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An Empirical Study on Open Access Scholarly Publications: Unveiling Indian Impact

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This paper presents a comprehensive analysis of the evolving landscape of open-access (OA) scholarly publications originating from India during the period spanning 2013 to 2022. The study is grounded in meticulous data collected from the Scopus bibliographic database. The findings illuminate a prolific scholarly output, with India contributing 477,576 publications in the open-access domain, of which 76% are under the research paper category. A discernible thematic distribution emerges from the analysis, with Medicine emerging as the foremost area of contribution, closely trailed by Engineering. These two domains collectively account for a substantial 30% share of the overall scholarly discourse. The All India Institute of Medical Science (AIIMS), New Delhi, holds a dominant position among the other institutional affiliations. The Journal of Clinical and Diagnostic Research emerges as a top source, with an impressive tally of 7627 OA publications. Comparative global insights reveal the United States as a frontrunner in the open-access landscape, while India claims a commendable 7th position in the rank. Distinguished individual contributions also make their presence known, particularly D. Dutta from the Bhabha Atomic Research Centre (BARC) emerged as the leading prolific contributor. The Green and Gold OA models distinctly resonate among Indian contributors, echoing the evolving paradigms in disseminating scholarly output.

Keywords: Open Access Publication, Indian Contribution, Open Access Model, Highly cited articles

Introduction

Open access (OA) is an innovative way to disseminate scholarly publications. Open access publications are digital materials created in their digital form, freely accessible to users via the internet, providing unhampered online entry to articles featured in scholarly journals. The notion of open access has provided sustainable solutions for bridging the knowledge and digital divides in society. The digital divide refers to the gap between those who have access to technology and information and those who do not. Openness plays a vital role in bridging this divide by providing equal access to information and knowledge to all. It also enables individuals and communities to participate in the global economy and benefit from its opportunities. Open access (OA) literature is defined as "digital, online, free of charge, and free of most copyright and licensing restrictions"[30]. OA to scientific research may be obtained in Gold OA and Green OA. Gold OA signifies that the content of the journal that published the paper is entirely or partially freely available to the public. The Gold OA category includes a wide variety of publications, from tiny journals that publish a few articles per year to massive journals that publish many papers in the same period. Contrastingly, Green OA entails authors personally depositing their articles within institutional or subject repositories, either in the form of a pre-print or as a finalized version of the peer-reviewed and edited full text (a post-print), subsequent to publication. Gold OA, on the other hand, involves publishers making articles freely

available on their websites or other platforms. Both options increase any article's potential readership being accessed by the target audience.

Further, it speeds up the spread of newly emerging research ideas for the knowledge of the academic community. Studies reveal that open-access publications impact most research areas across all disciplines, starting from science and technology to social sciences and humanities. The OA impact across disciplines can also be visible through their appearances in major indexing databases like Web of Science (WoS) and SCOPUS. According to studies [2], Open-access journals listed in Scopus and Wo S demonstrate equivalent scientific impact and quality when compared to subscription-based journals. Furthermore, other studies corroborate the citation advantage associated with open access, and this advantage extends beyond citations to encompass article views and attention on social media platforms. Against this given backdrop, the present paper focuses on Indian contributions to OA publications in various academic disciplines.

Objectives of the Study

The study has been undertaken to showcase Indian contributions in the open-access domain with the following objectives:

1. To represent the distribution pattern of OA publications across different types of documents;
2. To trace out the developmental trend of Indian open-access publications and the share across disciplines;
3. To identify the top most funding organisations in open access publications;
4. To highlight the different open-access models adopted by Indian authors;
5. To determine the top most source journals in open access publications;
6. To ascertain the top affiliated countries and institutions in OA publications;
7. To find out the prolific writers contributed to OA publications ;
8. To show the characteristics of the top ten highly cited articles and their research areas available in the open-access domain.

