

TRENDS AND GLOBAL COLLABORATION IN SUSTAINABLE DEVELOPMENT GOALS ACCOUNTING

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Abstract

The integration of Sustainable Development Goals (SDGs) into accounting practices has gained significant academic and professional attention as organizations seek to align their financial and non-financial reporting with global sustainability objectives. The study employs bibliometric analysis to explore the evolving landscape of Sustainable Development Goals (SDG) accounting, focusing on research trends, publication patterns, and international collaboration. By analyzing a comprehensive dataset of academic articles (WoS database) between 2015 and 2024, the study identifies key journals, authors, and institutions contributing to the field, with particular attention to the most cited works that have shaped the discourse on SDG integration in accounting practices. The findings reveal a significant increase in SDG accounting research over time, driven by growing global demand for sustainable business practices and transparency. The analysis also uncovers the dominant research hubs, including the USA, China, the UK, Australia and Italy, while highlighting emerging clusters of collaboration between developed and developing economies. The study underscores the importance of global partnerships in advancing SDG-related accounting practices and offers valuable insights into the direction of future research in this critical area of sustainability. Additionally, the high citation rates suggest a growing interest and influence of SDG accounting research in the global sustainability discourse.

Keywords: SDG, accounting, bibliometric analysis, co-authorship analysis, co-citation analysis, co-occurrence analysis

JEL Classification: M41, M48

1. Introduction

The integration of the Sustainable Development Goals (SDGs) into accounting practices has become increasingly important in today's business landscape. The SDGs, adopted by all United Nations Member States in 2015, consist of 17 global objectives aimed at achieving a better and more sustainable future by 2030. These goals address critical challenges such as poverty, inequality, climate change, environmental degradation, peace, and justice (United Nations, 2015). Accounting plays a pivotal role in advancing these goals by measuring, reporting, and managing financial and non-financial information that reflects the sustainability performance of organizations (Kolk, 2016).

In the context of accounting, SDGs are driving a shift toward sustainable finance and corporate responsibility. Accountants are not only tasked with traditional financial reporting but also with providing transparent and accurate information on environmental, social, and governance (ESG) factors that impact both short-term and long-term value creation (Ioannou & Serafeim, 2017). This holistic approach aligns financial reporting with broader social and environmental considerations, ensuring that businesses contribute positively to global sustainability efforts (Grewal et al., 2021).

As organizations embrace SDGs, accounting standards and practices are evolving to include metrics that reflect sustainability impacts. This transformation supports informed decision-making, enhances corporate transparency, and fosters greater accountability toward stakeholders, from

investors to consumers (Higgins et al., 2014). Therefore, integrating SDGs into accounting practices is vital for fostering sustainable growth, mitigating risks, and creating lasting value for both businesses and society.

One of the challenges in integrating SDGs into accounting is the need for standardization in sustainability reporting. Unlike traditional financial reporting, which adheres to established and universally recognized standards such as the Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS), sustainability reporting lacks a uniform framework. As a result, the lack of standardized guidelines for SDG-related disclosures can create inconsistencies and hinder the comparability of sustainability data across organizations (Adams, 2015). In response to this challenge, various frameworks, such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), have been developed to guide companies in reporting their sustainability performance. These frameworks aim to provide greater clarity and consistency in how organizations disclose their environmental and social impacts, thereby improving the quality of information available to stakeholders (Sullivan & Mackenzie, 2017).

Moreover, integrating the SDGs into accounting practices requires a shift in organizational culture. Corporate governance plays a significant role in driving the adoption of SDGs within the accounting function. Senior management and board members must prioritize sustainability and align business strategies with the global SDG agenda to ensure that sustainability is embedded in corporate decision-making. Research shows that when organizations integrate sustainability into their core governance structures, they are more likely to enhance long-term value creation and risk management (Eccles et al., 2014). This shift also requires accountants to acquire new skills and knowledge related to sustainability metrics, ESG reporting, and impact investing, ensuring that accounting professionals are equipped to assess and report on the broader sustainability objectives of their organizations.

