

Academic publishing under pressure: the role of transparency in peer review

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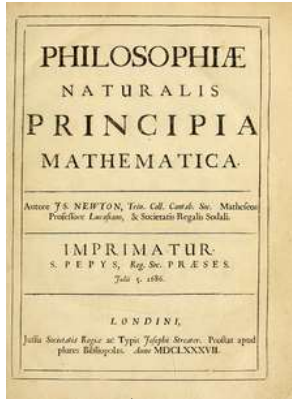
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April 13, 2023

UNIVERSITIES: PAST, PRESENT, AND FUTURE.

Mahindra Humanities Center

Institutionalization of journal peer review (Baldwin 2018)



1687
Principia

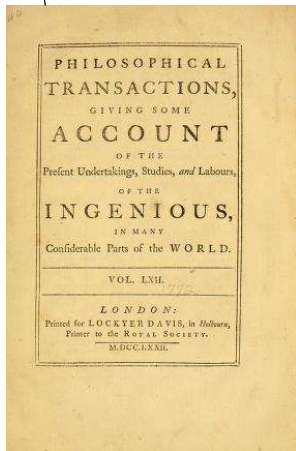
1973
Nature adopts
peer review

1700

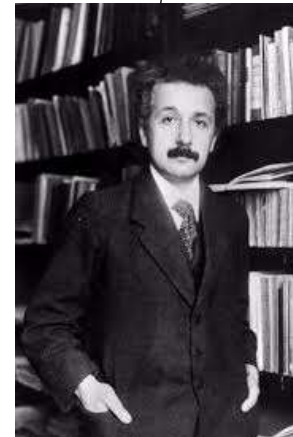
1800

1900

2000

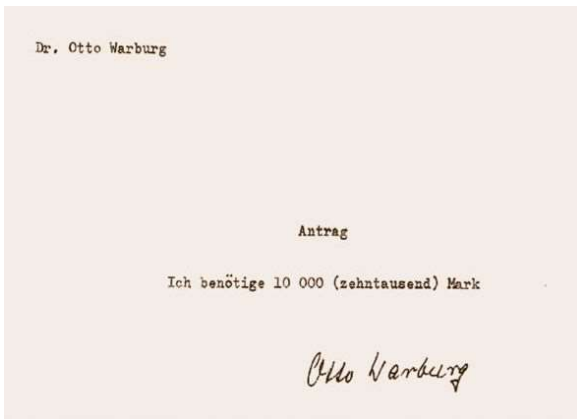


1665
First peer review
Philosophical Transactions
of the Royal Society



1936
“we had not authorized
you to show our
manuscript to specialists
before it is printed...”

Institutionalization of grant peer review (Baldwin 2018)



Grant proposal in 1921:
"I need 10.000 mark"

National Science
Foundation



Contesting
NSF



Pressure for
efficient use of
resources



INSTITUTIONALIZATION
Peer Review key for
scientific legitimacy



The perfect storm:
Metrics
New public management policies
University rankings

Exacerbates
publication
pressure



.....

Peer review relies on **voluntary work**

As scientists are increasingly under pressure to publish, they have less time for peer review

- more difficult to find reviewers
- lower quality reviews

Peer review relies on **TRUST**

(Reviewers don't have access to original data)

Scientists are under pressure to publish → strong incentives to “cut the corners” → erode trust

Worrisome growth of scientific retractions and scandals

“When we launched the blog Retraction Watch in 2010 (...) journals were averaging about 45 retractions a month. Last year (2021) saw nearly 300 a month. Our database of retractions, launched in 2018, is up to nearly 35,000 entries.”

Oransky I. (2022) *Nature*

Increasing competition → burdensome and costly PEER REVIEW

Bedeian (2004) about peer review in top management journals:
“Reviews .. were typically short overviews. Now eight or more single-spaced pages are not uncommon.”

→ In 2012, Australian scientists spent 550 working years to write proposals to Australia’s largest funding scheme*

*Herbert, D. L., Barnett, A. G., & Graves, N. (2013). Australia's grant system wastes time. *Nature*, 495(7441), 314-314.

