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Perkembangan Tren Penelitian Carbon Disclosure: Sebuah Analisis Bibliometrik

TRENDS IN CARBON DISCLOSURE RESEARCH: A BIBLIOMETRIC ANALYSIS

Sully Kemala Octisari[1], Bambang Agus Pramuka[2], Puji Lestari[3]
Student of Accounting Doctoral Program, Universitas Jenderal Soedirman Purwokerto[1]
Accounting Lecturer, Universitas Jenderal Soedirman Purwokerto[2,3]
sully.octisari@mhs.unsoed.ac.id[1],bambang.pramuka@unsoed.ac.id[2],puji.lestari2506@unsoed.ac.id[3]

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ABSTRAK

Pengungkapan karbon merupakan pengungkapan sukarela perusahaan terkait lingkungan dan emisi gas rumah kaca. Dengan meningkatnya pemanasan global dan kepedulian publik global terhadap ekonomi rendah karbon, pengungkapan informasi perusahaan terkait emisi karbon menjadi salah satu fokus utama bagi investor. Artikel ini bertujuan untuk melihat tren perkembangan penelitian di bidang pengungkapan karbon selama 20 tahun terakhir dengan menggunakan analisis bibliometrik. Data dalam penelitian ini bersumber dari database Scopus dan dianalisis dengan bantuan aplikasi Bibliomagika 1.8 dan Biblioshiny of Bibliometrix R-package. Pencarian di database Scopus dilakukan dengan kata kunci "carbon disclosure" dan menghasilkan 443 hasil pencarian. Hasil analisis bibliometrik menunjukkan bahwa tren penelitian di bidang pengungkapan karbon mengalami pertumbuhan yang stabil selama 10 tahun terakhir dengan dominasi penulis dari Australia dan Amerika Serikat. Artikel-artikel di bidang pengungkapan karbon banyak berfokus pada dua tema utama, pengungkapan terkait emisi karbon dan perubahan iklim sebagai faktor penyebab pengungkapan informasi ini.

Kata kunci: pengungkapan karbon, perubahan iklim, bibliometric

ABSTRACT

Carbon disclosure is company's voluntary disclosure of environmental and greenhouse gas emissions. With rising global temperatures and public awareness about the low-carbon economy, investors' primary attention has shifted to disclosing information about carbon emissions. Using bibliometric, this article examines research trends in the subject of carbon disclosure during the last 20 years. Data in this study orignated from the Scopus database and analyzed with the help of the Bibliomagika 1.8 and the Biblioshiny of Bibliometrix R-package. A search in the Scopus database was executed.with the keyword "carbon disclosure" and produced 443 search results. The bibliometric study results demonstrate that over the previous 20 years, research trends in the subject of carbon disclosure have undergone constant growth, with Australia and the United States leading. Carbon disclosure articles tend to focus on two key themes: disclosure of carbon emissions and climate change as the causal factors for releasing this information.

Keywords: *Carbon disclosure, climate change, bibliometric.*

* Corresponding author :
Address: Student of Accounting Doctoral Program, Universitas Jenderal Soedirman Purwokerto
E-mail: sully.octisari@mhs.unsoed.ac.id

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INTRODUCTION

Global climate change has a significant impact on society, not only on the environment but also on business. Global climate change, followed by economic development, has focused stakeholder attention on environmental consequences and pollution (Karim et al., 2021). There is increase in scientific proof that shows carbon emissions are a substantial contributor to global warming, which threatens the human quality of life. Despite this, the great bulk of carbon emissions remain without regulation, and disclosure of carbon is not required in the majority of the world's countries. Companies should begin to examine the environmental impacts of their operations (Bui et al., 2020). Corporate carbon information disclosure has evolved into a useful tool for combating global climate change and reducing carbon emissions. (Y.-J. Zhang & Liu, 2020).

The government is also actively involved in global governance of climate change to reduce carbon emissions and has achieved multiple major successes for environmental sustainability, including the Kyoto Protocol and the Paris Agreement (Haag, 2005; Lewis, 2016; Y. J. Zhang et al., 2015). Many countries, in particular, have set carbon emission reduction targets to limit global temperature rise (Seneviratne et al., 2018). Nationally Determined Contributions (NDC), for example, the European Union and its member made commitments to cut greenhouse gas emissions by no fewer than 40% by 2030 in comparison to 1990 levels, and China announced that its carbon intensity by 2030 would be decreased by 60%-65% compared to 2005 levels (*2030 Climate Target Plan*, 2020) As a result, on a global scale, voluntary initiatives project such as the Carbon Disclosure Project (CDP) have emerged, pressing firms to declare their efforts and performance in terms of greenhouse gas emissions.

