmıştır. Bu çalışmanın amacı, Web of Science veri tabanında yayınlanan sürdürülebilir kalkınma hedeflerini içeren yeşil muhasebe çalışmalarının incelenmesi, güncel eğilimin ortaya çıkarılması, eksikliklerin belirlenerek araştırmacılara yol göstermeyi amaçlamaktadır. Çalışma kapsamında 28.08.2024 tarihinde 1985-2024 yılları arasında Web of Science veri tabanında yeşil muhasebe kavramı ile ilgili toplam 27.406 yayına ulaşılmıştır. Bu yayınlardan 189 tanesinin sürdürülebilir kalkınma hedeflerini içeren yeşil muhasebe çalışmaları olduğu belirlenmiştir. Çalışma dâhilinde en fazla yayının 22 tane ile 2021 yılında yazıldığı ve "sağlıklı bireylerle" ilgili 3. hedefi içeren yayınlar olduğu (85 yayın ile) görülmüştür. VOSviewer analizi sonucuna göre, en çok yayın ve atıf alan yazarlar arasında Hodder, Rebecca K, O'brien, Kate M, Tzelepis, Flora, Wolfenden, Luke ve Wyse, Rebecca J ilk sıradadır. Bunların 5 yayını ve 146 atıfı olduğu görülmüştür. Türkiye ise; yayınlanan çalışmalarda 4 yayın, 302 atıf ile ilk 16. sıradadır. Yeşil muhasebe dünyanın geleceği için önemlidir ve konu ile ilgili araştırmalar artırılmalıdır.

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1. INTRODUCTION

Amid global challenges such as natural disasters, pandemics, global warming, resource depletion, and environmental pollution, businesses have started recognizing nature as a key stakeholder within their social responsibility framework. As societal awareness and environmental sensitivity have grown, businesses have been compelled to adapt by adopting environmentally friendly practices and products. Businesses have had to bear some additional costs in order to protect nature. With a growing population and limited natural resources, environmental protection has emerged as a critical topic of discussion in societies (Rounaghi, 2019: 507). Businesses that demonstrate sensitivity to these environmental problems have implemented various practices in to protect the environment by making various arrangements in their processes.

These include initiatives to protect nature, optimize energy production and consumption, reduce carbon dioxide emissions, and address soil, water, and air pollution. Additional cost practices related to these issues are based on the need for businesses to internalize environmental costs (Yelgen, 2022: 100). Environmental or green accounting is a type of accounting that attempts to integrate environmental costs along with the normal production costs of businesses into the financial results of their activities. With green accounting practices, data can be obtained on the extent to which a business contributes positively or negatively to the quality of human life and the environment (Endiana et al., 2020: 732; Gök and Çarıkçı, 2022: 386).

Although sustainable development was initially viewed as a solution to environmental challenges, it has come to be understood as a more extensive concept. In this context, a working group was established in 2013 to achieve the Millennium Development Goals, which were accepted at the United Nations summit in New York in 2000, and 17 sustainable development goals were adopted under the main headings of “Ending Extreme Poverty”, “Fighting Inequality and Injustice” and “Addressing Climate Change”. These goals were planned to be worked on from 2015 to 2030. The “Changing Our World: 2030 Agenda for Sustainable Development” has been endorsed by 193 countries. These goals are; 1) End Poverty, 2) Zero Hunger, 3) Health and Quality Life, 4) Quality Education, 5) Gender Equality, 6) Clean Water and Sanitation, 7) Accessibility and Clean Energy, 8) Decent Work and Economic Growth, 9) Industry, Innovation and Infrastructure, 10) Reducing Inequalities, 11) Sustainable Cities and Communities, 12) Responsible Production and Consumption, 13) Climate Action, 14) Life Below Water, 15) Life on Land, 16) Peace, Justice and Strong Institutions and 17) Partnerships for Goals (Örerel and Kağncı, 2024: 1174). As environmental awareness has increased, inspections are becoming more frequent in order to reduce the negative impacts on the environment (İçöz and Kılınç, 2016: 1525). Various sanctions are applied to businesses that fail to comply with these regulations in line with the laws and regulations and penalties are made more severe (Zrnić et al., 2020: 49).

The number of academic studies on every branch of science is increasing day by day (Arslan, 2022: 34). Bibliometric analyses are frequently used in the research of information belonging to a certain field. Pritchard (1969) first introduced the concept of bibliometrics to the literature. Bibliometrics involves the analysis of scientific research output, such as journals, books, conferences, symposiums, and theses, using mathematical and statistical methods (Chen et al., 2022: 2). While these analyses determine the current trends in any branch of science, they also instill ideas for the future in researchers and practitioners (Chen et al., 2014: 2; Yu et al., 2020: 2). Numerous bibliometric studies are conducted today, employing a variety of methods. One of these methods is VOSviewer bibliometric analysis (Erdal, 2024: 332) which is the most widely used method in books, articles, reports, scientific outputs, processes and works (Cronin 2000; Pritchard, 1969: 348-349). VOSviewer is a method for the purpose of creating common networks from concepts such as publications, journals, researchers, research organisations, countries, keywords, etc. (Tang et al., 2023: 2).

This study covers publications related to environmental accounting in the Web of Science database. The focus of the examination is green accounting, environmental accounting, sustainable accounting and environmental accounting publications. A total of 189 publications containing sustainable development goals were examined.

Research questions were prepared and analyzed with the VOSviewer method. VOSviewer analysis enables the identification of trends and distribution according to countries, authors, publication years, subjects, languages, etc. It is the analysis of relationships between authors, publications and even the countries where the publications appear, through the citations made by the authors. The aim of this study is to identify green accounting publications that align with the sustainable development goals and provide guidance for researchers and practitioners in line with these findings.

2. CONCEPTUAL FRAMEWORK AND LITERATURE

In today's business world, the widespread use of green accounting practices along with green innovations helps to protect natural resources by minimizing environmental damage and promoting sustainability.

Green accounting has gained significant attention globally, driven by rising ecological awareness and sustainability efforts. Various countries such as the European Union, the United States, Japan and Taiwan have been repeatedly promoting environmental protection laws related to green accounting and continuing protection activities in order to improve the environment in the production of products by businesses (Tu and Huang, 2015: 6264).

In recent years, green accounting practices have become a critical tool for businesses to measure and manage ecological impacts in economic activities in order to lead to a more sustainable future and to increase environmental concerns of businesses. In the face of these developments, the increasing importance of green accounting has attracted great interest from both businesses and researchers interested in the subject (Taşar, 2023: 637).

The concept of green accounting was first named in the literature by economist Peterwood in the 1980s (Kiranmai and Swetha, 2018: 7). Green accounting; it can be defined as a subtype of accounting that tries to integrate the results of companies' environmental activities with their production costs. In this way, the costs that businesses may incur on resource use and the environment if green accounting practices are implemented in businesses can be determined (Yelgen, 2022: 100).

Green accounting plays a vital role in the current sustainability goals of businesses. In order for businesses to be successful in implementing green accounting policies and their impact on the environment, they require employees to have an institutional commitment (Lee et al., 2018: 268).

While economists like Malthus and Jevons attempted to address sustainability concerns, the concept of 'sustainable development' emerged in the 20th century (Yeni, 2014: 183). Sustainability conceptually means continuing and sustaining. In other words, sustainability represents a framework that connects the present with the future, ensuring that progress continues without compromising the well-being of future generations. Development can be defined as the process of raising income levels, promoting equitable income distribution, improving living conditions, and safeguarding resources while reflecting economic growth to individuals (Yılmaz and Yücel, 2022: 693-694). Sustainable development can be expressed as the provision of all kinds of sustainability in the environmental, economic and social areas which are three different basic building blocks in society (Akgül, 2010).

The orientation of sustainability in businesses constitutes the long-term value creation efforts of the business by taking into account the social, environmental and economic impacts of the business's commercial activities. To achieve organizational development objectives, businesses must implement effective environmental management strategies. Business activities which are an integral part of natural resources, must pay attention to the state of the environment in order not to harm the environment (Pramono et al., 2023: 348).

Challenges such as environmental pollution, global warming and environmental disinformation place significant responsibilities for businesses, governments and societies. In order to overcome these difficulties, the implementation of green accounting in businesses can be one of the solution methods applied by the business in overcoming sustainability problems (Ratmono et al., 2024: 46).

When the relevant literature studies are examined; In the joint study conducted by Dwianika et al. (2024), a bibliometric analysis study of green accounting was conducted. In the study, publications published between 1992-

2023 in the field of green accounting were examined in terms of various subject types such as subject types, publication types and international dissemination. As a result of the study, it was determined that the dominant article type was interdisciplinary green economy-related publications focusing on economic and ecological aspects (Dwianika et al., 2024: 349).

