



Editorial

Publish or perish: The trap of predatory and illegitimate journals

Publicar o perecer: la trampa de las revistas depredadoras e ilegítimas

Publicar ou perecer: a armadilha dos periódicos predatórios e ilegítimos



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1. Introduction

A fundamental responsibility of researchers is to communicate their work results effectively. All research endeavors must generate original knowledge, which must be disseminated to the broader scientific community through publication. From this perspective, research is not complete until its findings are published. The well-known adage "publish or perish" implies that researchers who fail to publish their results cannot demonstrate to the scientific community that they are contributing novel and original insights. Consequently, scientific publication has become a central metric for assessing the performance of researchers. Metrics derived from publications —such as the times they are read or cited by other researchers— are commonly used by institutions and funding agencies as indicators of scholarly impact and productivity. Thus, research publication, particularly in reputable scientific journals, is critical in academic appointments, access to funding, and career progression evaluations. It is also a crucial factor in assessing the performance of research institutions and groups.

This emphasis on publication has driven institutions to strongly encourage their researchers to disseminate their findings, as this enhances institutional evaluation outcomes and increases access to resources. While this dynamic has long been prevalent in countries central to global knowledge production, recent years have seen growing pressure to publish in regions where this was not traditionally prioritized. Developing research capacity requires substantial investments in economic resources, infrastructure such as equipment and laboratories, and, critically, the cultivation of human capital. Building teams capable of producing high-quality scientific work is a long-term process, often requiring years of sustained effort.

In many countries, thematic areas, or institutions there has historically been a lack of the critical mass necessary for conducting high-quality research that could be published in leading scientific journals. The





growing pressure to publish, without a corresponding investment in scientific training and the tools needed to produce quality research, has created opportunities for the proliferation of publications prioritizing commercial interests over scientific rigor. While these outlets provide a platform for authors to publish their work, they often do so at the expense of scientific quality. This practice may offer short-term benefits, but it poses significant risks in the long term. Publishing in disreputable venues can shift the paradigm from "publish or perish" to "publish and perish," as the permanence of such publications can undermine a researcher's credibility and career.

2. Geographical origin of scientific publications

The number of published scientific articles has systematically increased in recent years, with a 22.8% rise reported between 2018 and 2022⁽¹⁾. This growth has been more pronounced in upper-middle-income countries compared to high-income or lower-middle-income countries⁽²⁾. Nevertheless, high-income countries have maintained their position as the most significant contributors to scientific publications, a trend attributed to their well-established research infrastructure and capacity to produce original, publishable knowledge.

When examining the growth in publications between 2012 and 2022 among the 15 countries with the highest output, four countries —China, India, Russia, and Iran— stand out due to their remarkable increases of 273%, 265%, 231%, and 194%, respectively (calculated from Science & Engineering Indicators⁽²⁾). This exceptional growth highlights the implementation of active national policies to enhance scientific publishing capacities. However, it is difficult to access data on article submission volumes or rejection rates by regions or countries, which could shed light on the financial and professional cost of increasing publication output, especially in areas with limited traditions of scientific publishing. Based on my experience as an editor for several scientific journals, it is evident that the number of article submissions has grown much faster than the number of accepted publications, resulting in higher rejection rates. Although comprehensive data are not readily available, a study suggests that rejection rates among leading scientific publishers increased by more than 10% between 2016 and 2022⁽³⁾. In parallel with the rise in submissions and rejections, the number of scientific journals has also grown steadily, with an annual increase of 3–4%⁽¹⁾.

While these journals have accommodated the publication of more articles, the rapid expansion has also created opportunities for alternative publishing avenues outside the mainstream, peer-reviewed scientific community. This dynamic has been shaped by several factors, including insufficient investment in training policies to support high-quality research, mounting pressure to publish, and significantly reduced publication costs due to the advent of electronic publishing. These conditions have paved the way for opportunistic practices, including the emergence of predatory and illegitimate journals, which often prioritize profit over scientific rigor. The proliferation of these journals poses significant challenges to maintaining the integrity and quality of scientific publications.

3. Predatory journals

Those involved in scientific research frequently receive unsolicited email messages offering to publish their work within an implausibly short timeframe, often within one or two weeks⁽⁴⁾. From the perspective of editorial processes, such rapid publication is impossible if peer review is conducted correctly⁽⁵⁾. The reality is that these journals bypass peer review entirely, instead charging authors to publish their work without any meaningful quality control. This practice has given rise to predatory publishers and journals, a phenomenon that began



over 20 years ago but has since escalated dramatically. For instance, by 2015, the number of predatory publications was comparable to that of legitimate open-access journals⁽⁶⁾. Between November 2018 and September 2021 —just under three years— the number of predatory journals increased from approximately 10,000 to 15,000⁽⁷⁾.

Many authors, particularly those unable to secure publication in reputable journals, have turned to these predatory outlets to achieve publication by simply paying publication fees and bypassing rigorous review processes. While this allows more articles to enter the scientific record, it comes at the cost of quality and of learning how to improve the science done. Articles published under such conditions often contain procedural flaws, methodological issues, errors in data analysis, or other deficiencies, which can lead to misleading or erroneous conclusions.

While the peer review system has limitations, eliminating it does not address these flaws —it only exacerbates them by undermining the reliability and credibility of scientific literature⁽⁶⁾. Moreover, the proliferation of predatory publishing highlights a broader issue: authors who choose these venues are unwilling to subject their work to the rigorous evaluation processes of reputable journals, regardless of the difficulty or demand involved. This behavior compromises not only the integrity of individual publications but also the trustworthiness of science.