Environmental disclosure in annual reports is still voluntary, therefore whether or not it is disclosed in a company's annual report is entirely up to the corporation. (Abdullah, 2020). Companies that voluntarily publish carbon emission levels will improve the quantity of information published to the capital market, resulting in reduced information asymmetry (Adhikari & Zhou, 2021). Carbon information disclosure (CID) can assist related companies in recognizing their downsides and benefits in terms of carbon management, raising their awareness about the development that is coordinated of emission reductions and economic benefits, and providing investors with information about company carbon emissions and carbon assets to assist them in monitoring and limiting the operations of these companies (Y.-J. Zhang & Liu, 2020). Carbon disclosure can be regarded as a response to stakeholder enquiries about climate change as a critical societal issue (Hahn et al., 2015). In response to stakeholder pressure, a corporation discloses information concerning carbon emissions. The growth of firm concern for carbon disclosure demonstrates that ecological problem, such as the organizational impact on climate change, have emerged as an important matter that is the primary

concern of stakeholders for non-financial information such as disclosure.

Ellegaard & Wallin, (2015) define bibliometric analysis as a quantitative way to examining and analyzing previously published work. Sweileh et al., (2017) performed a bibliometric analysis to identifying trends and patterns in a specific academic topic. Accoring to Sweileh et al., (2017) the bibliometric analysis technique is now commonly employed as a research tool to illustrate study trends and impacts. General indicators in bibliometric studies include publication classification, citation, authorship, publication impact, and country (Ahmi & Mohamad, 2019). To assure the quality and trustworthiness of the data, the bibliometric analysis research technique collects secondary data that is quantitative and unbiased from digital databases such as Scopus and Web of Science.

This study's bibliometric analysis will concentrate on Carbon Disclosure. Several studies have attempted to do bibliometric analysis in this field. Wahyuningrum et al., (2023) conducted an in-depth bibliometric investigation on environmental sustainability disclosure in Asia. There are other articles analyzing research trends in the field of climate change from 1999 to 2021 (Díaz Tautiva et al., 2022) and analyses focusing on carbon disclosure projects (Ma et al., 2023). The purpose of this article is to examine trends in carbon disclosure studies and to provide answers to the following research questions:

1. What are the current forms of Carbon disclosure publications?
2. What is the annual growth in carbon disclosure scientific publications?
3. Who are the most productive contributors in the Carbon disclosure study in terms of authors, institutions, and countries?
4. What is the most cited Carbon disclosure study document?
5. What is the conceptual structure of the carbon emission research field?

This article is aimed at helping in identifying and mapping research trends on the topic of carbon disclosure. This article is divided into four parts: Part one summarizes the importance of current research. The second section outlines the methodology utilized to conduct the bibliometric analysis. Section three displays the findings in tabular, graphical, and network formats. Section four contains the conclusions.

RESEARCH METHODS

The bibliometric analysis connected to carbon disclosure was used as the study approach. Tambunan, (2013) defines bibliometrics as the use of statistical and mathematical methodologies to books and other forms of communication media. The method of bibliometric analysis used is descriptive bibliometrics, which describes the properties of a body of literature. Bibliometric analysis is used for a variety of purposes, including identifying patterns in papers and journals (Donthu et al., 2021).

Data Collection

The Scopus database was used as the study's data source. Scopus was chosen as a research data source since it is one of the largest databases with a strong reputation in the academic sector when compared to other databases. In

April 2023, statistics were gathered from the Scopus database. The following search terms were used in the Scopus database: (TITLE-ABS-KEY("carbon disclosure")). Because searches were conducted using article titles and keywords, it can be assumed that the data obtained from Scopus is relevant to the topics covered in this article. Scopus data is extracted in CSV format, yielding 443 data sources. Bibliomagika 1.8 (Ahmi, 2023) and Biblioshiny of Bibliometrix R-package was used to conduct the analysis in this article.

Data Analysis

Data collected from Scopus in CSV format will be evaluated using the Bibliomagika 1.8 (Ahmi, 2023) and Biblioshiny, which is still part of the Bibliometrix application. Bibliometrix is an R-Statistics tool that analyzes and visualizes bibliographic data. It is compatible with the GNU operating system. Data from Biblioshiny can be converted into Excel format and used in this investigation. Some of the analyses, such as co-occurrence networks and thematic maps, are represented graphically. There is also some descriptive information from Scopus, such as publications by institutions and publications by nations.

