Research Metrics

Impact factor

It is a measure reflecting the average number of citations to recent articles published in the journal.

It was designed by Eugene Garfield: The founder of Institute for Scientific Information.

Published yearly since 1975 — today by Clarivate, in the Journal Citation Reports (JCR)

Calculation

In any given year , the impact factor of a journal is the average number of citations received per paper published in that journal during the two preceding years.

A= number of times that all items published in that journal in 2023 and 2024 were cited by index publications during 2025.

B= total number of citable items published by that journal in 2023 and 2024

2025 impact factor = A/B

Citable items

Articles

Reviews

Proceedings

Notes

Excluded items:

- Editorials
- Letter to the editors

Journals that are indexed starting with a volume other than the first volume will not get an impact factor until they have been indexed for three years.

Factors affecting the impact factor

Irregular publications

Dependent on academic discipline

Taking mean of citation is unjustified as certain papers are actually not cited at all.

Editorial policies

- Review articles get cited more often
- Submission policy of ‘invitation only’ to invite exclusively senior scientists
- Declining to publish unlikely to be citied articles
- Spurious self citations

JIF quartiles: Q1–Q4

Within each subject category, journals are ranked by impact factor and split into quarters.

Q1 = top 25% of the category; Q4 = bottom 25%.

You will meet quartiles everywhere: recruitment and promotion norms, PhD publication requirements, institutional incentives.

Caution

Quartiles only make sense WITHIN a category — a Q2 optics journal may out-cite a Q1 mathematics journal. Never compare raw impact factors across disciplines.

Beyond the impact factor

CiteScore (Scopus) — like the IF but a 4-year window, computed from the Scopus database; free to view.

SJR (SCImago Journal Rank) — prestige-weighted: citations from highly cited journals count for more.

SNIP — normalises for field: lets you compare journals across disciplines.

i10-index (Google Scholar) — number of your papers with at least 10 citations.

Altmetrics — attention in news, policy documents and social media; fast but gameable.

No single number describes a journal — or a researcher.

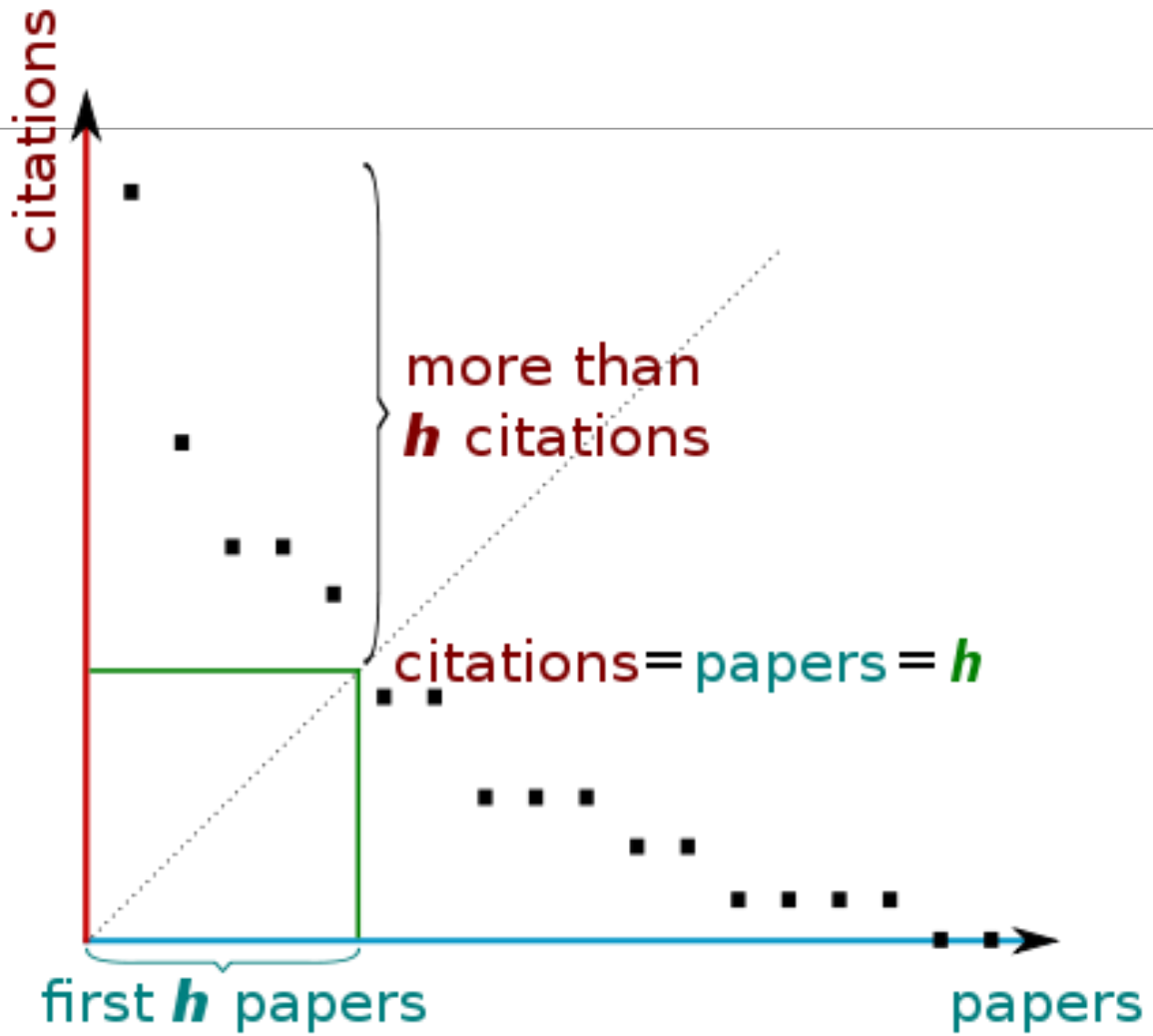
H- Index

It is an index that attempts to measure the productivity and impact of the published work of a scientist or scholar.

- Suggested by Jorge E Hirsch

Definition

- A scholar has index h if h of his /her N papers have at least h citations each , and the other N –h papers have no more than h citations each.


citations
more than
h citations
citations = papers = h
first h papers
papers

Advantages

Total number of papers do not disproportionally affect the count.

Disadvantages

Does not account for number of authors of the paper

Gives a book the same weight as an article

It is a natural number, which reduces its discriminatory power

Never decreases — favours seniority over current activity

Differs by database: Google Scholar, Scopus and Web of Science count different citation sets, so your h-index is different in each

Predatory journals — the metric trap

Pay-to-publish outlets that fake or skip peer review, often flaunting invented metrics (“Global Impact Factor”, “Universal IF”).

Warning signs

Flattering e-mail invitations; guaranteed acceptance in days; the fee revealed only after acceptance; huge scope (“engineering, science and humanities”).

Before you submit, check

Is it indexed in Scopus / Web of Science? Listed in DOAJ? What does the UGC-CARE guidance say? Walk through Think. Check. Submit. (thinkchecksubmit.org).

One predatory paper can hurt a CV more than no paper at all.

Where to look up journal rankings

SCImago (scimagojr.com) — free SJR rankings and quartiles

Journal Citation Reports (Clarivate) — impact factors, via the library • Scopus Sources — CiteScore, free