Finally, the integration of SDGs into accounting offers significant investment opportunities for organizations that embrace sustainability. Investors are increasingly considering ESG factors as part of their decision-making process, recognizing that companies with strong sustainability practices tend to outperform their peers in the long term. By incorporating SDG-related performance into financial statements, businesses can attract responsible investment and increase their access to capital from investors who prioritize sustainability (Clark et al., 2015). Moreover, the integration of SDGs can improve a company's reputation, foster stakeholder trust, and enhance customer loyalty, all of which contribute to the organization's long-term success.

Realizing a bibliometric literature review about SDG accounting involves the application of quantitative methods to analyze the structure, trends, and patterns of published research on the integration of Sustainable Development Goals (SDGs) into accounting. This approach uses tools like citation analysis, co-authorship networks, and keyword co-occurrence mapping to uncover the most influential articles, authors, journals, and institutions contributing to this field. By identifying the key topics and thematic clusters within SDG accounting, such as ESG reporting, sustainability performance metrics, and the role of accountants in driving corporate responsibility, a bibliometric review can provide an objective overview of how the literature has evolved over time. It also helps to visualize the relationships between different areas of research, highlight emerging trends, and pinpoint gaps or under-researched areas that may require further investigation.

There have been several studies that have applied bibliometric analysis to SDG accounting, shedding light on the development and growth of research in this area. For instance, bibliometric analyses have been used to map out the evolution of corporate sustainability disclosures and identify how SDG-related practices have gained prominence in accounting literature (Soto-Acosta et al., 2021; Li et al., 2022). These studies help identify influential authors, key themes, and trends related to SDG integration into accounting and reporting practices. By tracking these trends,

bibliometric reviews contribute valuable insights into the broader academic landscape of SDG accounting, providing a clearer picture of its progress and emerging research priorities.

This method not only offers insights into the academic landscape of SDG accounting but also informs future research directions, enabling scholars to focus on the most relevant and impactful aspects of sustainability in accounting. Moreover, bibliometric approaches can reveal under-researched areas, which can guide future studies to address gaps in the field, fostering deeper exploration of sustainability accounting practices and their implications for business and society.

2. Methodology

Bibliometric analysis serves as a powerful tool in examining the landscape of SDG accounting research, offering valuable insights into the evolution, trends, and impact of this emerging field. By analyzing scientific publications, citations, and collaborations, bibliometrics provides a comprehensive overview of the growth of SDG accounting literature, highlighting key themes, influential authors, and institutions driving research. This approach allows for the identification of research gaps and emerging trends, facilitating the recognition of areas in need of further exploration or investment. Moreover, bibliometric analysis reveals patterns of international collaboration, illustrating the global nature of SDG accounting efforts. In doing so, it not only contributes to a deeper understanding of the current state of SDG accounting but also informs future research directions, ensuring that efforts are aligned with the evolving needs of the Sustainable Development Goals.

The analysis is based on data extracted from the Web of Science (WoS) database, a leading platform for publications widely used in bibliometric research. WoS is commonly employed in studies assessing various academic fields, including SDG research. Recent studies have highlighted its utility in mapping publication trends, research gaps, and collaborative networks related to SDGs (Alfirević et al., 2023; Marco-Lajara et al., 2023).

The research covers the period from 2015, which represents the year of the adoption of the SDGs, to 2024, which represents the most recent data available.

The conducted analysis assumed an advanced search in the WOS database in the Topic field for the representative terms "SDG or Sustainable Development Goals" and "accounting". The search generated a number of 607 documents, but we limited the search to articles in English, thus obtaining a number of 598 documents. Analyzing the type of documents, we have excluded Editorial materials and Book chapters, thus remaining with a number of 585 articles.

The analysis was performed using VOSviewer 1.6.20 to explore collaboration networks among authors, focusing on their countries of origin, with the goal of identifying the scientific community's interest in SDG accounting across diverse geographic regions. Furthermore, we analyzed the distribution of the most frequently used keywords, setting a minimum threshold of 10 co-occurrences, to examine their interconnections in depth. Additionally, the study investigated the co-citation network of references to uncover the structural framework of the literature on SDG accounting. These steps provided a comprehensive overview of the impact and trajectory of research in this field.

