

Paper mills

Paper mills are commercial enterprises which manufacture manuscripts for researchers for a fee or sell authorship. Fake research papers may be associated with fake authorship.

There are three principal areas where there can be indications that a paper mill has been involved in the production of a paper:

- authorship
- reviewers/the review process
- the submission

Authorship

- A mismatch between author and institution expertise and the topic of the article
- A mismatch between author expertise and the contributor statement
- Lack of a contributor statement
- Lack of affiliation of authors to institutions
- Suspicious author email addresses
- Author and/or email changes at revision or after acceptance
- Authorship for sale on social media

Reviewers

These indicators include:

- Suspicious author-suggested reviewers
- Suspicious reviewer email addresses
- Very fast positive reviews
- Identical or similar reviews
- Reviews in the same format

Fake papers compromise the scientific record and the evidence base used to produce healthcare guidelines.

The submission

These include:

- Same structure and formatting from different author groups
- Submissions out of scope for the journal
- Submissions not adhering to journal Guide for Authors
- Nonsensical manuscripts
- Inappropriate methodology
- Lack of evidence of clinical trial registration
- Lack of evidence of ethical review and approval (for papers reporting either human or animal studies)
- Inability to provide or share raw data or protocols
- Suspicious results
- Poor language, with bizarre and tortured phrases
- Duplicate/multiple submissions
- High textual similarity
- Use of identical/manipulated images, graphs and tables

Fake papers identified after publication lead to retraction.

Further information

Cabanac C, Labbé C Prevalence of nonsensical algorithmically generated papers in the scientific literature. *J Assoc Inf Sci Technol*, 72 (2021), 1461–1476. <https://doi.org/10.1002/asi.24495>

Committee on Publication Ethics *Paper Mills*. Research report from COPE & STM, 1 June 2022. <https://publicationethics.org/sites/default/files/paper-mills-cope-stm-research-report.pdf>

Elsevier Paper mills: see the wood for the trees (Part 2). 23 November 2022. <https://www.elsevier.com/en-gb/connect/paper-mills-see-the-wood-for-the-trees-part-2>