In the study conducted by Fernando et al. (2024), the effect of green accounting disclosures on firm value in mining and agricultural companies in Southeast Asia was investigated. As a result of the study, it was determined that the effect of green accounting disclosures on the firm value of mining and agricultural companies was insignificant (Fernando et al., 2024: 377).

In the study conducted by Dewi et al. (2024), the impact of green accounting and integrated reporting on financial performance and market performance of companies operating in the basic materials and energy sectors in the Indonesian stock exchange was examined within the framework of sustainable development goals. 74 companies were selected for the study between 2020-2022. As a result of the regression test analysis, it was determined that green accounting could be a strategic policy for basic materials and energy companies and that if companies integrated environmental sustainability issues into their accounting practices, they could improve their financial performance and contribute to the achievement of sustainable development goals (Dewi and Anggara, 2024:1). In the study conducted jointly by Bala et al. (2024), the impact of the board structure of companies on the link between green taxation, green innovation and accounting practices was investigated. 792 companies were considered in the study from 2014 to 2021. The data was created through auxiliary data obtained from the annual reports of the World Bank, OECD and Nigerian companies. As a result of the study, they found that businesses avoid paying environmental taxes or hide their green practices (Bala et al., 2024:1-2).

In the study conducted by Sukmadilaga et al. (2023), they investigated whether green accounting affects firm values on 15 businesses that won the Asian Sustainability Reporting Award 2021 in ASEAN countries. As a result of the study, they found that green accounting reporting does not have a significant effect on firm value in terms of energy consumption of businesses (Sukmadilaga et al., 2023: 509).

In his study, Taşar (2023) examined the postgraduate theses published in Turkey between 2014-2023 on the concept of green accounting using the bibliometric analysis method. As a result of the study, it was determined that the majority of theses on the subject were written in 2019, the subject was addressed more frequently by female researchers, and the majority of theses written in the examined time period were written with quantitative methods (Taşar, 2023: 637).

In the study conducted by Pramono et al. (2023), the effect of the integration of green accounting factors and control systems on the sustainability orientation of the enterprise was examined. In the study consisting of 512 participants, data were collected and analyzed with SmartPLS software. As a result of the study, it was concluded that green accounting and control system integration variables have a significant effect on the sectoral green economy and sustainability orientation (Pramono et al., 2023: 348).

In the study conducted by Buric et al. (2022), data were collected by applying a survey method to the employees and owners of Montenegrin tourism companies and the study was carried out with the decision tree model method. In the decision tree model method, it was determined that socio-demographic factors have a significant impact on understanding the importance of green accounting in the tourism sector of Montenegro and that most tourism companies attach importance to corporate social responsibilities when forming their business strategies and policies (Buric et al., 2022: 1).

In the joint study of Riyadh et al. (2020), the effect of green accounting on the financial performance of enterprises was examined. As a result of the study, a negative relationship was determined between autonomous green accounting costs and the financial performance of enterprises (Riyadh et al., 2020: 421).

In his study, Al-Dhaimesh (2020) tried to reveal the reality of green accounting practices and their effects on the economic added value of Qatari companies. The study sample was examined through content analysis of

sustainability reports and materials related to the subject of green accounting published between 2014-2019. As a result of the study, it was determined that the quality of green accounting practices in Qatari companies was weak; However, it was found that green accounting had a significant effect on the economic added value of listed Qatari companies (Al-Dhaimesh, 2020: 164).

In the joint studies of Agustia et al. (2019), the effect of environmental management accounting and green innovation on firm value was investigated. As a result of the study, it was determined that environmental management accounting affected firm value and green innovation had a significant effect on firm value (Agustia et al., 2019: 299).

In the study conducted by Yılmaz and Şahin (2017), the awareness levels of accounting students regarding green accounting were tried to be measured. As a result of the study, it was determined that students with work experience had higher awareness levels regarding green accounting than students without (Yılmaz and Şahin, 2017: 110).

In the study by Bezirci et al. (2011), the opinions of accounting professionals regarding green accounting practices in their activities were examined. As a result of the study, it was argued that the knowledge of accounting professionals regarding green accounting was insufficient and that training on this subject should be increased (Bezirci et al., 2011: 62).

3. METHODOLOGY

3.1. Subject and Purpose of the Research

This study analyzes publications on green accounting indexed in the Web of Science database using VOSviewer. 189 publications covering sustainable development goals were examined. The purpose of this study is to achieve sustainable development goals so that future generations can live a comfortable life. In order to achieve this, research should be increased and this study is planned to be implemented. It reveals the current trend and guides future studies.

3.2. Universe and Sample of the Research

It covers publications on environmental accounting in the Web of Science database on 28.08.2024. Green accounting, environmental accounting, sustainable accounting and environmental accounting publications were examined. A total of 27.406 publications were reached between 1985-2024. Of these, 189 publications containing sustainable development goals were examined. The research questions were formulated and analyzed using the VOSviewer method. The VOSviewer analysis was analyzed through the distribution and trends shown by countries, authors, publication years, subjects, languages, etc., the relations between the countries where the publications appeared, and the citations made by the authors. The analysis results were shown with tables, graphics and visual mapping.

3.3. Research Model

As a result of the literature research and Web of science scanning, the research model in Figure 1 was created.

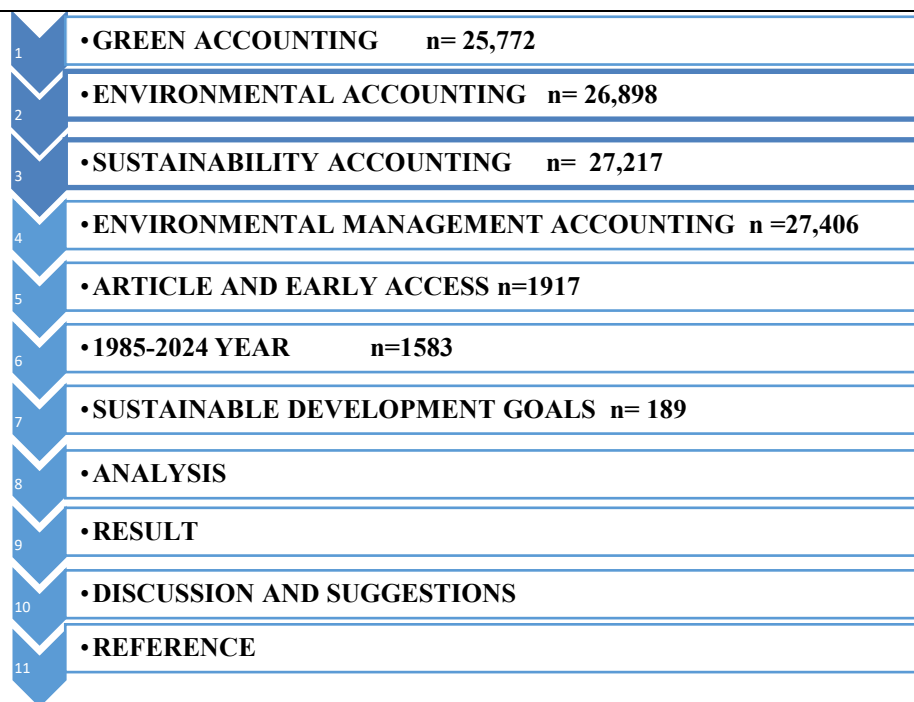


Figure 1. Research Model

3.4. Research Questions

In the research, the following questions were created to bibliometrically examine the research on green accounting in sustainable development.

Question 1. In which years were publications about green accounting in realizing sustainable development goals in the Web of Science database?

Question 2. What goals do the green accounting publications on the Web of Science contain, including sustainable development goals?

Question 3. What is the writing language of publications on about green accounting in realizing sustainable development goals in the Web of Science database?

Question 4. What is the index of publications related on about green accounting in realizing sustainable development goals in the Web of Science database?

Question 5. Which databases are included in the green accounting publications containing sustainable development goals in the Web of Science?

Question 6. What is the co –occurrence – keywords related to green accounting in achieving sustainable development goals?

