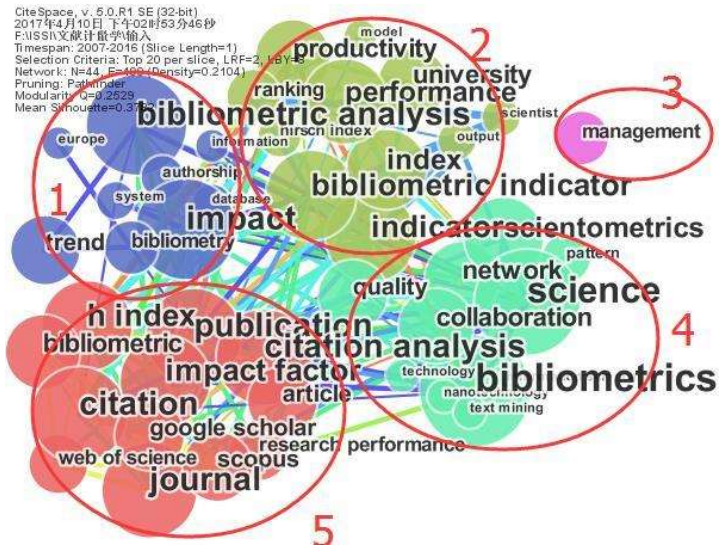
V. Indexing of Scientific Journals and Bibliometrics: Selected Databases



Journal indexing is the process of listing a scientific journal in a recognized database or indexing service, based on criteria like peer review, publication ethics, and regularity, to increase the journal's visibility, credibility, and accessibility to researchers.

An example of journal indexing is when a journal like The Lancet is included in PubMed or Scopus.
This means its articles are searchable in these databases, making them more visible and citable to the global scientific community.

Importance of indexing

Visibility: Indexed journals reach a wider audience
Credibility: Peer-reviewed & quality-controlled
Impact: Higher citations, better recognition

Research → Journal → Indexing Database → Researchers → Citations → Impact

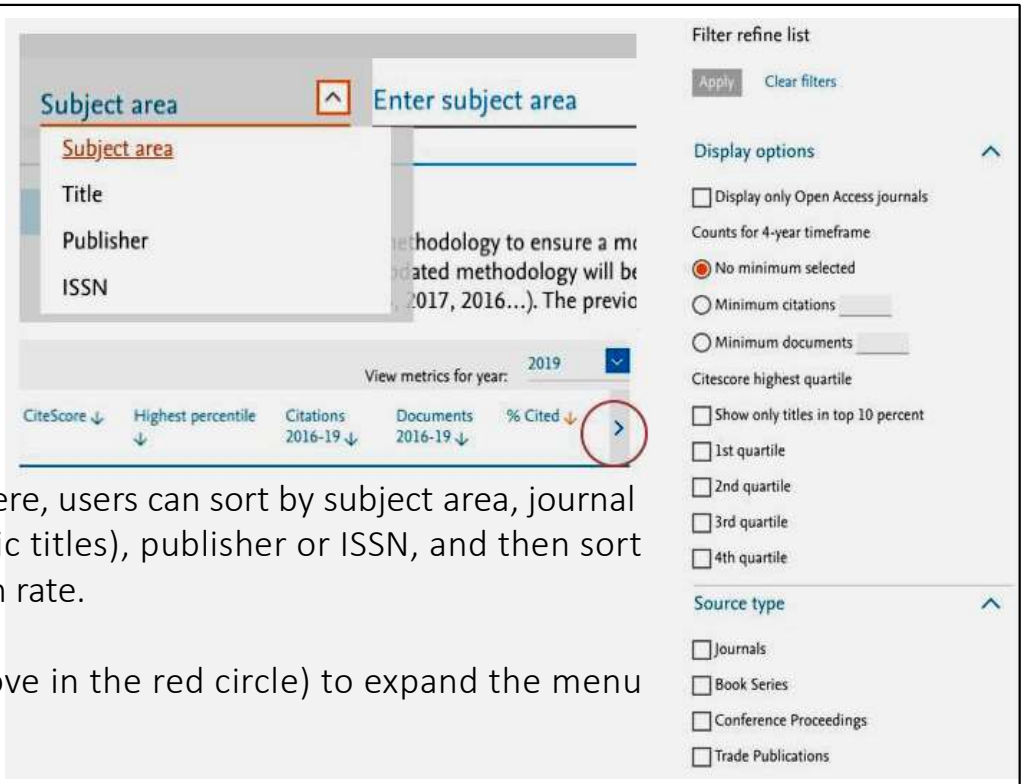
Abstracting & Indexing is the process by which journals are listed with **searchable databases** that compile (often subject-specific) data to be accessed by academics and researchers.

Most institutions have access to these databases on a subscription basis, or use them as reference tools to create their own internal databases, so they are essential in getting content to potential readers.

There are two types of indexation:

1. Full text (FT): Access to the entire text is granted through the database, usually on a subscription basis (as with, for example, JSTOR and EBSCO).
There are also FT open access (OA) databases that any OA journals are welcome to apply to.

2. Abstract-only: The metadata for a journal is compiled and accessible through the database.
A link is provided to access the article (if the searcher has a subscription already)/purchase the article (if they do not).
The metadata they display includes journal titles, article titles, abstracts, authors, date of publication, volume and issue numbers, page numbers, subject areas, keywords, DOI, etc.



Taking Scopus as an example here, users can sort by subject area, journal title (using keywords or specific titles), publisher or ISSN, and then sort those results by date or citation rate.

Clicking the arrow (shown above in the red circle) to expand the menu shows SNIP and SJR metrics.

Via a separate search function, users can search by author and ORCID.

What are A&I aervices used for?

Database research is often the first activity researchers undertake as part of their study, and they naturally look to established, well-known databases.

