

Global Mapping of Open Access Literature Availability in the Area of Scientometrics Research during 2012-2021

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Abstract. Open access publishing has received considerably a greater amount of recognition in the sector of scholarly communication by highlighting the significant advantages of creating impactful literature. The present study aims to identify the availability of open access literature in scientometrics and visualize the adoption of open access publishing by comparing various sectors of bibliographic information between open access and non-open access literature. Performance measurement and network visualization of the Scientometrics mapping method have been used. The study highlights that the OAP ratio is relatively low in the area of scientometrics yet has a higher average citation value than non-open access publications. China is the most productive country to adopt OA publishing however have low collaborative network than the United States and the United Kingdom. Based on the importance of Scientometrics studies, the contributors should adopt open access publishing to enhance the visibility and exposure of the quality of research globally.

Keywords: Scientometrics, open access publications, open access routes, correlation, OA share, library management.

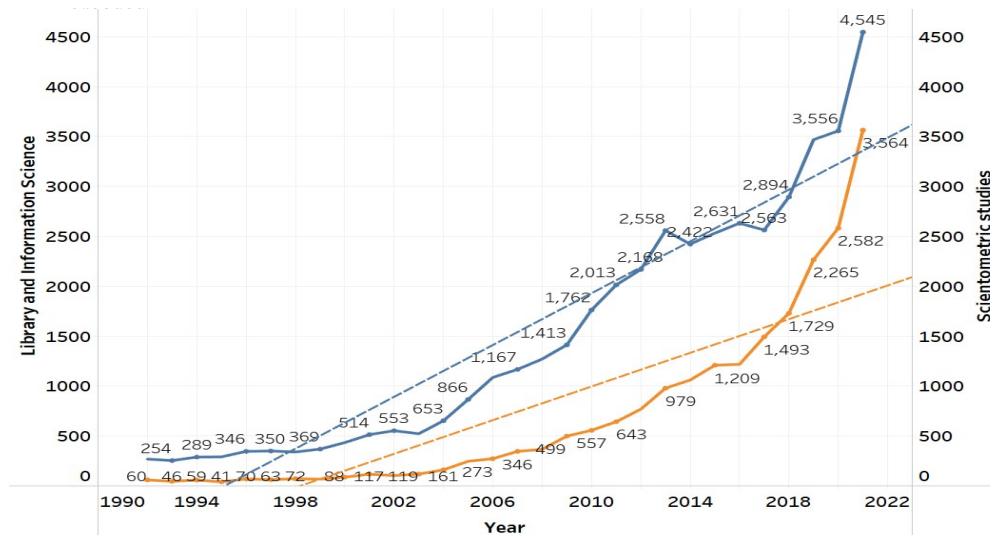
1 Introduction

Scientific journals are one of the main channels of communication between researchers and experts in various fields of science, and researchers try to publish the

outputs of their research activities in relevant and reliable scientific journals. In many countries, the credibility and effectiveness of researchers are evaluated based on the quantity and quality of their articles published in scientific journals (Cope & Phillips, 2014). In the past, access to scientific journals in print was possible through paid subscriptions, but in recent years, many features of scientific journals have changed. Online publication of journals, which began in the early 1990s with the development of the World Wide Web, is one of the most important and influential developments. Also, the expansion of the free access movement and the free and unrestricted dissemination of research outputs in the form of open access journals facilitated scientific communication and provided the basis for the movement of scientific communities towards open science (Erfaanmanesh, 2019). The open-access movement has a sacred and ancient goal that human beings have strived to achieve throughout history, and that is unconditional access without any restrictions to scientific content and findings for every human being regardless of race, color, nationality and it is poverty and wealth. This movement aims to spread science and develop access to scientific findings to the public and not to selected individuals, and it will never allow a lack of access to scientific findings due to inadequate financial resources or legal barriers. Therefore, open access demands the removal of any financial and legal restrictions on access to science and scientific production (especially in the field of scientific journals and articles) (Zerhsaz, 2007).

