

# Open Access Publishing Scenario in India: An Insight

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## ABSTRACT

Over the past decade, open access (OA) publishing has expanded significantly, providing free access, faster dissemination, and enhanced visibility of research. Despite ongoing challenges related to funding, awareness, and predatory practices, OA adoption continues to grow in India. This progress is supported by institutional efforts and government initiatives; however, sustainable funding mechanisms and stronger regulatory frameworks are essential to fully realize its potential. This section outlines the various OA models, including gold, green, bronze, black, hybrid, controlled access, and diamond/platinum OA. It also examines the Indian landscape of OA publishing, encompassing institutional and individual perspectives, emerging trends, key initiatives, and the major drivers and barriers influencing its adoption.

## KEYWORDS

Open access publishing, scholarly communication, open access models, research visibility, academic publishing in India, predatory journals

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## INTRODUCTION

Over the past ten years, the gradual open-access (OA) publication strategy has evolved into a revolution. The characteristics of OA journal articles, such as faster publication, increased visibility, ease of contact, and free access to content, have enticed researchers and academics around the world to publish their work via OA channels. The OA model has been well received by the publishing industry, but it has raised severe concerns among authors around the world, particularly those from developing countries. This is because the OA model requires writers to pay publishing fees to have their articles published. This is in contrast to the subscription/closed access (SC)-based publication, where articles are free of charge. Articles published under the OA model are freely available online to everyone, whereas SC-based article releases require authors to pay per view and/or download. Furthermore, SC-based publications are available to subscribers worldwide, including colleges, universities, and libraries. Although it is correct to claim that the OA initiative influenced both publishers and authors worldwide, authors from underdeveloped nations were disproportionately affected. This is because the budgetary constraints in these nations deprive the authors of the support of article publishing costs (APCs). On the bright side, publishers have provided partial and entire waivers to authors from emerging and low-income nations<sup>1</sup>. Although these savings appear to be the highlight, they have contributed significantly to the increase in overall publication expenses.



Based on the regulations that specify the requirements for the availability and accessibility of the published information, the journals can be divided into many categories. The available publication models are gold OA, green OA, bronze OA, black OA, hybrid OA, and closed access. An article published in an open-access journal, or one where all articles are freely available to everyone, is referred to as the gold OA. An article published in a journal that is protected by a paywall but is uploaded to a repository (either institutional or discipline-based), making it freely available, is referred to as green OA. But in this instance, the rights to reuse are limited. Additionally, journals frequently impose an embargo period, which can range from six to forty-eight months, during which the article cannot be submitted to an open repository. An article on a journal page that is free to read without a license is referred to as bronze OA. A paper shared through illegitimate pirate websites like Sci-Hub or LibGen is referred to as black OA. Nevertheless, the literature does not widely acknowledge this kind as OA.

All other items that are not legally openly accessible are referred to as closed access, which stands in stark contrast to the OA paradigm. This includes publications that might be shared on academic social networks or on illicit pirate websites that might have requirements for subscription, registration, or other things<sup>2,3</sup>. Common concerns with hybrid OA are Double dipping: The publishers collect APCs for OA articles and subscription fees for the rest; Cost transparency: APCs vary widely, and subscription fees remain, making it unclear how costs are allocated; Equity issues: Authors with funding can make their work OA, while others remain behind paywalls; and Institutional policies: Some funders discourage hybrid OA due to lack of clarity in pricing models. The decision between fully OA and mixed access is based on personal priorities. Authors who prioritize accessibility and have resources for APCs might favor complete OA. The hybrid approach may be used by those with little finances who want to publish in reputed journals. While fully OA publications need institutional or APC backing and strategic planning, hybrid OA enables publishers to gradually move toward OA while retaining financial stability<sup>4</sup>.

