



## Indian Research Contribution in Open Access Mega Journals: A Comprehensive Review

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DOI - 10.5281/zenodo.18710099

### Abstract:

*Open Access Mega Journals (OAMJs) high-volume, broad-scope, gold open access journals that evaluate submissions primarily on scientific and methodological soundness occupy a distinctive position within the contemporary scholarly communication ecosystem. This comprehensive review synthesizes conceptual scholarship, bibliometric evidence, and policy literature to examine the scale, disciplinary distribution, citation behaviour, collaboration patterns, and policy implications of Indian research contributions to OAMJs. Drawing on large cross-journal bibliometric studies, journal-specific national analyses, and national and international open access policy frameworks, the review highlights India's growing engagement with the mega-journal model. The study also discusses challenges related to article processing charges (APCs), research assessment practices, and open access infrastructure, and offers evidence-based recommendations for Indian universities, research funders, and libraries.*

**Keywords:** *Open Access; Mega Journals; OAMJ; India; Bibliometrics; Research Policy.*

### Introduction:

#### 1. Background and Definition:

Since the early 2000s, scholarly communication has undergone profound transformation driven by digitization, rapid growth in global research output, and the emergence of open access publishing models. Within this evolving landscape, Open Access Mega Journals (OAMJs) have emerged as a distinctive form of scholarly journal. OAMJs are characterized by four interrelated features: (i) very large annual publication volumes, often numbering in the thousands; (ii) multidisciplinary or broadly defined scope; (iii) immediate gold open access, commonly financed through article processing charges (APCs); and (iv) peer review that prioritizes technical and methodological soundness rather than subjective assessments of

novelty or anticipated impact, often described as a “soundness-only” review model.

The launch of *PLOS ONE* in 2006 marked a significant milestone in the development of this model, demonstrating that large-scale, open access publishing could be operationally viable while maintaining peer review standards. Subsequent journals such as *Scientific Reports* further expanded the mega-journal landscape, illustrating how publishers adapted editorial workflows and reviewer management systems to support high publication throughput while ensuring open availability of research outputs.

#### 2. Why OAMJs matter: Global and Indian Perspectives:

OAMJs are significant for several reasons. First, they expand global publishing capacity by providing outlets for methodologically rigorous research that may be

incremental, interdisciplinary, or difficult to place in highly selective journals. Second, by offering immediate and unrestricted access, OAMJs enhance the visibility and discoverability of research outputs, potentially increasing readership and citation impact. Third, OAMJs intersect directly with research assessment and funding systems: by decoupling publication decisions from perceived novelty, they challenge evaluative practices that rely heavily on journal prestige as a proxy for research quality.

Globally, bibliometric studies have documented the rapid early growth of OAMJs, followed by diversification and stabilization across journals and publishers. At the national level, several emerging research-producing countries including India have become prominent contributors to major OAMJs, reflecting broader shifts in the global geography of knowledge production.

### **3. India's research ecosystem and open access policy context:**

India's research output has expanded substantially over the past two decades, driven by growth in universities, central research institutions, and medical and engineering colleges. Alongside this expansion, the Government of India has advanced policy initiatives to promote open access to publicly funded research. The DBT–DST Open Access Policy, approved in December 2014, mandates open availability of outputs from funded projects and explicitly encourages evaluation practices that prioritize intrinsic research merit over publication venue.

At the international level, the UNESCO Recommendation on Open Science (2021) situates open access within a broader framework of equity, inclusion, and capacity building. For Indian researchers, OAMJs therefore represent a practical and policy-aligned route for disseminating research, while simultaneously

raising concerns related to APC affordability and responsible research assessment.

### **4. Purpose and Scope of the Review:**

This review synthesizes conceptual analyses of OAMJs, findings from large-scale bibliometric profiling studies and India-focused scientometric research, and national and international policy documents relevant to open access. The objectives are threefold: (i) to characterize India's contribution patterns to OAMJs in terms of growth, disciplinary composition, collaboration, institutional participation, and citation behaviour; (ii) to examine the implications of these patterns for research policy and evaluation; and (iii) to propose evidence-informed recommendations for Indian research stakeholders. Where bibliometric indicators are discussed, the review emphasizes that such metrics are time-sensitive and should be derived from clearly documented database extractions.