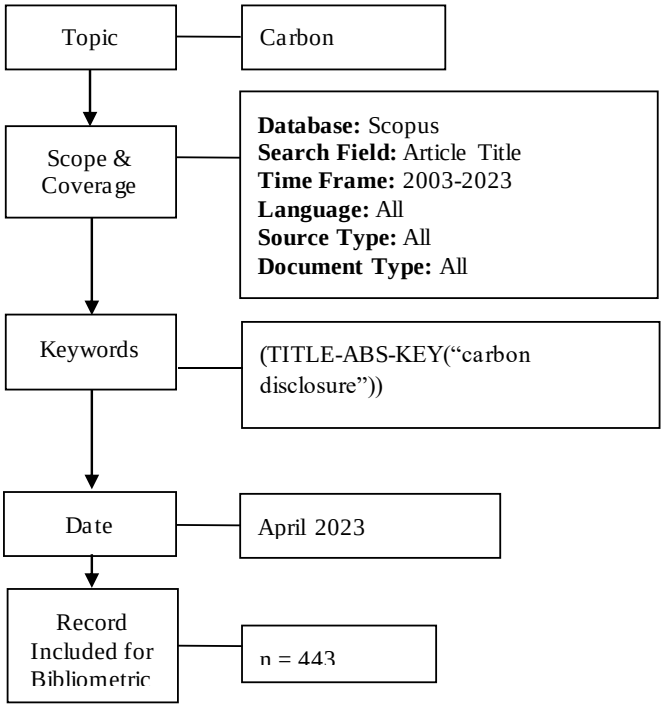

Figure 1. Flow diagram of search strategy. Source: Ahmi & Saidin, (2022)

RESULTS AND DISCUSSION

This study's findings and conclusions have been organized in accordance with the research questions posed in the first section. The author offers the findings based on a descriptive study of the dataset's general information, publishing trends, most cited papers, and the conceptual structure of the literature on carbon disclosure.

Table 1. Main Information about the Dataset

Description	Results	Description	Results
MAIN INFORMATION ABOUT DATA		DOCUMENT CONTENTS	
Timespan	2003:2023	Indexed Keywords	1127
Sources (Journals, Books, etc.)	240	Author's Keywords	1080
Documents	443		
Average years from publication	15.22	AUTHORS	
Average citations per documents	5.47	Authors	874
Average citations per year per doc	26.09	Authors of single-authored docs	81
References	20574		
		AUTHORS COLLABORATION	
DOCUMENT TYPES		Single-authored docs	91
Article	359	Co-Authors per Doc	2.6
Book	2	International co-authorships %	21.9
Book chapter	26		
Conference paper	36		
Conference review	1		
Editorial	1		
Erratum	1		
Note	2		
Retracted	1		
Review	9		
Short survey	5		

Main Information

Table 1 displays general information about the article dataset connected to Carbon emission disclosure obtained from Biblioshiny. This table summarizes the data set's statistics based on the number of sources that contributed to publications on the topic (240), the average years since publication (15,22), the average number of citations per document (5.47), the average number of citations per year per document (26.09), and the number of references (20,574). The table also displays the types of documents that are commonly produced by academics. According to this study, the majority of the materials released were in the form of articles (359). There are also a number of conference papers (36), as well as book chapters (26).

Table 2. Number of publication per year

Year	TP	NCP	TC	C/P	C/CP	h-index	g-index
2003	1	0	0	0.00	0.00	0	0
2005	3	1	33	11.00	33.00	1	3
2006	1	0	0	0.00	0.00	0	0
2007	2	1	2	1.00	2.00	1	1
2008	6	4	808	134.67	202.00	4	6
2009	6	3	38	6.33	12.67	3	6
2010	9	2	275	30.56	137.50	2	9
2011	13	8	631	48.54	78.88	8	13
2012	12	7	600	50.00	85.71	7	12
2013	25	17	866	34.64	50.94	12	25
2014	28	21	1583	56.54	75.38	13	28
2015	29	23	1579	54.45	68.65	12	29
2016	27	23	955	35.37	41.52	16	27
2017	35	30	1286	36.74	42.87	17	35
2018	31	28	937	30.23	33.46	15	30
2019	36	32	676	18.78	21.13	15	25
2020	40	34	659	16.48	19.38	16	24
2021	49	46	404	8.24	8.78	12	17
2022	73	43	216	2.96	5.02	9	12
2023	17	5	11	0.65	2.20	2	3
Total	**443**						

Notes: TP: total number of publications; NCP: number of cited publications; TC: total citations;
C/P: average citations per publication; C/CP: average citations per cited publication.