Pressure for efficient use of resources



INSTITUTIONALIZATION
Peer Review key for scientific legitimacy



Exacerbates publication pressure

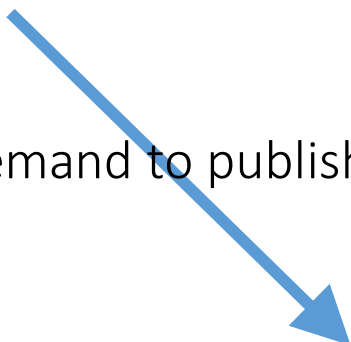


Less time for review
More papers
High rejection rates



PEER REVIEW CRISIS
Slow, inaccurate, costly

Demand to publish met by



Article Processing Charge
business model

Business Models in Scientific publishing

- **Traditional: Subscription Based**
- **Emergent: Article Processing Charge (APC)**

Traditional: Subscription Based

Revenues: from public libraries' subscription fees

- Client: the **reader** → goal: quality
- Publisher → goal: profit → subscriptions → quality
- Journals' Editors are scientists → goal: prestige/reputation → quality

Alignment of incentives towards quality

→ common interest in rigorous, selective peer review

New model: Article Processing Charge (APC) a.k.a. “open access”

Revenues: from authors who publish articles

Client: the author → goal: publish

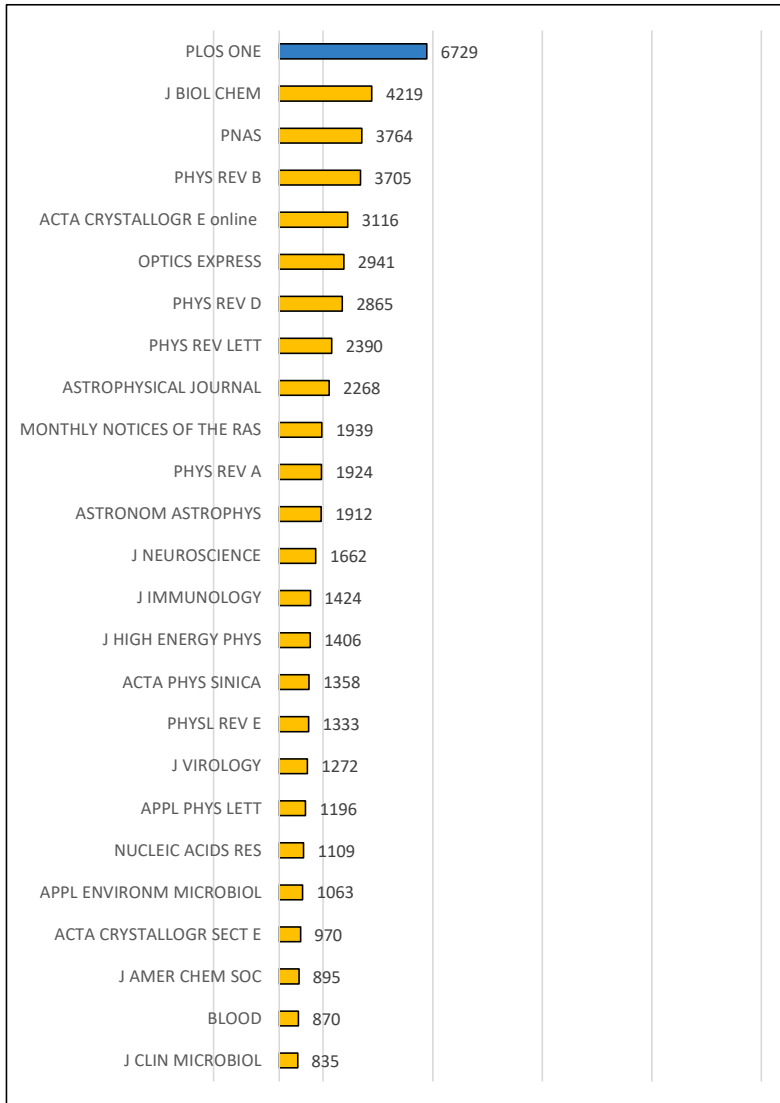
Authors: strong pressure to publish

Super growth of APC publishers

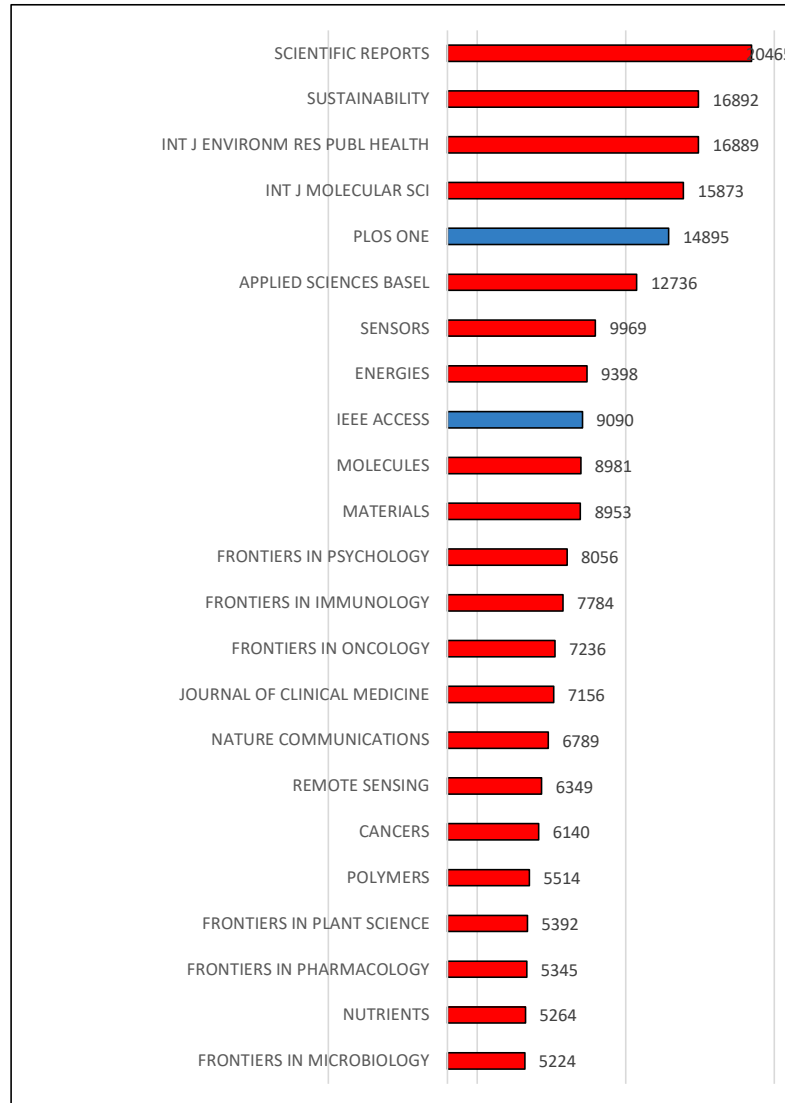
Example. MDPI from 2015 to 2021: publications from 17.000 to 233.000,
revenues from 14 to 294 million CHF

