ChinaRxiv

AI translation · View original & related papers at
chinarxiv.org/items/chinaxiv-202410.00008

Development Trends of International Open Peer Review Platforms and Recommendations for China: Postprint

Authors: Zhixiong Zhang, Wang Yuju, Zhao Yang

Date: 2024-10-06T00:00:00+00:00

Abstract

[Purpose/Significance] This study systematically reviews and analyzes the basic models and development trends of international open peer review platforms, and explores their implications for China's academic exchange and research governance. [Method/Process] The article first outlines three fundamental operational models of international open peer review platforms, then summarizes their development trends through in-depth analysis of the developmental dynamics of these platforms and communities. On this basis, and by combining international experience with the specific characteristics of China's research environment, the article proposes recommendations for constructing open peer review platforms in China. [Results/Conclusions] International open peer review platforms and communities are gradually becoming a significant force in promoting scientific research innovation and enhancing research quality. In response to China's current situation, the article puts forward six recommendations for accelerating the development of international open peer review platforms and communities, including strengthening policy guidance and institutional support, updating concepts of scientific and technological publishing, encouraging case demonstrations, building national open peer review infrastructure, etc., to seize new frontiers in international academic exchange.

Full Text

Preamble

Journal of Library and Information Science in Agriculture
DOI: 10.13998/j.cnki.issn1002-1248.24-0499

Development Trends of International Open Peer Review Platforms and Recommendations for China

ZHANG Zhixiong[1],[2],[3], WANG Yuju[1],[3], ZHAO Yang[1],[3]
[1] National Science Library, Chinese Academy of Sciences, Beijing 100190
[2] Department of Information Resources Management, School of Economics and Management, University of Chinese Academy of Sciences, Beijing 100190
[3] Key Laboratory of New Publishing and Knowledge Services for Scholarly Journals, Beijing 100190

Abstract:
[**Purpose/Significance**] This study systematically analyzes the basic models and development trends of international open peer review platforms, exploring their implications for academic exchange and research governance in China. [**Method/Process**] The article first outlines three fundamental operational models of international open peer review platforms. Through in-depth analysis of these platforms and their community development dynamics, it summarizes key trends. Based on this analysis and drawing on international experience while considering China's specific research environment, the study proposes recommendations for developing China's open peer review system. [**Results/Conclusions**] International open peer review platforms and communities are becoming crucial forces in driving scientific innovation and enhancing research quality. For China's current context, the article proposes six recommendations to accelerate the construction of international open peer review platforms and communities, including strengthening policy guidance and institutional support, updating scientific publishing concepts, encouraging pilot demonstrations, and building national open peer review infrastructure, thereby securing a new position for China in international academic exchange.

Keywords: open peer review; open peer review platforms; open peer review models; development trends; scholarly communication

Citation: ZHANG Zhixiong, WANG Yuju, ZHAO Yang. Development Trends of International Open Peer Review Platforms and Recommendations for China[J]. Journal of Library and Information Science in Agriculture, 2024, 36(5):

0 Introduction

The construction of international open peer review platforms and communities is gaining momentum. Numerous important research management departments and scientific journals are building open peer review platforms, actively integrating international open peer review experts into their systems, and advancing the development of their open peer review service systems. Platforms such as Peer Community In [1], Sciety [2], PREreview [3], and Review Commons [4] have become influential open peer review platforms in the international scientific community, gathering large numbers of peer review experts and forming new hubs for the exchange and evaluation of the latest research findings.

This study analyzes the basic models of current international open peer review platforms and communities and their roles in academic exchange. It examines the three operational models of these platforms and summarizes their development trends. Based on this analysis, the study identifies the main challenges facing the development of open peer review in China and proposes recommendations for building Chinese open peer review platforms and communities.

---

1 Basic Models of International Open Peer Review Platforms

Open peer review has various definitions [5]. This study defines it as a peer review model that operates independently of the journal publishing process and is more open than traditional blind review. It involves conducting transparent peer review of publicly available manuscripts (typically preprints), allowing broader participation and understanding of the review process, usually by disclosing reviewer identities and review comments. As the global research environment becomes increasingly open and transparent, these platforms play a vital role in promoting rapid dissemination of research findings while ensuring quality assurance. Through innovative review mechanisms, they not only accelerate publication speed but also enhance transparency and interactivity in the review process. This study identifies three basic models of international open peer review platforms.