Diamond OA, sometimes referred to as platinum OA, is a new approach that allows researchers to use an OA license to publish for free in journals or other platforms. Diamond OA is free for writers and readers alike. This sets it apart from the gold model, which features APC. Diamond OA journals are academic-controlled, community-motivated, and owned by academic establishments. These publications and platforms represent the idea of bibliodiversity and are regarded as equitable by nature and design. They serve a fine-grained variety of mostly small-scale, multilingual, and multicultural scholarly communities<sup>5</sup>.

Recently, there has been an increase in awareness of open science. It is a collection of guidelines and procedures that support openness and cooperation in scientific inquiry. Open science has consequences, especially for translational research, where diverse teams need constant access to the most recent and precise data. To fulfil the open science objective, a network of tools known as an open science environment (OSE) has been proposed. An OSE is a transparent, cooperative environment where everyone may openly access and reuse research (publications, data, code, and methodologies), removing obstacles like paywalls to encourage quicker advancement, repeatability, and greater social value.

Findable, Accessible, Interoperable, and Reusable (FAIR) and a data management plan (DMP) with availability, interoperability, reproducibility, and responsibility are among the principles that OSE integrates. FAIR seeks to enhance data management by guaranteeing that data can be readily located, accessed, integrated, and reused with confidence. By focusing on unique identities, rich information, formal vocabularies, unambiguous licensing, and provenance for improved data sharing and reuse in the digital age, it further makes research data discoverable, retrievable, and usable by both humans and machines. DMP is an official document that describes how research data will be managed at every stage of its lifespan, from production and collection to sharing and long-term storage. DMP, which covers subjects including data kinds, storage, access, documentation, roles, and compliance, further guarantees

Table 1: A comparison between hybrid open access and gold open access publishing models

Feature	Hybrid open access	Full gold open access
Definition	Subscription journals that allow authors to make individual articles open access (usually via APCs)	Entire journal is OA; all articles freely available
Funding	Mixed: Subscription fees+APCs for OA articles	Funded entirely by APCs or institutional support
Flexibility	Authors choose whether to pay for OA	No choice: Everything is OA
Licensing	OA articles are often under permissive licenses (e.g., CC BY)	All content under OA licenses
Accessibility	Partial: Only selected articles are OA	Complete: Entire journal is OA

that data is arranged, safe, ethical, and reusable, a requirement frequently demanded by funders<sup>6</sup>. With this viewpoint, we hope to talk about the Indian OA publishing situation, the changing OA publishing environment and its difficulties in India, the reasons behind and barriers to OA in India, as well as future directions, policy implications, and practical measures.

## COMPARISON OF OPEN ACCESS PUBLISHING MODELS

To better understand the structural and functional differences between major open access (OA) publishing approaches, a comparison between hybrid open access and full gold open access models is presented in Table 1. This comparison highlights key aspects such as funding mechanisms, accessibility, licensing, and flexibility, which are critical in guiding authors' publication choices and institutional policies.

**Indian scenario:** It was discovered that over 74% of OA journals published in India do not charge a publishing fee<sup>7</sup>. This enables the quality and quantity of OA journals published in India to attract authors, researchers, and academics to OA journals, and their widespread use will increase the impact of research in India. According to statistics from the Directory of Open Access Journals (DOAJ), an examination of 306 OA journals published in India from 2003 to 2021 reveals a yearly growth rate of 22.36%. Furthermore, it was discovered that around 44.11% of journals are indexed in Scopus, 34.96% in Web of Science (WoS), and 7.18% of journals have an impact factor (IF) supplied by the Journal Citation Report (JCR)<sup>7</sup>. A recent study employed Scopus data as the primary database, retrieving records of both OA and non-OA publications published between 2014 and 2023. According to the data, only 0.73% of India's OA literature contributed to the worldwide OA literature throughout the last decade (2014-2023). Although the annual growth rate of OA literature climbed fast from 36.26 to 51.27% worldwide, the Indian scenario only showed a 9.58% increase. Despite this, according to Scopus statistics, India ranks 12th internationally in open access publishing, trailing only the United States of America (USA), China, the United Kingdom (UK), Germany, Japan, France, Italy, Spain, Canada, Brazil, and Australia. Interestingly, the bulk of open access papers have come from government-sponsored Institutes of National Importance (INI), such as the All India Institute of Medical Sciences (AIIMS) in New Delhi, the Indian Institute of Science (IISc) in Bangalore, and the University of Delhi, among others. A few leading Indian private universities, like the Manipal Academy of Higher Education (MAHE) in Manipal, Karnataka, the Vellore Institute of Technology (VIT), and the SRM Institute of Science and Technology, have also made substantial contributions to OA publishing. The significant majority of Indian OA articles were published by medical faculty in journals such as Journal of Clinical and Diagnostic Research (JCDR), Scientific Reports (Publisher-Springer Nature-SN), and Plos One. In the global context, Plos One and SN were the prominent journals that published the majority of OA publications<sup>8</sup>. The aforementioned evaluations attest to the accessibility benefit, and researchers are drawn to Indian OA publications due to their free publishing costs. However, a quality gap that reveals inadequate IF coverage and restricted indexing in WoS could lower awareness internationally. India's global contribution could be increased by bolstering OA regulations, enhancing indexing, and promoting interdisciplinary OA publishing. Although medicine leads, the output may be balanced by expanding OA publication into the social sciences, engineering, and humanities<sup>7,8</sup>.