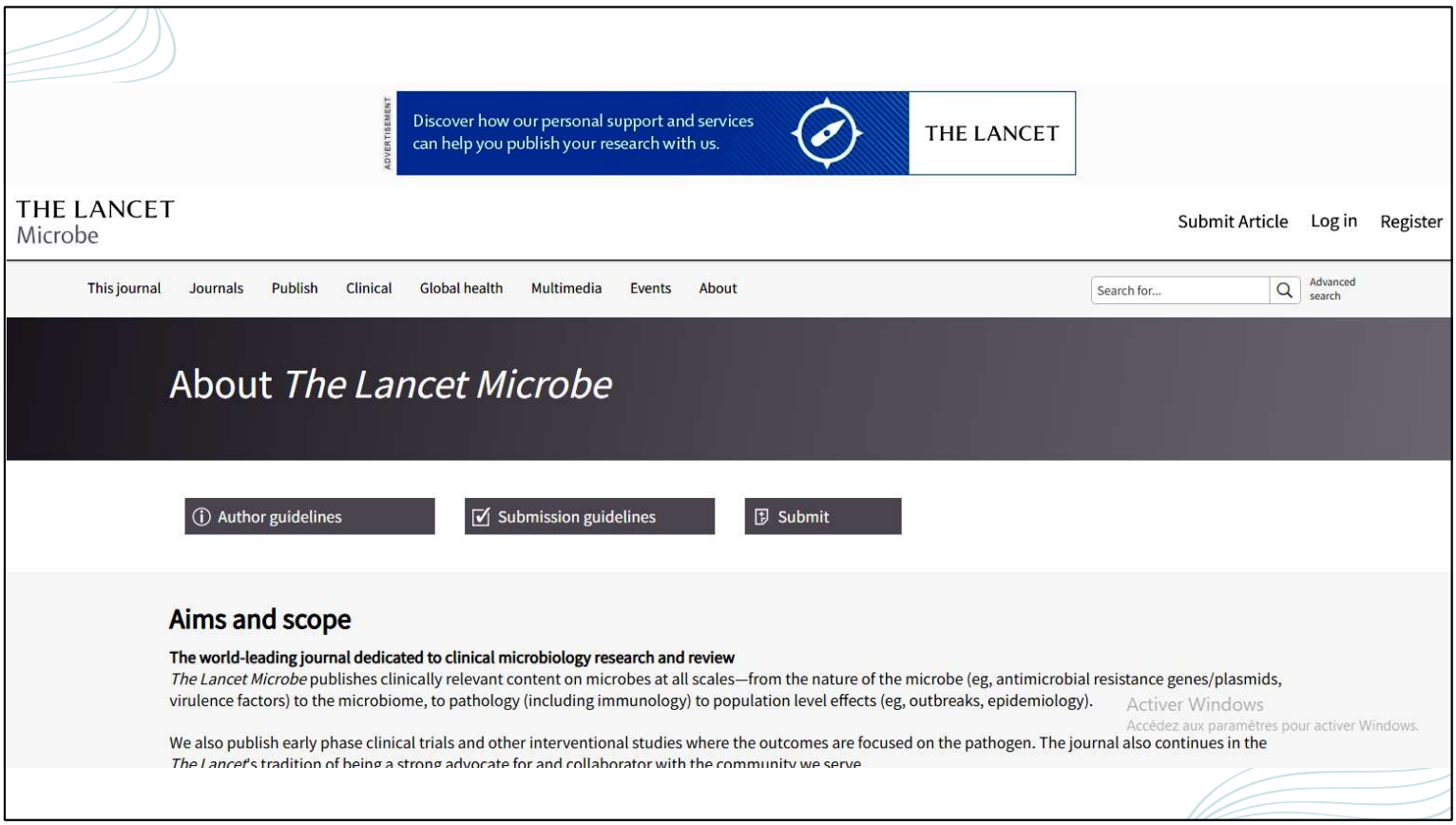
Users browsing these services are shown articles relevant to their search or field, along with the whole article (if ‘full text’), or the metadata and a link to purchase or access the full text.

While a journal is indexed by a database, the information is made available to all users of that database and any additional databases it feeds to.

The Benefits of Indexation

The more platforms the journal is visible on, the greater the opportunity it has to build a solid reputation in its field. The benefits include:

- helping to make the journal as accessible – to as wide an audience – as possible (thus increasing citations);
- improving the journal's reputation as a reliable source of information in its field;
- increasing a journal's subscriptions and submission rate;
- conforming to some institutions and governmental schemes' requirements for researchers' work to be published in well-indexed journals (for example, scholars from some institutions must publish within journals indexed with Scopus);
- providing ranking measurements, known as metrics, to give you an idea of how successful the journal is in its field;
- improving the journal's chance of getting indexed with more prestigious databases in the future;



THE LANCET
Microbe

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- With **over 275 000 annual mentions** in news articles, research published in Lancet journals receives regular coverage in influential media such as the Associated Press, BBC, CNN, *The Times of India*, *Financial Times*, Reuters, *The Guardian*, *El Pais*, *The New York Times*, *O'Globo*, NPR, and *The Washington Post*.
- Lancet podcasts receive **over 84 100 listens** each month.
- Lancet Webinars have been **viewed more than 11 900 times** by audiences in 173 countries.

The Lancet Microbe is an internationally trusted source of clinically relevant translational research, review, and opinion. We are the world-leading journal dedicated to clinical microbiology research and review. We have an **Impact Factor of 20·4**, ranking second among 137 infectious diseases journals and third out of 163 microbiology journals (2024 *Journal Citation Reports*®, Clarivate 2025) and a **CiteScore of 25·4**, ranking third among 86 virology, fourth among 148 medical microbiology, fifth out of 188 microbiology, and seventh out of 357 infectious diseases journals (Scopus).

We recognise that the Journal Impact Factor and CiteScore are a partial measure of a journal's performance and encourage authors to explore additional journal impact metrics, which provide a means to assess our journals. *The Lancet Microbe* is also indexed by the following abstracting and indexing services:

- BIOSIS Previews
- Biological Abstracts
- Chemical Abstracts
- Crossref
- Directory of Open Access Journals (DOAJ)
- Embase
- GoOA (National Science Library, Chinese Academy of Science)
- MEDLINE
- OAJ (OA Journal Index, Chinese Academy of Science)
- PubMed
- Science Citation Index Expanded (SCIE)
- Scopus

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World Journal of Microbiology and Biotechnology

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Overview

The journal publishes original research papers and review articles on all aspects of **applied** **iology and microbial biotechnology.** Since its foundation in 1985, the *World Journal of*

Journal metrics

Journal Impact Factor
4.2 (2024)