In general, the dissemination of scientific resources (whether articles or any research output) in the form of open access will lead to three very important results for the scientific community and researchers: (a) increasing the likelihood of seeing resources; (b) increase the likelihood of using resources; and (c) increasing the impact of thoughts and ideas (Solomon, 2018). Therefore, the open access movement, by providing the ability to produce and freely disseminate knowledge and the possibility of using and exploiting it without any restrictions, provides the ground for the emergence and impact of new ideas independent of the centers and institutions of power and public awareness of the scientific community. It has raised the scales and boundaries of the progress of science. In such a system, collective wisdom and participatory activities are developed in the world of science, and epistemological circles are formed or rapidly forming among scientists around the world without geographical constraints. Also, in such an atmosphere, the monopoly status has diminished and the possibility of influencing thoughts and ideas in the form of individuals and institutions to the higher layers of the scientific community has been facilitated. Therefore, the present study tries to examine open-access journals in the field of scientometrics. Today, the field of scientometrics has become very important among researchers and experts. Because it is one of the ways that helps researchers to achieve research goals in their field is to have an understanding and overview of the scientific framework of the field. In this regard, information visualization or drawing a map and drawing the scientific structure of that field seems necessary. In a scientific map that is drawn based on the scientific research outputs, influential authors, thematic clusters formed over time, and an important and influential production are identified and introduced. Another feature of visualizing information that results from drawing scientific maps is the possibility of studying the history of science. Figure 1 shows the continuous

growth of scientometrics studies in the field of Library and Information Science. Therefore, the necessitate for open access mapping of scientometrics research in-



* ALL ("Library and Information Science")

** ALL ("Scientometric" OR "scientometrics" AND "library" OR "libraries" OR "librarian" OR "librarians")

Figure 1: Growth trend of Scientometrics studies in the field of Library and Information Science

In scientific maps, the emergence of new domains and the cessation of some saturated scientific domains can be studied. A scientific map depicts the results of the analysis of a scientific field from different angles and provides an overview of that field (Soheili & Asareh, 2014). Over the past few decades, the study of scientific maps as one of the most important aspects of science assessment studies has gained much importance in various fields. Providing a big picture of the status of research and how the relationship between different fields and awareness of how these fields grow and develop over time, is one of the goals of scientific maps (Sedighi, 2015). Tazegul & Emre (2021) presented the scientometric data for journals published in clinical allergy and immunology and compare the scientometric data of journals in terms of all-OA and hybrid-OA publication policies. The results conflict with the literature stating that the OA publication model's usage causes an increase in citation counts. Wani & Wani (2020) studied mapping the use of open access resources by doctoral students in the USA by employing citation analysis finding the number of times cited, impact factor, h-index, immediacy index, impact per publication and Scimago Journal Rank (SJR). Valderrama-Zurián, Aguilar-Moya, & Gorraiz (2019) conducted a study on the use of InCites to analyse documents in open access and edu-

cation published in journals from 2010 to 2016 in the SSCI categories of ‘Education and Educational Research’, ‘Education, Scientific Disciplines’ and ‘Education, Special’. Makeenko & Trishchenko (2018) presented the impact of open access on citations and alternative metrics of scientific articles in media and communication studies. The article contains the results of the pilot stage of the research into the impact of open access on major relevance indicators of scientific articles on journalism, media and mass communication. Rautenberg, Hild & de Souza (2018) presented the digital data curation and web of data: maintaining linked open data for bibliometric and scientometric studies. It was concluded that, by preserving the three datasets as Linked Open Data, the endpoint <<http://lod.unicentro.br>> allows: i) the availability of resources on the Web of Data; ii) the navigability between the resources distributed on the web; iii) the exploration of the relationship between the available elements; and iv) the replication of results in scientific studies over time. Bosah, Oleji & Baro (2017) showed that university librarians were aware of the golden and green methods but were not familiar with the diamond method on open access journals in Africa.

Various open access investigation has been conducted by many authors for journals, databases, institutions or region but very few studies have been seen on a particular theme or topic. Therefore, this study aims to evaluate the scientific literature employing scientometrics studies by identifying the level of open access embracement by the academic community across the globe. Scientific mapping of open access publications has been an opportunity to know and investigate the intention of researchers or the academic community about the acceptance and adoption of open access implying open science.

2 Objective of the Study

The objectives of this study are:

- To disclose the trendline variation between total publications and open access publications estimating the future direction of publication on Scientometrics.
- To compare the top journals, affiliations and funding agencies between the OA and non-OA publications.
- To identify the correlation of the prolific author with authors’ keywords and corresponding affiliated countries of the open-access publications.
- To visualize the collaborative, interlink between authors and affiliated countries for OA publications on scientometrics studies.