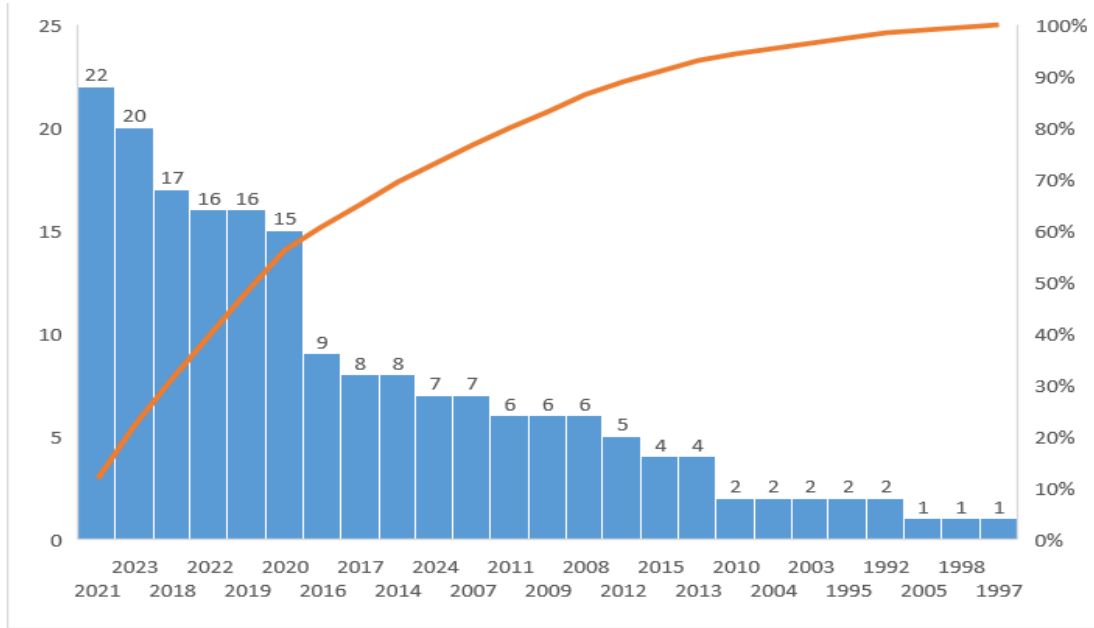
Question 7. What is the co –authorship - authors related to role of green accounting in achieving sustainable development goals?

Question 8. What is the co –authorship - organization related to role of green accounting in achieving sustainable development goals?

Question 9. What is the co – authorships - country related to role of green accounting in achieving sustainable development goals?

4. RESULTS

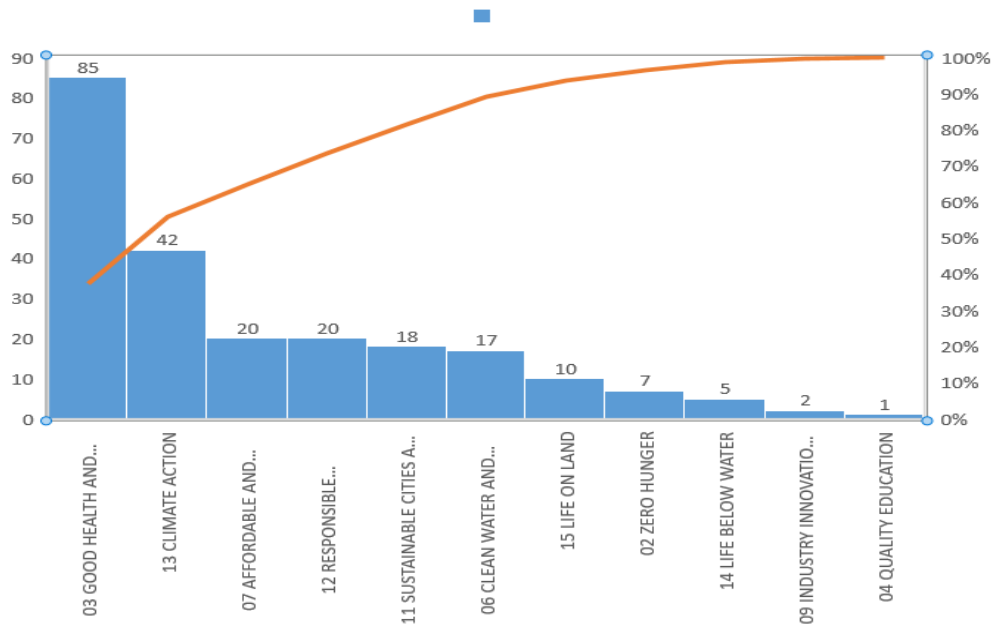
Question 1. In which years were publications about green accounting in realizing sustainable development goals in the Web of Science database?



Graph 1. Distribution of Publications by Year

Graph 1 shows the distribution of publications by year. The highest number of publications, 22, was recorded in 2021. This was followed by 20 publications in 2023. There were 17 publications in 2018. As can be seen here, there has been an increase in publications containing sustainability goals in recent years.

Question 2. What goals do the green accounting publications on the Web of Science contain, including sustainable development goals?



Graph 2. Distribution of Publications on Green Accounting Including Sustainable Development Goals

Graph 2 shows which sustainable goals are and the number of publications. The highest number of publications is related to the 3rd goal, healthy individuals, and there are 85 publications. This is followed by climate action with 45 publications. The 7th goal, accessible clean energy, and the 12th goal, responsible production and consumption, are followed by 20 publications. There are 18 publications on the 11th goal, sustainable cities and living spaces. There are 17 publications on the 6th goal, clean water and sanitation. There are 10 publications on the 15th goal, life on land. There are 7 publications on the 2nd goal, end hunger. There are 5 publications on the 14th goal, life under water. There are 2 publications on the 9th goal, industrial and innovative infrastructure. There is 1 publication on the 4th goal, quality education. There are no publications on goal no poverty, goal 5 gender inequality, goal 8 decent work and economic growth, goal 10 reducing inequalities, goal 16 peace, justice and strong institutions and goal 17 partnerships for the goals.

Question 3. What is the writing language of publications on about green accounting in realizing sustainable development goals in the Web of Science database?

Table 1. Writing Language of Publications (Web of Science, 2024)

Language	Frekans	%
English	188	99,5
Portuguese	1	0,5

As seen in Table 1, all but 1 publication were written in English 226 (99.6%).

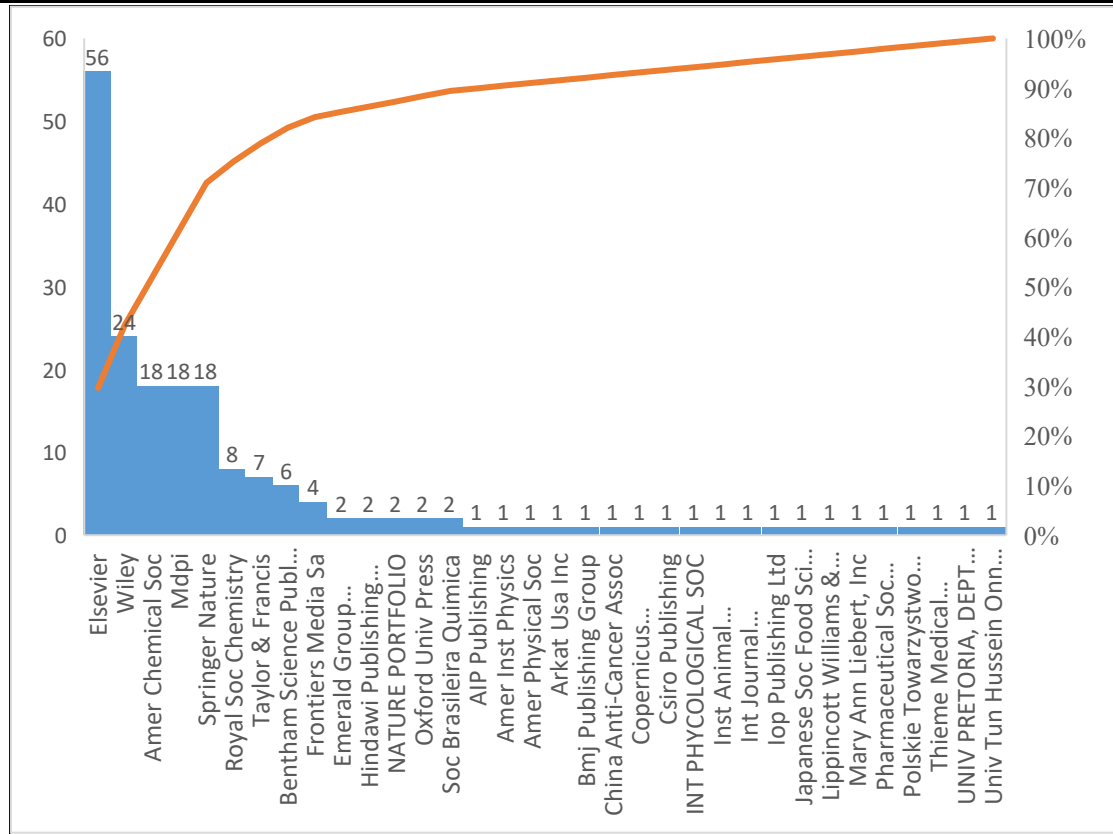
Question 4. What is the index of publications related on about green accounting in realizing sustainable development goals in the Web of Science database?

Table 2. Indexes in Which The Publications Were Scanned (Web of Science, 2024)

Index	Frekans	%
Sciences Citation Index Expanded (SCI-EX...)	177	85
Social Science Citation Index (SSCI)	24	11,3
Emerging Sources Citation Index (ESCI)	7	3,2
Book Citation Index-Science (BKCI-S)	1	0,5

Table 2 shows the indexes in which the publications were scanned. The highest number is Sciences Citation Index Expanded (SCI-EX...) 177 (85%). This is followed by Social Science Citation Index (SSCI) 24 (11.3%). Emerging Sources Citation Index (ESCI) 7 (3.2%) and Book Citation Index-Science (BKCI-S) 1 (0.5%).