View all updates →

Journal information

Electronic ISSN	Print ISSN
1573-0972	0959-3993

Abstracted and indexed in

AGRICOLA
BFI List
BIOSIS
Baidu
Biological Abstracts
CAB Abstracts
CLOCKSS
CNKI
CNPIEC
Chemical Abstracts Service (CAS)
Current Contents/Agriculture, Biology & Environmental Sciences
Dimensions
EBSCO
EI Compendex
EMBiology
Google Scholar
IFIS Publishing
Japanese Science and Technology Agency (JST)
Medline
Meta
Naver
OCLC WorldCat Discovery Service
Portico
ProQuest
SCImago
SCOPUS
Science Citation Index Expanded (SCIE)
TD Net Discovery Service
Wanfang
eLibrary.ru

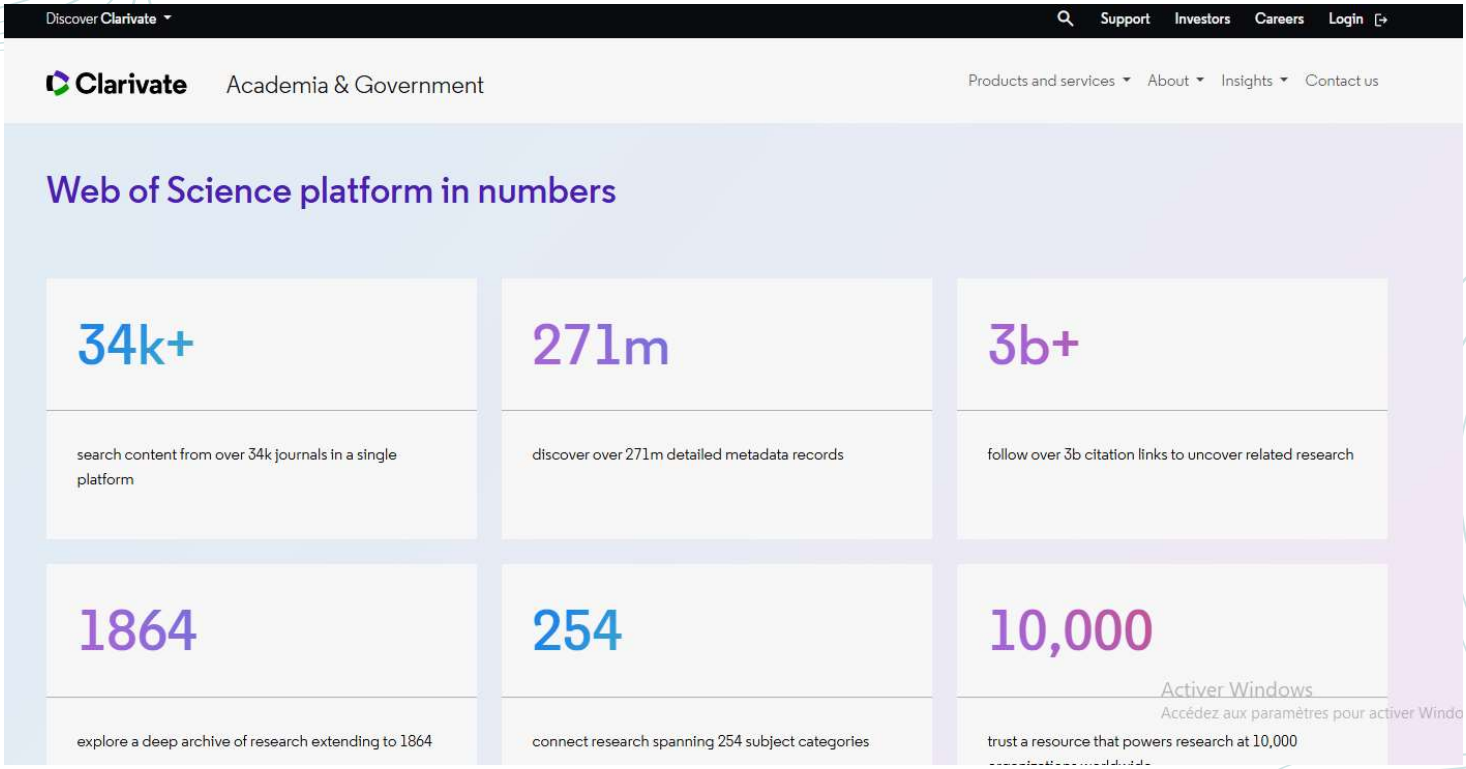
Major Indexing Databases

Database	Publisher	Scope	Coverage
WoS	Clarivate	Multidisciplinary	12,000+ journals
Scopus	Elsevier	Multidisciplinary	25,000+ journals
PubMed	NLM	Biomedical	35 million+ records
DOAJ	Independent	Open Access	17,000+ journals

Web of Science is a citation and indexing database originally created by the Institute for Scientific Information (ISI) and now managed by Clarivate Analytics. It allows users to search for scientific publications and measure their impact through indicators such as the Impact Factor (IF).

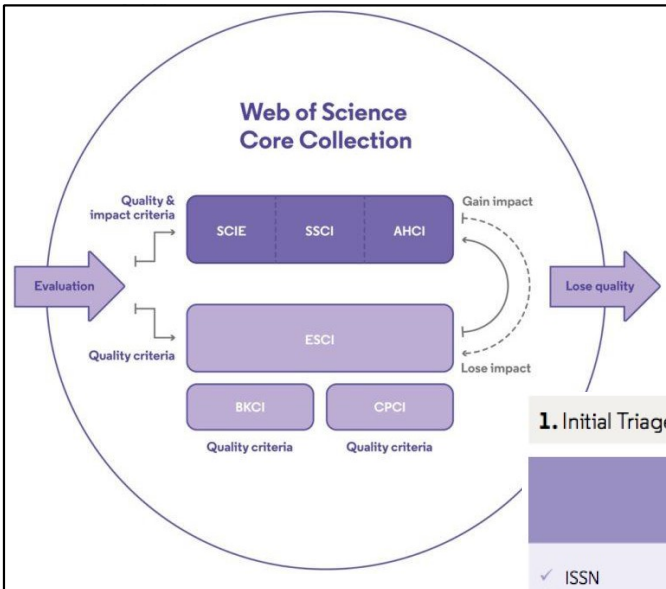
It includes the following specialized indexes:

- Science Citation Index Expanded (SCIE) – for natural and exact sciences
- Social Sciences Citation Index (SSCI) – for social sciences
- Arts & Humanities Citation Index (AHCI) – for arts and humanities
- Emerging Sources Citation Index (ESCI) – for newer journals under evaluation
- Book Citation Index (BKCI) – for scholarly books
- Conference Proceedings Citation Index (CPCI) – for conference papers



Role

- Selective indexing – only journals that meet strict quality criteria (peer review, ethics, regularity, etc.) are included.
- Scientific impact evaluation – used to calculate the Journal Impact Factor (JIF).
- Citation analysis – tracks how often an article, author, or institution is cited.
- Research tool – helps discover relevant articles, trends, and collaboration networks.