Table 2 shows the findings of annual publication trends. Over the last 20 years, the number of publications on carbon disclosure has increased dramatically. The year 2013 marked a watershed moment in the research field of carbon disclosure, when the number of publications began to rise steadily year after year. The year with the most carbon disclosure publications was 2022, with a total of 73 documents. These findings indicate a significant rise in interest in the topic of carbon disclosure compared to 2020 (40 documents) and 2021 (41 documents). Table 2 additionally depicts the influence of research published in a particular year in terms of total citations, average total citations per publication, and average total citations per year. From 2009 through 2022, the average total number of citations climbed gradually. According to Table 2, documents published in 2014 earned the most citations thus far, with 1,583 total citations and an average of 56.54 citations per publication.

Publication By Author

Through a total contribution to scientific papers, the author highly contributes to the field of research. Table 3 lists the top writers who have at least

five articles for the last 20 years. Tang Q. (27 publications) and Luo L. (21 publications) are the top authors who submitted publications to the Carbon Disclosure study, according to this table. Furthermore, several authors, including Ben-Amar W., Bui B., Gonzales, Hsueh L., Kumar P., and Zamora-Ramirez C., have a total of 5 publications. While Bimha. A have total 4 publications.

Tabel 3. Publication by Author

Authors	Articles
TANG QINGLIANG	27
LUO LE.	21
BEN-AMAR W.	5
BUI BINH	5
GONZÁLEZ-GONZÁLEZ JM	5
HSUEH LILY	5
KUMAR P.	5
ZAMORA-RAMÍREZ C.	5
BIMHA ALFRED	4

Publication By Institutions

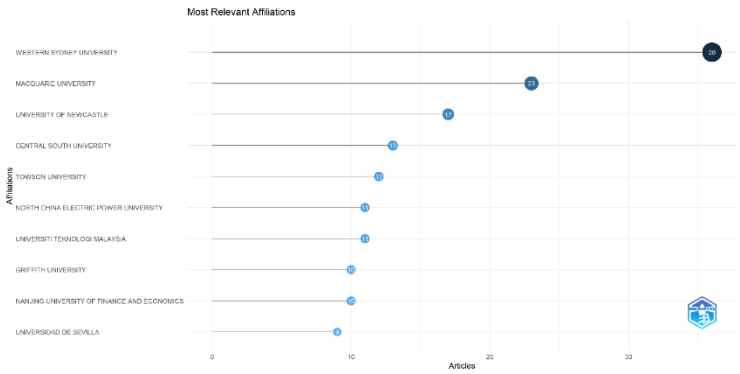

Figure 1. Publications by Institutions

Figure 1 displays the most productive institutions that have been issued at least ten carbon emission disclosure publication. Western Sydney University has the most publications with 36 documents, followed by Macquarie University with 23 documents and the University of Newcastle with 17 documents.

Publication By Countries

Table 4 lists the top 20 countries for carbon disclosure research in last 20 years. The following numbers show the global landscape of scientific research on carbon disclosure. Published documents are contributions from numerous countries throughout the world, based on author affiliation. With a total of 80 documents, Australia and the United States have the most published scientific articles on the topic of carbon disclosure

in last decade, followed by China (59 documents), the United Kingdom (51 documents), and Canada (29 documents). The high number of publications and interest regarding carbon disclosure in Australia and the United States contribute to a goverment and financial regulator proposal to make reporting of climate related disclosures an mandatory for companies in the two countries (Chambers & Leeks, 2023; Rajendran, 2023). United Kingdom, Canada, France, and New Zealand is among country in international stages that requiring financial disclosures aligned with the Task Force on Climate-Related Financial Disclosure (TCFD) as mandatory (Rajendran, 2023). While in China, disclosure related to climate risk was still voluntary (Sha, 2022). Based on TCFD report in 2022, European has the highest disclosure level of climate related disclosure, followed by Asia Pasific, America and Middle East and Africa (Task Force on Climate-Related Financial Disclosure, 2022)