Data and Method

For this study, the bibliographical data were collected from the Scopus Database, considering its comprehensive coverage in indexing a large number of contributions of OA publications. The study analyses considering only the open-access publications published from 2013 to 2022. To get the desired result, the search string comprising "*AFFILCOUNTRY(India) AND (LIMIT-TO (OA, "all")) AND (LIMIT-TO (PUBYEAR,2022) OR LIMIT-TO (PUBYEAR,2021) OR LIMIT-TO (PUBYEAR,2020) OR LIMIT-TO (PUBYEAR,2019) OR LIMIT-TO (PUBYEAR,2018) OR LIMIT-TO (PUBYEAR,2017) OR LIMIT-TO PUBYEAR,2016) OR LIMIT-TO (PUBYEAR,2015) OR LIMIT-TO (PUBYEAR,2014) OR LIMIT-TO (PUBYEAR,2013))*" applied in the SCOPUS database. Further, the refining process was limited only to OA publications, resulting in 4,77,576 documents considered for the analysis. The retrieved data set was analyzed further with the help of Microsoft Excel and "R" open-source software.

Literature Review

Over the past two decades, Open Access has emerged as a pivotal force in promoting the interests of researchers, scholars, students, businesses, and the general public. Since the development of the concept of Open Access (OA) in 2002 and OA routes and roads of scholarly publications to date, quite a good number of articles have been published from different perspectives. Models of OA Publishing have been contributed by Gue'don[10]; Beall [1]; Laakso and Björk[16]; Sotudeh, Ghasempour and Yaghtin[29]; Razumova and Kuznetsov[24]; Singh, Piryani and Srichandan[28]. Articles on open access policy have been published by Olsbo[23];Glynn & Thomas[9] ; Ellison et al[7] ; Doyle[5]; Koley and Lala[14]. Several metrics to describe different facets of open access and open research have been authored by Nichols and Twidale[21]; Waris *et al.*[35]. Researchers have taken an interest in authors' perspectives on publishing in open-access journals and their perceptions of the implications of open-access publishing like Mammo and Ngulube[18]; Joung, Rowley and Sbaffi[11]; Rowley et al.[26]. The status and quality of OA journals were investigated by Erfanmanesh[8]. The social dimension and academic impact of Open Access publications were examined by V´ılchez-Roman, Huaman-Delgado and Alhuay-Quispe[32].Authors who investigated the research and citation impact of open access (OA) journals versus non-OA journals in different disciplines are Craig *et al.*[4]; Turk [31]; Nazim and Ashar[19]; Walters[33] and Khan, Ashar & Yuvaraj[12].

Pertinent studies befitting to the context of the present paper are reviewed as under. Dulle and Minishi-Majanja[6] conducted a survey to assess the adoption of OA using the Unified Theory of Technology Acceptance and Usage (UTAUT) model.

The findings revealed that awareness, attitude, effort, and performance were identified as key determinants on OA usage behavioural intentions. Conversely, age, awareness, behavioral intention, and facilitating conditions were found to have a significant influence on researchers' real-world adoption of open access. To ascertain if open access articles in the field of civil engineering garner more citations compared to their non-open access counterparts, Koler-Povh, Juznic and Turk[13] conducted a study based on the impact factor and ranking in quartiles. The findings indicated that OA articles from highly-ranked journals received more citations than non-OA articles at a significance level of five percentile or lower in both the WoS and Scopus databases. Kurata *et al.*[15]centered on the patterns observed in open-access (OA) publishing within the biomedical domain from 2006 to 2010. The study found that the rate of OA publishing increased significantly during this period. Specifically, the OA rate in 2010 was twice that of 2006, with 50.2% of articles being available through OA means. This finding suggests that OAJs have consistently played a crucial role in promoting OA throughout the period under investigation. A study was conducted by Chang[3]from 2008 to 2013 to understand the disparities between writers in OA and non-OA journals in the LIS sector. The data suggest that it takes time for new OA journals to develop their reputations and attract more scholars to submit papers for publication. Ntimand Fombad[22]Engaged in the development of a model for the utilization of Open Access Institutional Repositories (OAIR) within university libraries in Ghana, incorporating a modified iteration of the Technology Acceptance Model (TAM). The authors presumed the model would enhance user satisfaction and make OAIR research outputs accessible and visible. Nazim and Zia [20] investigated the availability of Open Access (OA) research literature in the field of digital libraries (DL). They concluded that open access to the research literature in digital libraries significantly positively impacts scientific research publications. More than 26% of publications in digital libraries were accessible through the Gold route of OA, whereas 67% of total articles were available via the Green route of OA. Exploring the increasing proportion of scientific research articles in the field of radiation oncology that are being published in open-access (OA) journals, Sindhu *et al.*[27] stated that for future maximal benefits from open-access publishing, radiation oncology residents in the United States should opt for reputable OA journals to disseminate their research findings while avoiding predatory publications.