3. Descriptive and Bibliometric Approaches to Literature Analysis

3.1. The evolution of publications between 2015 and 2024

The results highlight the evolution of research in SDG accounting over the analyzed time period, revealing a significant increase in scholarly interest. Based on the publication years of the 598 articles, there has been a steady increase in research on this topic since 2015. However, a substantial growth can be observed starting with 2018 until now, which shows that the interest in this topic is continuously growing (Figure 1).

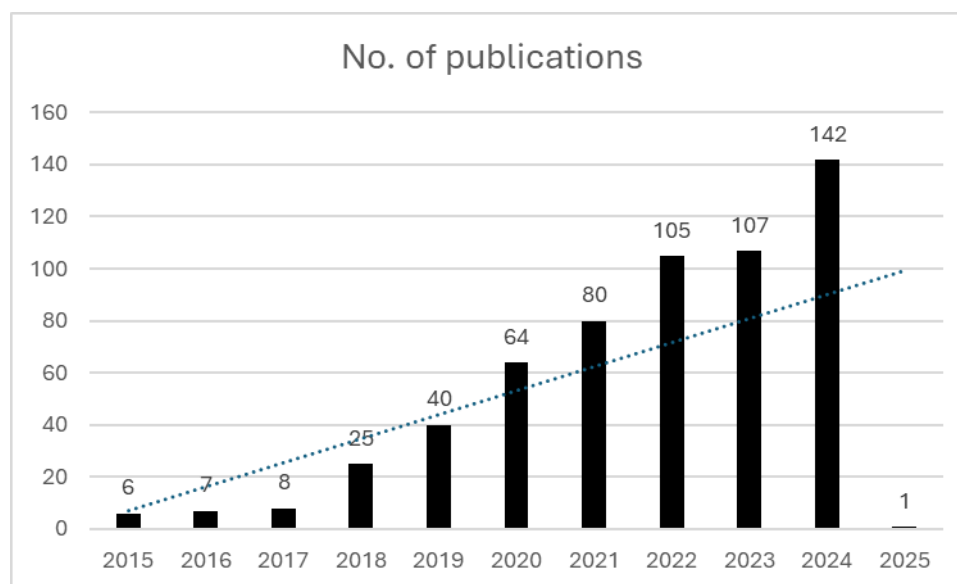


Figure 1 – Publications evolution

Source: Own processing

Another important aspect to highlight is that, of the total 585 articles, 370 were published in all open access format, representing 63.25% of the total articles identified. This substantial proportion of all open access publications suggests that research on SDG accounting is likely to receive a higher citation index, as open access articles are more widely accessible and visible to a global audience (Gonzalez-Brancor & Dorta-Gonzalez, 2019; Li et al., 2018; Davis et al., 2008; Craig et al., 2007; Moed, 2007; Kurtz et al., 2005; Lawrence, 2001; Piwowar et al., 2018; Tennant et al., 2016). This trend suggests that open access not only enhances the visibility of research but also contributes to greater academic impact.

Therefore, the increase in research on SDG accounting is driven by several factors. First, the adoption of the SDGs in 2015 has spurred a global focus on sustainability, compelling organizations to consider how their activities align with these goals. As organizations are increasingly required to demonstrate their contributions to the SDGs, the need for appropriate accounting frameworks has grown. Additionally, researchers have recognized the role accounting can play in supporting SDG implementation through transparency and reporting practices (Bebbington & Unerman, 2020; Bebbington et al., 2018). This evolving landscape has led to a surge in SDG-related academic articles addressing these challenges.

3.2. The impact of the topic in specialized journals

Analyzing the number of articles on the SDG accounting published in journals, Table 1 reveals that Sustainability leads with the highest number of publications, totaling 45 (7.69%), followed by Journal of Cleaner Production with 30 (5.13%), and Meditari Accountancy Research with 18 (4.21%). However, when considering citations, the situation shifts. Therefore, Journal of Cleaner Production leads with 805 citations across all databases and 784 citations in WoS Core. It is followed closely by Accounting, Auditing & Accountability Journal, which has accumulated 799 citations in all databases and 775 in WoS Core and then comes Sustainability with 673 citations in all databases and 614 in WoS Core. Notably, Accounting, Auditing & Accountability Journal stands out for having the most citations for a single article, reaching 488 citations in all databases and 467

citations in WoS Core. The data also highlights the significant influence of these journals in shaping the research landscape on SDG accounting. With the Journal of Cleaner Production and Accounting, Auditing & Accountability Journal leading in citations, they play a pivotal role in disseminating research on sustainability and corporate accountability. Their high citation rates reflect the growing interest in SDG-related topics and underscore the increasing importance of accounting practices in supporting the global sustainability agenda.