1.1 Open Peer Review Platforms for Open Publishing

These platforms, exemplified by F1000 Research, promote broad dissemination of research findings through post-publication open peer review [6]. In this model, after preliminary editorial review, papers are published online immediately. Reviewers recommended by the authors then evaluate the manuscripts, with review reports and expert names published alongside the articles, along with author responses and comments from registered users, achieving full transparency in the review process. The platform encourages authors to continuously improve their work by releasing revised versions. Each version is interlinked and can be cited independently, enabling dynamic updates and complete presentation of research findings. Peer-reviewed articles are indexed in external databases such as PubMed, Scopus, and Google Scholar. The F1000 platform combines the speed of preprints with the advantages of comprehensive publication, actively advocating for open science through its flagship platform F1000 Research. This model also helps journals screen high-quality submissions and enhances journal impact.

1.2 Open Peer Review Platforms Developed from Preprint Servers

These platforms achieve seamless connection from preprint to formal publication by establishing cooperative mechanisms with journals and publishers. Typical

examples include publisher-funded preprint platforms such as Springer Nature's Research Square platform with its In Review service [8] and Elsevier's SSRN platform with its First Look service [9]. These services allow authors to opt into the review service directly from the journal submission system of partner journals. Once a submission is sent for journal review and passes the platform's pre-screening, the manuscript is posted on the preprint platform and marked as "In Review" with the target journal's name, clearly indicating it is under consideration by that journal. Journals cooperating with In Review include those operated by Springer Nature's BMC Series, and preprints posted through In Review may be indexed in PubMed Central, Meta, and Researcher databases. First Look has also established partnerships with a series of journals including Cell Press's Sneak Peek and The Lancet. This process breaks down temporal barriers between submission, peer review, and preprint posting, with review status or reports synchronized to preprints in real-time with varying degrees of openness.

1.3 Independently Built Open Peer Review Platforms

Independent open peer review platforms are typically constructed by third-party organizations independent of academic journals, aiming to provide professional review services for preprints, papers under journal review, and other document types. These platforms have become key forces in promoting transparency in the research process and academic fairness. Typical third-party platforms include PCI (Peer Community In), MedEdPublish, Review Commons, PREreview, and Sciety. The general workflow for third-party platforms involves authors first depositing their preprints on preprint servers such as arXiv or bioRxiv, or in open archives using appropriate templates, and then submitting them to the third-party platform. The platform invites relevant experts to conduct reviews, employing a model that combines expert review with public commentary to carry out independent open peer review. Reviewed articles can be submitted to journals that support third-party platforms, or submitted to journals with the author's consent. For instance, the PCI platform recommends at least two reviewers for each submitted paper to conduct one or more rounds of rigorous peer review. Articles recommended by PCI can form valid references and may be submitted directly to journals or published directly in Peer Community Journal. Sciety uses a model where registered contributors actively evaluate and curate preprints they find interesting or important, while aggregating preprint reviews and curation from multiple preprint review platforms or services, providing retrieval services for evaluated preprints and supporting scientists in submitting evaluated preprints.

2 Major Development Trends of International Open Peer Review Platforms

2.1 Strong Support from Major Research Institutions

Since 2011, third-party peer review platforms such as Peerage of Science, Gates Open Research, PREreview, Open Research Europe, and others have been established successively. To promote community consensus and support for open peer review of preprints, ASAPbio and EMBO jointly organized a meeting in December 2022 among funders, researchers, and peer review platforms. ASAPbio also published relevant meeting materials on its official website, stating that all funders and publishers can promote the construction and development of open review by establishing policies that recognize and encourage peer review independent of journals. In addition to active support from the scientific community, the three operational models of international open peer review platforms demonstrate a series of common characteristics, mainly reflected in: (1) using preprint manuscripts as the primary objects for review, with participating papers generally first posted on platforms in preprint form; (2) disclosing peer review comments, with platforms inviting domain experts to review preprints and publicly disclosing review comments and user feedback to varying degrees; and (3) recommending reviewed preprints for formal publication or database indexing, with peer-reviewed and recognized research findings generally recommended to relevant peer-reviewed journals for formal publication or directly indexed in literature databases.