Results and discussion

The distribution of different types of documents in OA publications during the study periodis presented in Table 1.Out of 477576 contributions, the highest are Articles (Research Papers) that accounts for 76.21% (363960) of the total contributions, followed by Conference Papers (36814papers, 7.71%),Reviews (33377publications, 6.99%) and Letters(17139 publications, 3.59%) respectively. More than 1% of document types are Editorial, Note and Erratum. However, the categories like Book Chapter, Book, Short Survey, and Data Paper also appeared in OA publications, but the number is considerably less, accounting for less than 1% for each category.

The chronological growth pattern of Indian open-access publications from 2013 to 2022resultedina total of 477576OA Publications across various disciplines, presented in Figure – 1.It is inspiring to observe the growing trend of Indian OA publications from 25657 documents in 2013 to 76644in 2022. As shown in the figure, in 2017 and 2018, though, there was a growth in the total number of publications, but it did not match the projected trend line. Further, from 2019 to 2022, there has been significant growth in the total contributions towards OA. Nevertheless, the overall growth in OA publications by Indian contributors is truly encouraging.

Table 2 shows the distribution of India's contribution to open-access publications by subject. It

Table 1 — Contributions by the Indian Authors across types of documents

Document Type	No. of Documents	%
Article (Research Paper)	363960	76.21
Conference Paper	36814	7.71
Review	33377	6.99
Letter	17139	3.59
Editorial	8571	1.79
Note	7873	1.65
Erratum	4777	1.00
Book Chapter	1831	0.38
Book	1208	0.25
Short Survey	957	0.20
Data Paper	579	0.12
Retracted	477	0.10
Undefined	13	0.00
Total	477576	100

Table 2 — Subject-wise distribution of OA Publications

Subject Areas	No. of Research Paper	%	Level of Productivity
Medicine	145778	19.42	Most Productive (54.07%)
Engineering	78762	10.49	
Biochemistry, Genetics & Molecular Biology	65290	8.70	
Physics and Astronomy	59987	7.99	
Computer Science	56150	7.48	
Materials Science	42995	5.73	Moderate (41.28)
Agricultural and Biological Sciences	36500	4.86	
Chemistry	35531	4.73	
Environmental Science	33081	4.41	
Mathematics	32550	4.34	
Pharmacology, Toxicology & Pharmaceutics	29510	3.93	
Chemical Engineering	24931	3.32	
Multidisciplinary	21745	2.90	
Earth and Planetary Sciences	18996	2.53	
Immunology and Microbiology	17875	2.38	
Social Sciences	16237	2.16	
Energy	12852	1.71	Least Productive (4.64%)
Dentistry	12518	1.67	
Business, Management and Accounting	9480	1.26	
Total	750768	100.00	