Question 5. Which databases are included in the green accounting publications containing sustainable development goals in the Web of Science?



Graph 3. Database Distribution of Publications

Graph 3 shows the database distribution of publications. Elsevier has the most publications with 56. Wiley follows with 24.

Question 6 What is the Co –occurrence – keywords related to green accounting in achieving sustainable development goals?

Co-occurrence – When we look at the Keywords, assuming that the minimum number of occurrences of a keyword is 1704 keywords were selected. For each of the 704 keywords, the total strength of co-occurrence links with other keywords will be calculated. Keywords with a total link strength of 704 will be selected.

Table 3. Total Link Strength of Keywords Occurrences

Keywords	Occurrences	Total Link Strenght
Childs, Preschool	4	40
House Calls	4	40
Humans	4	40
Randomized Controlled Trials As Topic	4	40
Reward	4	40
Infant	4	40
Conditioning (Psycjology)	3	30
Eating	3	30
Freeding Behavior	3	30
Fruit	3	30

Table 3 shows the first 10 keywords with co-occurrences out of 707 keywords. The words childs, preschool house calls, humans, randomized controlled trials as topic, reward, infant have 4 occurrences and 40 total link strength. This is followed by conditioning (psychology), eating, freeing behavior, fruit with 3 occurrences and 30 total link strength.



Figure 2. Visual Map of Keywords Occurrences Total Link Strength

Figure 2 shows the visual map of the Total Connection Strength of Keywords Occurrences 110 of the 704 words that are connected to each other are seen.

Question 7 What is the Co –authorship authors related to role of green accounting in achieving sustainable development goals?

Co-authorships - authors 25 documents were reached. The minimum number of publications of an author was accepted as 1 and the minimum number of citations of an author was accepted as 0. In this context, 872 authors were reached.

Table 4. Co-Authorship - Authors, Document Citation and Link Strength Table

Author	Documents	Citations	Total Link Strength
Hodder, Rebecca K	5	146	49
O'brien, Kate M	5	146	49
Tzelepis, Flora	5	146	49
Wolfenden, Luke	5	146	49
Wyse, Rebecca J	5	146	49
Bartlem Kate M	4	101	45
James, Erica I	4	101	45
Stacey Fiona G	4	101	45
Sutherland, Rachel	4	101	45
Clinton-mcharg, Tara	3	92	36

Table 4 shows the first 10 of the 872 Co-authorships - Authors citations and links. The first row includes 5 documents, 146 citations and 49 links to Hodder, Rebecca K, O'brien, Kate M, Tzelepis, Flora, Wolfenden, Luke and Wyse, Rebecca J. These are followed by Bartlem Kate M, James, Erica I, Stacey Fiona G and Sutherland, Rachel with 4 documents, 101 citations and 45 links.

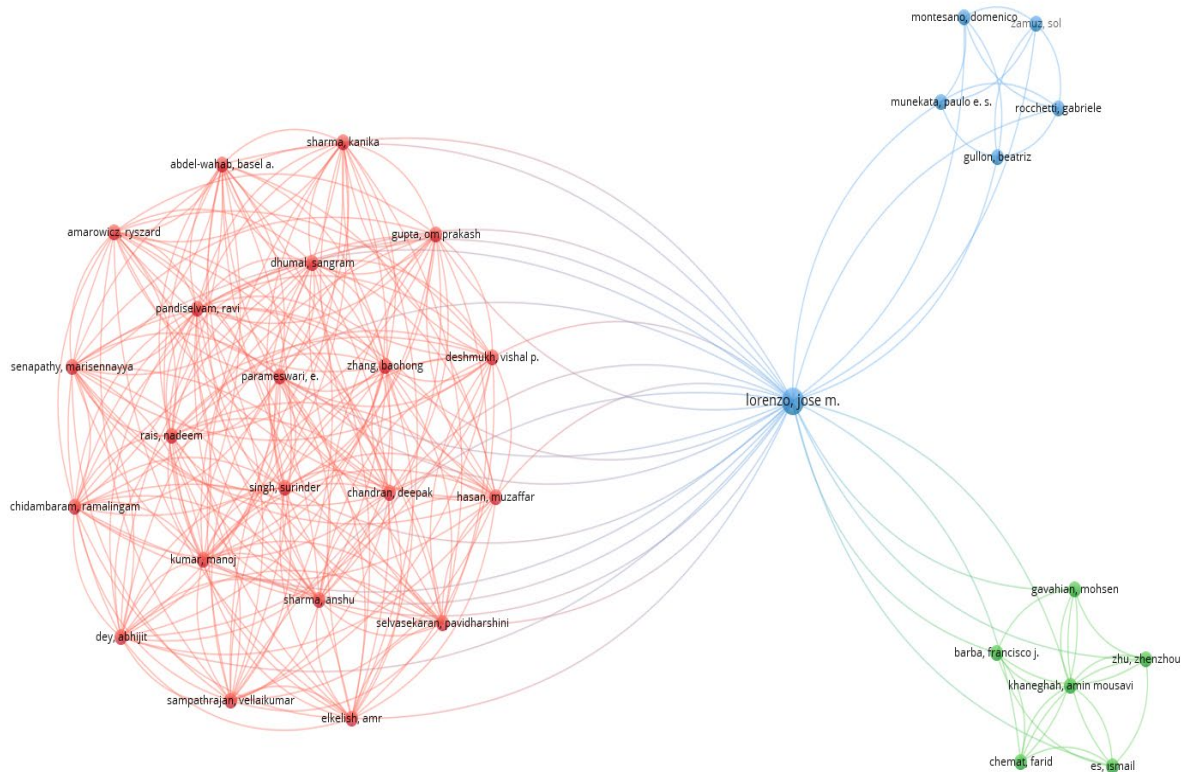


Figure 3. Co-authorships - Authors Documents, Citations and Connections Visual Map

Figure 3 shows the Co-authorships - Authors documents, citations and connections visual map. The number of documents, citations and connections of 872 authors in the network was found to be 33.

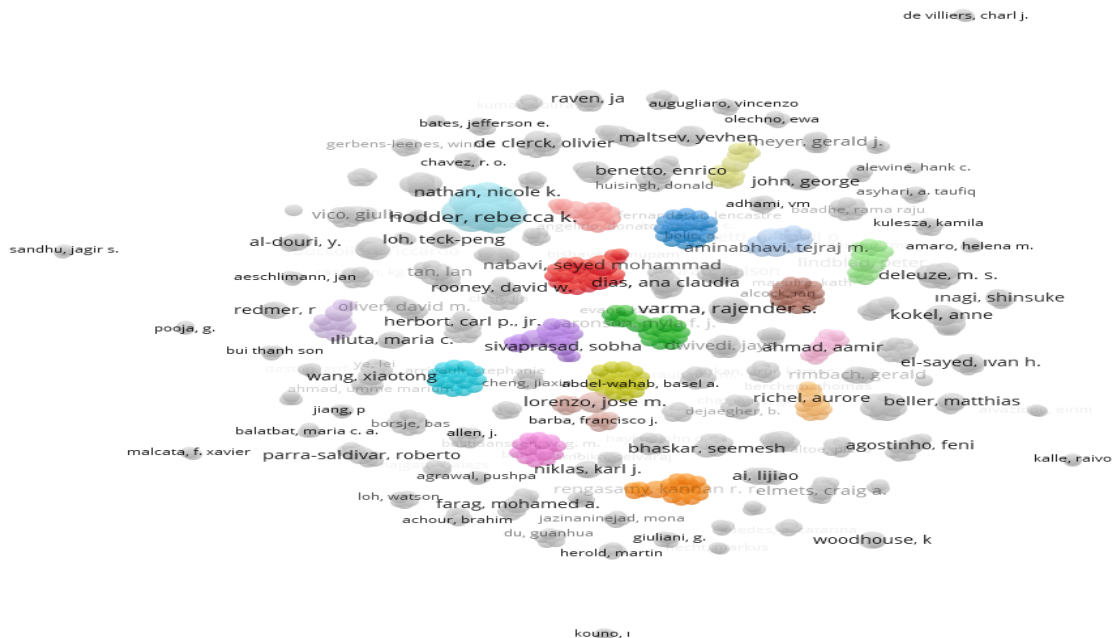


Figure 4. Visual Map of Co-Authorships-Authors Documents, Citations and Links Without Any Connections to Each Other

Figure 4 shows the visual map of co-authorships-Authors documents, citations and links without any connections to each other. 872 elements in the network are not connected to each other.

Question 8. What is the co –authorship organization related to role of green accounting in achieving sustainable development goals?

