PUBLISHING STM RESEARCH
UNDERSTANDING THE DIFFERENT NEEDS, OPTIONS AND OUTCOMES

RESEARCHER NEEDS

The publishing needs and goals of university-based STM researchers vary widely.*

OPTIONS & OUTCOMES

Currently, 3.5 million research articles are published annually in over 50,000 journals, plus many preprint servers.

- Articles published
- Accessibility
- Language
- Speed
- Rejections
- Peer review
- Cost
- Research impact
- Career impact
- Quality
- Discoverability

DECEPTIVE JOURNALS

Publish anything for a fee. Most are fakes and quickly for a fee. Publish anything.

PREPRINT SERVERS

Mostly research articles posted online to generate feedback before submitting to a journal, or to claim discovery.**

REGIONAL JOURNALS

Small, affordable, focusing mostly on topics of regional importance, often in local languages. Quality varies widely.

SPECIALTY JOURNALS

International, selective, conduct peer review, have rigorous quality processes, widely read and cited, good visibility.

PRESTIGE JOURNALS

Multiple fields, novel findings, followed by major media. Prestigious for researchers, funders, and institutions.

SUBMIT, REJECT, REPEAT

Rapid publishing is the norm in some fields. In other fields, researchers might publish quickly in order to share urgent medical research, establish discovery, or get feedback.

RESEARCHER OPTIONS & OUTCOMES

Where and how rapidly an article is published is often based on the prestige of the journal or publisher, which may have little to do with the quality of the science. For many researchers, especially in the social sciences, this means that they publish in low-impact, but rapidly publishing, journals.

IMPACT

Every researcher wants their work to have high impact and be read by other researchers in their field. Therefore, getting published in the best possible journals is a common goal.

VISIBILITY

Researchers want their work to be visible. The perceived prestige of certain journals can therefore be a factor in deciding where to publish.***

* These needs and goals vary by career stage, research field, topic, funder expectations, and more. Non-university STM researchers do not rely as much on journal publishing; using white papers and other less accessible publishing methods instead (e.g., preprint servers as a common communication tool) might be more appropriate for some of these groups. Humanities research is published mostly in book format, not journals.

** Preprints can be valuable in a few cases (most notably physics and astronomy), which have relied on the arXiv preprint server since 1991. In general, preprints comprise a very wide range of articles in terms of subject matter and quality.

*** Whether this should be the case is a matter of debate. At present, the visible, and possibly career-enhancing, impact for early career researchers who are seeking promotion and tenure, or researchers who are seeking grant funding. This visibility inequity ends up influencing publishing choices and outcomes. Efforts like OAERA (https://oaera.org) are trying to address these inequities through an open access platform.

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