BRIJ MOHAN, PhD Research Scholar, P2109
Department of Mathematics, University of Delhi, Delhi-India.

Open Access Publishing

Open access (OA) is a broad international movement that seeks to grant free and open online access to academic information, such as publications and data. A *publication* is defined as 'open access' when there are no financial, legal, or technical barriers to accessing it. That is to say when anyone can read, downloads, copy, distribute, print, search for and search within the information, or use it in education or in any other way within the legal agreements.

Open access is a publishing model for scholarly communication that makes research information available to readers at no cost, unlike the traditional subscription model in which readers have access to scholarly information by paying a subscription (usually via libraries).

One of the essential advantages of open access is that it increases the visibility and reuse of academic research results. There is also criticism, and the quality aspect deserves the extra effort. The principles of open access are set out in the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003). This declaration has been signed by many international organizations for academic research, including all Dutch universities and research organizations.

There are two primary vehicles for delivering OA to research articles:

- **OA archives or repositories** do not perform peer review but make their contents freely available. They may contain unrefereed preprints, refereed post-prints, or both. Archives may belong to institutions, such as universities and laboratories, or disciplines like physics and economics.
  Authors may archive their preprints without anyone else's permission, and most journals already allow authors to archive their post-prints. There is now open-source software for building and maintaining open archives initiative (OAI)-compliant archives and worldwide momentum for using it.
  (**Examples**: reseachgate.net, researchsquare.com, arxiv.org)

- **OA journals** perform peer review and then make the approved contents available freely. Their expenses consist of peer review, manuscript preparation, and server space. Some OA journals have a subsidy from the hosting university or professional society. Sometimes, journals charge a processing fee on accepted articles to be paid by the author or the author's sponsor (employer, funding agency).
  OA journals that charge processing fees usually waive them in cases of economic hardship. Some OA publishers waive the fee for all researchers affiliated with institutions that have purchased an annual membership. There is much room for creativity in finding ways to pay the costs of a peer-reviewed OA journal, and we are far from having exhausted our cleverness and imagination.

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Different ways of publishing open access:

1. The golden route:

1) **Full Open Access journals**: publication via publisher platforms, in fully open access journals. This route may involve a charge. The publication costs, known as 'article processing charges (APCs), are covered by authors or institutions. Most research funders support open access and are willing to cover the costs. A list of fully open access journals accessible worldwide can be found on the DOAJ (Directory of Open Access Journals) website.

2) **Hybrid Journals:** publication via 'hybrid' journals. These journals are subscription journals that allow open access publication of individual articles on payment of an Article Processing Charge (APC). Thanks to a series of deals between the VSNU and several academic publishers, Dutch-affiliated researchers can publish for free in thousands of hybrid journals.

2. The green route:

The full text of academic publications is deposited in a trusted repository, a publicly accessible database managed by a research organization. Green OA, also known as self-archiving, is when someone posts an earlier version of his manuscript in repositories and online. It enables anyone to share their article without paying an Article Processing Charges (APC). Authors publishing in any green route journal can take advantage of depositing a version of the article in an institutional or subject repository and posting it on a blog or social media profile.
(**Examples**: shodhganga.inflibnet.ac.in, arxiv.org, researchgate.net, etc.)

3. The diamond route:

Publication via diamond journals/platforms that do not charge author-facing publication fees (APCs). The Diamond open access journals are usually funded via library subsidy models, institutions, or societies.
(**Examples**: Journal of Ocean Engineering - JOES)

SHERPA/RoMEO (Securing a Hybrid Environment for Research Preservation and Access/ Rights MEtadata for Open archiving)

SHERPA/RoMEO offers a publicly available database of open-access policies of scientific journals and lists the conditions under which manuscript archival might be allowed. It is an online resource that aggregates and analyses publisher open access policies worldwide and provides summaries of publisher copyright and open access archiving policies on a journal-by-journal basis. Its database is available through an Application Programming Interface (API), which means that we could build an R client to access this data programmatically. It would allow researchers to select journals based on their manuscript archival policies more easily.

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There are three versions of the manuscript considered in SHERPA/RoMEO:

1. **Preprint**, which is the manuscript version **before peer review**;
2. **Post-print**, the manuscript **was accepted after peer review** but not yet typeset as an article in the journal.
3. **Typeset manuscript/publisher's manuscript**, which is the manuscript with the text after peer-review, **fully typeset**, as it appears in the journal.

Tools to identify predatory publishers (discussed in Unit 2) developed by SPPU:

Types of Predatory Publications

• **Shoddy/sham journals**: Journals having all characteristics and unethical features mentioned in Unit 2.
• **Hijacked journals**: They are difficult to recognize as they mimic the standard publications in name, logo, and website. They look as good as the standard legitimate journals.
• **Cloned journals**: They are dubious online versions of print-only authentic journals. They have the same names and ISSN (if any).
• **Crony publishing**: Institutional publications in which editorial board members and a majority of the authors are from the same institutes across a majority of the periodical issues. Editorial misconduct by editors and their associate reviewers (groups of friends from either the same or different institutions are on board of reviewers).

Checklist tools to Identify Predatory Journals

• **ISSN**: Although the ISSN is not an indicator of any quality, it should be verified by researchers from the ISSN-providing agencies or some secondary source.
• **Publisher Address / Editor Address**: Addresses can be verified from secondary sources such as Google, Yahoo, Bing, or similar online searches.
• **Impact Factor**: Verify IF with Journal Citation Report by the Clarivate Analytics.
• **Indexing database**: Check the authenticity of the database (contact details, journal inclusion criteria, etc.). Google scholar, aggregators, and library catalogs are not indexing databases.
• **Credibility of editor/s**: Credibility can be checked with publications of editors-in-chief and editorial board members in respectable journals.
• **Publication in short time duration:** Always check submission dates and acceptance of papers.
• **Journal back volumes**: Availability of the archives can be checked.
• **Annual listing of reviewers**: Does the journal publish a list of reviewers in the Annual Issue/ number? [Optional feature]

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Journal finder tools

- **Scopus Journal Analyzer**
  Compare up to 10 journal titles. It gives a range of metrics, including whether they are well-cited and if they publish many review articles.
- **Elsevier Journal Finder**
  Paste in the title or abstract of a paper to match with suitable journals
- **Springer Journal Suggester**
  Enter the details of the paper to get suggested journal matches.
- **Manuscript matcher**
  It is accessed via a free EndNote Online account. Use manuscript details to find relevant journals.
- **Open Journal Matcher**
  Paste details of the abstract to find relevant Open Access journals
- **IEEE Publication Recommender**
  Finds recommended IEEE publications based on keywords from the paper.
- **JANE**
  'Journal/Author Name Estimator' compares your paper's title or abstract with millions of others in PubMed to find matching articles, authors, and journals.

List of some OA Mathematics Journals

	Journal Name	**Publisher**
1	Mathematics	MDPI
2	Advances in difference equations	Springer
3	Partial Differential Equations in Applied Sciences	Springer
4	Journal of Inequalities and Applications	Springer
5	Advances in Group Theory and Applications	Arcane
6	Journal of Graph Algorithms and Applications	Brown
7	Mathematics and Mechanics of Complex Systems	MSP
8	New York Journal of Mathematics	University at Albany
9	Open Mathematics	Walter de Gruyter
10	Forum of Mathematics, Pi	Cambridge University Press
11	Forum of Mathematics, Sigma	Cambridge University Press