1. Initial Triage	2. Editorial Triage	3. Editorial Evaluation	
Quality Criteria			Impact Criteria
✓ ISSN ✓ Journal Title ✓ Journal Publisher ✓ URL (online journals) ✓ Content Access ✓ Presence of Peer Review Policy ✓ Contact Details	✓ Scholarly Content ✓ Article Titles and Article Abstracts in English ✓ Bibliographic Information in Roman Script ✓ Clarity of Language ✓ Timeliness and/or Publication Volume ✓ Website Functionality/Journal Format ✓ Presence of Ethics Statements ✓ Editorial Affiliation Details ✓ Author Affiliation Details	✓ Editorial Board Composition ✓ Validity of Statements ✓ Peer Review ✓ Content Relevance ✓ Grant Support Details ✓ Adherence to Community Standards ✓ Author Distribution ✓ Appropriate Citations to the Literature	✓ Comparative Citation Analysis ✓ Author Citation Analysis ✓ EBM Citation Analysis ✓ Content Significance

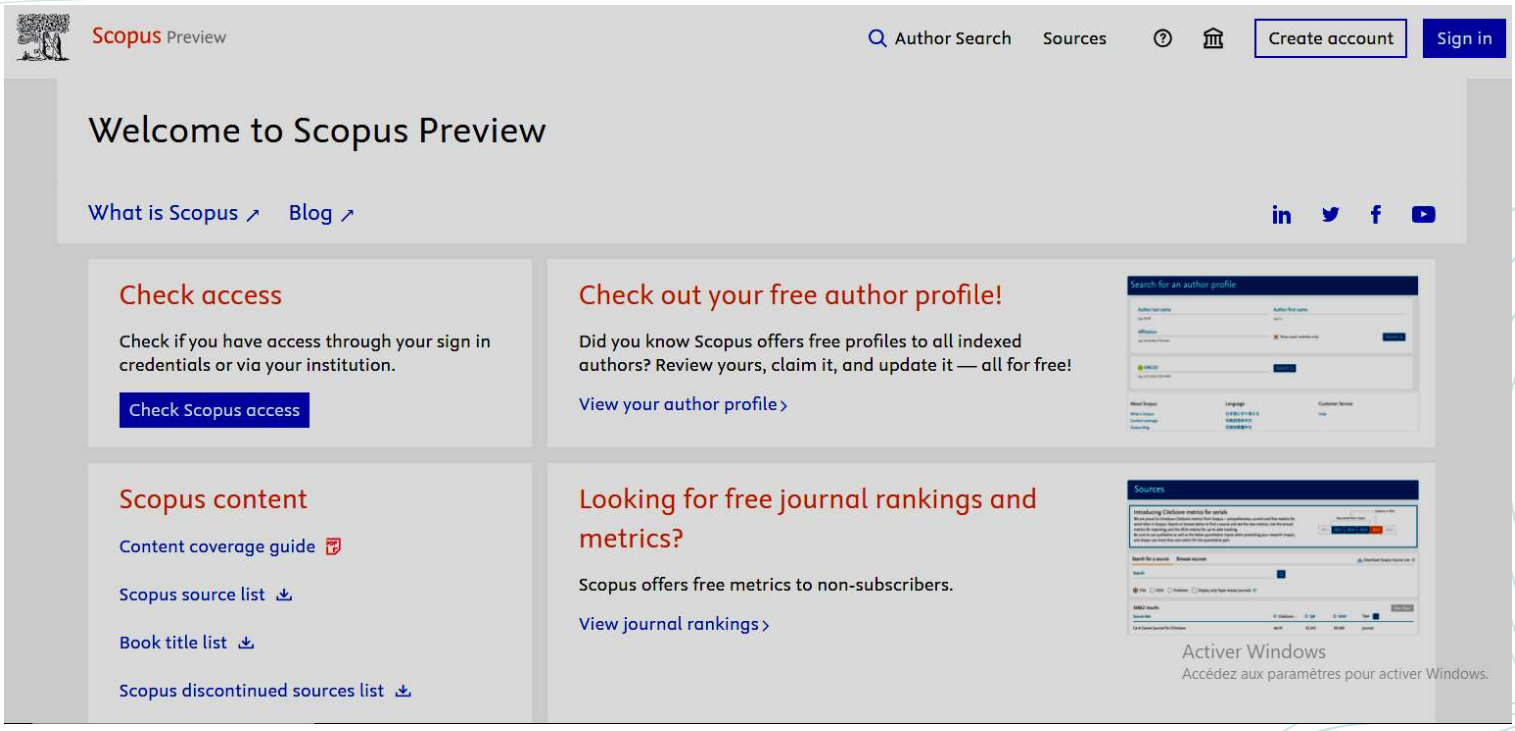
Scopus (Elsevier)

- Scopus is an international database owned by Elsevier.
- As the largest indexer of global research content, Scopus includes titles from more than 5000 publishers worldwide. (CiteScore; SNIP (Source Normalized Impact per Paper); SJR (SCImago Journal Rank)).

It indexes:

- Peer-reviewed journals
- Conference proceedings
- Books and book series
- Patents (linked)

It covers all major scientific fields: life sciences, medicine, engineering, chemistry, environmental science, social sciences, arts & humanities, etc.



Pubmed

- PubMed is a free resource supporting the search and retrieval of biomedical and life sciences literature with the aim of improving health–both globally and personally.
- PubMed contains more than 39 million citations and abstracts of biomedical literature. It does not include full text journal articles; however, links to the full text are often present when available from other sources, such as the publisher's website or PubMed Central (PMC).
- Available to the public online since 1996, PubMed was developed and is maintained by the National Center for Biotechnology Information (NCBI), at the U.S. National Library of Medicine (NLM), located at the National Institutes of Health (NIH).

Citations in PubMed primarily stem from the biomedicine and health fields, and related disciplines such as life sciences, behavioral sciences, chemical sciences, and bioengineering.

PubMed facilitates searching across several NLM literature resources:

MEDLINE

MEDLINE is the largest component of PubMed and consists primarily of citations from journals selected for MEDLINE; articles indexed with MeSH (Medical Subject Headings) and curated with funding, genetic, chemical and other metadata.