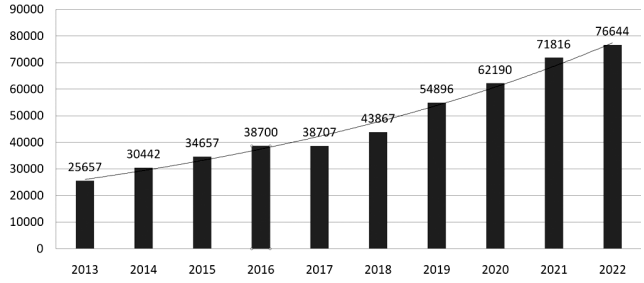

Fig. 1 — Chronological Growth Pattern of Indian OA Publications

is found that Medicine tops the list in OA publications by producing as many as 145778 publications (19.42%). It is followed by Engineering (78762 OA publications, 10.49%), Biochemistry, Genetics and Molecular Biology (65290, 8.70%). In combination, the five subject fields, namely Medicine, Engineering, Biochemistry, Physics and Computer Science, contribute to more than 54% of total research papers and are classified "**Most Productive**" disciplines in the OA domain. Eleven subject fields "(Materials Science, Agricultural and Biological Sciences, Chemistry, Environmental Science Mathematics, Pharmacology, Toxicology and Pharmaceutics, Chemical Engineering, Multidisciplinary Earth and Planetary Sciences, Immunology and Microbiology and Social Sciences)" are classified as "**Moderately Productive** "disciplines with a contribution of 41.28% of total OA publications. Some other subjects, like Energy, Dentistry and Business, Management and Accounting, are considered "**Least Productive** "as their share is below 2% of total

Table 3 — Top most Funding Agencies to OA Publications

Sl. No.	Funding Agencies	No. of Research Paper	%
1	Department of Science and Technology, India	18746	19.46
2	Science and Engineering Research Board	10965	11.39
3	Council of Scientific and Industrial Research, India	10801	11.22
4	University Grants Commission	13696	14.22
5	Department of Biotechnology, India	7784	8.08
6	National Science Foundation	6836	7.10
7	National Institutes of Health	5308	5.51
8	Indian Council of Medical Research	5217	5.42
9	Department of S&T, Government of Kerala	4254	4.42
10	Indian Council of Agricultural Research	2831	2.94
11	Department of Atomic Energy, Government of India	2768	2.87
12	Science and Technology Facilities Council	2733	2.84
13	Department of Biotechnology, Government of West Bengal	2532	2.63
14	Ministry of Human Resource Development	1836	1.91
	Total	96307	100

OA publications. The coverage of a wide variety of research fields reflects the diversity of OA research publications of Indian contributors.

Table 3 reflects the top-ranked funding agencies that promote Open Access Publications. It is found from the

study that the Department of Science and Technology (DST), India is the top most funding agency produced18746OA publications, followed by the Science and Engineering Research Board with 10965OA Publications.Council of Scientific and Industrial Research, India ranks three with 10801OA publications, followed by University Grants Commission (UGC) with 13696 publications. The other top-ranked funding agencies are the Department of Biotechnology, India(7784 OA publications), the National Science Foundation(6836 OA publications), the National Institutes of Health(5308 publications), the Indian Council of Medical Research(5217 publications), the Department of S&T, Government of Kerala(4254 publications), Indian Council of Agricultural Research (2831 publications), Department of Atomic Energy, (2733), Science and Technology Facilities Council (2733 publications), Department of Biotechnology, Government of West Bengal(2532 publications) and Ministry of Human Resource Development (1836 publications).

Presently, various open access categories are categorized using a color-coded system, with the most widely recognized labels being "green," "gold," "bronze," "hybrid," and "hybrid gold" open access. Notably, "bronze" open-access articles are only freely accessible on the publisher's website, whereas "hybrid gold" journals require authors to pay an article processing fee (APC) to enable individual papers to be freely accessible in subscription-based journals. It is reflected in Figure 2 that various OA models have been opted for by Indian contributors. It shows that the majority of the Indian authors have chosen their publication in the Green Open Access Model (267929, 41 %), followed by the Gold Open Access Model (223509, 35%). Both models together contribute a total of 76% of the total OA publications. This is followed by the Bronze Open Access Publication Model (123421, 19%) and Hybrid Gold Model (33348, 5%).

Figure 3 displaysthe top ten Sources of Indian Open Access Publications published by Indian Authors. The "Journal of Clinical & Diagnostics Research "tops the list where 7627 OA publications have occurred, followed by the "IOP Conference Series Materials Science and Engineering", "Journal of Physics Conference Series", and "Scientific Reports" having more than 6000 plus publications each. The other top sources having more than 4000 OA publications are "Plos One", "The Indian Journal of Ophthalmology", and the "International Journal of Innovative Technology & Exploring Engineering". Similarly, three journals that have published more than 3000 plus OA papers are "BMJ Case Report", "Procedia Computer Science," and "International Journal of Recent Technology and Engineering".

