

A Bibliometric Analysis on Carbon Credit Disclosure Using Dimensions Database

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Abstract:

This study is focused on carrying out a bibliometric analysis upon the literature database contained in dimensions.ai in the area of carbon credit and its disclosure. The dimensions.ai database was filtered using the query "Carbon Credit" & "Disclosure" and articles published under the category of "Commerce, management, Tourism" were selected for the study. Total number of articles selected was 50. Bibliometric analysis was carried out using VOSVIEWER. The selected articles were analysed on the basis of year of publication, citations score, co-citations, and keyword occurrences.

Keywords: Carbon Credit, Disclosure, Bibliometric Analysis, Dimensions.

INTRODUCTION

A certificate or permit that certifies the authorization to release a specific quantity of carbon dioxide (CO₂) or other greenhouse gases (GHGs) into the atmosphere is known as a carbon credit. It is a component of a larger system to battle climate change and lower global carbon emissions. In order to offer financial incentives for lowering emissions, carbon trading systems rely heavily on the idea of carbon credits.

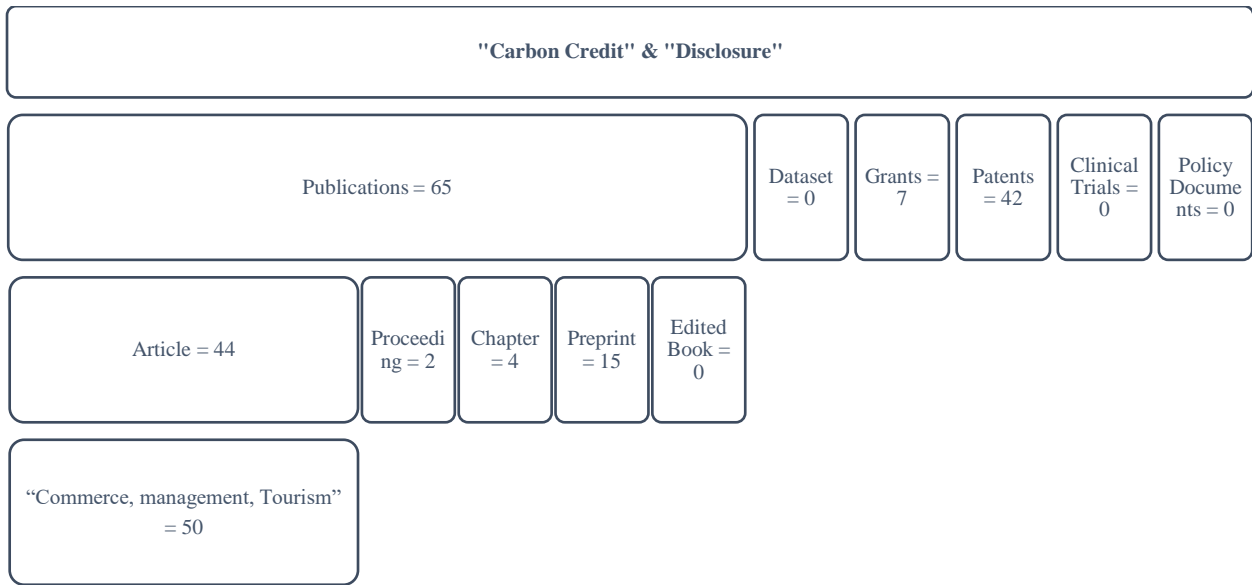
The practice of disclosing information about a company's use of carbon credits to the public, such as how many credits were purchased, what kinds of projects were funded, and how the credits fit into the company's overall sustainability or carbon offset strategy, is known as carbon credit disclosure. Investors, consumers, regulators, and the general public may all better understand how a business is addressing its environmental impact, especially its carbon footprint, thanks to this openness.

METHODOLOGY

For this study we have collected the data using dimensions.ai database.

The query inserted in the database was: [searching "Carbon Credit" & "Disclosure" in title and abstract].

The search was carried out on **6th October, 2024**. The selection of database was carried out as under:



(Figure: 1 sample selection for study)

(Source: <https://app.dimensions.ai/discover/publication>)

A total of 50 articles under the area of “Commerce, management, Tourism” were considered for the study. These articles were exported to be further analyzed using VOS viewer.