3 Methodology

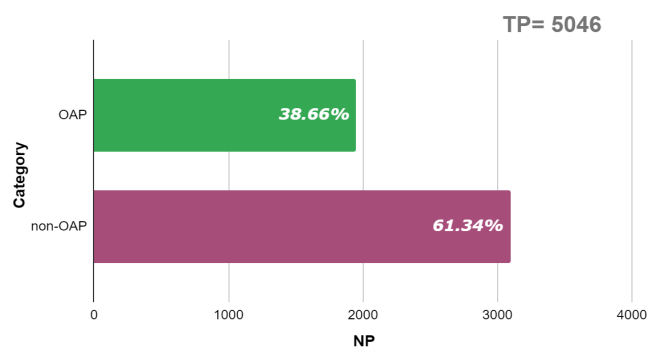
The present study is configured to visualize the adoption and acceptance of open access publishing in the most popular study area viz. Scientometrics. The study is confined to the dataset indexed in the Scopus database and the query used to extract the dataset is ‘TITLE-ABS-KEY = (scientometric*)’ which has been refined and filtered for the time frame of ten years i.e., 2012-21. The dataset was retrieved on June

15, 2022. The retrieved data are arranged in standard setup manually in MS-Excel. Further, the analysis was carried out by following the scientometrics method. For performance measure analysis, the open-source analysis and visualization tool Biblioshiny (Bibliometrix R package) is used while network visualization VOS viewer is used, especially for open-access publications. The scrutinized data are demonstrated through various tables, figures and charts via Google Spreadsheet and Tableau.

4 Data Analysis and Interpretation

4.1 General distribution of the undertaken set of publications

Figure 2 represents the overall distribution of the extracted publications on Scientometrics based on the framework of open access and non-open access publications. The overall extracted publications found on the basis of the query is 6679 publications where OA access share is only 35.57%. Based on the undertaken time frame of 2012-21, amongst the total publications (TP=5046), only 38.66% are published on open access platforms and the rest 61.34% are under non-open access platforms. The main information regarding the underlined open access publications (OAP=1951), the average publication ratio is 3.74%. The authorship pattern discloses that a total of 4803 authors have contributed actively among which 257 were single-authored documents and 4546 were multi-authored documents with the collaboration index of 2.8%. The total citation count for the extracted open access publications based on the time frame of 2012-21 is 19947 having a 59 h-index with an average citation value of 10.22% whereas, for non-open access publications, the total citation count is 19969 of 57 h-index. And the average citation value of non-OAP is 6.45% which is significantly low.

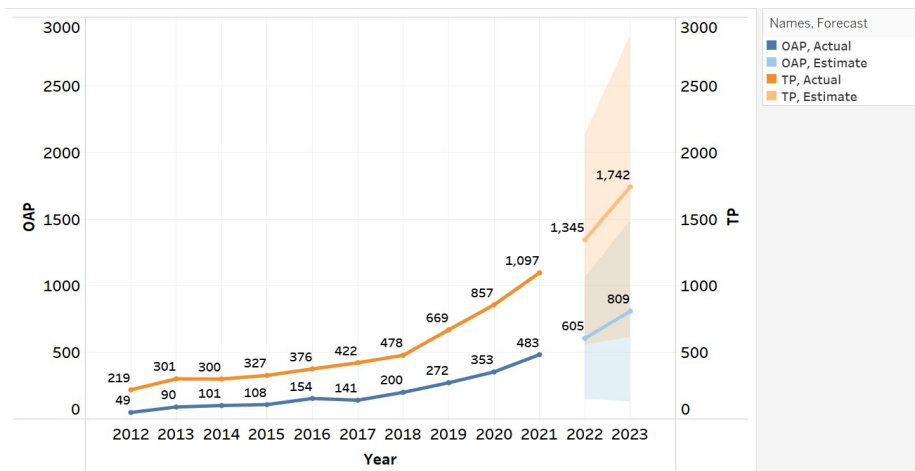


Note(s): TP= Total Publications; OAP= Open Access Publications; Non-OAP= Non-Open Access Publications; NP= Number of Publications

Figure 2: Overall visualization of the extracted publications on Scientometrics studies

4.2 Growth trend variation between total publications (TP) and open access publications (OAP)

Figure 3 displays the growth trend of scholarly publications associated with the topic of Scientometrics during the last decade (2012-2021) highlighting the differences between both total and open access publications. Wagner & Sandor were the first, in the academic community to publish a scholarly article based on scientometrics in 1977 mainly focusing on the importance of scientometrics and bibliometric study on cancer research. Whereas, the scholarly article that was published on an open-access platform (Green/self-archiving) was in 1984 by Rip & Courtial. The comparison between the total and open access publications during the undertaken time frame represents a curve line depicting the simultaneous growth in the number of scientometrics publications for both the category. However, there seems to have a constant gap between the two categories where the adoption of an open-access platform by the researcher is less than publishing a non-open access platform. The annual growth rate of the open-access publications on scientometrics is 28.92%. By forecasting, it can be assumed that the scholarly publications on scientometrics will increase in the next two years in both the categories i.e., open access and total publications and the gap between the two will also upsurge.