PubMed Central (PMC)

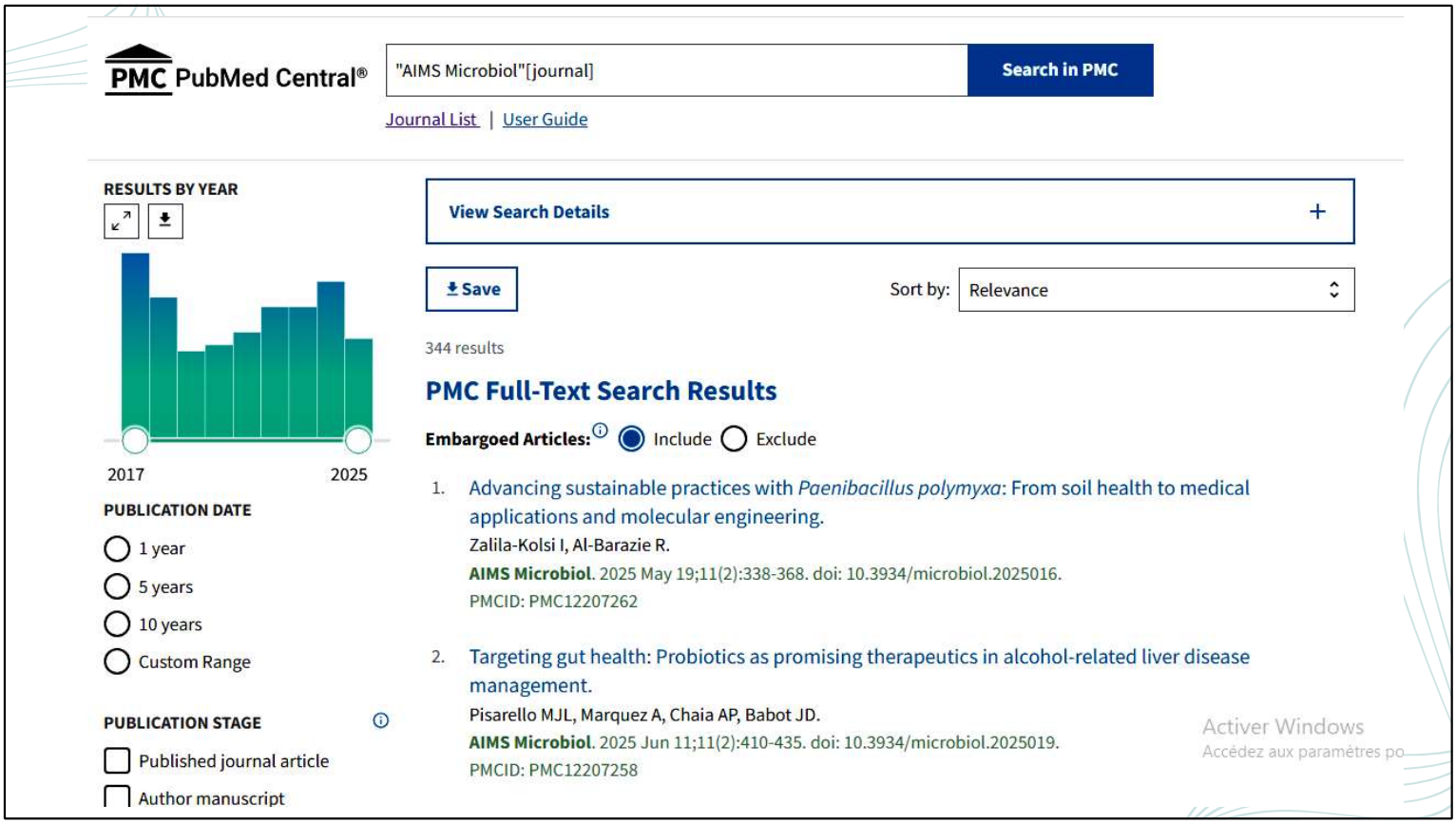
Citations for PubMed Central (PMC) articles make up the second largest component of PubMed.

PMC is a full text archive that includes articles from journals reviewed and selected by NLM for archiving (current and historical), as well as individual articles collected for archiving in compliance with funder policies.

Bookshelf

The final component of PubMed is citations for books and some individual chapters available on Bookshelf.

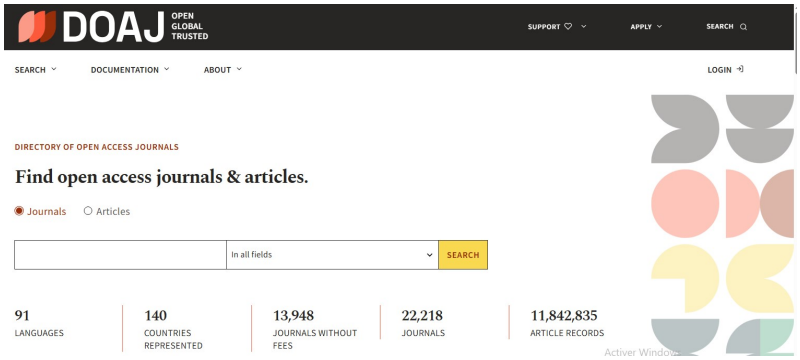
Bookshelf is a full text archive of books, reports, databases, and other documents related to biomedical, health, and life sciences.



DOAJ=Directory of Open Access Journals

DOAJ is an international online directory that indexes high-quality, peer-reviewed open access journals.

It is one of the most trusted lists for verifying whether an open-access journal is legitimate and ethical.



DOAJ is not a citation index.
It checks journal quality and transparency and did not measure article citations and impact.

