

LEARNING AND INFORMATION SERVICES

Skills for Researchers

Measuring Publication Impact - Bibliometrics

Bibliometrics refers to qualitative measures used to assess research output (MyRI).

Why is this important?

Understanding publication impact can help to:

- Assess which are the most influential in your field of study
- Help to assess how influential an article is
- For researchers it can also help to understand who is citing you and how many times your work is being cited

Bibliometric data is increasingly being used to assess the impact of research, to track and evaluate research activity, such as in the case of the Research Excellence Framework (REF). Various metrics used to measure publication impact, this guide covers: journal impact factors, citation counts and the H-index.

Journal Impact Factors

Journal impact factors are applied to individual journals and represent the average citation counts of papers published in an individual journal during a two year time frame.

How are journal impact factors calculated?

For each journal a count is made of the total number of times all its articles, reviews, proceedings or notes from the previous two years were cited during the current year. The number is divided by the total number of 'citable' items published in the journal over the same period. Items which are 'non-citable' include: editorials and letters. You can also obtain the **Eigenfactor** which is five year calculation that is useful for subject areas which take longer to cite.

Where can I find journal impact factors? The Web of Knowledge databases provides journal citation reports where you can search for an individual journal and compare journal impact factors in your subject area.

Limitations

- A journal's impact factor cannot be used to assess the quality of individual papers
- Journal editorial policy – journals which publish more review articles are likely to get a higher number of citations than those which publish more research papers.

Alternatives to Journal Citation Reports

SCImago Journal Rank (SJR) - The SJR is a journal rank based on the belief that 'not all citations are created equal'. The SJR takes into account the differences in citation behaviour between subject fields and is weighted by the prestige of the journal, meaning that a citation from a journal with a high SJR is worth more than one with a low SJR.

Source Normalised Impact per Paper (SNP) - The SNP measures citation impact by weighting citations based on the total number of citations in a subject field.

Where Can I find the SNP and SJR? You can find both the SNP and SJR in the Scopus database.

H-Index - The H-index is a calculation of how many times a researcher's papers have been cited.

For example a H-index of 7 means that the researcher has published 7 papers which have all been cited at least 7 times by other papers. The H-index can help to measure the impact of a researchers work and compare individuals within the same discipline, especially the sciences.

Where can I find a researcher's H-index? You can find it within Web of Knowledge, Scopus and Google Scholar.

Issues to consider when using the H-index

- Can only compare individuals within the same discipline, the H-index also favours established researchers and is less useful for early career researchers who have published less.

Citation Counts - A Citation Count is the number of times an article is cited by other articles.

A number of databases include the citation count of an article such as: Web of Knowledge, Scopus, Medline, PsycInfo, Google Scholar.

Issues to consider

- The citation count of an article is rarely the total number of times an article has been cited. The citing article must be included in the database. An article may have a different citation count in another database, as each database contains a unique set of citations.
- The number of citations is not an indicator of the quality of the article or of the citing articles.

Summary of metrics and where to find them

	Web of Knowledge	Scopus	Other
Journal Impact Factors (2 & 5 Years)	Yes		
SJR		Yes	
SNP		Yes	
Citation Counts	Yes	Yes	Yes - various databases
H-Index	Yes	Yes	Yes – Google Scholar

Google Scholar – Google Scholar covers all types of literature (conference papers, reports etc) as well as journal articles. However, Google Scholar lacks transparency and so from a citation indexing perspective is not considered an authoritative source.

Useful Links:

Access Web of Knowledge and Scopus database through our A-Z list of databases from our subject resources pages: <http://www.wlv.ac.uk/lib/resources.aspx>

MyRI – online tutorial covering the various metrics used to help assess publication impact of researchers and research. <http://www.ndlr.ie/myri/>

Help and Advice: For help and advice on any aspect of measuring publication impact please see the LIS Researcher section: <http://www.wlv.ac.uk/lib/academics/research.aspx>