Table 4. Publication by Countries

Institution	Continent	TP	%
Australia	Oceania	80	18.06%
United States	North America	80	18.06%
China	Asia	59	13.32%
United Kingdom	Europe	51	11.51%
Canada	North America	29	6.55%
Germany	Europe	23	5.19%
France	Europe	17	3.84%
Italy	Europe	16	3.61%
Spain	Europe	15	3.39%
Indonesia	Asia	14	3.16%
India	Asia	13	2.93%
Netherlands	Europe	13	2.93%
South Africa	Africa	13	2.93%
Malaysia	Asia	10	2.26%
Brazil	South America	9	2.03%
New Zealand	Oceania	8	1.81%
Japan	Asia	7	1.58%
South Korea	Asia	7	1.58%
Turkey	Europe	6	1.35%
Nigeria	Africa	5	1.13%

Notes: TP=total number of publications

Most Cited Documents

Figure 2 displays the ten most commonly mentioned documents in the disclosure of carbon emissions. Since their release, these documents have acquired over 100 citations. The most cited documents are articles written by Liao L.; Luo L.; Tang Q. (2015) under the title *"Gender Diversity, Board Independence, Environmental Committee and Greenhouse Gas*

Disclosure" followed by Matsumura E.M.; Prakash R.; Vera-Muñoz S.C. (2014) under the title *"Firm-Value Effects of Carbon Emissions and Carbon Disclosures"* and Kolk A.; Levy D.; Pinkse J. (2008) under the title *"Corporate Responses in an Emerging Climate Regime: The Institutionalization and Commen-Suration of Carbon Disclosure".*

Liao et al., (2015) analyzes the link between company board features and the Carbon Disclosure Project's of greenhouse gas emissions voluntary disclosure in companies. The findings in this study are in line with stakeholder theory, hinted that a diverse and independent board of directors, as well as the apperance of a board-level environmental committee, would balance a company's financial and non-financial goals with inadequate resources, as well as manage potentially clashing demands from stakeholders with various interests.

Matsumura et al., (2014) investigates the consequence of carbon emissions on corporation value and voluntary disclosure of carbon emissions. The findings reveal that the market penalizes companies for their emissions of carbon, but companies who do not report their carbon emissions information face additional costs. The findings support the concept that capital markets sequester carbon emissions, as well as information should be disclosed in firm valuations.

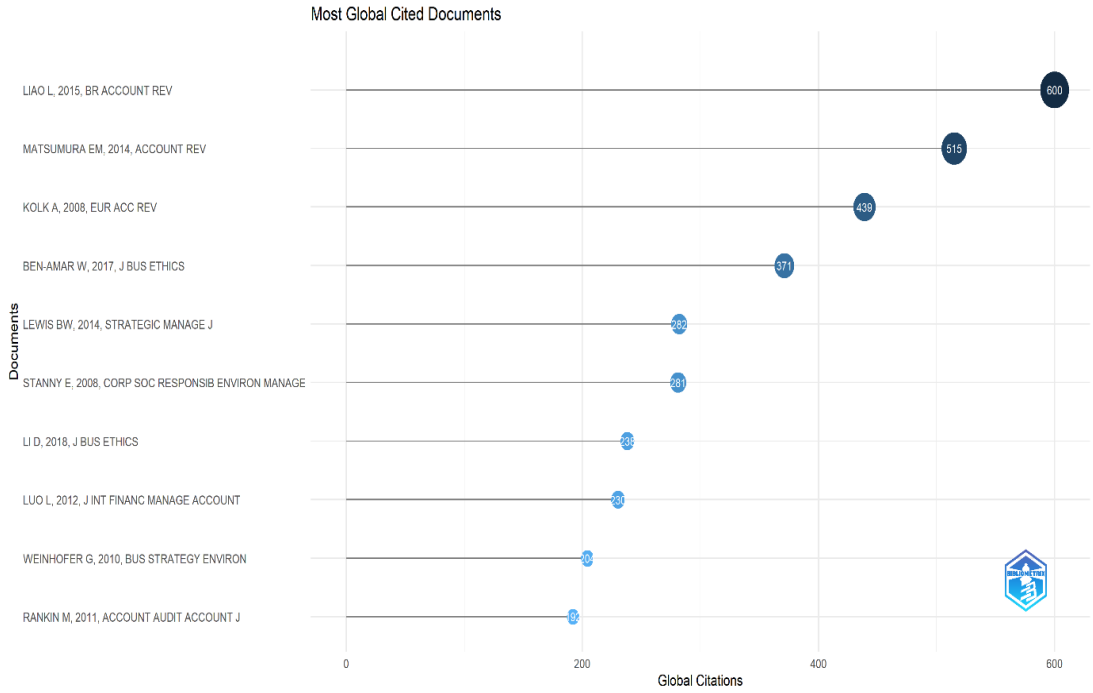

Figure 2. Most Cited Document

Kolk et al., (2008) investigates business reactions to climate change in regard to the creation of greenhouse gas reporting procedures, specifically carbon disclosure. They found that despite the fact that the number of declaring enterprises are outstanding and developing, neither the level of carbon disclosure suggested by Carbon Disclosure Project nor the more

extensive carbon accounting give information that is particularly relevant for stakeholders at this juncture.