When we look at the co-authorship - organization connections, 25 documents have been reached. When the minimum publication number of an author is accepted as 1 and the minimum citation number of an organization is accepted as 0, documents, authors and connections from 467 organizations are seen. The total strength of the co-authorship connection with other organizations will be calculated for each of the 467 organizations. The organizations with the highest total connection strength will be selected.

Table 5. Co-Authorships - Organizations, Documentation, Citation and Link Strength

Organizations	Documents	Citations	Total Link Strength
Bagiyatallah Univ Med Sci	3	186	25
Ctr Tecnol Carne Galicia	2	47	23
Univ Pavia	2	157	23
Univ Porto	4	458	23
Univ Twente	3	341	23
Univ Vigo	2	84	23
Vellore Inst Technol	2	50	23
Humboldt Univ	2	133	22
Univ Messina	2	57	21
Abdul Wali Khan Univ	1	42	20

Table 5 shows the top 10 in terms of 467 Co-authorships - organization citations and the strength of their links. Bagiyatallah Univ Med Sci is in the first place with 3 documents, 186 citations and 25 links. Univ Porto follows with 4 documents, 458 citations and 23 links. Univ Twente is in the first place with 3 documents, 341 citations and 23 links.

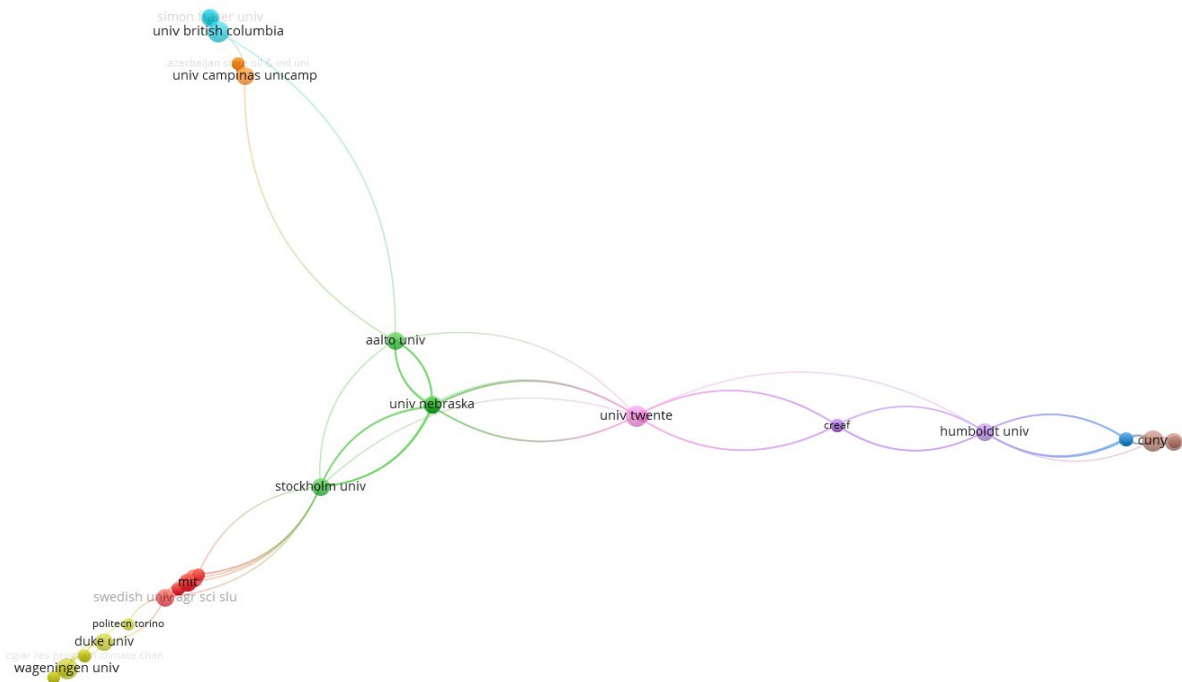


Figure 5. Co-Authorships – Visual Map of Organizations with Document, Citation and Total Link Strength

Figure 5 shows the Co-authorships-Organization document, citation and connection visual map. During the analysis, the minimum number of authors was selected as 1 and the minimum number of citations as 0. It is seen

that some of the 467 elements in your network are connected to each other. In this figure, the number of elements connected to each other was found to be 14.

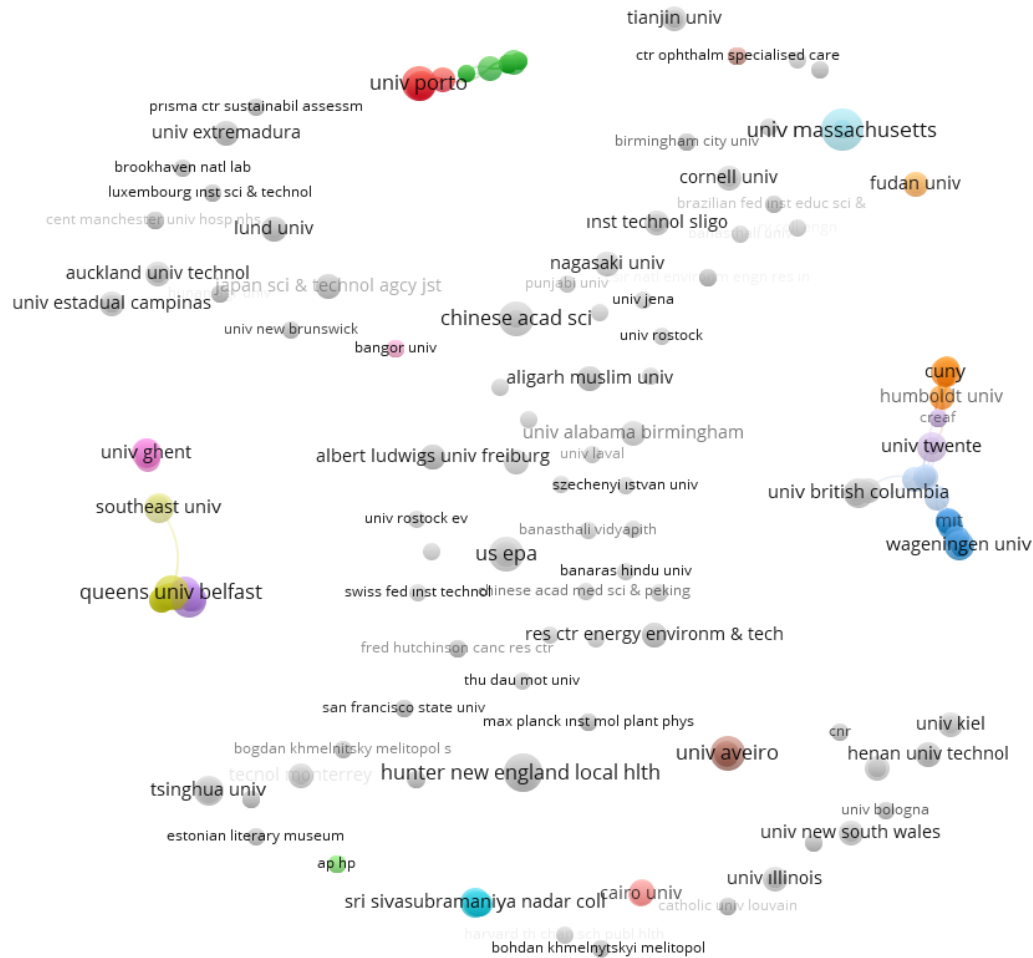


Figure 6. Co-Authorships - Organization Visual Map of Documents, Citations and Links Without Any Linkage

Figure 6 shows the visual map of Co-authorships-Organization without any links to each other. A total of 467 organizations are seen.

Question 9. What is the co – authorships - country related to role of green accounting in achieving sustainable development goals?

Table 6. Co-Authorships – Country, Documentation, Citation and Link Strength

Country	Documents	Citations	Total link strenght
USA	49	9784	82
Italy	21	2755	58
Spain	16	2182	53
Peoples R China	29	1629	50
England	18	1685	47
India	28	1953	40
Netherlands	11	1026	36
Australia	18	1482	33
France	9	633	33
Germany	15	1078	31
Saudia Arabia	9	253	29
Japon	9	643	25
Portugual	9	633	25
Austria	5	358	24
Switzerland	6	429	23
Türkiye	4	302	20
Iran	4	221	20

Table 6 shows the first 17 of the 467 Co-authorships country citations and links. The United States is seen in the first place with 49 documents, 9784 citations and 82 links. These are followed by Univ Porto with 4 documents, 458 citations and 23 links. Univ Twente is there with 3 documents, 341 citations and 23 links. Türkiye is in the first 16 places with 4 documents, 302 citations and 20 links.