### **Literature Review:**

The literature on OAMJs encompasses conceptual discussions, bibliometric and scientometric analyses, publisher and editorial studies, and policy-oriented research. This section reviews the literature thematically, focusing on definitional and evolutionary studies, cross-journal bibliometric evidence, India-focused journal-level analyses, and policy and assessment frameworks.

### **1. Definitional and Evolutionary Studies:**

Bo-Christer Bjork's seminal work has played a central role in defining and analysing the mega-journal phenomenon. Bjork (2015) examined the rapid early growth of *PLOS ONE* and similar titles, questioning whether the mega-journal model had reached a saturation point by the mid-2010s. In a subsequent longitudinal analysis, Bjork (2018) extended this examination through 2017, identifying a redistribution of

publication volumes among mega journals and a growing contribution from emerging research economies. These studies are foundational in operationalizing the mega-journal concept and documenting its temporal evolution.

## 2. Cross-journal Bibliometric Profiles:

A comprehensive bibliometric profile of eleven OAMJs by Wakeling et al. (2016) provided empirical evidence on publication volume, subject distribution, citation patterns, and author nationality. The study confirmed the defining characteristics of OAMJs and highlighted substantial heterogeneity across journals. Citation distributions were found to be highly skewed, with a small proportion of articles accounting for a large share of citations.

Complementing this work, Spezi et al. (2017) offered a critical synthesis of bibliometric findings, editorial practices, and author perspectives. Rather than framing OAMJs in normative terms, their review emphasized the complex interaction between scholarly norms, commercial publishing models, and researcher motivations.

## 3. Publisher and Editorial Perspectives:

Studies examining publisher and editorial practices indicate that OAMJs rely on structured editorial triage, expanded reviewer pools, and robust integrity checks to manage scale. While the peer review model differs from novelty-driven journals, evidence suggests that reputable OAMJs maintain standard ethical and quality assurance mechanisms, including plagiarism detection and data availability requirements. These operational insights contribute to informed debates about quality and scale in scholarly publishing.

## 4. India-Focused Journal-Level Studies:

India-focused scientometric analyses have examined national contributions to major OAMJs, particularly *PLOS ONE*. Ahmadi (2018) analysed Indian-authored articles in *PLOS ONE*, identifying leading institutions, dominant subject

areas, and collaboration patterns. The study concluded that Indian researchers have effectively utilized the mega-journal model to disseminate multidisciplinary and applied research. Broader bibliometric surveys similarly indicate that India ranks among the more prolific contributor countries in leading OAMJs, especially in life sciences, health sciences, environmental studies, and engineering.

## 5. Policy and Assessment Literature:

India's DBT–DST Open Access Policy (2014) and the UNESCO Recommendation on Open Science (2021) together provide a normative framework supporting open access while emphasizing fairness, infrastructure development, and responsible evaluation. Both documents highlight the need to assess research based on intrinsic merit and to address equity concerns associated with APC-funded publishing models. These policy perspectives are directly relevant to India's engagement with OAMJs.

## Analysis: India's Contribution to OAMJs:

The reviewed literature points to several convergent insights. Indian researchers represent a significant and sustained contributor group across major OAMJs, particularly in disciplinary areas aligned with national research strengths. Contribution patterns exhibit temporal variation, with rapid growth during the early expansion phase of mega journals followed by stabilization as publishing markets matured. Citation outcomes are heterogeneous and underscore the importance of article-level, field-normalized assessment. International collaboration is a prominent feature of Indian OAMJ publications, suggesting that open access visibility may facilitate cross-border research partnerships. At the same time, APC-based funding models raise equity and sustainability concerns that warrant policy attention.

**Discussion and Policy Implications:**

For Indian stakeholders, OAMJs offer expanded dissemination opportunities aligned with national and international open access mandates. However, realizing these benefits requires effective APC governance, institutional support mechanisms, and evaluation frameworks that prioritize article-level evidence over journal prestige. Consistent implementation of DBT–DST policy principles and alignment with UNESCO’s open science recommendations can help ensure that participation in OAMJs strengthens, rather than distorts, research quality and equity.

**Conclusion:**

The literature reviewed in this study demonstrates that Open Access Mega Journals are firmly embedded within contemporary scholarly publishing and that India is a substantive contributor to this model. OAMJs support India’s open access objectives by enhancing visibility and facilitating collaboration, but they also introduce challenges related to APC affordability and research assessment. Addressing these challenges through coordinated policy, infrastructure investment, and responsible evaluation practices will be essential for ensuring that OAMJs contribute positively to India’s research ecosystem.

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