REDIN Revista Facultad de Ingeniería Universidad de Antioquia

No.117, pp. 7-8, Oct-Dec 2025

EDITORIAL

Financing of specialized journals in the world: evolution, actors and current trends

Scientific dissemination can be defined as the set of activities aimed at sharing scientific knowledge. This knowledge is usually produced through teamwork: it is the result of a group of researchers working together to solve a problem or to deepen their understanding of theories that may be of interest to a specific sector, group, or society as a whole.

Today, there are various media and an ever-growing range of formats for the dissemination of science, including books, magazines, newspapers, radio stations, television channels, websites, social and professional networks, emails, and more. However, specialized journals continue to hold significant relevance within the scientific community. For this reason, this editorial is dedicated to reviewing the ways in which specialized journals are financed. [1].

The publication of scientific and academic journals is one of the fundamental pillars of the global knowledge ecosystem. Since its beginnings in the 17th century, with the launch of publications such as *Philosophical Transactions of the Royal Society* in 1665, the dissemination of scientific knowledge has undergone continuous evolution, adapting to technological, economic, and social changes. In recent decades, this evolution has been shaped by major shifts in funding and access models, particularly with the rise of open access, digitization, and the consolidation of the publishing market in the hands of large corporations.

1. Magnitude and actors of the current scientific publishing system

Currently, it is estimated that there are over 47,000 active specialized journals worldwide, of which between 30,000 and 35,000 are peer-reviewed scientific journals [2]. These journals collectively publish between 2.5 and 3 million scientific articles each year—a number that has continued to grow steadily, driven by the rise in global academic output, particularly from countries in the Global South [3].

Scientific journals are published by a range of institutional actors, each with different goals and funding models. According to one analysis [4], around 60% of the scientific publishing market is controlled by commercial publishers such as Elsevier, Springer Nature, Wiley, and Taylor & Francis. These large publishing houses operate for profit and account for a significant share of high-impact journals. Universities and research centers, by contrast, are responsible for about 20% of publications, while scientific societies manage between 15% and 20% of specialized journals, particularly in fields like engineering, medicine, and the natural sciences. A smaller share is published by non-profit organizations, government agencies, or regional coalitions, such as SciELO in Latin America or the DOAJ at the global level.

2. Traditional and emerging financing models

The subscription model, which dominated scientific publishing until the early 21st century, relies on university libraries and other academic institutions paying for access to journals. In this model, authors typically do not pay to publish, but access to the content is restricted to those who can afford subscription fees. This system has been widely criticized for its high costs and for limiting access to knowledge, particularly in countries with fewer resources [5].

Since the 2000s, the open access model has gained traction, aiming to ensure that scientific articles are freely accessible to all readers. In this model, the cost burden shifts to authors or their institutions through Article Processing Charges (APCs), which can range from USD 500 to USD 5,000 per article, depending on the journal [6]. While open access has significantly improved access to scientific knowledge, it has also introduced new barriers, particularly for researchers without funding or those affiliated with smaller institutions.

There are also hybrid models, in which traditional subscription-based journals offer authors the option to pay an APC to make their individual article open access, while the rest of the journal's content remains behind a paywall. This model has sparked debate, as it can create a double financial burden for institutions—requiring them to pay both subscription fees and APCs [7].

Another growing alternative is the *diamond open access* model, in which neither authors nor readers are required to pay to publish or access content. This model is primarily supported by universities, library consortia, government agencies, or foundations. Latin America has been a pioneer in this approach, with platforms such as RedALyC and SciELO demonstrating the viability of non-profit open science [8].

DOI: 10.17533/udea.redin.20250777

3. Current challenges and future prospects

The scientific publishing ecosystem faces significant challenges. On one hand, the increasing concentration of publishing power in the hands of a few large corporations limits the diversity of voices and raises ethical concerns regarding equitable access to knowledge. On the other hand, while the growth of open access is a positive development, it must be carefully managed to avoid becoming yet another barrier for researchers who cannot afford APCs.

Initiatives such as *Plan S*, led by the European coalition *cOAlition S*, aim to establish a new standard for publicly funded scientific publishing by requiring that all research results be made immediately available through open access [9]. Such measures signal a structural transformation of the publishing system, emphasizing equity, transparency, and long-term sustainability.

Finally, new preprint platforms, institutional repositories, and emerging technologies such as those based on blockchain or artificial intelligence are also reshaping the traditional role of journals and their funding models. These innovations promote more agile, decentralized, and open approaches to scientific communication.

References

[1] O. J. Conde, "Editorial, la divulgación científica: Financiamiento," *Revista Gestión I+D*, vol. 7, no. 2, Jul.-Dec. 2022. [Online]. Available: https://dialnet.unirioja.es/descarga/articulo/8594454.pdf

[2] "Ulrich's periodicals directory," 2024, ulrich's Periodicals Directory. [Online]. Available: https://ulrichsweb.serialssolutions.com/search/-911653605

[3] M. Ware and M. Mabe, "The stm report: An overview of scientific and scholarly publishing," University of Nebraska-Loncoln, Lincoln, EU, Tech. Rep. 3-2015, Mar. 2015. [Online]. Available: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1008&context=scholcom

[4] V. Larivière, S. Haustein, and P. Mongeon, "The oligopoly of academic publishers in the digital era," *PLOS One*, vol. 10, no. 6, Jun. 10, 2015. [Online]. Available: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0127502

[5] P. Suber, Ed., *Open Access*, ser. The MIT Press Essential Knowledge series. Cambridge, MA: The MIT Press, 2012. [Online]. Available: https://mitpress.mit.edu/9780262517638/open-access/

[6] D. J. Solomon and B. C. Bjork, "A study of open access journals using article processing charges," *Journal of the American Society for Information Science and Technology*, vol. 63, no. 8, Jul. 06, 2012. [Online]. Available: https://doi.org/10.1002/asi.22673

[7] S. Pinfield, J. Salter, and P. A. Bath, "A "gold-centric" implementation of open access: Hybrid journals, the "total cost of publication," and policy development in the uk and beyond," *JASIST*, vol. 68, no. 9, Feb. 27, 2017. [Online]. Available: https://doi.org/10.1002/asi.23742

[8] J. P. Alperin, "The public impact of latin america's approach to open access," Ph.D Thesis, Standford University, Graduate School of Education, Standford, CA, 2015. [Online]. Available: https://purl.stanford.edu/jr256tk1194

[9] (2021) Principles and implementation. Plan S. [Online]. Available: https://tinyurl.com/3zrfwtyj

Maryory Astrid Gómez Botero

Editor-in-Chief

Professor-Universidad de Antioquia

https://orcid.org/0000-0001-9685-3080

http://www.redalyc.org/autor.oa?id=8587

https://scholar.google.com/citations?user=U_2Xx_cAAAAJ&hl=es