Results and Discussion:

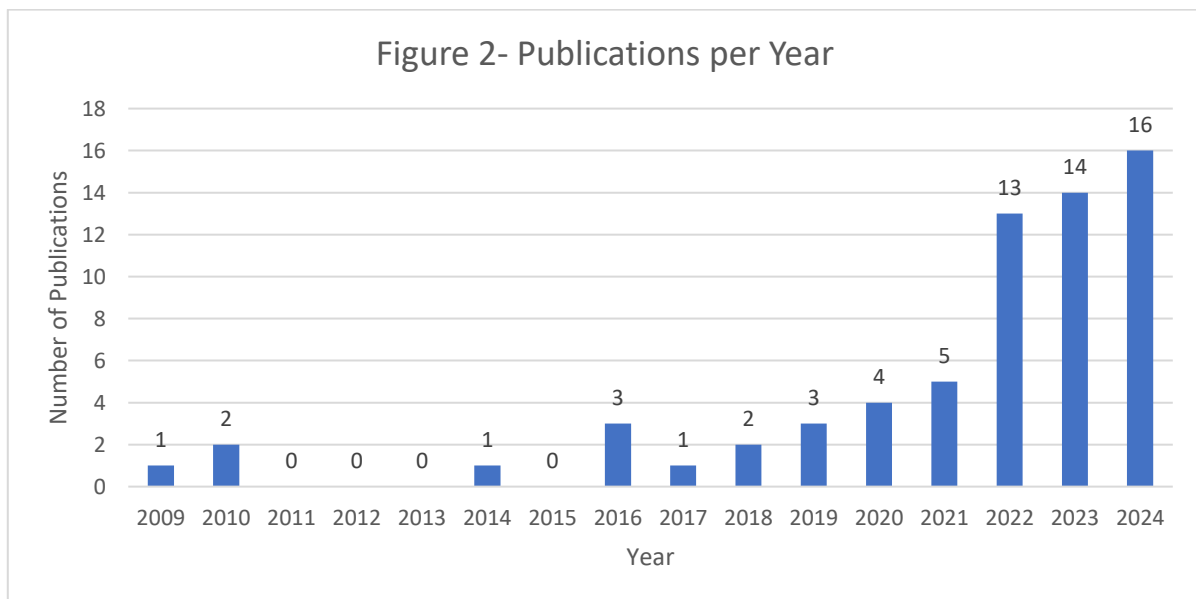


Figure 2 presents the publication trends in the area of Carbon Credit and Disclosure (upto **6th October, 2024**), shows an uptrend in the yearly number of studies published. This may signal the rising recognition this field is attracting in the recent times. The same scenario of uptrend in published document is shown in figure 3 as well as shown below.