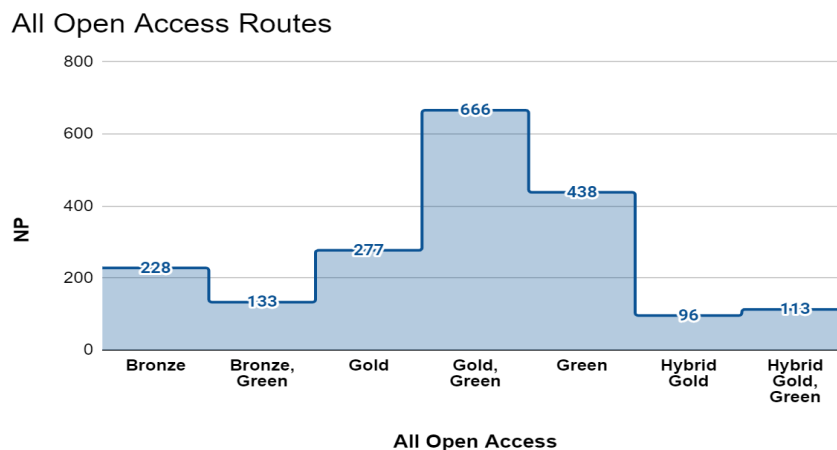
Note(s): TP= Total Publications; OAP= Open Access Publications

Figure 3: Trendline variation associated with forecast estimation for the theme Scientometrics

4.3 Variation of open access publication routes

Figure 4 depicts the different approaches adopted by the researchers while undergoing the open-access publication process. The different OA approaches are: gold - articles published only in open access journals by paying article processing charge (APC); green - final/preprint version of the publication is deposited in any repository; bronze

- publishers' choice to make free availability of the final manuscript for with certain time-bound; and hybrid gold - journals or publishers provides a choice to publish in open access platform. Figure 4 depicts that the combination of gold and green approach (666) is mostly preferred by the contributors of scientometrics. Out of 1951 OAP, the green route is highly followed by the authors with a sum of 1350 publications which has received about 21149 citations from 2010 onwards with an h-index of 58. And gold (943) is the next most accepted OA approach receiving 9593 citations from 2010 to the present with an h-index of 37. Bronze with 360 OAP, cited by 2137 documents from 2010 onwards has an h-index of 19 and the hybrid gold is the least preferable among all authors with 209 documents receiving 2078 citations and an h-index of 22. This depicts that with a vast difference in the number of publications in bronze and hybrid gold, still, the citation gap is not that vast whereas the h-index for hybrid gold is high compared to bronze. The impact of the bronze approach differs and fluctuates because the time frame for the availability and accessibility of the documents purely depends on the choice of publishers.



Note(s): NP= Number of Publications

Figure 4: Display of adoption of various open access approaches by contributors

4.4 Open access distribution of various involved subjects

Table 1 displays the involvement of various disciplines in the area of scientometrics along with the adoption of open access publishing. It also depicts the top affiliated country for each subject that has adopted open-access publishing. Scientometrics studies have been mainly conducted in the area of Social Science (TP=2343; OAP= 852); yet have only 36.36% OA share followed by Computer Science (TP=1816; OAP= 607) with a lower OA share (33.43%); where Germany and Bornmann, L. are

Global Mapping of Open Access Literature Availability in the Area of Scientometrics Research during 2012-2021

the top affiliated country and prolific author respectively for both subject areas. If viewed in terms of OA share, natural science and medical science disciplines usually opt for open access publishing like Neuroscience (78.26%); Pharmacology, Toxicology and Pharmaceutics (66.32%); and Agricultural and Biological Sciences (60.55%). Top country affiliation depicts that in different disciplines as such Pharmacology, Toxicology and Pharmaceutics; Chemical Engineering; Environmental Science and 9 others, China makes the way to attained top position, however United States also leads in Neuroscience, Biochemistry, Genetics and Molecular Biology and three other disciplines. The discipline Arts and Humanities (TP=620; OAP=68) have a relatively low OA share (10.97%) even after having a good number of publications in Scientometrics which requires a drastic involvement of OA adoption to be on-trend in the near future.