According to the top three publications, academics appear to be focusing on determining the factors that influence decisions and the level of carbon disclosure. This appears to be one of the primary central topics in the research realm of carbon disclosure.

Co-Occurrence Analysis

Co-Occurrence Analysis Of Author's Keywords

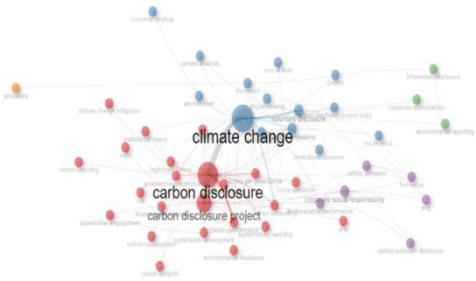

Figure 3. Co-occurrence analysis of author's keywords

The co-occurrence network of the author's keywords is depicted in Figure 3. The analysis findings were obtained using the Biblioshiny of the Bibliometrix R-package. Based on Co-occurrence According to keyword analysis network, the carbon disclosure literature may be separated into two large clusters, the red cluster and the blue cluster. The red cluster is concerned with carbon disclosure, while the blue cluster is concerned with climate change. The keywords generated in the red cluster are concerned with the theories behind carbon disclosure as well as the factors influencing carbon disclosure. Meanwhile, the blue cluster focuses on climate change as one of the primary reasons why companies make carbon disclosures, while the green cluster demonstrates the impact of carbon disclosure. The purple cluster, which focuses on environmental information created by carbon disclosure, connects the red and blue clusters

Thematic Map dan Wordcloud

The study results in the production of thematic map and wordclouds that depict the conceptual structure of the topic. This thematic map is made up of co-occurrence network analysis phrases that identify what the study areas are discussing as well as important topics and trends (Della Corte et al., 2019). Figure 4 depicts a representation of four different typologies of themes on this map.

This map is created using the author's keywords. Voluntary carbon disclosure, industry self-regulation, and environmental risk management are examples of motor

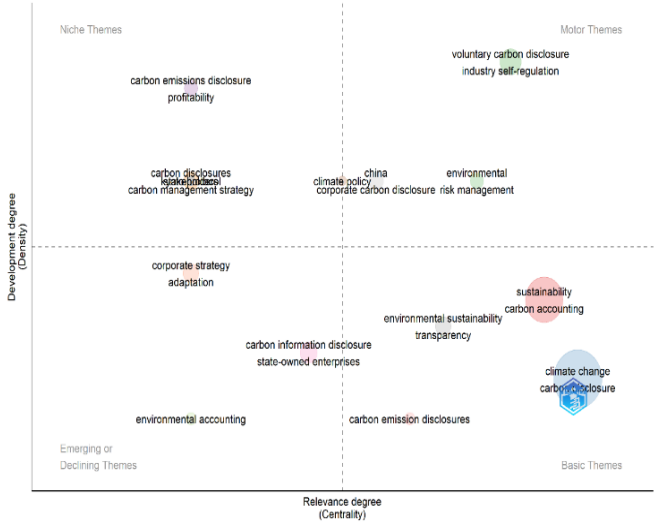

Figure 4.Thematic Map

Topics with high centralities and density in the upper right quadrant. Corporate strategy, carbon information disclosure, state-owned enterprise, and environmental accounting are the more developed and declining themes in the carbon disclosure literature, as illustrated in Figure 4. The upper left quadrant demonstrates high density but low centrality, as shown by the themes of carbon disclosure, profitability, and carbon management plan. Meanwhile, the lower right quadrant depicts fundamental and cross-cutting themes to various fields of field research (Della Corte et al., 2019). The emerging themes in this domain are sustainability, climate change, carbon accounting, and information transparency.

Figure 5. Wordcloud

The results of wordcloud analysis based on author keywords in Figure 5 indicate similar trends to the thematic map analysis and co-occurrence analysis. The most common and commonly used keywords revolve around three major themes: carbon disclosure, climate change, and carbon disclosure project. In addition, numerous commonly used buzzwords, such as voluntary disclosure and corporate social responsibility, appear.