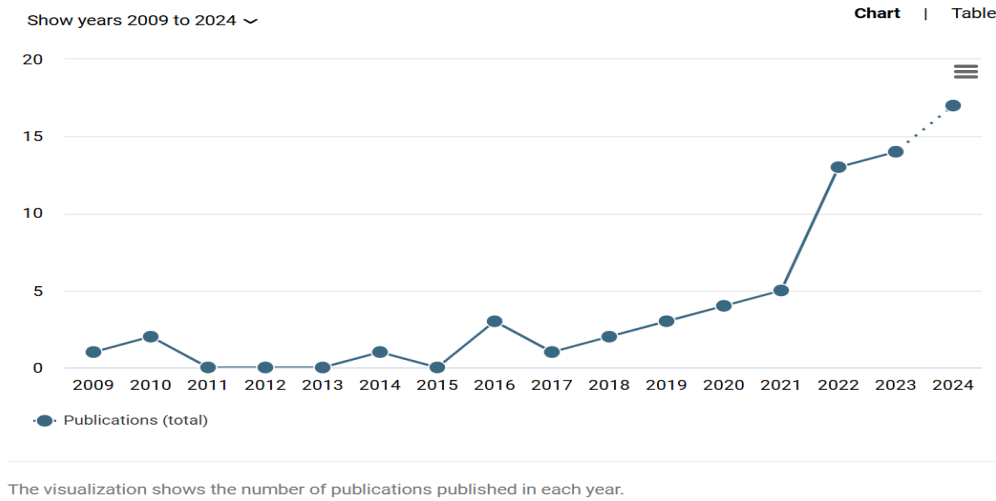


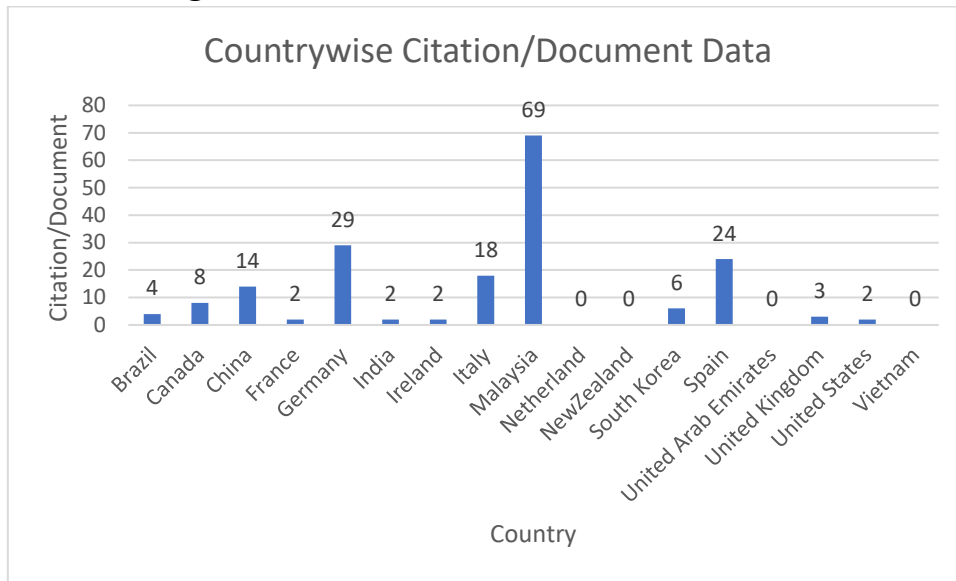
Figure 3- Trend of Publication per Year

Table 1- country wise publications, with citations.

COUNTRY	DOCUMENTS	CITATIONS	CITATION / DOCUMENTS
Brazil	4	16	4
Canada	7	56	8
China	13	180	14
France	2	4	2
Germany	2	58	29
India	12	19	2
Ireland	1	2	2
Italy	5	88	18
Malaysia	3	207	69
Netherland	1	0	0
New Zealand	1	0	0
South Korea	1	6	6
Spain	1	24	24
United Arab Emirates	1	0	0
United Kingdom	5	15	3
United States	9	15	2
Vietnam	1	0	0

As per table 1, there are a total of 17 countries, with China emerging as a country with the highest number of publications (13) followed by India and United States. Table 1 also presents the country wise citations for respective documents, where by Malaysia has highest citations of 207 for 3 publications, followed by China with 180 citations for 13 publications. Total citations and number of documents are further equated to calculate citation/paper, for each country. Higher citation score per paper indicates high quality of paper and signals that a particular paper is used extensively for further studies. The citation score per publications for each country is exhibited in figure 4.

Figure 4- Citations / Document across countries.



• **Co-citation analysis**

Co-citation analysis determines the linkage depending upon the number of times they are cited together. These publications were then analyzed in context to the relatedness of items which is determined based on their number of co-authored documents, across countries. The analysis was carried out for two units of measurement, cited authors and cited sources.

1. Co citation among authors with a minimum of 10 citation received were selected for study. The results are presented in table 2. The network classifications as described in figure 4 gives 2 cluster with 7 authors matching the criteria. Cluster 1 is presented in yellow with 5 authors and cluster 2 is presented in blue with 2 authors,