Table 1: Subject-wise distribution of open access publications on Scientometrics

SUBJECT AREA	TP	OAP	OA share (%)	Top Affiliated Country (NP)
Social Sciences	2343	852	36.36	Germany (89)
Computer Science	1816	607	33.43	Germany (92)
Medicine	687	355	51.67	China (65)
Environmental Science	402	234	58.21	China (64)
Engineering	517	187	36.17	China (42)
Agricultural and Biological Sciences	256	155	60.55	Brazil (51)
Biochemistry, Genetics and Molecular Biology	210	124	59.05	United States (19)
Business, Management and Accounting	402	112	27.86	United States (19)
Energy	191	103	53.93	China (33)
Mathematics	360	96	26.67	United States (21)
Decision Sciences	392	85	21.68	United Kingdom (16)
Multidisciplinary	139	83	59.71	Brazil (17)
Arts and Humanities	620	68	10.97	Brazil (19)
Materials Science	120	66	55.00	China (18)
Physics and Astronomy	115	64	55.65	China (12)
Pharmacology, Toxicology and Pharmaceutics	95	63	66.32	China (15)
Earth and Planetary Sciences	118	61	51.69	China (18)
Psychology	104	58	55.77	United States (10)
Economics, Econometrics and Finance	127	51	40.16	Russian Federation (16)

Neuroscience	46	36	78.26	United States (9)
Chemical Engineering	58	35	60.34	China (8)
Chemistry	73	33	45.21	China (6)
Immunology and Microbiology	55	31	56.36	Iran (5)
Health Professions	43	21	48.84	Russian Federation (6)
Nursing	33	14	42.42	China (2)
Veterinary	5	3	60.00	Australia, Brazil, Iran, United Kingdom- (1)
Dentistry	12	3	25.00	Chile, China, Spain- (1)

Note(s): TP= Total Publications; OAP= Open Access Publications NP= Number of Publications

4.5 Comparative display of top journals between non-OA and OA publications

Table 2 compares and ranks the top journals that have published maximum publications in Scientometrics studies in both non-OA and OA publications along with the most prolific author for each journal.

Table 2: Display of top journals with associated prolific authors

Rank	Non-OA publications			OA Publications		
	Journal	NP	Prolific Author	Journal	NP	Prolific Author
1st	Library Philosophy and Practice	450	Surulinathi, M. (18)	Scientometrics	214	Bormann, Lutz (17)
2nd	Scientometrics	331	Glänzel, Wolfgang (9)	Journal of Informetrics	52	Bormann, Lutz (12)
3rd	Ceur Workshop Proceedings	47	Afonin, Sergey Aleksandrovich (4)	Sustainability Switzerland	51	Vega-Muñoz, Alejandro (3)
4th	Annals Of Library and Information Studies	46	Garg, Kailash Chandra and Gupta, Brij Mohan (6)	International Journal of Environmental Research and Public Health	45	Latkin, Carl A. and Tran, Bach Xuan (11)
5th	ACM International Conference Proceeding Series	40	Katsaros, Dimitrios S. and Manolopoulos, Yannis (3)	Journal Of Scientometric Research	44	Das, Anup Kumar (3)
	Lecture Notes in Computer Science Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics		Gogoglou, Antonia &... (2)			
6th	Journal Of Informetrics	39	Bormann, Lutz &... (2)	Plos One	27	Groneberg, David Alexander and ... (2)
7th	DESIDOC Journal of Library and Information Technology	38	Gupta, Brij Mohan (10)	DESIDOC Journal of Library and Information Technology	26	Gupta, Brij Mohan (7)
8th	Scientific And Technical Information Processing	36	Gureyev, Vadim N.; Kalachikhin, Pavel Andreevich & Mazov, Nikolai Alekseevich (4)	Journal Of Data and Information Science	20	Moed, Henk F. and Wu, Jinshan (3)
9th	Current Science	35	Singh, Vivek Kumar (6)	Quantitative Science Studies	19	Thelwall, Mike (3)
10th	Iranian Journal of Information Processing Management	33	Soheil, Faramarz (7)	Acta Informatica Medica	18	Mašić, Izet (6)

Note(s): NP= Number of Publications

The ranking of the journals is based on the number of publications for each category. Certain journals such as Scientometrics, Journal of Informetrics, DESIDOC Journal of Library and Information Technology have gained their respective rank in both non-OA and OA publications though there is variation in the number of

Global Mapping of Open Access Literature Availability in the Area of Scientometrics Research during 2012-2021

publications. Bornmann, Lutz is the most frequently reflected author in the journals of both non-OA and OA publications. Gupta, Brij Mohan, the Indian author is seen as the most prolific author in DESIDOC Journal of Library and Information Technology significantly attaining 7th position in the ranking for non-OA and OA publications category.

4.6 Ranking of most affiliated institutions associated with Scientometrics studies comparing the non-OA and OA publications

Table 3 compares the quality impact through citations of the most prolific affiliation between non-OA and OA publications associated with Scientometrics studies. The citation data collected is based on the years 2012-2021. The most prolific affiliation to publish more on scientometrics are either universities (state/central/private) or other academic research institutions. The adoption of OA publishing is circulated all across the globe, however, within the top ten ranked affiliated institutions majority belong to Germany (Administrative Headquarters of the Max Planck Society & Goethe-Universität Frankfurt am Main) and the Netherlands (Universiteit Leiden & Universiteit van Amsterdam). Nevertheless, in the ranking of the non-OA category, India such as CSIR, India; NISTADS; BHU, Periyar University and Bharathidasan University are accounted to have major affiliations associated with maximum scientometrics studies followed by China (Wuhan University & Chinese Academy of Sciences). As for quality impact, the OA category of the top 10 ranked affiliations has received more citations and exposure with a high h-index when compared to the affiliations of the non-OA category.