2.2 Active Participation of Leading Scientists

Distinguished scientists are actively participating in open peer review affairs, building platforms, and establishing communities, playing important roles in attracting authors and reviewers. Many eminent scientists serve on senior advisory boards of platforms like Review Commons, including Shaw Prize and Lasker Award winner Ronald D. Vale, Royal Society Research Professor David Baulcombe, Vilcek Prize winner Ruth Lehmann, and former EMBO President Maria Leptin. More than ten outstanding scientists or academic leaders form the eLife editorial team. Scientists from the French National Research Institute for Agriculture, Food and Environment (INRAE)—Denis Bourguet, Benoit Facon, and Thomas Guillemaud—conceived and founded Peer Community In. Thomas Lemberger, Deputy Editor of EMBO Press, serves as Deputy Editor of Review Commons. These scientists focus on conducting peer review of preprint papers when authors request it, rather than through traditional journal-based review [22].

2.3 Formation of Scale and Impact by International Platforms

Scientist-led, journal-independent international open peer review platforms such as Peer Community In, PREreview, and Review Commons have achieved considerable scale, gathering numerous peer review experts and forming new hubs

for exchanging and evaluating the latest research findings. PCI has established 17 thematic management committees covering international subject areas, with a review team of over 2,000 experts and 4,088 published review comments, receiving support from 90 friendly journals [1]. Review Commons has assembled a review editorial team and advisory board composed of scientists, having reviewed over 1,000 manuscripts with more than 2,000 reviewers producing over 3,000 review comments, and sharing manuscripts and reviews with 17 journals. PREreview supports review of preprints from 24 platforms, gathering 2,834 reviewers and publishing 931 review comments [3]. PreLights has reviewed and recommended 1,539 preprints [23].

2.4 Recognition of Open Peer-Reviewed Research by the Scientific Community

The open peer review model is gaining recognition in the scientific community. In July 2022, Plan S issued a statement on peer-reviewed publications, asserting that research outputs reviewed by third-party open peer review platforms should have equal value and status to traditionally published peer-reviewed journal articles [24]. In October 2023, cOAlition S formally recognized that preprint papers reviewed through open peer review are equivalent to those published in peer-reviewed journals. Preprints reviewed by PCI can be indexed in Google Scholar, EBSCO, CAB Abstracts, Sherpa Romeo, DOAJ, and other platforms after being published in Peer Community Journal [26]. The Australasian and New Zealand Society for Immunology and FEBS's 28 alliance journals also recognize preprints reviewed through open peer review [4]. For preprints that pass review but are not formally published, open review platforms clearly mark their peer-reviewed status, allowing them to be cited and disseminated in the scientific community and indexed by Europe PMC, PubMed, Google Scholar, etc., equivalent to formally published papers.

2.5 Alignment with International Open Access (OA) Development Trends

International open access development is at a crossroads. Many scientific groups believe that the two most important inputs in scholarly publishing come from researchers: manuscripts and peer review comments. Although publishers invest in editing and marketing, the APC (Article Processing Charge)-based pricing mechanism they dominate is opaque and continuously rising, infringing upon the common interests of the research community and creating issues such as publication inequity and declining paper quality. Many scientific teams advocate abandoning the APC-based OA model. With preprint exchange becoming increasingly accepted in science and the rise of preprint-based open peer review communities, the international scientific community is calling for and actively building a new OA model governed by the academic community itself. This approach aligns with international OA development trends and represents a new path for community-governed open access.

2.6 Reshaping of International Academic Communication Models

The rise of international open peer review platforms and communities signifies a major adjustment in academic exchange hubs and will reshape international academic communication patterns. Over 350 years ago, Henry Oldenburg, editor of the Royal Society's Philosophical Transactions, proposed that academic publishing serves four main functions: registration of claimed research findings, certification of those claims, dissemination of research results, and archiving of scholarly outputs. These four basic functions remain fundamental to today's academic exchange system. More than 20 years ago, all four functions were concentrated in scientific journals. However, with the rise of preprint platforms and open peer review in recent years, preprint platforms have assumed the registration function, while open peer review platforms have taken on the certification function. Open peer review platforms naturally possess dissemination and archiving functions. The academic communication landscape is undergoing major transformation, with open peer review becoming a new highland in international academic exchange, increasingly prominent in value and function within the scientific community.