Google scholar

Google Scholar is a free search engine by Google that indexes scholarly documents across the web. It helps users find academic content, including:

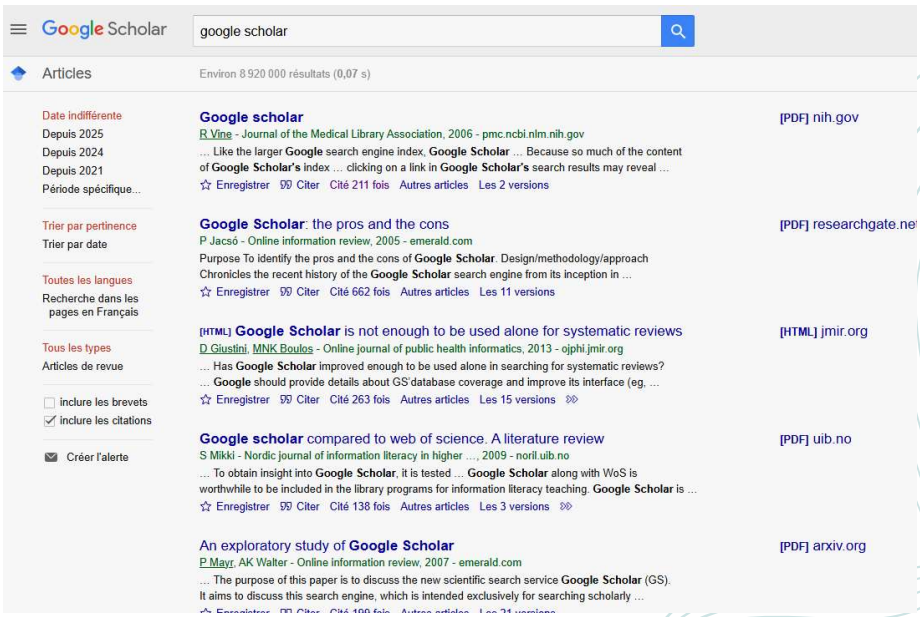
- journal articles
- theses and dissertations
- conference papers
- books and book chapters
- preprints (arXiv, ResearchGate, SSRN…)
- institutional repository documents
- technical reports

It is one of the most widely used tools for discovering academic literature.

Google Scholar is not a formal indexing database.

It does not evaluate journals or apply quality criteria like:

- peer review
- ethics
- publication standards
- editorial board quality



Strengths and limitations of GS

Aspect	Strengths	Limitations
Coverage	Very broad: journals, books, theses, conferences, preprints	Includes low-quality or predatory sources
Access	Free for everyone	No official support or guidance
Citations	Shows who cited your work	Citation counts can be inflated or inaccurate
Search	Easy, Google-style interface	Limited filters and advanced search
Author Profiles	Track your publications and h-index	Can be manipulated or inaccurate
Quality Control	Includes all scholarly content	Does not verify journal quality or peer review
Usefulness	Great for literature search and tracking visibility	Not reliable for official evaluation or journal ranking

Bibliometrics

Bibliometrics is a quantitative analysis method that uses scientific publications and various indicators to measure research performance, particularly two important components of research performance:

Scientific output – the quantity of scientific results produced
Scientific impact – the influence of scientific results on the subsequent advancement of science

Bibliometrics allows for the evaluation of:
- ✓ Authors
- ✓ Scientific articles
- ✓ Journals
- ✓ Institutions
- ✓ Countries...

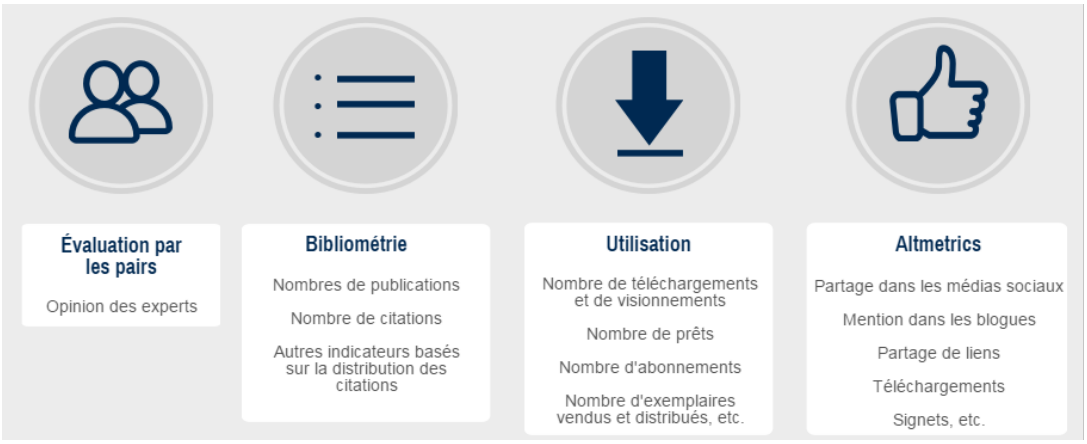
Bibliometric data **complement, but do not replace, qualitative peer evaluation**.

They are particularly used:

- When awarding research funding
- When selecting candidates for a researcher position
- To evaluate the research performance of universities

How to evaluate research impact?

Impact is generally defined as the "effect" or "influence."
In the context of research evaluation, impact refers to the measurement of the benefits resulting from scientific activities such as publications and the generation of new knowledge.
Here are some methods to measure certain aspects of research impact:



https://www.bibl.ulaval.ca/services/bibliometrie-et-impact-de-la-recherche

Bibliometric Indicators

Scientific output and **impact** are measured using two key indicators:

- **The number of publications** is a direct **indicator of scientific output**, since a publication must generally contain new scientific results in order to be published.
- **The number of citations** received by publications is a direct **indicator of scientific impact**. Citations generally reflect the intellectual influence of a publication.

Sources for Obtaining Citation Data

Main Tools

- Web of Science (WOS) Core Collection
- Google Scholar
- The Scopus database

Why Measure the Influence of a Journal?

- To identify the most influential, highly cited, and essential journals in a discipline.
- To support the choice of a journal in which to publish.
- To better manage journal subscriptions and collections within an educational and research institution.