Table 3: Comparison of most prolific affiliation between non-OA and OA publications

Rank	Non-OA publications				OA Publications			
	Affiliation	NP	Citations (2012-2021)	h-index	Affiliation	NP	Citations (2012-2021)	h-index
1st	Council of Scientific and Industrial Research India	51	334	11	Administrative Headquarters of the Max Planck Society	42	1171	21
2nd	Russian Academy of Sciences	50	127	7	Universidad de Granada	40	837	14
3rd	National Institute of Science Technology and Development Studies India	48	251	9	University of Wolverhampton	35	1551	16
4th	Banaras Hindu University	47	321	11	KU Leuven	34	213	9
5th	Wuhan University	44	214	12	Magyar Tudományos Akademia	29	141	6
6th	Periyar University	40	47	3	National University of Singapore	27	315	11
7th	Chinese Academy of Sciences	37	258	12	Universiteit Leiden	26	1167	13
8th	Goethe-Universität Frankfurt am Main	34	272	11	Goethe-Universität Frankfurt am Main	25	391	15
9th	Bharathidasan University	33	120	7	Universiteit van Amsterdam	24	882	12
10th	KU Leuven	32	283	12	Chinese Academy of Sciences	23	121	7

Note(s): NP= Number of Publications

4.7 Ranking of associated Funding agencies

Table 4 signifies the top associated funding agencies by comparing the non-OA and OA categories dealing with the publication in the area of Scientometrics. Among the total dataset of 5046, only 27.65% of the total publications are funded within which 48.32% (OA share) are published in open access platform whereas the non-

funded publications ratio is 72.35% with 34.98% of OA share. The comparison between non-OA and OA categories in the top ten ranked funding agencies depicts that certain funding agencies such as the National Natural Science Foundation of China, National Science Foundation and many others have attained a position in both categories. The National Natural Science Foundation (NNSF) of China is the top funding agency from country China to be associated with Scientometrics publications in both OA and non-OA categories. And the prolific affiliation to receive funding from NNSF particular agency is Wuhan University (11) in the category of OA. Based on the citation impact (collected for 2012-21) the top funding agencies have relatively gained more citation counts despite having a low number of publications than the non-OA category, which depicts the importance and advantages of greater visibility and exposure of scholarly content.

Table 4: Comparative display of top funding agencies between OA and non-OA category

Rank	Non-OA category			OA Category		
	Funding agencies	NP	TC	Funding agencies	NP	TC
1st	National Natural Science Foundation of China	158	1499	National Natural Science Foundation of China	117	877
2nd	Conselho Nacional de Desenvolvimento Científico e Tecnológico	42	462	European Commission	52	1638
3rd	Coordenação de Aperfeiçoamento de Pessoal de Nível Superior	42	347	Conselho Nacional de Desenvolvimento Científico e Tecnológico	44	244
	National Science Foundation		308	Coordenação de Aperfeiçoamento de Pessoal de Nível Superior		201
4th	Russian Foundation for Basic Research	39	63	National Science Foundation	32	1117
5th	Ministry of Education of the People's Republic of China	36	589	National Institutes of Health	24	376
6th	Department of Science and Technology, Ministry of Science and Technology, India	34	274	Horizon 2020 Framework Programme	20	349
	European Commission		295			
7th	Fundamental Research Funds for the Central Universities	32	497	Ministry of Education of the People's Republic of China	19	78
				Seventh Framework Programme	19	579
8th	Council of Scientific and Industrial Research, India	27	99	Fundamental Research Funds for the Central Universities	18	73
9th	National Institutes of Health	23	59	Russian Foundation for Basic Research	17	15
10th	National Key Research and Development Program of China	20	147	European Regional Development Fund	16	141