The Gold OA approach was the most favored, according to another survey that evaluated universities in northeastern India. The most popular option was the Creative Commons (CC)-free to use even commercially by crediting the source (BY) license (CC-BY). Furthermore, it was found that institutions that

receive significant government money exhibit higher levels of OA involvement, indicating that financial support has an impact on OA publishing practices<sup>9</sup>. The desires of the Indian scientific community for open access publishing were recently ascertained through a survey. Five highly regarded Indian life science research institutions provided 300 responses for this study. Regarding end users' unobstructed access to the publications ( $\chi^2 = 11.722$ ,  $p = .000$ ) and their distaste for publishing in paid OA journals ( $\chi^2 = 12.116$ ,  $p = .017$ ), the institutions had differing opinions<sup>10</sup>. This suggests that OA involvement was higher at institutions with substantial government assistance. Financial support also has a direct impact on the adoption of OA, which makes it simpler for researchers to publish without worrying about costs or institutional obstacles. Strong opposition to paid OA journals and strong support for unrestricted access to articles show that although researchers appreciate free access, they are nonetheless wary of APCs.

### **EVOLVING LANDSCAPE OF OPEN ACCESS PUBLISHING AND ITS CHALLENGES IN INDIA**

Libraries all around the world were struggling to maintain scholarly material subscription costs due to the yearly increase in journal subscription fees, a situation that was common in the decade before now. On the other hand, the idea of publicly accessible data and information on the internet is becoming more popular due to the recent surge in OA, which appears to have the potential to eliminate barriers to scientific communication related to cost and authorization. Scientists, policymakers, government agencies, non-governmental organizations (NGOs), and libraries have been working together to adopt OA to make knowledge accessible and affordable for everyone. Over ten years have passed since the OA movement in India was started by a small number of fervent followers. The Journal of Tropical Agriculture, which Kerala Agricultural University launched in 2001, is widely recognized as the nation's first open-access journal. The Council for Scientific and Industrial Research (CSIR), the Department of Biotechnology (DBT), the Department of Science and Technology (DST), and the Indian Council of Agricultural Research (ICAR) are just a few of the Government of India (GOI) agencies and organizations that have adopted OA policies since 2014. Year-wise and country-wise publication patterns were analyzed using bibliometric data from the Scopus database (2000-2024), and the results showed a notable acceleration in OA publications, especially in India and the rest of the globe after 2018<sup>11</sup>.

Few academic institutions in India have enforced OA for research funded by their institutions. While academic awareness of making research results openly available has clearly increased, there appears to be a misunderstanding about the validity and benefits of embracing the OA publishing model as a result of the dramatic rise in predatory journals or publishers that use the pay-to-publish model worldwide<sup>12</sup>.