---

3 Recommendations for Accelerating the Development of International Open Peer Review Platforms and Communities in China

3.1 Fully Recognizing the Significance of Open Peer Review Platforms for Chinese Science

As open peer review platforms transform the international academic communication landscape, China's scientific departments must recognize that building internationally influential open peer review platforms and communities is crucial for seizing the high ground in academic exchange and enhancing academic discourse power. The rise of these platforms indicates a significant shift in academic exchange hubs and foreshadows a reshaping of academic communication models. Developing China-led international open peer review platforms and communities is essential for improving the national research governance system and enhancing the overall efficiency of the innovation system.

3.2 Updating Scientific Publishing Concepts to Create a Supportive Environment

The academic communication landscape is undergoing profound transformation. The emergence of preprint platforms and open peer review platforms has redistributed and reinforced traditional academic publishing functions, gradually becoming new highlands for scholarly exchange. International research institutions, particularly funding agencies like cOAlition S, have begun to recognize these new platforms as legitimate channels for research output dissemination.

As eLife Senior Editor and neuroscientist Panayiota Poirazi stated, journal-independent open peer review is the future. Facing this trend, Chinese science and technology management departments must update their scientific publishing concepts, fully recognizing the important value and role of preprint exchange and open peer review in academic communication, and provide a favorable environment for building open peer review platforms and communities.

3.3 Implementing Policy Measures to Support Platform and Community Construction

China should formulate policy measures to promote open peer review from a strategic perspective. First, it should organize research on policies related to international open peer review community construction and propose national policies to promote high-quality research publication and open access through open peer review platforms and communities. Second, funding agencies such as the National Natural Science Foundation of China should research and formulate policies recognizing that papers reviewed by open peer review communities have equal value and status to those published in traditional peer-reviewed journals, allowing them to be cited in project applications and research reports. Third, appropriate incentive and reward mechanisms should be provided for high-quality manuscripts and reviewers, continuously recommending high-quality research outputs that have passed review to international research groups and scientific journals.

3.4 Encouraging Pilot Demonstrations and Innovative Practices

Innovative practices in open peer review are already being actively explored. For instance, ChinaXiv, the preprint platform of the Chinese Academy of Sciences, launched its open peer review function in 2022 and established cooperative relationships with international publishers such as Taylor & Francis and F1000 Research, initiating innovative practices in open peer review. ChinaXiv has received nearly a hundred author-initiated open peer review requests for preprints. To further promote open peer review development, support and encouragement from research management departments are crucial. Through these practices, valuable experience can be accumulated, problems in implementation can be identified and resolved promptly, and a solid foundation can be laid for broader promotion and application of open peer review.

3.5 Building Robust National Open Peer Review Infrastructure

The national research paper and scientific information exchange platform should be developed into a comprehensive open academic exchange platform integrating research plan pre-registration, preprint quality open peer review, preprint open exchange, and recommendation of reviewed preprints to the academic community and public. High-level review expert teams and editorial teams should be assembled to accelerate the construction of internationally influential open peer review communities. This infrastructure will support community building

and help China occupy a high ground in international open access and academic exchange.

3.6 Engaging in Brand Building to Create Internationalized Platforms and Communities

Following internationally accepted open peer review models, China should build internationalized open peer review platforms and communities, continuously enhancing the brand appeal of China-led initiatives. Stable financial support should be provided for internationalized open peer review platforms, along with building substantial high-level editorial teams. Domestic and international high-level scientists and academic leaders should be organized to participate in these internationalized open peer review platforms, thereby strengthening China's influence in global academic discourse.

---

4 Conclusion

With the vigorous development of international open peer review platforms and communities, they have become key drivers of global scientific innovation and academic exchange. This study analyzed the basic models and development trends of these platforms, revealing their important roles in promoting academic transparency, improving research quality, and advancing scientific progress. Based on this analysis and considering China's research environment characteristics, the study proposed a series of practical recommendations aimed at accelerating the construction and development of China's open peer review system. The goal is to build a more open, collaborative, and efficient academic exchange environment that provides researchers with broader platforms, stimulates innovative thinking, and promotes the free flow of knowledge and widespread dissemination of scientific spirit.