CONCLUSION

The bibliometric analysis in this study was carried out in scientific publications between 2003 and 2023 in the field of carbon disclosure. A total of 443 scientific publications were analyzed to understand the research work carried out in this domain. The bibliometric analysis reveals the main players that dominate the research domain in carbon disclosure. 2022 is the most productive year in research publications with the theme of Carbon disclosure. Tang Q., (27 publications) and Luo L., (21 publications) are the most prolific authors based on the number of publications they have produced, while Liao L.; Luo L.; Tang Q. (2015) is the most influential writer based on the highest number of citations over the last 10 years. Western Sydney University is the institution that produces the most carbon disclosure articles, and Australia and the United States (80 documents), appear to be the largest contributors to this field. Based on a co-occurrence analysis of the author's keywords, this study found several main topics in the field of carbon disclosure, namely carbon disclosure and the factors and theories underlying carbon disclosure and climate change as one of the main causes why companies conduct carbon disclosures.

Based on the results of this study, it can be seen that research in the field of carbon disclosure is still one of the topics of interest with the number of publications and the number of citations steadily increasing from year to year. However, most of the publication topics in the field of carbon disclosure are still limited to how companies disclose information related to carbon emissions and the causal factors for disclosing this information. Future research might be able to focus on controlling costs related to company carbon emissions and how the company's strategy uses the disclosure of carbon information in financial reports.

REFERENCES

2030 Climate Target Plan. (2020). European Commission. https://climate.ec.europa.eu/eu-action/european-green-deal/2030-climate-target-plan_en

Abdullah, M. W. (2020). Carbon emission disclosure in indonesian firms: The test of media-exposure moderating effects. *International Journal of Energy Economics and Policy*.

Adhikari, A., & Zhou, H. (2021). Voluntary disclosure and information asymmetry: do investors in US capital markets care about carbon emission? *Sustainability Accounting, Management and Policy Journal*, *13*(1), 195–220. https://doi.org/10.1108/SAMPJ-02-2020-0046

Ahmi, A. (2023). *biblioMagika®*. https://aidi-ahmi.com/index.php/bibliomagika

Ahmi, A., & Mohamad, R. (2019). Bibliometric Analysis of Global Scientific Literature on Web Accessibility. *International Journal of Recent Technology and Engineering*, 2277–3878. https://www.researchgate.net/publication/334596375

Ahmi, A., & Saidin, S. Z. (2022). Current landscape of the enterprise resource planning (ERP) research: A bibliometric review. *AIP Conference Proceedings*, *2644*(1), 030005. https://doi.org/10.1063/5.0106544

Bui, B., Moses, O., & Houqe, M. N. (2020). Carbon disclosure, emission intensity and cost of equity capital: multi-country evidence. *Accounting &*

Finance, *60*(1), 47–71. https://doi.org/10.1111/ACFI.12492

Chambers, J., & Leeks, A. (2023, February). *Incoming: Mandatory Climate Risk Disclosures in Australia | Insights | Jones Day*. Jones Day. https://www.jonesday.com/en/insights/2023/02/incoming-mandatory-climate-risk-disclosures-in-australia

Della Corte, V., Del Gaudio, G., Sepe, F., & Sciarelli, F. (2019). Sustainable Tourism in the Open Innovation Realm: A Bibliometric Analysis. *Sustainability 2019, Vol. 11, Page 6114*, *11*(21), 6114. https://doi.org/10.3390/SU11216114

Díaz Tautiva, J. A., Huaman, J., & Ponce Oliva, R. D. (2022). Trends in research on climate change and organizations: a bibliometric analysis (1999–2021). *Management Review Quarterly 2022*, 1–35. https://doi.org/10.1007/S11301-022-00298-1

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*, 285–296. https://doi.org/10.1016/J.JBUSRES.2021.04.070

Ellegaard, O., & Wallin, J. A. (2015). The bibliometric analysis of scholarly production: How great is the impact? *Scientometrics*, *105*(3), 1809–1831. https://doi.org/10.1007/S11192-015-1645-Z/TABLES/9

Haag, A. (2005). Developing nations offer hope in climate talks. *Nature*, *438*(7070), 895. https://doi.org/10.1038/438895A

Hahn, R., Reimsbach, D., & Schiemann, F. (2015). Organizations, Climate Change, and Transparency. *Http://Dx.Doi.Org/10.1177/1086026615575542*, *28*(1), 80–102. https://doi.org/10.1177/1086026615575542