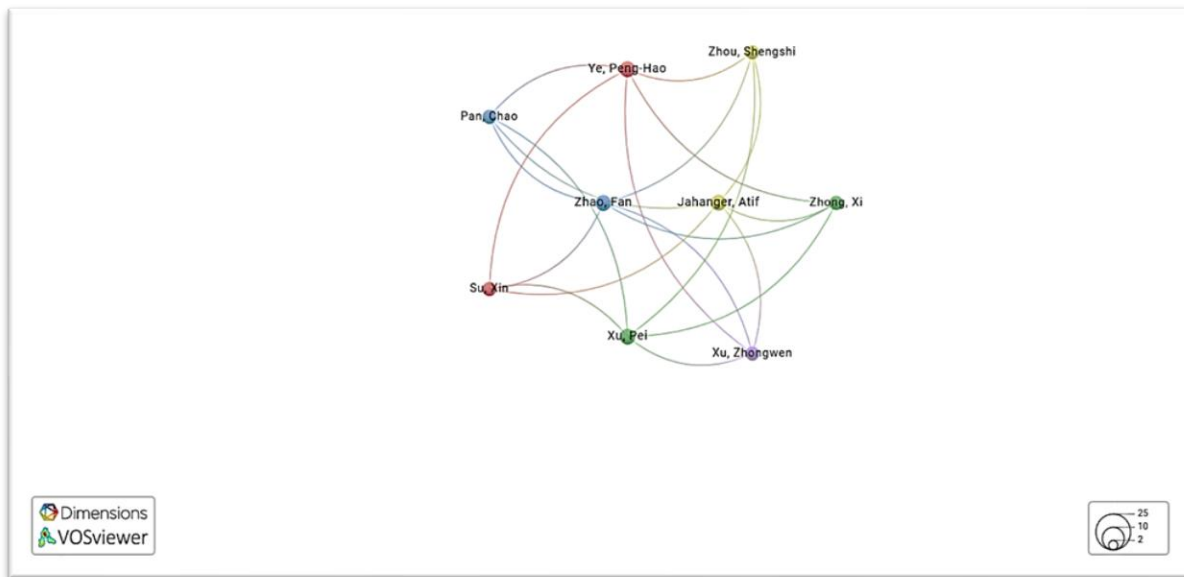
Table 2: authors with a minimum 10 citations

Author	Citations
Pei Xu	36
Peng-Hao Ye	36
Zhongwen Xu	29
Fan Zhao	36
Atif Jahanger	36
Margherita Giuzio	29
Sujit Kapadia	29
Giuliana Birindelli	30
Stefano Dell'Atti	28
Antonia Patrizia Iannuzzi	28
Joseph Ufere Kalu	69
Godwin Uche Aliagha	69
Alias Buang	69
María Jesús Nieto	24
Josh Ryan-Collins	10

Table 3- Co-authorship and their co-authorship links

Co-Author	Co-authorship links
Abhishek, N & Bhadesiya Hardik bharatbhai	5
Kulal Abhinandan	5
Nayak, Keyurkumar M	5
Divyashree, M S	5
Suraj, Nithu	5

Figure 5 Network Visualization for co-citations across authors.



2. Co-citation among the sources with a minimum of 5 citations were selected for the study. The results are presented in table 4. ‘Journal of Cleaner Production’ received highest citation of 117 among the selected database followed by ‘SSRN Electronic Journal’ and ‘Journal of Environmental Management’.

Table 4: sources with their citations

SOURCE	CITATIONS
SSRN Electronic Journal	79
Journal of Cleaner Production	117
Sustainability	16
Corporate Social Responsibility and Environmental Management	66
Industrial Marketing Management	5
Business Strategy and the Environment	29
Climate Policy	13
Social and Environmental Accountability Journal	8
Journal of International Accounting Auditing and Taxation	5
Corporate Board role duties and composition	7
Meditari Accountancy Research	8
Journal of Environmental Management	69

• **Keyword Analysis:**

The database was analyzed to measure the occurrence of keywords in title and abstracts. Binary counting method was used. Using minimum of 5 occurrences, out of 1311 terms, 32 met the threshold. Based on the. Table 5 gives the list of the most relevant 19 terms that were identified on the basis of relevance score.

Table 5: keyword occurrence (minimum 5) in title

Term	Occurrences
development	7
china	6
carbon	24
cost	5
Disclosure	21
Emission	12
Green	19
Climate	15
Credit	21
Voluntary	4
Financial	7
Accounting	5
Environment	5

Concluding Remarks:

This bibliometric analysis, conducted using the Dimensions database, has explored the evolving research domain of carbon credit and its disclosure. The findings reveal a rapidly growing field, with a significant increase in publications in recent years. The analysis of authorship patterns suggests a growing level of international collaboration. ‘Journal of Cleaner Production’ journal emerged as most cited source. While majority of the documents were published from china, document from Malaysia got the highest citations.

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