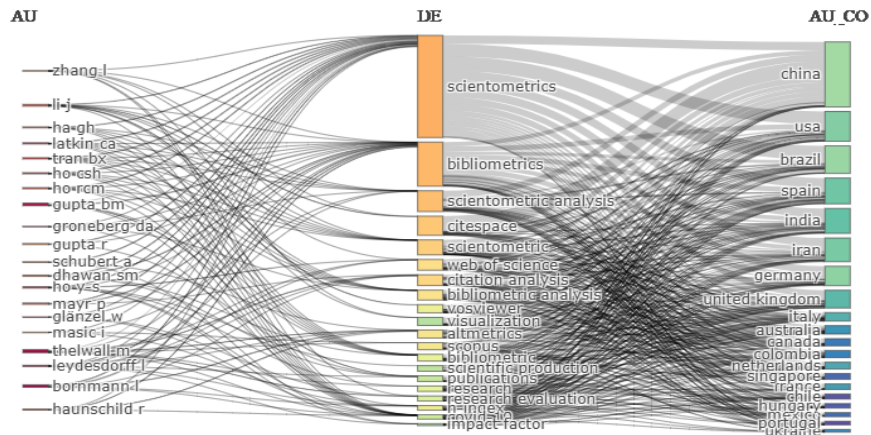
Note(s): NP= Number of Publications; TC= Total Citations

4.8 Correlation between OA authors, keywords and prolific countries

Figure 5 demonstrates the interconnection between authors, their induced keywords and the affiliated country of the open-access publications. The viscosity of each template shows a high frequency of correlational activity between the undertaken category. The term Scientometrics is the most correlated keyword (1.80k times) associated with the following list of countries such as Brazil (253) China (147), the USA (222), Spain (166), India (154) and many more and author like Gupta, B.M. (22) and Thelwall, M. (22). The next prominent correlated keywords identified are bibliometrics (777) highly associated with the USA (87), scientometrics analysis (368) with China (117) and Citespace (338) also highly interconnected with China (264). From the correlation, it can be visualized that the eminent keyword used by most of the authors is scientometrics; the prolific authors to dominate the open access publication ratio in scientometrics studies are Gupta, B.M., Thelwall, M. and

Global Mapping of Open Access Literature Availability in the Area of Scientometrics Research during 2012-2021

Bormann, L. whereas, for author affiliated country, China has maximum contribution mostly followed by USA and Brazil.



Note(s): AU= Authors; DE= Author's Keywords; AU_CO= Author affiliated country

Figure 5: Correlation of prolific OA authors, keywords and affiliated country

4.9 Author collaboration network of open access publications

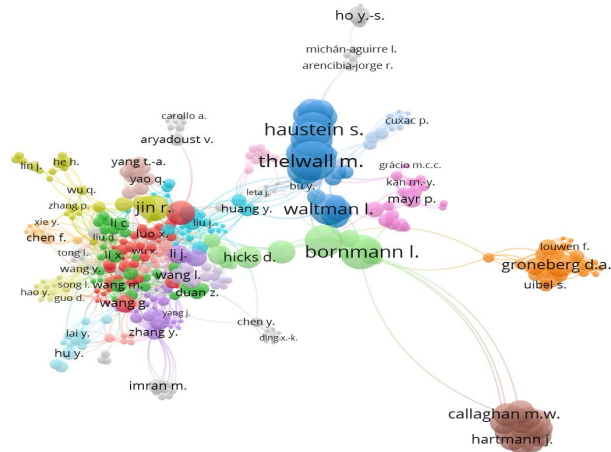


Figure 6: Collaborative network visualization of authors for open access publications

Figure 6 represents the collaborative network of authors for the undertaken open access publications on Scientometrics studies. The illustration demonstrates the

interlink of 389 authors forming 25 clusters for various collaborative authors making 2075 total link strength. The total interconnected link of authors is 1654. The authors with dense distinctive weight have the maximum number of open-access documents as well as citations like Thelwell, M. with 29 documents have 1796 citations however linked with only 11 other authors viz. Wolfram, D., Lariviere, V., Haustein, S., Milojevic, S and others in cluster 3. Bornmann, L. (n=41) as the most prolific author to publish scientometrics studies in open access platform, cited 1276 times belongs to cluster 11 collaborating with 16 authors such as Thelwall, M., Callaghan, M.W., Bauer, J., Wolfram, D., Guns, R., Lamb, W.F., Minx, J.C., and others. The authors who have conquered maximum total link strength of 128 among all the authors are Latkin, C.A. (n=16) and Tran, B.X. (n=15).