Karim, A. E., Albitar, K., & Elmarzouky, M. (2021). A novel measure of corporate carbon emission disclosure, the effect of capital expenditures and corporate governance. *Journal of Environmental Management*, *290*(April), 112581. https://doi.org/10.1016/j.jenvman.2021.112581

Kolk, A., Levy, D., & Pinkse, J. (2008). Corporate Responses in an Emerging Climate Regime: The Institutionalization and Commensuration of Carbon Disclosure. *Http://Dx.Doi.Org/10.1080/09638180802489121*, *17*(4), 719–745. https://doi.org/10.1080/09638180802489121

Lewis, S. L. (2016). The Paris Agreement has solved a troubling problem. *Nature 2016 532:7599*, *532*(7599), 283–283. https://doi.org/10.1038/532283a

Liao, L., Luo, L., & Tang, Q. (2015). Gender diversity, board independence, environmental committee and greenhouse gas disclosure. *The British Accounting Review*, *47*(4), 409–424. https://doi.org/10.1016/J.BAR.2014.01.002

Ma, B., Lin, S., Bashir, M. F., Sun, H., & Zafar, M. (2023). Revisiting the role of firm-level carbon disclosure in sustainable development goals: Research agenda and policy implications. *Gondwana Research*, *117*, 230–242. https://doi.org/10.1016/J.GR.2023.02.002

Matsumura, E. M., Prakash, R., & Vera-Muñoz, S. C. (2014). Firm-Value Effects of Carbon Emissions and Carbon Disclosures. *The Accounting Review*, *89*(2), 695–724. https://doi.org/10.2308/ACCR-50629

Rajendran, N. (2023, January). *Carbon disclosure becomes mandatory | Greenbiz*. GreenBiz. https://www.greenbiz.com/article/carbon-disclosure-becomes-mandatory

Seneviratne, S. I., Rogelj, J., Séférian, R., Wartenburger, R., Allen, M. R., Cain, M., Millar, R. J., Ebi, K. L., Ellis, N., Hoegh-Guldberg, O., Payne, A. J., Schleussner, C. F., Tschakert, P., & Warren, R. F. (2018). The many possible climates from the Paris Agreement's aim of 1.5 °c warming. *Nature*, *558*(7708), 41–49. https://doi.org/10.1038/s41586-018-0181-4

Sha, F. (2022, April 19). *How should China improve climate disclosure in the finance sector?* China Dialogue. https://chinadialogue.net/en/business

/how-should-china-improve-climate-disclosure-in-the-finance-sector/

Sweileh, W. M., Al-Jabi, S. W., AbuTaha, A. S., Zyoud, S. H., Anayah, F. M. A., & Sawalha, A. F. (2017). Bibliometric analysis of worldwide scientific literature in mobile - health: 2006-2016. *BMC Medical Informatics and Decision Making*, *17*(1), 1–12. https://doi.org/10.1186/S12911-017-0476-7/TABLES/9

Tambunan, K. (2013). KAJIAN PERPUSTAKAAN KHUSUS DAN SUMBER INFORMASI DI INDONESIA. *BACA: JURNAL DOKUMENTASI DAN INFORMASI*, *34*(1), 29–46. https://doi.org/10.14203/J.BACA.V34I1.172

Task Force on Climate-Related Financial Disclosure. (2022). *Task Force on Climate-Related Financial Disclosure 2022 Status Report*.

Wahyuningrum, I. F. S., Humaira, N. G., Budihardjo, M. A., Arumdani, I. S., Puspita, A. S., Annisa, A. N., Sari, A. M., & Djajadikerta, H. G. (2023). Environmental sustainability disclosure in Asian countries: Bibliometric and content analysis. *Journal of Cleaner Production*, 137195. https://doi.org/10.1016/J.JCLEPRO.2023.137195

Zhang, Y. J., Wang, A. D., & Tan, W. (2015). The impact of China's carbon allowance allocation rules on the product prices and emission reduction behaviors of ETS-covered enterprises. *Energy Policy*, *86*, 176–185. https://doi.org/10.1016/j.enpol.2015.07.004

Zhang, Y.-J., & Liu, J.-Y. (2020a). Overview of research on carbon information disclosure. *Frontiers of Engineering Management 2020 7:1*, *7*(1), 47–62. https://doi.org/10.1007/S42524-019-0089-1

Zhang, Y.-J., & Liu, J.-Y. (2020b). Overview of research on carbon information disclosure. *Frontiers of Engineering Management*, *7*(1), 47–62. https://doi.org/10.1007/s42524-019-0089-1