Table 1. The number of articles and citations per journal

Publication Titles	Number of articles	Total citations (all databases)	Total citations (WoS Core)	The highest no of citations for an article in the journal (all databases)	The highest no of citations for an article in the journal (WoS Core)	Publishers
SUSTAINABILITY	45	673	614	100	96	MDPI
JOURNAL OF CLEANER PRODUCTION	30	805	784	87	87	ELSEVIER
MEDITARI ACCOUNTANCY RESEARCH	12	36	36	13	13	EMERALD GROUP PUBLISHING LTD
SUSTAINABILITY ACCOUNTING MANAGEMENT AND POLICY JOURNAL	11	151	147	47	45	EMERALD GROUP PUBLISHING LTD
JOURNAL OF ENVIRONMENTAL MANAGEMENT	10	182	176	44	43	ACADEMIC PRESS LTD-ELSEVIER SCIENCE LTD
SCIENCE OF THE TOTAL ENVIRONMENT	10	505	475	160	146	ELSEVIER
SUSTAINABLE DEVELOPMENT	10	170	163	111	107	WILEY
ACCOUNTING AUDITING ACCOUNTABILITY JOURNAL	9	799	775	488	467	EMERALD GROUP PUBLISHING LTD
ENVIRONMENT DEVELOPMENT AND SUSTAINABILITY	9	173	172	75	74	SPRINGER

Source: Own processing

3.3. Contributions at the country and institution level

The descriptive analysis shows that the Chinese Academy of Sciences leads in the number of publications, followed by the University of California System and the University of London, with the University of Sydney ranking next (Figure 2).