4. Illegitimate journals

In recent years, a new category of publishers has occupied an additional space in the scientific publishing landscape. These publishers claim to follow peer review processes; however, the ultimate decision to publish an article often seems disconnected from the rigor of the review itself. While some of these publishers have consolidated their positions in the field, their editorial policies have repeatedly drawn scrutiny⁽⁸⁾⁽⁹⁾. Criticisms include questionable business practices, such as launching journals with names almost identical to well-known, reputable journals —often modifying or adding just a single letter⁽¹⁰⁾. Although these practices may raise ethical concerns, they do not necessarily invalidate the scientific legitimacy of the journals. Many of these publishers apply peer review processes and impose significant publication costs for authors, making their operations outwardly similar to those of established publishers. However, unlike many traditional publishers, which offer reduced or waived fees for authors from low-income countries or those without access to funding, these publishers often prioritize commercial interests, ignoring policies that could promote broader scientific contribution.

One distinguishing feature of these publishers is their promise to process articles acceleratedly. To achieve this, they dramatically expand their pool of reviewers and significantly shorten the time allocated for editorial decisions. While this may sound efficient, it often invites individuals with less expertise to review manuscripts critically. Additionally, reviewers are frequently given unreasonably short deadlines —usually just one week— making it difficult to conduct the thorough analyses that high-quality peer review requires. In many cases, while standard editorial practice might involve multiple rounds of revisions and evaluations before arriving at a final decision, these publishers discourage such practices. As a result, the speed of the process often comes at the expense of quality. It is important to note that this does not mean that these publishers never publish excellent work or that their editorial processes are inherently flawed in every instance. However, their editorial policies tend to bypass the thorough processes that should aim to ensure the highest possible quality of the published material.



A study by Hanson and others⁽³⁾ sheds further light on these trends by comparing scientific publishers across several critical indicators from 2013 to 2022. According to their findings, MDPI emerged as the publisher with the most significant increase in published articles. At the same time, MDPI also reported the most significant reduction in rejection rates during this period⁽³⁾⁽¹¹⁾. Furthermore, as its output increased, so did the cost of publication for authors⁽¹²⁾. Another notable finding was the disproportionately high number of self-citations within their journals, meaning articles published in these journals frequently cited other articles from journals published by the same editors, creating a bias in impact metrics and inflating citation-based indicators⁽³⁾.

Another key observation from the study is the markedly short turnaround time between article submission and publication for certain publishers. For example, the same publisher reported the average time from submission to a decision on publication as just 37 days, a timeline that has significantly decreased since 2016. This timeframe includes several critical steps, such as:

- receiving the article;
- conducting an editorial review to check compliance with journal standards and determine suitability for scientific evaluation;
- assigning the manuscript to an editor, who reviews it and decides whether it should be sent for external peer review;
- identifying and inviting reviewers, waiting for their responses, and seeking additional reviewers if necessary (a process that sometimes implies contacting more than a dozen candidates to secure just two reviewers);
- allowing time for reviewers to complete their evaluations, which often arrive later than the deadlines;
- having the editor assess the reviewers' comments, make a decision, and communicate it to the authors,
- and, if revisions are requested, receiving a revised manuscript from the authors, reassigning it for additional review (often to the same reviewers), and parts of the process will be repeated.

Each step requires careful attention, and readers can judge whether it is feasible to achieve all of this in an average of 37 days without compromising quality. The question arises: how much is quality sacrificed to meet such short timelines? Despite these concerns, it must be acknowledged that these publishers publish many excellent articles. However, their editorial policies raise issues that cannot be ignored. In response to these concerns, several research evaluation systems in various countries have begun to treat articles published in such journals differently. Some systems do not recognize these articles as equivalent to those published in more traditional, rigorous editors. In contrast, others refuse to cover the publication fees, discouraging researchers from submitting to these publishers.

5. In summary

The growing pressure to publish often diverts research funds toward communicating results, sometimes at the expense of other priorities. When properly implemented, peer review is crucial in supporting researchers, particularly in thematic areas with limited critical mass. Through this process, researchers receive valuable feedback from established scientists in their field, enabling them to refine their work and enhance the quality of their research⁽¹³⁾. This feedback mechanism should be a cornerstone of scientific progress. However, this objective becomes distorted if research systems and institutions fail to condemn publication in editors that do not adhere to rigorous scientific standards. Merely excluding publications in predatory journals from evaluations is insufficient. Institutions must actively and explicitly question and reject such practices. They



failed to do so, risking legitimizing these outlets and sending mixed signals about their acceptability. Instead, institutions should take a strong stance and provide clear guidance to their members, unequivocally labeling these practices unacceptable⁽¹⁴⁾. This is essential to uphold the integrity of the research process and ensure that quality remains a priority over quantity.

Meanwhile, other publishers —such as those previously analyzed— engage in practices prioritizing commercial interests over scientific evaluation's rigor. Although the peer review process is never without flaws, maintaining standardized criteria for evaluating scientific quality is critical. In response to such questionable practices, many leading institutions in countries with well-established scientific communities have taken a firm position. These institutions often exclude publications from certain publishers in their evaluations or assign them lower weights than expected based on bibliometric indicators. Furthermore, some funding agencies that support open-access publication fees for their researchers decline to cover these costs —or only provide partial coverage— when the articles are submitted to journals from these publishers.

This response serves as an essential signal to the global scientific community. While publishing in such journals might provide a quick and easy path to adding a new publication to a CV, the medium- and long-term effects can be detrimental. Researchers may find that this approach undermines their credibility and career progression. More importantly, the broader implications are significant. Encouraging practices that prioritize "publishing at any cost" over "rigorous scientific publications" sends harmful signals to the next generation of researchers. Those who are currently in training and will shape the future scientific community are particularly vulnerable to these messages. If publishing quantity precedes quality, it risks eroding the foundations of scientific integrity and weakening society's trust in research.

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