References

[1] Peer community in(PCI)[EB/OL]. [2024-04-01]. https://peercommunityin.org/.
[2] Sciety[EB/OL]. [2024-04-01]. https://sciety.org/.
[3] Open preprint reviews[EB/OL]. [2024-04-01]. https://prereview.org/.
[4] Review commons [EB/OL]. [2024-04-01]. https://www.reviewcommons.org/about/.
[5] ROSS-HELLAUER T. What is open peer review? A systematic review[J]. F1000Research, 2017, 6: 588.
[6] F1000 research [EB/OL]. [2024-04-01]. https://f1000research.com/about.
[7] F1000. F1000 publishing venues [EB/OL]. [2024-04-01]. https://www.f1000.com/resources-for-researchers/where-to-publish-your-research/f1000-publishing-venues/.
[8] Research Square. In review[EB/OL]. [2024-04-01]. https://www.researchsquare.com/researchers/in-review.

[9] SSRN. First look[EB/OL]. [2024-04-01]. https://www.elsevier.com/products/ssrn-preprint-services/first-look.
[10] Research Square. Participating journals & platforms[EB/OL]. [2024-04-01]. https://www.researchsquare.com/journals.
[11] POLKA J, PUEBLA I, PATTINSON D, et al. PReF: Describing key preprint review features[J/OL]. OSF preprints, 2022. https://doi.org/10.31219/osf.io/8zj9w.
[12] Peerage of science[EB/OL]. [2024-04-01]. https://www.peerageofscience.org/.
[13] Gates open research [EB/OL]. [2024-04-01]. https://gatesopenresearch.org/.
[14] Wellcome open research [EB/OL]. [2024-04-01]. https://wellcomeopenresearch.org/.
[15] PreLights[EB/OL]. [2024-04-01]. https://prelights.biologists.com/.
[16] MNI open research[EB/OL]. [2024-04-01]. https://mniopenresearch.org/.
[17] HRB open research[EB/OL].[2024-04-01]. https://hrbopenresearch.org/.
[18] Science open reviewed [EB/OL]. [2024-04-01]. https://science-open-reviewed.com/webapp/.
[19] Open research Europe [EB/OL]. [2024-04-01]. https://open-research-europe.ec.europa.eu/.
[20] EISEN M B, AKHMANOVA A, BEHRENS T E, et al. Implementing a "publish, then review" model of publishing[J]. Elife, 2020, 9: e64910.
[21] Wiley. eLife's new publishing model: What do researchers think?[EB/OL]. [2024-04-01]. https://mvc.wiley.cn/research-news/231024-9/.
[22] BRAINARD J. Can peer reviewing preprints catch on?[J]. Science, 2022, 378(6626): 1264-1265.
[23] PreLight[EB/OL]. [2024-04-01]. https://prelights.biologists.com/.
[24] Plan S statement on peer reviewed publications[EB/OL]. [2024-04-01]. https://www.coalition-s.org/statement-on-peer-reviewed-publications/.
[25] ASAPbio. What do researchers think about scholarly publishing? Five key takeaways from a new survey by cOAlition S[EB/OL]. [2024-04-01]. https://asapbio.org/what-do-researchers-think-about-scholarly-publishing-five-key-takeaways-from-a-new-survey-by-coalition-s.
[26] Peer community journal[EB/OL]. [2024-04-01]. https://peercommunityjournal.org/page/indexation/.
[27] ABBOTT A. Strife at eLife: Inside a journal's quest to upend science publishing[J]. Nature, 2023, 615: 780-781.

Author Biographies:
ZHANG Zhixiong (1971-), male, Ph.D., doctoral supervisor, professor-level senior engineer (Grade 2), research interests: open science, semantic mining of scientific literature.
WANG Yuju (1980-), female, M.S., senior engineer, research interests: open scholarly communication, data security.
ZHAO Yang (1996-), female, Ph.D., assistant researcher, research interests: semantic evaluation of scientific literature, open scholarly communication.

Note: Figure translations are in progress. See original paper for figures.

Source: ChinaXiv — Machine translation. Verify with original.