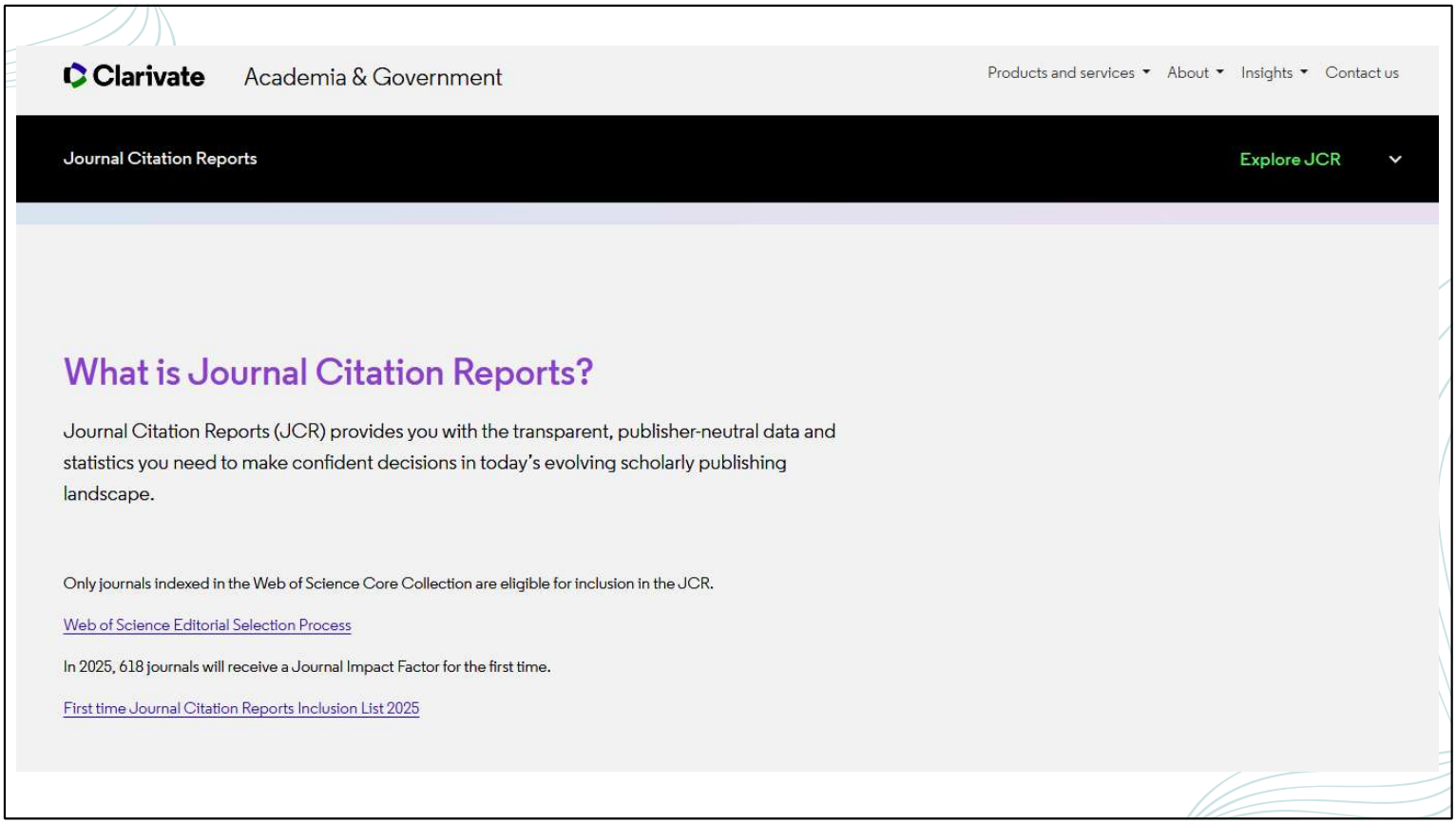
Tools for Measuring a Journal's Influence

- Journal Citation Reports (JCR):

Journal Citation Reports provides several indicators and disciplinary rankings for the ~12,000 journals included in the **Web of Science Core Collection**. (IF. 5years IF...).

Journal Metrics:

JournalMetrics presents journal indicators for the 22,000 titles available in **Scopus**. Similar to Journal Citation Reports (JCR), developed by **Elsevier**, this freely accessible portal provides several measures used to assess a journal's influence. (SNIP, ...)



- SCImago Journal and Country Rank (SJR):

Freely accessible, the SCImago Journal and Country Rank (SJR) provides rankings for journals indexed in **Scopus**.

Data have been available since 1996.

- Google Scholar Metrics:

Google Scholar Metrics is an open-access tool that provides the **5-year h-index** of journals indexed in Google Scholar.

It evaluates journals in languages other than English, covers subjects such as the humanities, and offers subject-based rankings for journals published in English.

Impact Factor (IF)

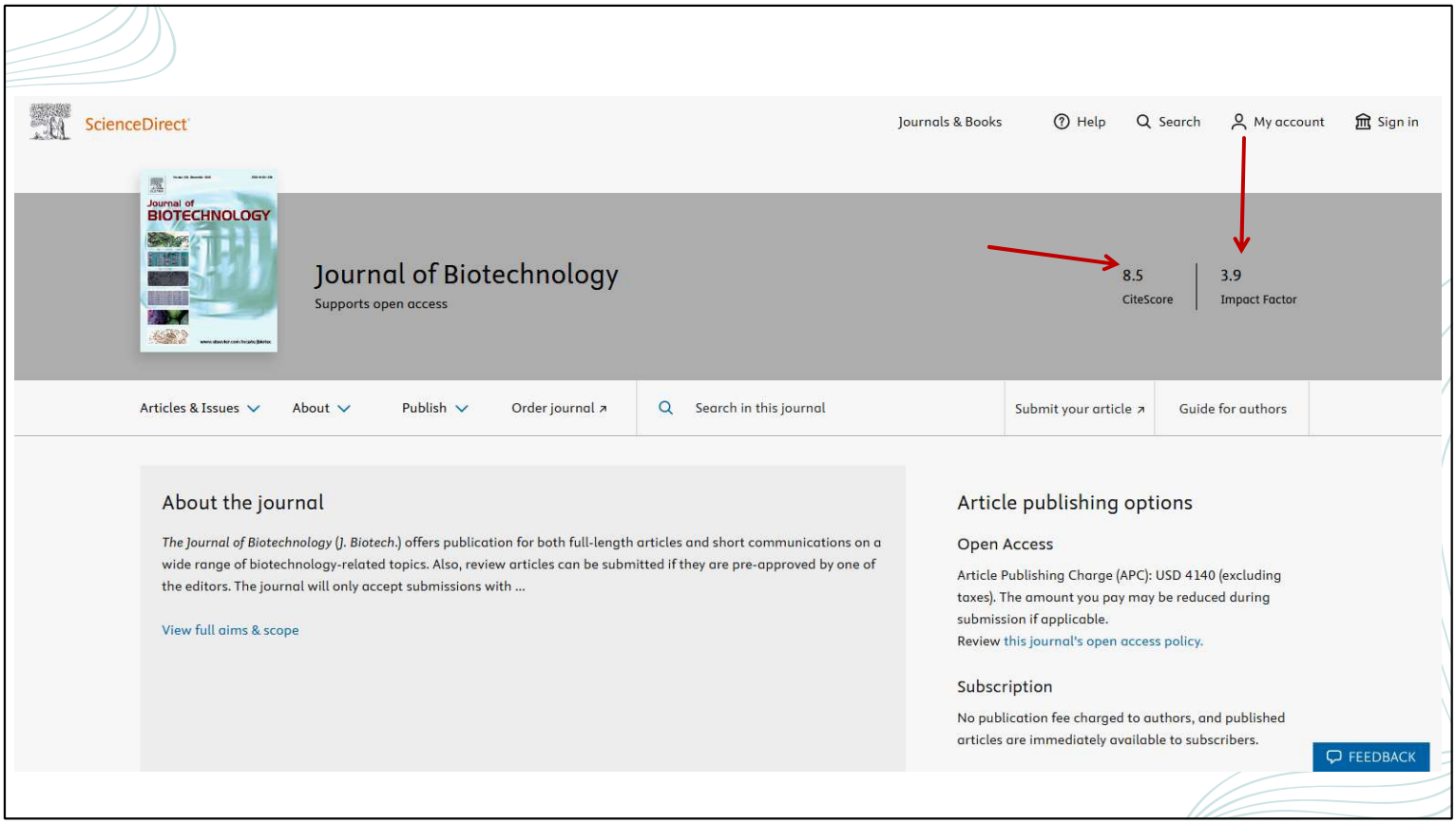
The IF calculates, for a journal, the ratio between the number of citations accumulated during a given year and the number of articles published over the previous two years.