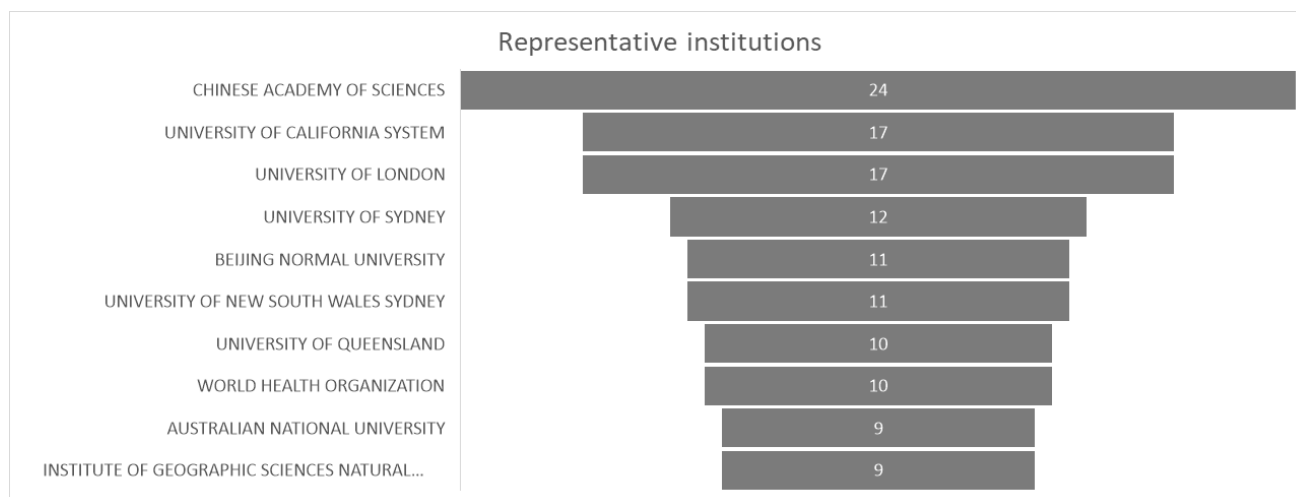


Figure 2 – Representative institutions

Source: Own processing

This pattern of prominence is also evident in the country analysis, which highlights China as the top contributor with 118 publications, followed by the USA (101 publications) and the UK (74 publications). Moreover, Australia (71 publications) and Italy (60 publications) also make notable contributions to SDG accounting research (Figure 3). Furthermore, the Chinese Academy of Sciences accounts for 20.34% of the 118 publications from China, the University of California System contributes 16.83%, and the University of London represents 22.97%. Likewise, the University of Sydney contributes 16.90% of Australia's 71 publications, while Beijing Normal University accounts for 9.32% of China's total publications. Overall, this analysis underscores the global commitment to SDG accounting and the critical role of these top institutions in advancing this area of research.

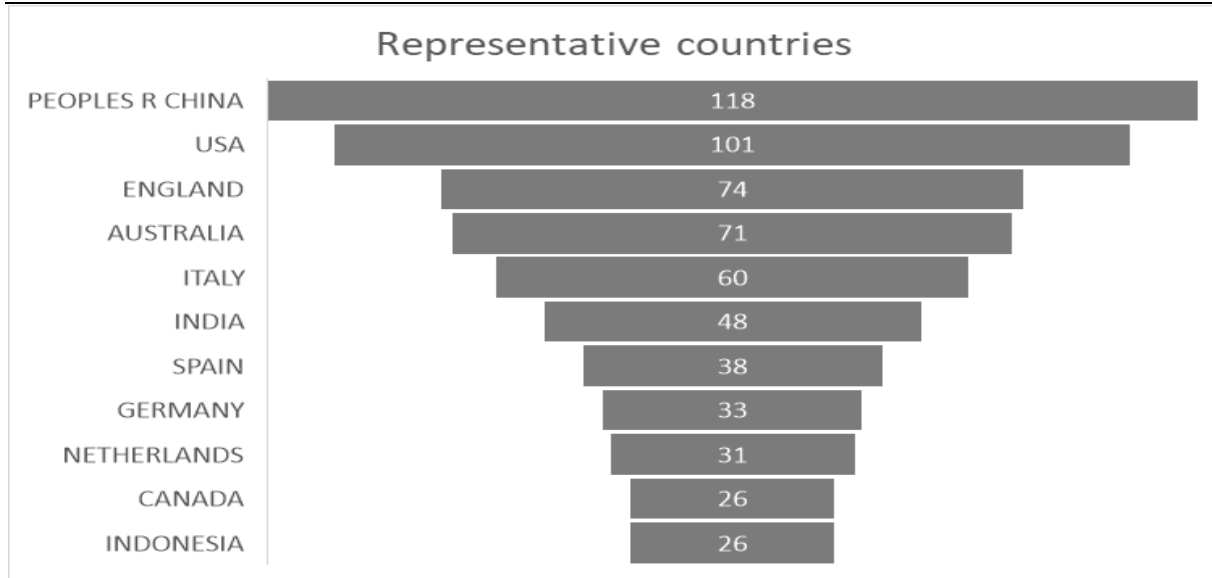


Figure 3 – Representative countries
Source: Own processing

3.4. Keywords co-occurrence analysis

Smith et al. (2018) emphasize the importance of keyword analysis in uncovering nuanced meanings within a specific field. Similarly, Johnson and Patel (2020) highlight that exploring relationships between keywords is crucial for mapping the conceptual framework of a domain. Chen and Xiao (2016) further suggest that examining keyword connections provides a broad overview of the analyzed topic. Complementing these findings, Lee and Taylor (2019) demonstrate how keyword networks can reveal emerging research trends, while Anderson and Gupta (2021) argue that such analyses can uncover interdisciplinary connections and foster innovative perspectives.

The analysis aims to identify the most frequently used keywords as well as the connection between them. Thus, a minimum threshold of 10 occurrences was set for each keyword in order to determine the strongest and densest interconnections between them. Therefore, 65 keywords met this criterion, forming three clusters (Table 2) that provide an overview of the themes discussed by researchers.