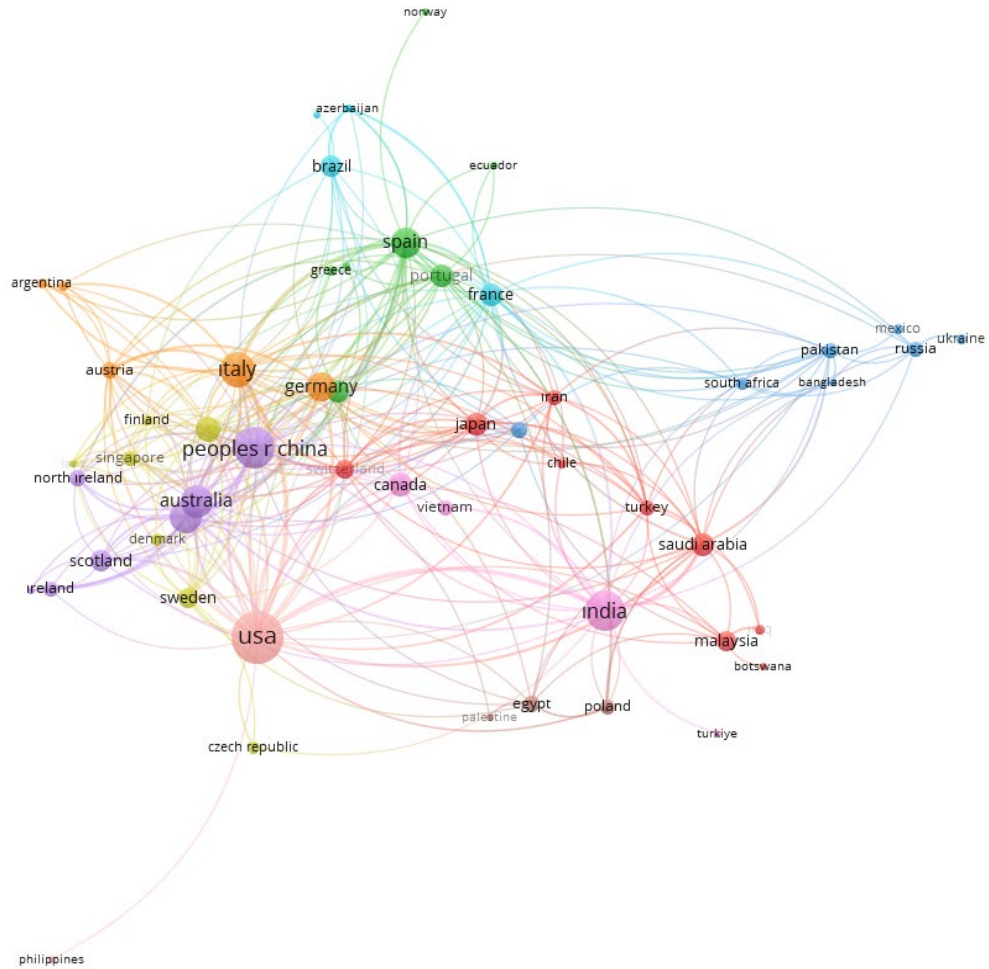


Figure 7. Co-Authorships – Visual Map of Country with Document, Citation and Total Link Strength

Figure 7 shows co-Authorships – Country connections. When 1 document and 0 citations are considered, there are 25 countries, 59 authors and 59 connections.

5. DISCUSSION AND SUGGESTIONS

Businesses aim not only to generate profits but also to fulfill their social responsibilities to society. According to social responsibility which is one of the basic concepts of accounting, the activities of businesses must be transparent and accountable and healthy information must be provided to stakeholders. This study is an examination of publications in Web of Science related to green accounting in line with sustainable development goals with VOSviewer. Creating a livable world and ensuring that the next generation lives a comfortable life is achieved by achieving sustainable development goals all over the world. This study examined publications on green accounting in the Web of Science database between 1985–2024 on 28.08.2024. A total of 27.406 publications were reached on the subject. 189 publications containing sustainable development goals were examined. Research questions were prepared and these questions were analyzed with the VOSviewer method. The most publications on green accounting were written in 2021, 22 of which were written in 2021. Of these publications, 85 publications were found on the 3rd goal of sustainable development goals, healthy individuals. 188 publications were written in English. Scopus Citation Index Expanded scanned 177 publications. Elsevier has 56 publications and Wiley has 24 publications. 704 keywords were identified. Among the authors, Hodder, Rebecca K, O'Brien, Kate M, Tzelepis, Flora, Wolfenden, Luke and Wyse, Rebecca J are seen with 5 documents, 146 citations and 49 links. When we look at the links of the authors and organizations, Bagiyatallah Univ Med Sci is in the first place with 4

documents, 186 citations and 25 total link links. In terms of co-authorship country citations and links, the United States is seen in the first place with 49 documents, 9784 citations and 82 links. Türkiye is in the first 16th place with 4 documents, 302 citations and 20 links. Green accounting is important for the future of the world and research on the subject should be increased. In recent years, Türkiye has seen a notable increase in bibliometric studies on green and environmental accounting. Yalçın and Sarıgül (2021) conducted a bibliometric analysis of green marketing and green accounting topics according to visual mapping technique. Karcıoğlu and Tosunoğlu (2022) conducted a bibliometric analysis of green accounting research with mapping techniques. Altınbay and Durak, (2022) investigated the bibliometric analysis of environmental accounting, green accounting and carbon accounting articles. Gök and Çarıkçı, (2022) conducted a bibliometric analysis of studies on environmental accounting. Öztürk, (2022). Bibliometric analysis of academic studies published on environmental accounting in Türkiye. Yöndemli, (2022) conducted a bibliometric review of academic studies published on environmental accounting in Türkiye. Can and Özarı, (2023). Bibliometric analysis of sustainability accounting and carbon accounting studies. Yöndemli (2022). It has conducted a bibliometric analysis of academic studies published on environmental accounting in Türkiye.

Karcıoğlu and Tosunoğlu (2022) examined 893 articles between 2010-2021 in their study. The number of articles in 2020 was high. The United States ranks first and the most effective journal is the "Journal of Environmental Accounting and Management". In terms of keywords, the majority of words related to the sustainability dimension are. In the study conducted by Gök and Çarıkçı (2022), it was seen that topics such as environmental accounting, environmental costs, and emission costs were studied more. Altınbay and Durak (2022) examined research on environmental accounting, green accounting, and carbon accounting. In the study conducted by Can and Özarı (2023), it was seen that the United States and Australia, which published the most, were the leading countries worldwide, respectively. As can be understood from here, the studies are similar to this study.

In this study, data related to green accounting were scanned and analyzed from the VOS database. Only Web of Science was used and no other databases were used. This situation constitutes a limitation of the study. In addition, it is recommended that future researchers conduct studies on the relevant subject published in many databases including indexes such as Scopus, TR Dizin, ULAKBİM, ProQuest and Google Scholar and evaluate different documents. It is very important to focus on such studies in order to achieve sustainable development goals for the future of the world. The increase in such publications facilitates the achievement of sustainable development goals. Researchers can conduct bibliometric analyses using different keywords from different databases. In addition to the VOSviewer program, programs such as Bibexcel, Pajek, Bibliyometrix and SciMAT can be preferred. Studies conducted to achieve sustainable development goals are limited in number. It is anticipated that they will contribute to the literature and researchers.