Journal citation reports

CiteScore

CiteScore measures, for a journal, the ratio between the number of citations accumulated during a given year and the number of documents published over the previous three years.

Scopus



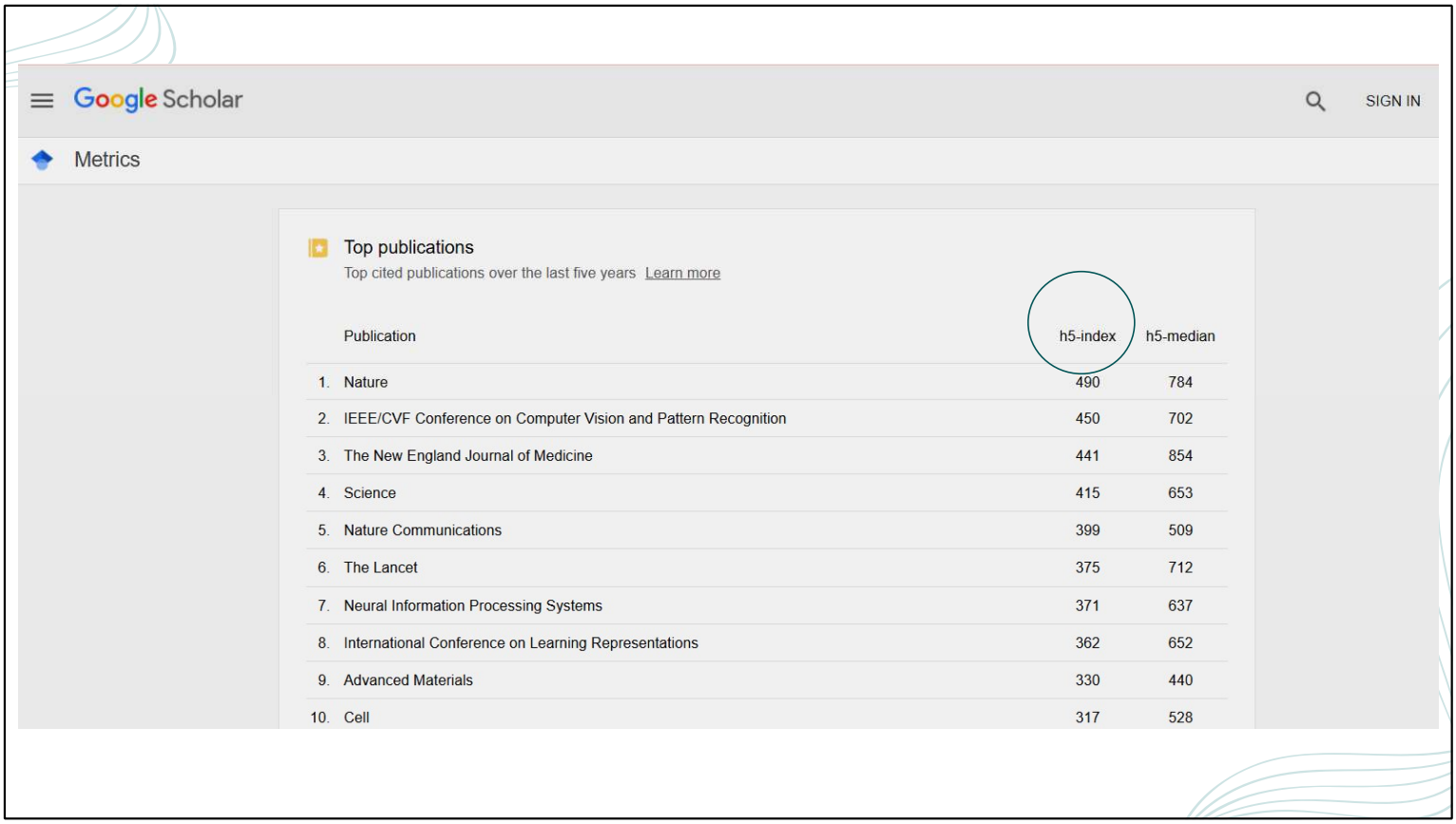
h5-Index

Based on 5 years of Google Scholar data, the h5-index indicates, for a journal, the number X of articles published in the last 5 years that have received at least X citations.

For example, an h5-index of 10 means that 10 articles published in that journal over the past 5 years have received 10 or more citations.

The indicators are updated in June each year and cover the preceding years.

Google Scholar



Google Scholar SIGN IN

Metrics

Top publications

Top cited publications over the last five years Learn more

	Publication	h5-index	h5-median
1.	Nature	490	784
2.	IEEE/CVF Conference on Computer Vision and Pattern Recognition	450	702
3.	The New England Journal of Medicine	441	854
4.	Science	415	653
5.	Nature Communications	399	509
6.	The Lancet	375	712
7.	Neural Information Processing Systems	371	637
8.	International Conference on Learning Representations	362	652
9.	Advanced Materials	330	440
10.	Cell	317	528