Current Status of Preprint Publications by Indian Researchers

Sridhar Gutam
Senior Scientist, ICAR-IIHR and Convenor, Open Access India
gutam2000@gmail.com

Preprints are preliminary versions of research papers that have not yet undergone peer review. In recent years, preprint servers such as OSF Preprints and bioRxiv have witnessed a significant increase in their content. For instance, the arXiv preprint server, initially established by physicists in 1991, now contains over two million records. Since preprints do not undergo formal peer review, it is crucial to critically evaluate their content to ensure reliability and utilize validated information when available. Given this context, let's explore the status of preprint publications by Indian researchers.

As per the available information, there have been 9,31,779 preprints published worldwide. Among these, 9,775 preprints are attributed to researchers from India. In 2019, Indian researchers, represented by Open Access India, launched IndiaRxiv, a preprint server exclusively dedicated to hosting preprints from researchers in India or those working on topics related to India. However, after a year of operation, IndiaRxiv temporarily ceased accepting new submissions. Fortunately, it has recently been relaunched, providing researchers with a platform once again to share their preprints and facilitate open access to Indian research.

In a study[i] conducted to analyse the submission patterns of preprints by Indian scientists on the widely used preprint server arXiv between 2014 and 2018, revealed that, only approximately 3.5% of the research papers published were deposited. The distribution of deposited research papers varied across disciplines, with physics having the highest proportion of approximately 23%, while agricultural science and biology had the lowest proportion of 0.4%. In a similar study[ii] it was found that the proportion of preprints on bioRxiv with senior authors from India was approximately 1.8% (1212).

Such a low volume of pre-printing by Indian researchers may be due to factors such as the traditional emphasis on peer-reviewed journal publications, concerns about career advancement and evaluation, potential intellectual property issues, limited awareness of preprint servers, and a preference for the rigor of peer review before public sharing. These factors contribute to the lower inclination of some researchers to utilize preprints as a means of disseminating their research.

However, as per the Committee on Publication Ethics, preprints are not considered prior publication that would hinder subsequent submission to a peer-reviewed journal. They establish precedence and remain on preprint platforms indefinitely. Preprints can undergo peer review on some preprint servers, offering authors the opportunity to improve their work before journal submission. Additionally, platforms like Clarivate's Preprint Citation Index and Scopus include preprints, enabling them to be cited and providing visibility and impact metrics for preprint publications.

According to the policy statement by the Indian National Science Academy (INSA) on the dissemination and evaluation of research output in India[iii], Recommendation 3.1 suggests that funding agencies and organizations should acknowledge articles deposited in established free open access preprint archives as evidence of prior data. This recommendation emphasizes the value of preprints as a source of early data dissemination while recognizing the significance of

peer-reviewed publications for thorough evaluation. Prof. VijayRaghavan[iv] suggests that one way forward is to submit thesis chapters to preprint servers such as arXiv or bioRxiv, which would provide an opportunity to learn and improve writing skills. He emphasizes that publications can follow in due course but highlights the importance of using preprints for evaluation in postdoc positions, faculty appointments, and funding programs, without devaluing them compared to traditional publications.

The Science, Technology, and Innovation Policy 2020[v] (draft), states that optionally preprints from the research supported through public funding will be deposited in an institutional or central repository. This is to ensure that research outputs funded by the public are made openly accessible through repository systems, allowing broader dissemination and access to scientific knowledge.

In conclusion, promoting the utilization of preprints among Indian researchers requires concerted efforts and strategic actions. By increasing awareness through workshops and training sessions, researchers can be educated about the benefits of preprints and the process of submitting them. The establishment of dedicated preprint servers like IndiaRxiv provides a centralized platform for Indian researchers to share their work and gain visibility within the research community. Supporting an open science culture that values preprints in evaluations and funding applications will incentivize researchers to embrace preprints as a means of disseminating their work. Furthermore, incorporating preprints into policies and guidelines of funding agencies and institutions will create a supportive environment for their utilization. Lastly, encouraging peer review of preprints will enhance the quality and rigor of preprint publications.

These recommendations and initiatives aim to increase the utilization of preprints among Indian researchers, foster a culture of openness and collaboration, and accelerate the dissemination of scientific knowledge. By implementing these actions, India can contribute to the global open science movement, drive innovation in scientific research, and benefit from the advantages offered by preprints as a valuable tool in scholarly communication.

---

[i] Singh, Vivek & Srichandan, Satya & Piryani, Rajesh. (2020). Preprint submissions by Indian scientists in arXiv. Current Science. 119(6): 904-907 https://www.currentscience.ac.in/Volumes/119/06/0904.pdf

[ii] Richard J Abdill, Elizabeth M Adamowicz, Ran Blekhman (2020) Meta-Research: International authorship and collaboration across bioRxiv preprints eLife 9:e58496 https://doi.org/10.7554/eLife.58496

[iii] Chaddah, P. & Lakhotia, S. C. A Policy Statement on dissemination and evaluation of research output in India by the Indian National Science Academy. Proc. Indian Natn. Sci. Acad. 84, 319-329 (2018) doi: 10.16943/ptinsa/2018/49415

[iv] Prasad, R. (2019, June 11). Paper publication prior to PhD thesis submission rule may go. https://www.thehindu.com/sci-tech/science/paper-publication-prior-to-phd-thesis-submission-rule-may-go/article27807839.ece

[v] Science, Technology, and Innovation Policy 2020, India (Draft)
https://dst.gov.in/sites/default/files/STIP_Doc_1.4_Dec2020.pdf