4.10 Country collaboration network of open access publications

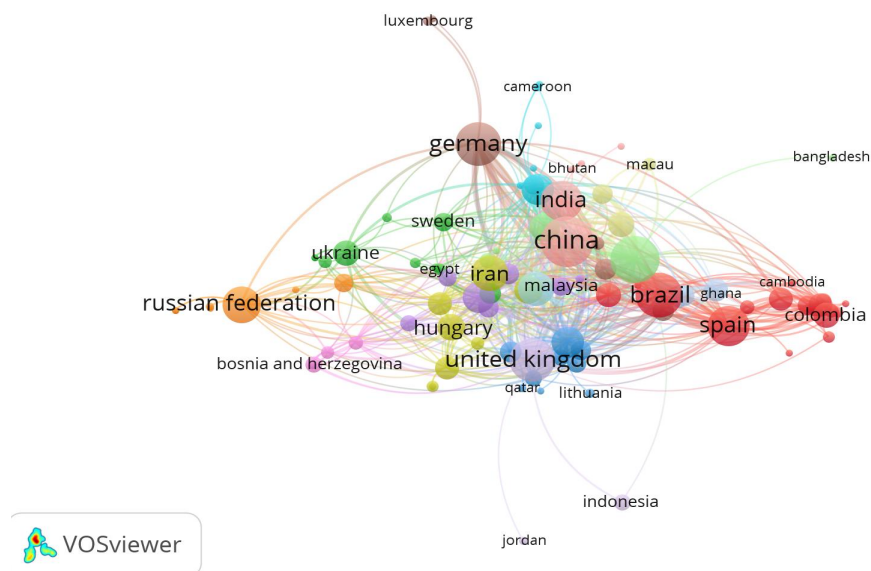


Figure 7: Network visualization of the country for OA publications

Figure 7 visualization of country collaboration network of the open-access publications on the undertaken dataset of scientometrics studies. The collaborative network illustrations represent 98 countries altogether forming 15 groups of varied coloured clusters with a total link strength of 1449. United Kingdom (n=172) and United States (n=210) portrays to have maximum collaborative sequences with 54 and 50 links respectively. China (n=255) with the highest number of open access publications has only 38 interlinks with other countries/regions followed by Germany (n=174) and France (n=69) with 35 interlinked countries. Countries like Jordan (n=2),

Global Mapping of Open Access Literature Availability in the Area of Scientometrics Research during 2012-2021

Bangladesh (n=1), Lithuania (n=3), Venezuela (n=1), Montenegro (n=1), Bhutan (n=1) and some others have a collaborative link with only one country or region indicating to have the least networking instinct for scientometrics studies published in open access platform.

5 Conclusion

The idea of open access has unified the entire domain of academic publishing for the betterment of the scientific community, elevating and empowering academic professionals. The increasing number of citations, reads and output of the scientific literature is indirectly aligned to the possibility of the ideology of the open access movement, which focuses on making the content associated with scientific publications transparent and available to all academicians (Deori & Verma, 2022). The open-access or open science movement has continuously enlightened every region/country, affiliation or subject area by diminishing the copyright restrictions and financial barriers. The study of scientometrics mapping itself highlights entertaining the quantitative structure of any intellectual discipline. The scientific mapping of the scholarly contents on various scopes with various scientific indicators leads to manifest definite information that ensures to fascinate the audiences and knowledge seekers. And the analysis of scientific literature in the area of scientometrics through open access medium would just be remarked as beneficiary conduct for academicians. The present study evaluates the implementation of open access policies and approaches by the confined contributors in the topic of scientometrics. Among the extracted scientometrics publications for the study, the majority of the documents are induced in non-open access publications whereas only 38.66% are published in the open-access category. And the growth trend curve of the extracted publications has risen upwards with the due course of time and is estimated to increase most probably by the next two years of the undertaken time-bound 2012-21. The contributors are more prone to deposit a copy of the final version or peer-review of the publications in a certain repository or archive as a process of self-archiving. The process of self-archiving is positively inherited under the green open-access approach. However few authors also follow the gold route by publishing in open access journals by providing article processing charges (APC) to the publishers. Since the average per-journal APC has risen globally differentiating for each journal yet the APC value also varies according to theme or subject (Morrison et al., 2021). The top corresponding country to publish in the area of scientometrics is India the open access category, China has led the way by crossing over all renowned academic countries or regions. China was the largest producer of scholarly articles in 2018 and it has proved the prediction to surpass the United States by 2020 or 2021 in all document types in SCI-index publications (Zhu and Liu, 2020). National Natural Science Foundation of China is the top-funded agency identified for both open access and non-open access category. Yet, China could not surpass the United States and the United Kingdom in terms of collaborative networks between regions/countries.

The endorsement of open access platforms by the contributor and publishers is seen to have diversified in the discipline of scientometrics mapping. In the last decade, academicians have been influenced by the benefit of the open access movement which is expected to improve in the upcoming years. There is a better chance to increase the ratio of the acceptance and adoption of the OA movement by contributors by acknowledging the literal advantages of the open science and plan S initiatives. The increase in acceptance of OA will have a greater impact in the world of scholarly publications in any discipline.

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Global Mapping of Open Access Literature Availability in the Area of Scientometrics Research during 2012-2021

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