Table 4 shows the contributions from different countries of the World and the position of India in Open-Access Publications. It is found from the study that the United States (USA) tops the list with 3,04,8475 (30.89 %)OA publications, followed by China having 1,86,4257 (18.89 %)OA Publications. The other countries which are also on the top of the list are the United Kingdom (1314868, 13.32

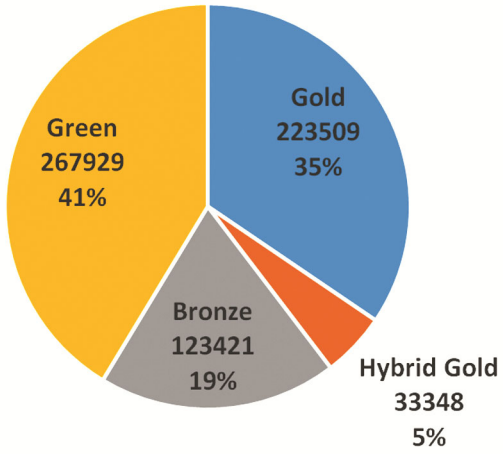

Fig. 2 — Types of OA Models Chosen by Indian Authors

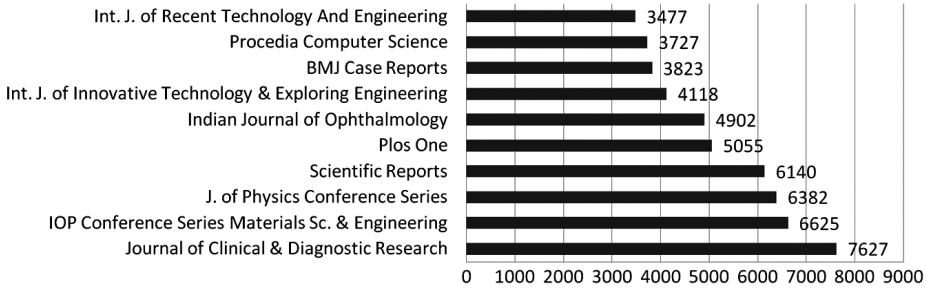

Fig. 3 — Top 10 Sources of OA Publications

%),Germany (870654, 8.82%), Japan (580816, 5.89%) and Spain (534013, 5.41%).India occupies 7th position in the rank by contributing 477576(4.84 %) OA publications. It is followed by Brazil with 424721(4.30%), Poland with 259621(2.63 %), and Turkey with 187178(1.90 %) OA publications respectively.

Table 4 — Country-wise Contributions in Open Access Publications

Sl. No	Country	Number of Publication	%	Rank
1	United States	3048475	30.89	1
2	China	1864257	18.89	2
3	United Kingdom	1314868	13.32	3
4	Germany	870654	8.82	4
5	Japan	580816	5.89	5
6	Spain	534013	5.41	6
7	India	477576	4.84	7
8	Brazil	424721	4.30	8
9	Poland	259621	2.63	9
10	Turkey	187178	1.90	10
11	Egypt	102780	1.04	11
12	Pakistan	85765	0.87	12
13	Romania	64886	0.66	13
14	Bangladesh	29932	0.30	14
15	Nepal	12231	0.12	15
16	Sri Lanka	11051	0.11	16
	Total	9868824	100	

Table 5 — Top Ten Institutions of OA Publications

Institutions / Organizations	Open Access Publications	Rank
All India Institute of Medical Sciences, New Delhi	11394	1
Indian Institute of Science	9816	2
Postgraduate Institute of Medical Education & Research, Chandigarh	8243	3
Manipal Academy of Higher Education	7593	4
Tata Institute of Fundamental Research, Mumbai	7099	5
University of Delhi	6789	6
Indian Institute of Technology Bombay	6478	7
Vellore Institute of Technology	6241	8
Indian Institute of Technology Madras	6114	9
SRM Institute of Science and Technology	5010	10

Table 5 indicates the top ten Indian Institutions of Open Access publications during the study period. The highest contribution is from the All India Institute of Medical Sciences (AIIMS), New Delhi, with 11394 OA Publications, followed by the Indian Institute of Science (IISc), with 9816 OA Publications. The other top Indian institutions that contribute OA publications are the Postgraduate Institute of Medical Education & Research, Chandigarh (8243 OA publications), Manipal Academy of Higher Education (7593 Publications), Tata Institute of Fundamental Research, Mumbai (7099 Publications), University of Delhi (6789 Publications), Indian Institute of Technology Bombay (6478 publications), Vellore Institute of Technology (6241 publications), Indian Institute of Technology Madras (6114 publications) and SRM Institute of Science and Technology (5010 publications) at 10^{th} position.