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REFERENCES

- Agustia, D., Sawarjuwono, T., ve Dianawati, W. (2019). The mediating effect of environmental management accounting on green innovation - firm value relationship. *International Journal of Energy Economics and Policy*, 9(2), 299-306.
- Akgül, U. (2010). Sürdürülebilir kalkınma: Uygulamalı antropolojinin eylem alanı. *Anthropology*, (24), 133-164.
- Al-Dhaimesh, O. H. (2020). Green accounting practices and economic value added: An applied study on companies listed on the Qatar Stock Exchange. *International Journal of Energy Economics and Policy*, 10(6), 164-168.
- Altınbay, A., ve Durak, H. (2022). Çevre muhasebesi, yeşil muhasebe ve karbon muhasebesi kavramları hakkında yazılan makalelerin bibliyometrik analizi. *International Journal of Applied Economic and Finance Studies*, 7(1), 140-155.
- Arslan, E. (2022). Sosyal bilim araştırmalarında VOSviewer ile bibliyometrik haritalama ve örnek bir uygulama. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 22 (Özel Sayı 2), 33-56.
- Bala, H., Naim, A. S., Sani, A. A., ve Alomair, A. (2024). Assessing the role of board structure on the nexus between green innovations, green taxation and cosmetic accounting practice in Nigeria. *Sustainability*, 16(6), 1-16. doi:<https://doi.org/10.3390/su16166919>.
- Bezirci, M., Özpeynirci, R., ve Duman, H. (2011). Sosyal sorumluluk kavramı bağlamında yeşil muhasebe eğitimi: Bir alan araştırması. *Muhasebe Bilim Dünyası Dergisi*, 61-89.
- Buric, M. N., Stojanovic, A. J., Filipovic, A. L., ve Kascelan, L. (2022). Research of attitudes toward implementation of green accounting in tourism industry in montenegro-practices and challenges. *Sustainability*, 14(3), 1-26. doi:<https://doi.org/10.3390/su14031725>.
- Can, E. N., ve Özarı, Ç. (2023). Sürdürülebilirlik muhasebesi ve karbon muhasebesi çalışmalarının bibliyometrik analizi. *Denetışim Dergisi*, (27), 55-71.
- Chen C., Dubin R., ve Kim M. C. (2014). Emerging trends and new developments regenerative medicine: A scientometric update (2000-2014). *Expert Opin Biol Ther*, 14(9), 1295-1317.
- Chen, Y., Lin, M., ve Zhuang, D. (2022). Wastewater treatment and emerging contaminants: Bibliometric analysis. *Chemosphere*, 297, 133932.
- Cronin, B. (2000). Semiotics and evaluative bibliometrics. *Journal of Documentation*, 56(4), 440-453.
- Dewi, H., ve Anggara, T. C. (2024). The impact of green accounting and integrated reporting on financial and market performance. *IOP Conference Series Earth and Environmental Science*, 1324(1), 1-13. doi:<https://doi.org/10.1088/1755-1315/1324/1/012090>.
- Dwianika, A., Purwanto, E., Suyoto, Y. T., ve Pitaloka, E. (2024). Bibliometrics analysis of green accounting research. *International Journal of Energy Economics and Policy*, 14(1), 349-358. doi:<https://doi.org/10.32479/ijeep.15055>.
- Endiana, I.D.M., Dicriyani, N.L.M., Adiyadnya, S.P., ve Putra, I.P.M.J.S. (2020). The effect of green accounting on corporate sustainability and financial performance. *Journal of Asian Finance, Economics and Business*, 7(12), 731-738.
- Erdal, N. (2024). Kaynak tabanlı yaklaşım konulu makalelerinin VOSviewer ile analizi. *Dicle Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (36), 331-351.
- Fernando, K., Jocelyn, H., Frista, F., ve Kurniawan, B. (2024). The effect of green accounting disclosure on the firm value of listed mining and agriculture companies in southeast Asia Countries. *International Journal of Energy Economics and Policy*, 14(1), 377-382. doi:<https://doi.org/10.32479/ijeep.15151>.

-
- Gök, A. G., ve Çarıkçı, O. (2022). Çevre muhasebesi konulu çalışmaların bibliyometrik analizi. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 27(3), 369-391.
- İçöz, A. ve Kılınc, Y. (2016). Çevre maliyetleri muhasebesi ve raporlanması. *Uluslararası Sosyal Araştırmalar Dergisi*, 9(42), 1517-1530.
- Karcıoğlu, R., ve Tosunoğlu, B. (2022). Yeşil muhasebe araştırmalarının bilim haritalama teknikleri ile bibliyometrik analizi. *Muhasebe Bilim Dünyası Dergisi*, 24 (Modavıca Özel Sayısı), 57-70.
- Kiranmai, J., ve Swetha, C. (2018). Green accounting practies: An overview. *IUP Journal of Business Strategy*, 15(3), 7-18.
- Lee, H.-Y., Hu, M.-C., Lin, Y.-T., ve Yam, Y.S. (2018). Criticizing the critiques of green accounting research. *Journal of Social and Administrative Sciences*, 5(4), 268-273. doi:<https://doi.org/10.1453/jsas.v5i4.1808>.
- Örerel, D., ve Kağnıcı, D. Y. (2024). Bireyselden küresele sürdürülebilir kalkınma hedefleri bağlamında psikolojik danışman olmak. *Dokuz Eylül Üniversitesi Buca Eğitim Fakültesi Dergisi*, (60), 1173-1196.
- Öztürk, S. (2022). Türkiye'de çevre muhasebesi konusunda yayınlanmış akademik çalışmaların bibliyometrik analizi. *Kafkas Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 13(26), 743-767.
- Pramono, A. J., Suwarno, S., Amyar, F., ve Friska, R. (2023). The effect of environmental management accounting and control system integration on sustainability orientation through sectoral green economy mediation. *International Journal of Energy Economics and Policy*, 13(5), 348-354. doi:<https://doi.org/10.32479/ijeeep.14781>.
- Pritchard, A. (1969). Statistical bibliography or bibliometrics? *Journal of Documentation*, 25(4), 348-349.
- Ratmono, D., Mail, R., Cahyonowati, N., ve Janie, D. N. (2024). The role of environmental performance in mediating the relationship between green accounting and corporate social responsibility. *Environmental Economics*, 15(1), 46-55. doi:[https://doi.org/10.21511/ee.15\(1\).2024.04](https://doi.org/10.21511/ee.15(1).2024.04).
- Riyadh, H. A., Al-Shmam, M. A., Huang, H. H., Gunawan, B., ve Alfaiza, S. A. (2020). The analysis of green accounting cost impact on corporations financial performance. *International Journal of Energy Economics and Policy*, 10(6), 421-426.
- Rounaghi, M.M. (2019). Economic analysis of using green accounting and environmental accounting to identify environmental costs and sustainability indicators. *International Journal of Ethics and Systems*, 35(4), 504-512.
- Sukmadilaga, C., Winarningsih, S., Yudianto, I., Lestari, T. U., ve Ghani, E. K. (2023). Does green accounting affect firm value? Evidence from ASEAN Countries. *International Journal of Energy Economics and Policy*, 13(2), 509-515. doi:<https://doi.org/10.32479/ijeeep.14071>.
- Tang, J., Shen, Q., Han, Y., Wu, Y., He, X., Li, D., ve Huang, Y. (2023). Analysis of research status and trends on marine benthic dinoflagellate toxins: A bibliometric study based on web of science database and VOSviewer. *Environmental Research*, 238(2), 1-15.
- Taşar, S. A. (2023). A bibliometric analysis related to green accounting. *R&S - Research Studies Anatolia Journal*, 6(4), 636-651. doi:<https://doi.org/10.33723/rs.1363543>.
- Tu, J.-C., ve Huang, H.-S. (2015). Analysis on the relationship between green accounting and green design for enterprises. *Sustainability*, 7(5), 6264-6277. doi:<https://doi.org/10.3390/su7056264>.
- Yalçın, A., ve Sarigül, S. S. (2021). Yeşil pazarlama ve yeşil muhasebe konularının görsel haritalama tekniğine göre bibliyometrik analizi. 1. *Third Sector Social Economic Review*, 56(1), 304-328.
-

-
- Yelgen, E. (2022). Yeşil muhasebe ve uygulama örnekleri üzerine bir çalışma. *Yönetim Bilimleri Dergisi*, Özel Sayı, 100-126. doi:<https://doi.org/10.35408/comuybd.1150938>.
- Yeni, O. (2014). Sürdürülebilirlik ve sürdürülebilir kalkınma: Bir yazın taraması. *Gazi Üniversitesi İktisadi ve İdari Bilimler Fakültesi*, 16(3), 181-208.
- Yılmaz, H., ve Yücel, T. (2022). Sürdürülebilir kalkınmanın sağlanmasında uluslararası çalışmalar ve eleştirileri. *Uluslararası Yönetim Akademisi Dergisi*, 5(3), 691-702.
- Yılmaz, Z., ve Şahin, Z. (2017). Muhasebe dersi alan öğrencilerin yeşil muhasebe konusundaki algıları ve farkındalıkları. *Balkan ve Yakın Doğu Sosyal Bilimler Dergisi*, 3(1), 110-122.
- Yöndemli, S. Ö. (2022). Türkiye'de çevre muhasebesi konusunda yayınlanmış akademik çalışmaların bibliyometrik analizi. *Kafkas University Faculty of Economics and Administrative Sciences Journal*, 13(26), 743-767.
- Yu, Y., Li, Y., Zhang, Z., Gu, Z., Zhong, H., Zha, Q., Yang, L., Zhu, C., ve Chen, E. (2020). A bibliometric analysis using VOSviewer of publications on Covid-19. *Annals of Translational Medicine*, 8(13),1-12.
- Zrnić, A., Starčević, D.P. ve Mijoč, I. (2020). Evaluating environmental accounting and reporting: The case of croatian listed manufacturing companies. *Pravni Vjesnik*, 36(1), 47-63.

