Peer Review: A Central Element of the Researcher Role but Significantly Impacted by Geography

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A new report from Publons shines a light on the current state of peer review worldwide.

Important Details:

Publons has released the Global State of Peer Review report as part of its contribution to international Peer Review Week. It is the largest ever study of peer review, surveying more than 11,000 researchers worldwide. The report combines insight from the Publons 2018 Global Reviewer Survey with data from the Publons database as well as Web of Science and ScholarOne Manuscripts, the latter two owned by Publons’ parent, Clarivate Analytics. The report examines findings across 20 countries, comparing results from 10 established research nations (USA, Germany, Italy, Spain, France, Netherlands, Sweden, Canada, UK, and Japan) and 10 emerging countries (China, Brazil, Turkey, India, Iran, South Korea, Malaysia, and Poland). These are the top 20 countries based on combined research output (i.e., the number of publications and reviews).

The report focused on four core questions, producing the following findings.

Who is Doing Peer Review?

- Relative to their respective article outputs, established regions reviewed more than emerging ones. The US dominates absolute contributions to peer review, while China reviews significantly less (8.8%) than its article output (13.8%) would predict.
- Editors are disproportionately selected from established nations and disproportionately select reviewers from their own nations.
- Absolute review contributions are growing across all regions, but at a faster rate in emerging regions, with China growing its review output particularly rapidly (up 224% between 2013 and 2017).

How Efficient is the Peer Review Process?

- In 2017, an editor sent out 2.4 peer review invitations to complete a peer review, up from an average of 1.9 invitations in 2013.
- Reviewers in emerging regions are more likely to accept and complete review assignments than those in established regions. They also tend to complete them more quickly. The median time to complete a review is 16.4 days after acceptance of a review invitation.

What Do We Know About the Quality of Peer Review?

- Review length varies considerably by region, with reviewers from established regions writing longer reviews than those in emerging regions.
- Journals with higher journal impact factors tend to receive longer reviews and have faster review turnaround times. Emerging regions, on average, review for journals with lower journal impact factors.
What Does the Future Hold?

- Finding reviewers to accept a review invitation will get harder, with an average requirement of 3.6 invitations projected by 2025.
- While Chinese review rates are increasing, assuming existing trends continue, it will take until 2031 before it achieves reviewing parity with the group of established nations.
- Of the survey respondents, 83% felt that greater recognition and career incentives for peer review would have a positive or extremely positive impact on the overall efficacy of the peer review process.

Why This Matters

Report findings indicate the extent to which peer review remains central to the current researcher workflow and ethos. Publishing peer-reviewed research remains the key contributing factor to which researchers attribute career success (53.4% of respondents). While 84% of respondents think institutions should more explicitly require and recognize the peer review contributions of faculty, peer review continues to happen because researchers see it has part of their jobs (40.8% of respondents). Furthermore, they want to reciprocate and do their fair share in return for reviews of their work (35.1%), keep up to date with the latest research trends in their fields, and ensure the quality and integrity of research published in their fields (both 32.9%).

While the data highlights that researchers are relatively satisfied with the quality and objectivity of the review process, additional insight into the publisher perspective and quality indicators are also needed. Possible techniques to support the measuring of peer review quality at scale include sentiment analysis and editor and review quality evaluations, as the report highlights. However, based on the data collected in the survey, review length is the only indicator of quality. As the authors themselves emphasize, this is a weak proxy, although it provides stark (if not necessarily surprising) findings about the effect of high impact factor on the peer review process. Deeper, more specific research into the issue of quality of peer review stands out as an area of interest.

The research findings serve as a helpful confirmation of Publons’ strategic focus on the value it provides in supporting the global research community. This value includes reducing inefficiencies in the peer review system, expanding the volume and diversity of the researcher pool, and working to build and improve reviewer expertise worldwide (see Insight, Clarivate Analytics’ Acquisition of Publons Begins to Bear Fruit, July 17, 2018).

The report provides detailed findings and a new depth of foundational data regarding the current reality of global peer review. However, it also leaves the reader wanting additional insight into the “why” behind the key findings. This is by no means a criticism of the report, as this was not the purpose of the research.

We recommend that both information providers and institutions use the report findings as a jumping-off point, further exploring the issues it raises to support the broader debate about peer review. There are well-known challenges around how rapidly increasing publication rates and predatory publishers, for example, may be undermining the ongoing quality of research literature. The report clearly highlights that a lack of geographic (and gender) diversity is almost certainly also impacting quality, potentially exacerbated by (likely unintended) bias related to editorial team diversity. If the situation is to improve, publishers must understand the reality of their peer review situations, so that the necessary steps can be taken to remove bias where possible. Equally, the role of the institution and the information provider in recognizing, incentivizing, and rewarding peer review is of fundamental concern for researchers; in many ways, it is central to how the peer review model itself may adapt and innovate going forward.

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