The top ten Indian contributors to open-access publications are listed in Table 6. It is found that Dutta, D. from BAR tops the list by contributing 1097 OA publications, followed by Mohanty G.B. from TIFR with OA 1060 Publications. The other authors who have contributed more than 1000 plus OA publications are Shukla, P. from BARC, Beri, S. B. from Punjab University, and Singh, J.B. from the University of Petroleum and Energy Studies, Dehradun. It is further observed that three authors from BARC collectively contributed 3150 OA publications, and five are among the top contributors from the Department of Atomic Energy (including BATC, TIFR & SINP).

Citation counts and journal impact factors (IF) serve as metrics to gauge 'impact' or 'quality.' Universities, research institutions, and academic departments rely on these measures for critical decisions like hiring researchers, evaluating tenure

Table 6 — Top 10 Indian Contributors in Open-Access Publications

Sl. No.	Author	Affiliation	Publications
1	Dutta, D.	Bhabha Atomic Research Centre (BARC), Mumbai	1097
2	Mohanty, G.B.	Tata Institute of Fundamental Research (TIFR), Mumbai,	1079
3	Shukla, P.	Bhabha Atomic Research Centre(BARC), Mumbai	1060
4	Beri, S. B.	Panjab University, Chandigarh	1043
5	Singh, J.B.	University of Petroleum and Energy Studies, Dehradun	1003
6	Pant, L.M.	Bhabha Atomic Research Centre(BARC), Mumbai	993
7	Ranjan, K.	University of Delhi, New Delhi	978
8	Kaur, M.	Amity University Punjab, Mohali,	973
9	Choudhary, B.C.	University of Delhi, New Delhi	972
10	Dutta, S.	Saha Institute of Nuclear Physics (SINP), Kolkata	972

Table 7 — Top 10 Highly Cited OA Articles

Pub. Year	Document Title	1st Author & No. of Collaborators	Journal	Area of Research	IF	Citations Received	Rank
2020	"Sci Py 1.0: fundamental algorithms for scientific computing in Python"	Virtanen *et al.*; 116	Nature Methods	Capabilities and development practices of Sci Py	47.99	9829	1st
2016	Observation of gravitational waves from a binary black hole merger	Abbott *et al.*; 133	Physical Review Letters	The gravitational-wave signal from a binary neutron star (BNS) merger	9.185	8332	2nd
2014	"Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: A systematic analysis for the Global Burden of Disease Study 2013"	Ng *et al.*;141	The Lancet	Overweight and obesity in children and adolescents	202·73	8161	3rd
2014	"Review of particle physics"	Olive *et al.*; 142	Chinese Physics C	Particle physics and Cosmology	4.2	6764	4th
2018	"Global, regional, and national incidence, prevalence, and years lived with disability for 354 Diseases and Injuries for 195 countries and territories, 1990-2017: A systematic analysis for the Global Burden of Disease Study 2017"	James *et al.*; 345	The Lancet	Study on Global Burden of diseases, injuries, and risk factors	202·73	6223	5th
2016	"Planck 2015 results. XIII. Cosmological parameters"	Ade *et al.*; 123	Astronomy & Astrophysics	Cosmic background radiation &cosmological parameters	9.9	6158	6th
2013	"The International Classification of Headache Disorders (beta version)"	Olesen *et al.*; 118	Cephalalgia	Classification of headache disorders	6.075	5835	7th
2017	"Observation of Gravitational Waves from a Binary Neutron Star In spiral"	Abbott *et al.*; 162	Physical Review Letters	Gravitational waves signal	9.185	5629	8th
2015	"Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013"	Naghavi *et al* l.; 1240	The Lancet	Age-sex-specific all-cause mortality	202·73	5450	9th
2015	"Planetary boundaries: Guiding human development on a changing planet"	Will Steffen *et al.*; 18	Science	Human societies & the maintenance of the earth system	57.8	5271	10th