Largest Scientific Journals in the world in 2010 and in 2022 in Web of Science *

2010



2022



Subscription based

Open access nonprofit

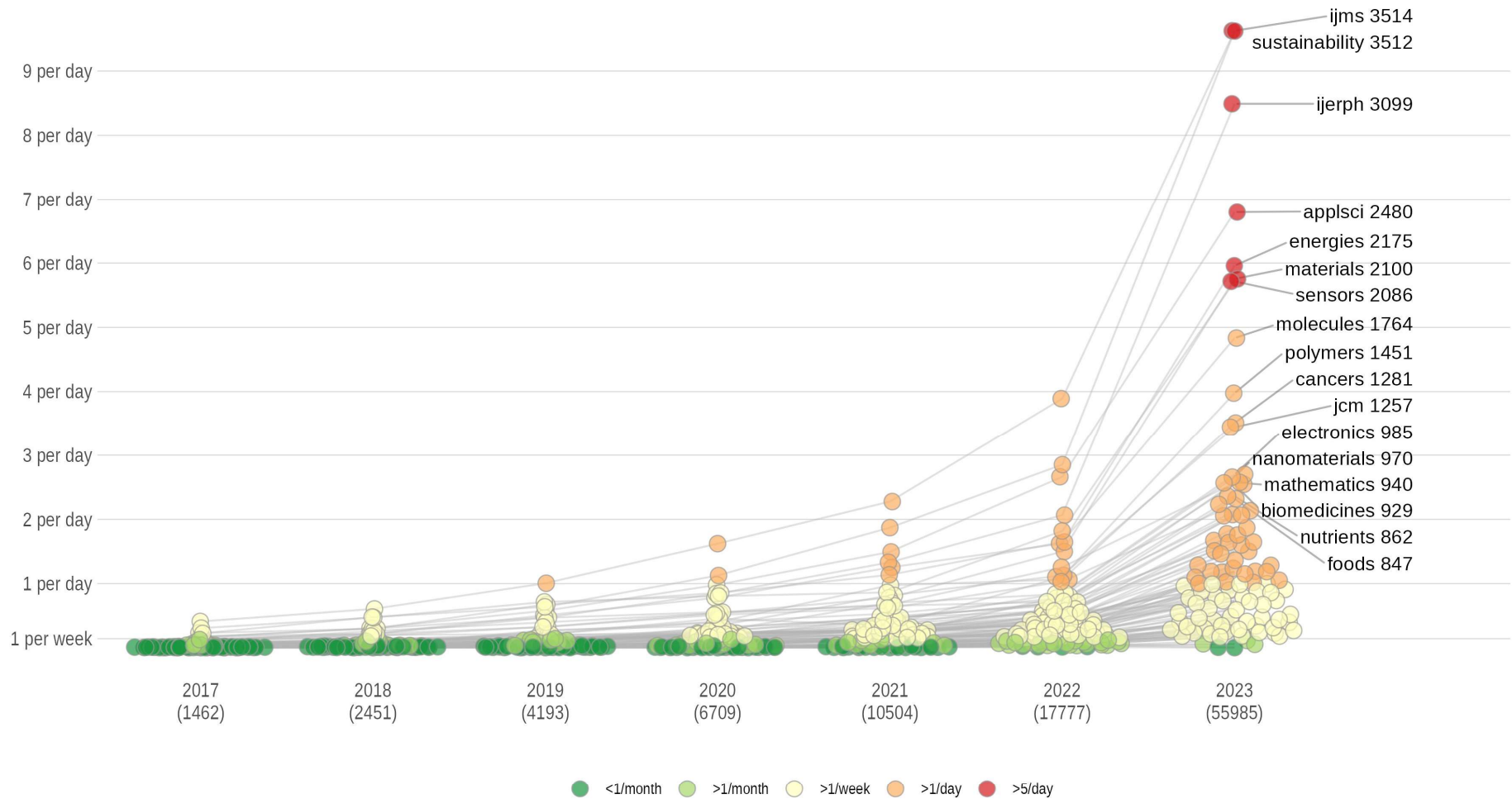
Open access for profit

21 are OA for profit
13 MDPI
6 Frontiers
2 Nature-Springer

*based on Sivertsen, 2023

Number of Special Issues at MDPI: 2017-22

98 journals with an Impact Factor



code @paolocrosetto -- data scraped from MDPI website

Risks of APC (open access) model

Publisher's PROFIT: from authors publishing articles → quantity!

Journal Editors' (scientists) goal: reputation → quality → **selectivity**

Clash of goals!