GENİŞLETİLMİŞ ÖZET

Giriş

Çevre bilincinin gelişmesi ve farkındalığın artmasıyla birlikte çevre üzerindeki olumsuz etkileri azaltmak amacıyla denetimler daha sık hale gelmektedir. Kanun ve yönetmelikler doğrultusunda bu kurallara uymayan işletmelere çeşitli yaptırımlar uygulanmakta ve cezalar ağırlaştırılmaktadır. Bu çalışma Web of Science veri tabanında yer alan çevre muhasebesi ile ilgili yayınları kapsamaktadır. Bu bağlamda yeşil muhasebe, çevre muhasebesi, sürdürülebilir muhasebe ve çevre muhasebesi yayınları incelenmiştir. Sürdürülebilir kalkınma hedeflerini içeren 189 adet yeşil muhasebe yayını incelenmiştir. Araştırma soruları hazırlanmış ve bu sorular VOSviewer yöntemi ile analiz edilmiştir. VOSviewer analizi yayınların ülkelere, yazarlara, yayın yıllarına, konulara, dillere vb. göre dağılımı ve eğilimleri görmeyi sağlar. Yazarlar tarafından yapılan atıflar aracılığıyla yazarlar, yayınlar ve yayınların yer aldığı ülkeler arasındaki ilişkilerin analizidir. Bu çalışmanın amacı hangi yeşil muhasebe yayınlarının sürdürülebilir kalkınma hedeflerini karşıladığını belirlemek ve araştırmacılara ve uygulayıcılara bu bilgiler doğrultusunda rehberlik etmektir.

Amaç

Bu çalışma, Web of Science veri tabanında yayınlanan yeşil muhasebe üzerine yayınların VOSviewer ile analizini içermektedir. Sürdürülebilir kalkınma hedeflerini içeren 189 yeşil muhasebeyle ilgili yayın incelenmiştir. Bu çalışmanın amacı, Web of Science veri tabanında yayınlanan, sürdürülebilir kalkınma hedeflerini içeren yeşil muhasebe çalışmalarının VOSviewer yöntemi ile analizi edilmesi ve böylelikle bu anlamda mevcut eğilimin ortaya konularak, gelecekteki çalışmalara rehberlik edilmesidir.

Metot

Çalışma, 28.08.2024 tarihinde Web of Science veri tabanında yer alan çevre muhasebesi üzerine yayınları kapsamaktadır. Yeşil muhasebe, çevre muhasebesi, sürdürülebilir muhasebe ve çevre muhasebesi yayınları incelenmiştir. 1985-2024 yılları arasında toplam 27.406 yayına ulaşılmıştır. Bunlardan sürdürülebilir kalkınma hedeflerini içeren 189 yayın incelenmiştir. Araştırma soruları hazırlanmış ve bu sorular VOSviewer yöntemi ile analiz edilmiştir. VOSviewer analizi, ülkeler, yazarlar, yayın yılları, konular, diller vb. tarafından gösterilen dağılım ve eğilimler, yayınların yayınlandığı ülkeler arasındaki ilişkiler ve yazarlar tarafından yapılan atıfları kapsamıştır. Analiz sonuçları tablolar, grafikler ve görsel haritalama ile gösterilmiştir.

Çalışma Soruları

Soru 1. Web of Science veri tabanında sürdürülebilir kalkınma hedeflerinin gerçekleştirilmesinde yeşil muhasebe ile ilgili yayınlar hangi yıllarda yer aldı?

Soru 2. Web of Science veri tabanındaki yeşil muhasebe yayınları, sürdürülebilir kalkınma hedefleri de dahil olmak üzere hangi hedefleri içeriyor?

Soru 3. Web of Science veri tabanında sürdürülebilir kalkınma hedeflerinin gerçekleştirilmesinde yeşil muhasebe ile ilgili yayınların yazım dili nedir?

Soru 4. Web of Science veri tabanında sürdürülebilir kalkınma hedeflerinin gerçekleştirilmesinde yeşil muhasebe ile ilgili yayınların dizini nedir?

Soru 5. Web of Science veri tabanında sürdürülebilir kalkınma hedeflerini içeren yeşil muhasebe yayınlarında hangi veri tabanları yer almaktadır?

Soru 6. Sürdürülebilir kalkınma hedeflerine ulaşmada yeşil muhasebe ile ilgili eş - oluşum - anahtar kelimeler nedir?

Soru 7. Sürdürülebilir kalkınma hedeflerine ulaşmada yeşil muhasebeyle ilgili ortak yazarlık - yazarlar nedir?

Soru 8. Sürdürülebilir kalkınma hedeflerine ulaşmada yeşil muhasebeyle ilgili ortak yazarlık - kuruluş nedir?

Soru 9. Sürdürülebilir kalkınma hedeflerine ulaşmada yeşil muhasebe ile ilgili ortak yazarlıklar - ortaklıklar nelerdir?

Bulgular

Sürdürülebilir kalkınma hedeflerini içeren 189 adet yeşil muhasebeyle ilgili yayın incelenmesi sonucu ulaşılan bulgular aşağıdaki gibidir:

Yayınların 188 tanesi İngilizce ve 1 tanesi Portekizce dilinde yazılmıştır. Araştırmada en fazla yayının 22 tane ile 2021 yılında olduğu görülmüştür. Bunu 20 yayımla 2023 yılı, 2018 yılında 17 yayın takip etmiştir. Yeşil muhasebeyle ilgili yayınların sürdürülebilir kalkınma hedeflerini karşılayıp karşılamadığına bakıldığında sürdürülebilir kalkınma hedeflerinden 3. hedef olan “sağlıklı bireylerle” ilgili 85 yayının olduğu görülmüştür. Bunu 45 yayın ile “iklim eylemi” takip etmektedir. 7. hedef olan “erişilebilir temiz enerji” ve 12. hedef olan “sorumlu üretim ve tüketimi” 20’şer yayın takip etmektedir. 11. hedef olan “sürdürülebilir şehirler ve yaşam alanları” hakkında 18 yayının, 6. hedef olan “temiz su ve sanitasyon” hakkında 17 yayının, 15. hedef olan “karada yaşam” hakkında 10 yayının, 2. hedef olan “açlığa son” hakkında 7 yayının, 14. hedef olan “su altındaki yaşam” hakkında 5 yayının, 9. hedef olan “endüstriyel ve yenilikçi altyapı” hakkında 2 yayının, 4. hedef olan “kaliteli eğitim” hakkında 1 yayının var olduğu tespit edilmiştir. “Hedef yoksulluğa son”, hedef 5 “toplumsal cinsiyet eşitsizliği”, hedef 8 “insana yakışır iş ve ekonomik büyüme”, hedef 10 “eşitsizliklerin azaltılması”, hedef 16 “barış, adalet ve güçlü kurumlar” ve hedef 17 “hedefler için ortaklıklar” konusunda ise hiçbir yayına rastlanılmamıştır.

Sonuç ve Tartışma

Yaşanabilir bir dünya oluşturmak ve gelecekte konforlu bir hayat sürdürülmesi tüm dünyada sürdürülebilir kalkınma hedeflerine ulaşmakla gerçekleşir. Bu çalışmanın amacı sürdürülebilir kalkınma hedefleri doğrultusunda yeşil muhasebe ile ilgili Web of Science’deki yayınların VOSviewer yöntemi ile incelenmesidir. Sciences Citation Index Expanded 177 yayın, Elsevier 56 yayın ve Wiley’de 24 yayın olduğu görülmüş ve bu yayınlar taranmıştır. Bu inceleme 28.08.2024 tarihinde yapılmış olup, 1985-2024 yılları arasında kapsamaktadır. Konu ile ilgili toplam 27.406 yayına ulaşılmıştır. Sürdürülebilir kalkınma hedeflerini içeren 189 yayın incelenmiştir. Araştırma soruları hazırlanmış ve bu sorular VOSviewer yöntemi ile analiz edilmiştir. Araştırma sonucunda yeşil muhasebe ile ilgili en fazla yayının 22 yayın ile 2021 yılında olduğu görülmüştür. Bu yayınların 85 adedi sürdürülebilir kalkınma hedeflerinden 3. hedef olan sağlıklı bireylerle ilgili olduğu saptanmıştır. 188 tane yayının İngilizce olduğu görülmüştür.

Yapılan bu çalışma sonucunda Dünyanın geleceği için önemli olan yeşil muhasebe ve sürdürülebilirlik kalkınma hedeflerine yönelik çalışmaların artırılması önerilmektedir. Yeşil muhasebe konusuna dair verilerin analiz edildiği bu çalışmada yalnızca Web of Science’den yararlanılmış ve diğer veri tabanlarından yararlanılmamıştır. Bu durum çalışmanın kısıtını oluşturmaktadır. Scopus, TR Dizin, ULAKBİM, ProQuest ve Google Scholar gibi indekslerin yer aldığı pek çok veri tabanında yayınlanmış ilgili konuya ilişkin çalışmaların yapılabilmesi ve farklı yayınların değerlendirilmesi de gelecek araştırmacılarına önerilmektedir. Araştırmacılar farklı veri tabanlarından, farklı anahtar kelimeler kullanılarak bibliyometrik analizler yapabilirler. Ayrıca, VOSviewer programı dışında Bibexcel, Pajek, Bibliometrix ve SciMAT gibi programları da tercih edilebilir.