Nonetheless, India has been seeing a robust community-driven OA culture, which is propelling Indian OA efforts that are at the forefront of the Global South. The GOI launched the One Nation, One Subscription policy (ONOS), which gives approximately eighteen lakh scholars from 6300 government-run higher education and research institutions access to 1300 e-journals from 30 publishers via a single portal, even though there is no national-level OA mandate in India. While ONOA makes research publications instantly free for everyone online and is frequently sponsored by author/funder fees or grants, subscription access restricts access to paying members by requiring users or institutions to pay for the material. India's OA initiative has been impacting policymakers, researchers, and the scholarly community through the establishment of IndiaJOL, a diamond OA journal platform designed to support non-profit academic societies, and IndiaRxiv, a national, multidisciplinary source that accepts documents and research pieces from any discipline<sup>13</sup>.

However, it seems that these initiatives have not yet produced the anticipated results due to ineffective policy implementation. Only 12% of Indian publications indexed in Scopus were found to be OA. Lack of awareness among researchers, insufficient institutional financing for APCs, and inadequate digital set-up in smaller or financially strapped academic and research establishments are some of the obstacles to greater implementation<sup>14</sup>.

## **DRIVERS AND OBSTACLES OF OA IN INDIA**

Despite several obstacles, there are plenty of prospects, particularly with the ONOS effort, which has the potential to improve OA culture in science and lessen access disparities. The OA India and other community-driven forums are still promoting OA policies. Furthermore, there are compelling reasons for researchers to embrace OA publishing of their work due to the growing prominence and influence of OA publications on citations<sup>14</sup>. The absence of paywalls in OA allows academics, educators, policymakers, and the general public to freely access intellectual work. This promotes education and creativity by democratizing knowledge. Additionally, OA promotes international and interdisciplinary cooperation by granting unfettered access to research, which propels advances in science and academia. Additionally, OA promotes an informed and involved society by enabling doctors, educators, and lawmakers to stay up to date on the most recent scientific advancements. The APC approach, which can be costly for academics with minimal financing and raises issues with equity and access, is one of the potential drawbacks of OA. Furthermore, it can be difficult to find sustainable financing sources for Diamond/Platinum OA models. The emergence of predatory publishers who take advantage of the OA model by charging exorbitant fees without appropriate peer review procedures, endangering the integrity of scholarly publishing, is another problem impeding the adoption of OA. Through workshops, guides, and mentorship programs, colleges and universities should actively educate researchers, particularly those in their early careers and graduate students, about the dangers and red flags of predatory publishing. One way to do this is by offering a checklist for assessing the credibility of journals and publishers.

Maintaining quality requires being able to distinguish trustworthy OA journals from predatory ones<sup>15</sup>. The OA entails licensing agreements that outline how works may be used, frequently under Creative Commons licenses. Authors and users may find it difficult to comprehend and navigate these licenses. Because of worries about costs, quality, and the prestige of traditional publishing, some academic institutions and scholars are still reluctant to embrace OA. It is crucial to raise public, institutional, and researcher knowledge and comprehension of open access. To overcome opposition and encourage broader adoption, advocacy and education might be helpful<sup>16</sup>.

## **CONCLUSION**

Open access (OA) publishing has significantly improved the accessibility, visibility, and collaborative potential of research in India. However, challenges such as high article processing charges, uneven institutional participation, and concerns regarding predatory publishing continue to hinder its full adoption. Strengthening policy frameworks, expanding sustainable funding mechanisms, and enhancing awareness among researchers are essential for balanced growth. With targeted reforms and quality control measures, India can advance toward a more equitable and globally competitive OA publishing ecosystem.

## **SIGNIFICANCE STATEMENT**

This study highlights the evolving landscape of open access publishing in India, emphasizing its role in enhancing research visibility, accessibility, and collaboration. It identifies key challenges such as funding limitations, predatory publishing, and policy gaps. The findings underscore the need for sustainable funding models, stronger regulatory frameworks, and increased awareness to ensure equitable and high-quality scholarly communication.

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