→ in APC journals, the Editors are often non-academics, not scientists

→ PEER REVIEW AS FICUS LEAF

Pressure for
efficient use of
resources



INSTITUTIONALIZATION
Peer Review key for
scientific legitimacy



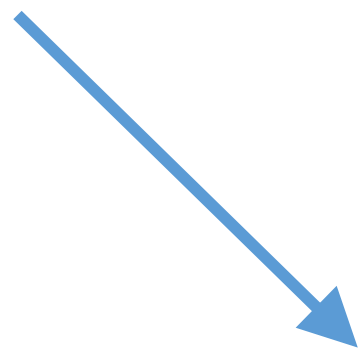
Exacerbates
publication
pressure



Less time for peer
review
More papers
High rejection rates



PEER REVIEW CRISIS
Slow, poor, burdensome
and costly peer review



Article Processing Charge
business model



PEER REVIEW
as FICUS LEAF
delegitimization

What's next?

ABOLISH

MAINTENANCE

NO CHANGE



“peer review is
broken”

“peer review must
be reformed to be
preserved”

“peer review is the
worst way of selecting
manuscripts/proposals,
except all others”

ABOLISH: journals and peer review

Rely instead on large, non-peer reviewed online archives

Yet:

- Each person must assess the validity and novelty of a manuscript
- Recommendations → new opportunistic behaviors
- Increasing reputational inequality

MAINTAINANCE (examples)

WOS: delisting journals with dubious peer review



Paolo Crosetto
@PaoloCrosetto

Ok this is big.

Web of Science just removed the MDPI flagship journal IJERPH from their lists. This means IJERPH has no more an Impact Factor.

Why is this big? What are the implications?



2:00 PM · Mar 22, 2023 · 1.3M Views

1,896 Retweets 448 Quotes 3,654 Likes 935 Bookmarks

“The second largest journal in the world lost its Impact Factor”

“IJERPH published 17085 articles in 2022. This is 13 times as many as 2016, when it published 1318.”

MAINTAINANCE (examples)

- Norwegian publication archive: “X” Journals when dubious peer review

NORWEGIAN REGISTER FOR SCIENTIFIC JOURNALS, SERIES AND PUBLISHERS

Level X

Level X marks publication channels there are doubt as to whether they should be approved or not and which The National Board of Scholarly Publishing and The Norwegian Directorate for Higher Education and Skills wants feedback on from the research community.

MAINTAINANCE (examples)

Lotteries as a complement to peer review of grant proposals*

- Peer review is precise in distinguishing **bad** from **good** proposals, but not in distinguishing **good** from **excellent** proposals
- Peer review tend to be risk averse

Hence – two phases:

- 1) Peer review to identify good proposals
- 2) Lottery to choose which good proposals to fund

* Roumbanis, L. (2019). Peer review or lottery?

MAINTAINANCE

Transparent Peer Review

Publish anonymous peer review reports

EDITORIAL | 05 February 2020

***Nature* will publish peer review reports as a trial**

Peer reviewer reports are available.

📅 September 2nd, 2020

Quantitative Science Studies
launches transparent peer review
pilot

- *no difference in willingness to review, the type of recommendations, review turn-around times,*
 - *slightly more positive tone* (Bravo et al. 2019).

Transparent peer review

- Reveals the quality of peer review
- Makes life more difficult for predatory journals*
- Reputational signal