criteria, granting promotions, and endorsing research published in high-impact journals. Additionally, authors frequently correlate impact factors and citation counts with quality. In a similar way, to assess the citation counts and IF of the journals where the top ten highly cited articles of the OA domain have been published, these are represented in Table 7. It is revealed that the highly cited articles are from the disciplines of Life Sciences, Health Sciences, Physics, Astronomy and Astrophysics and Neurology. The received citations of the top ten articles altogether come to 67,652, and the citation count varies from a minimum of 5271 to a maximum of 9829. All ten articles are published in journals of high reputation, such as The Lancet (3), Physical Review Letters (2), Nature Methods (1), Chinese Physics C (1), Astronomy and Astrophysics (1), Cephalalgia (1), Science (1). The numbers of collaborators in the case of each article are more, and it varies from a minimum of 18 (article in Rank 10th) to a maximum of 1240 (article in Rank 9th).High-impact factor journals are often associated with robust citation rates, and research has shown that as the impact factor of the publishing journal rises, citation counts tend to follow suit. Still, in the case top ten highly cited OA articles, no such correlation is found as the article in Rank 1 (9829 citations), the article in Rank 2 (8332 citations) and the article in Rank 4((8332 citations)

are from Journals with IF 47.99 and 9.185 and 4.2 respectively. In contrast, the article in Rank 3 is from the most reputed journal, *The Lancet,* which has an IF of 202·731. So in the case of the top-cited OA articles, it can be inferred that the topic the paper addresses and the impact of the research in academia are more significant factors in fetching citations than other reasons.

Conclusion and key findings

The OA publications have increased gradually, and India contributed 477,576 OA publications reported during the study period. There is a significant contribution to open-access publications from all the major disciplines. The five disciplines (Medicine, Engineering, Biochemistry, Physics and Computer science) contributed over 50% of total OA publications. Though the Department of Science and Technology (DST) funds the highest number of OA publications (18746), combined with UGC, CSIR and SERB, these four funding agencies contributed more than 56% of total OA publications. Green Open Access (41%) and Gold Open Access (35%) publishing models are more prevalent among Indian authors than other open-access publishing models, contributing 76% of the total OA publications. India occupies 7th position in the World, having 477576 OA publications, i.e., 4.84 % during the study period. The Highest contribution is from the All India Institute of Medical Sciences (AIIMS), New Delhi, having 11394 OA publications, followed by the Indian Institute of Science (IISc), with 9816 OA Publications. Individually, Dutta, D. from BARC contributed the highest (1097) towards OA publications, followed by Mohanty G.B. from TIFR with OA 1060 Publications. It is further observed that three authors from BARC collectively contributed 3150 OA publications, and five are among the top contributors from the Department of Atomic Energy (including BATC, TIFR & SINP).Open Access publishing has become increasingly popular among India's research and scientific community. It is highly encouraging that India's renowned educational and research institutions, namely AIIMS, TIFR, BARC and IITs, have come forward to contribute to open-access publications. As a result, the research contributions by these premium institutions will be easily accessible to all, and new aspects of research will be unveiled soon after its publication. The top ten highly cited articles have been published in high-reputation journals, including *The Lancet, Physical Review Letters, Nature Methods, Chinese Physics C, Astronomy and Astrophysics, Cephalalgia, and Science*.

Moreover, the number of collaborators involved in each article is variable, ranging from a minimum of 18 to a maximum of 1240. This indicates that the articles are products of extensive collaborative work involving multiple researchers and institutions and contribute significantly to their respective fields. This information may be helpful to researchers and readers looking to identify necessary research in their area and understand the collaborative efforts behind such research. In conclusion, the move towards providing unrestricted free online access to peer-reviewed journals is an inevitable trend gaining momentum rapidly. This shift is driven by a desire to democratize knowledge, increase the impact and visibility of research, and promote open science. While some challenges and concerns must be addressed, the benefits of OA publishing are clear and offer a promising future for the academic community.

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