The most frequently used keywords identified by researchers are "sustainable development goals" (138 occurrences), "sustainability" (73 occurrences), "management" (64 occurrences), and "sustainable development" (63 occurrences). As illustrated in Table 2, these keywords emerge as the most significant due to their high frequency and strong connections with other terms in the network.

Table 2 - Relevant keywords used in articles

Cluster 1			Cluster 2			Cluster 3		
Keyword	Number of occurrences	Total link strength	Keyword	Number of occurrences	Total link strength	Keyword	Number of occurrences	Total link strength
Sustainable development goals	138	366	sustainable development	63	162	china	42	124
sustainability	73	192	impact	46	135	consumption	25	75
management	64	215	climate-change	29	80	economic-growth	21	67
performance	39	144	ecosystem services	24	72	model	21	63

sdgs	39	103	impacts	24	71	co2 emissions	19	69
sustainable development goals (sdgs)	30	80	health	19	45	emissions	19	41
accounting	28	92	policy	18	50	renewable energy	19	69
governance	27	104	sdg	17	39	carbon	17	70
accountability	25	95	biodiversity	16	51	greenhouse-gas emissions	15	43
framework	25	104	climate change	16	54	energy	14	37
corporate social-responsibility	22	89	water	16	49	life-cycle assessment	13	32
quality	22	85	growth	14	38	environmental sustainability	12	42
challenges	20	73	indicators	14	52	system	12	30
csr	19	69	conservation	13	37	ecological footprint	11	32
disclosure	19	79	science	13	30	footprint	10	31
sustainability reporting	19	65	africa	12	31	resources	10	30
circular economy	18	51	countries	12	38			
determinants	17	67	food security	12	23			
education	13	43	mortality	12	16			
organizations	13	61	trends	12	26			
corporate governance	12	40	future	11	37			
sustainability accounting	12	41	innovation	11	37			
systems	12	38	agriculture	10	23			
implementation	11	38						
information	11	47						
business	10	42						

Source: Own processing

The first cluster (the red cluster) highlights the relationship between the keywords accounting and SDG (Sustainable Development Goals) disclosure. It focuses on keywords like "accounting," "accountability," and "disclosure" and their connection to sustainability and SDGs. The cluster refers to topics like corporate governance, sustainability reporting, and accountability, emphasizing organizational and business practices. The second cluster (The blue cluster) highlights themes related to energy, greenhouse gas emissions, carbon footprints, and renewable resources, representing environmental and energy-related discussions. At the same time, the third cluster (the green cluster) covers broader sustainability issues, such as biodiversity, policy, agriculture, and climate change, reflecting global development and ecological resilience.

The central nodes ("sustainable development goals", "sustainability") can be used to highlight the overarching concepts that connect these clusters. The network also reveals significant overlaps between clusters, underscoring the interdisciplinary nature of sustainability. For instance, the links between corporate governance (red cluster) and environmental metrics (blue cluster) highlight the integration of carbon accounting and sustainability disclosure into corporate practices. This connection demonstrates the growing role of businesses in addressing climate change by quantifying and reporting their environmental impacts. Similarly, the overlap between policy and biodiversity (green cluster) emphasizes the alignment of natural resource management and ecosystem protection with global policy frameworks, including the SDGs. Finally, the links