* e.g., Siler, K., et al. (2021). Nature

Transparent peer review

Fairness: preferential treatment becomes more difficult

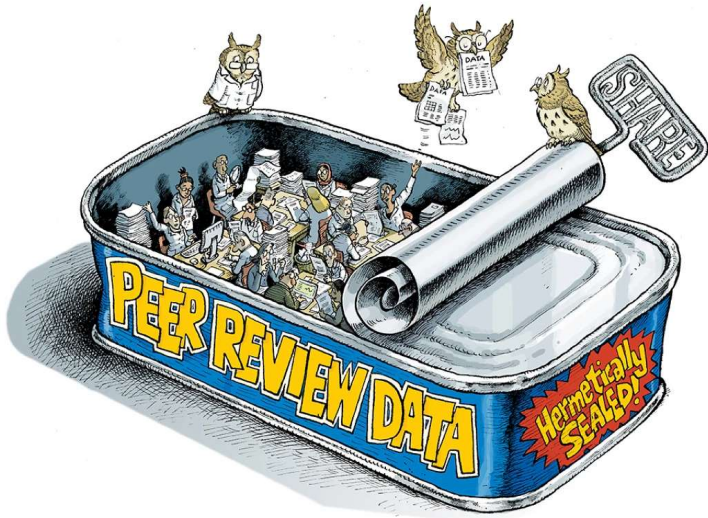
→ e.g., in special issues, or for well-connected scholars*

* Sarigöl et al. (2017): previous co-authorship author-editor reduce handling time

* Tutuncu et al. (2022): in journals owned by universities, insiders publish in large numbers and significantly faster

Transparent peer review

Enables research on peer review (e.g., to improve it, in a virtuous cycle)*



* Squazzoni et al. (2020). Unlock ways to share data on peer review. *Nature*

Transparent peer review at the European Journal of Higher Education

- 12 months pilot *
- Anonymous peer review report
- All round of reviews
- Not including the response of the authors



* Seeber, Klemenčič, Meoli, Sin (2023) *Publishing review reports to reveal and preserve the quality and fairness of the peer review process*. Editorial.

Thank you for your attention

Questions?

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References

- Baldwin, M. (2018). Scientific autonomy, public accountability, and the rise of “peer review” in the Cold War United States. *Isis*, 109(3), 538-558.
- Bedeian, A. G. (2004). Peer review and the social construction of knowledge in the management discipline. *Academy of Management Learning & Education*, 3(2), 198-216.
- Bravo, G., Grimaldo, F., López-Iñesta, E., Mehmani, B., & Squazzoni, F. (2019). The effect of publishing peer review reports on referee behavior in five scholarly journals. *Nature communications*, 10(1), 322.
- Herbert, D. L., Barnett, A. G., & Graves, N. (2013). Australia's grant system wastes time. *Nature*, 495(7441), 314-314.
- Lamont, M. (2009). *How professors think: Inside the curious world of academic judgment*. Harvard University Press.
- Oransky, I. (2022). World view. *Nature*, 608, 9.
- Roumbanis, L. (2019). Peer review or lottery? A critical analysis of two different forms of decision-making mechanisms for allocation of research grants. *Science, Technology, & Human Values*, 44(6), 994-1019.
- Sarigöl et al. (2017). Quantifying the effect of editor–author relations on manuscript handling times. *Scientometrics*, 113, 609-631.
- Seeber, M. (2022). Efficacy, efficiency, and models of journal peer review: the known and unknown in the social sciences. In *Handbook on Research Assessment in the Social Sciences* (pp. 67-82). Edward Elgar Publishing.
- Seeber, M., Klemenčič, M., Meoli, M., & Sin, C. (2023). Publishing review reports to reveal and preserve the quality and fairness of the peer review process. *European Journal of Higher Education*, 1-5.
- Siler, K., Vincent-Lamarre, P., Sugimoto, C. R., & Larivière, V. (2021). Predatory publishers’ latest scam: bootlegged and rebranded papers. *Nature*, 598(7882), 563-565.
- Sivertsen, G. (2023). “Endringer i markedet for akademisk publisering”. *Universitetspolitisk seminar, UiB*
- Squazzoni, F., Ahrweiler, P., Barros, T., Bianchi, F., Birukou, A., Blom, H. J., ... & Willis, M. (2020). Unlock ways to share data on peer review. *Nature*, 578(7796), 512-514.
- Tutuncu et al. (2022). Academic favoritism at work: insider bias in Turkish national journals. *Scientometrics*, 127(5), 2547-2576.
- Zhang, L., Wei, Y., Huang, Y., & Sivertsen, G. (2022). Should open access lead to closed research? The trends towards paying to perform research. *Scientometrics*, 127(12), 7653-7679.