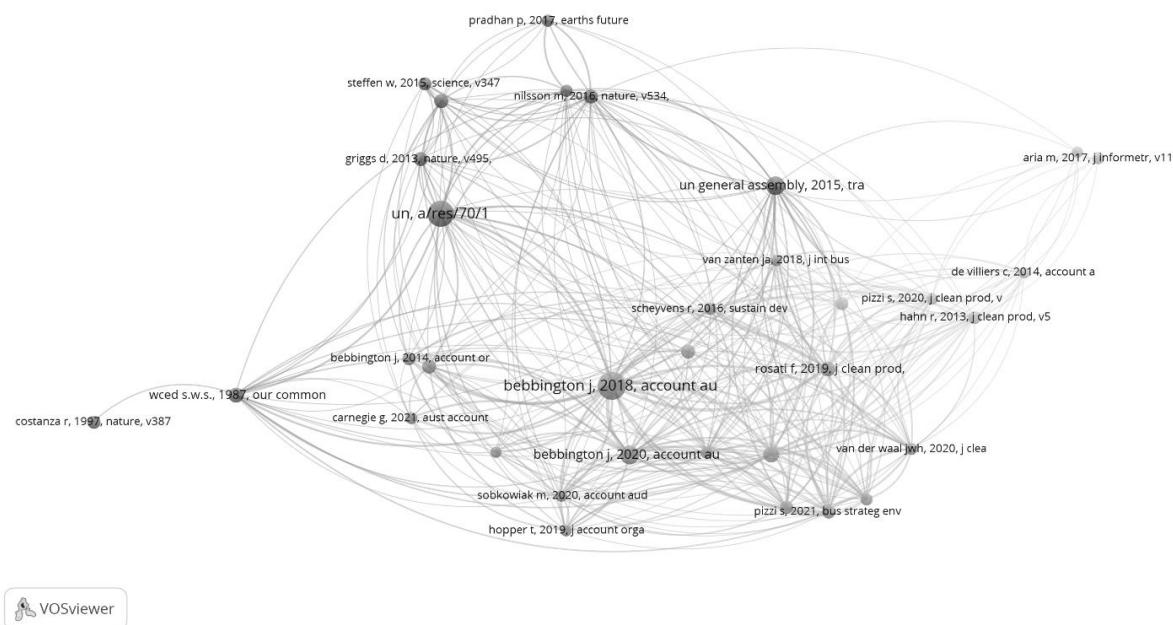


Figure 4 – Co-citation network of reference map
Source: Own processing with VOSviewer

4. Conclusions

The increase in articles about SDG accounting over time can be attributed to several interconnected factors. Following the adoption of the Sustainable Development Goals (SDGs) by the United Nations in 2015, there has been a global push for businesses to align their practices with sustainability objectives, creating a demand for effective measurement and reporting frameworks. The growing emphasis on Environmental, Social, and Governance (ESG) factors, coupled with increased regulatory pressures and the development of reporting standards like GRI, SASB, and TCFD, has driven both academic and corporate interest in how SDGs can be integrated into accounting practices. Additionally, the rise of sustainable finance and impact investing has further spurred research on how SDG-related disclosures affect investor decision-making and corporate transparency. As businesses face greater scrutiny from stakeholders and the public on their social and environmental impact, the need for accurate and transparent SDG accounting has become more urgent, leading to an expansion of scholarly work in this area.

In conclusion, the analysis of SDG accounting publications reveals important trends in both the volume of articles published and their citation impact. While Sustainability leads in the number of publications, journals like *Journal of Cleaner Production* and *Accounting, Auditing & Accountability Journal* stand out in terms of citations, indicating their significant influence in the field. The high citation rates of these journals highlight the growing interest in SDG-related topics and the increasing recognition of accounting practices in supporting global sustainability efforts. Overall, the data suggests that while the quantity of research on SDG accounting is expanding, the most cited journals are playing a central role in shaping the direction of the field and advancing knowledge on the intersection of accounting and sustainability.

Moreover, the country and institutional analysis highlights the significant global contributions to SDG accounting research, with China, the USA, and the UK leading in publication numbers. Prominent institutions such as the Chinese Academy of Sciences, the University of

California System, and the University of London play key roles in advancing research in this field. This pattern reflects a global commitment to SDG accounting and underscores the importance of these leading institutions in shaping the direction of sustainability-related accounting research.

Another aspect that should be taken into account is that the co-authorship analysis highlights key global research hubs in SDG accounting, with countries like the USA, England, and China fostering significant international collaboration. The analysis identifies six distinct clusters, reflecting a growing network of partnerships between developed and emerging economies, underscoring the expanding global engagement in advancing SDG accounting practices.

In summary, the growing body of research on SDG accounting reflects a global shift towards sustainability, with increasing scholarly attention, collaboration, and institutional involvement in the field. As the demand for effective SDG measurement and reporting frameworks rises, the academic community continues to play a pivotal role in advancing the integration of SDGs into accounting practices, driving both theoretical and practical developments in the pursuit of global sustainability goals.

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