The Web of Science (WoS; previously known as Web of Knowledge)

is a paid-access platform that provides (typically via the internet) access to multiple databases that provide reference and citation data from academic journals, conference proceedings, and other documents in various academic disciplines. Until 1997, it was originally produced by the Institute for Scientific Information.[2] It is currently owned by Clarivate.[3]

History[edit]

A citation index is built on the fact that citations in science serve as linkages between similar research items, and lead to matching or related scientific literature, such as journal articles, conference proceedings, abstracts, etc. In addition, literature that shows the greatest impact in a particular field, or more than one discipline, can be easily located through a citation index. For example, a paper's influence can be determined by linking to all the papers that have cited it. In this way, current trends, patterns, and emerging fields of research can be assessed. Eugene Garfield, the "father of citation indexing of academic literature",[4] who launched the Science Citation Index, which in turn led to the Web of Science,[5] wrote:

Citations are the formal, explicit linkages between papers that have particular points in common. A citation index is built around these linkages. It lists publications that have been cited and identifies the sources of the citations. Anyone conducting a literature search can find from one to dozens of additional papers on a subject just by knowing one that has been cited. And every paper that is found provides a list of new citations with which to continue the search. The simplicity of citation indexing is one of its main strengths.[6]

Search answer[edit]

Web of Science is described as a unifying research tool that enables the user to acquire, analyze, and disseminate database information in a timely manner. This is accomplished because of the creation of a common vocabulary, called ontology, for varied search terms and varied data. Moreover, search terms generate related information across categories.

Acceptable content for Web of Science is determined by an evaluation and selection process based on the following criteria: impact, influence, timeliness, peer review, and geographic representation.[7]

Web of Science employs various search and analysis capabilities. First, citation indexing is employed, which is enhanced by the capability to search for results across disciplines. The influence, impact, history, and methodology of an idea can be followed from its first instance, notice, or referral to the present day. This technology points to a deficiency with the keyword-only method of searching.

Second, subtle trends and patterns relevant to the literature or research of interest, become apparent. Broad trends indicate significant topics of the day, as well as the history relevant to both the work at hand, and particular areas of study.

Third, trends can be graphically represented.[7][8]

Coverage[edit]

Entering a search query on Web of Science.

Expanding the coverage of Web of Science, in November 2009 Thomson Reuters introduced *Century of Social Sciences*. This service contains files which trace social science research back to the beginning of the 20th century,[9][10] and Web of Science now has indexing coverage from the year 1900 to the present.[11][12] As of 24 February 2017, the multidisciplinary coverage of the Web of Science encompasses 12,000 high impact journals and 160,000 conference proceedings.[13] The selection is made on the basis of impact evaluations and comprise academic journals, spanning multiple academic disciplines. The coverage includes: the sciences, social sciences, the arts, and humanities, and goes across disciplines.[11][14] However, Web of Science does not index all journals.

There is a significant and positive correlation between the impact factor and CiteScore. However, an analysis by Elsevier, who created the journal evaluation metric CiteScore, has identified 216 journals from 70 publishers to be in the top 10 percent of the most-cited journals in their subject category based on the CiteScore while they did not have an impact factor.[15] It appears that the impact factor does not provide comprehensive and unbiased coverage of high-quality journals. Similar results can be observed by comparing the impact factor with the SCImago Journal Rank.
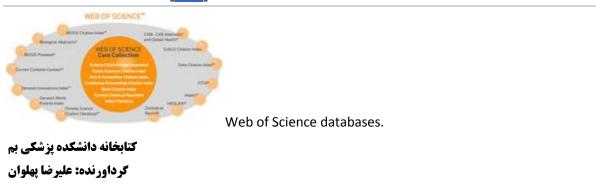
Furthermore, as of September 3, 2014 the total file count of the Web of Science was 90 million records, which included over a billion cited references. This citation service on average indexes around 65 million items per year, and it is described as the largest accessible citation database.[14]

Titles of foreign-language publications are translated into English and so cannot be found by searches in the original language.[16]

In 2018, the Web of Science started embedding partial information about the open access status of works, using Unpaywall data.[17]

After the 2022 Russian invasion of Ukraine, on March 11, 2022, Clarivate – which owns Web of Science – announced that it would cease all commercial activity in Russia and immediately close an office there.[18]

Citation databases[edit]

Web of Science databases.

The **Web of Science Core Collection** consists of six online indexing databases:[19][20]

- [Science Citation Index Expanded](#) (SCIE) -previously entitled Science Citation Index- covers more than 9,200 journals across 178 scientific disciplines. Coverage is from 1900 to present day, with over 53 million records[21]
- [Social Sciences Citation Index](#) (SSCI) covers more than 3,400 journals in the social sciences. Coverage is from 1900 to present, with over 9.3 million records[22]
- [Arts & Humanities Citation Index](#) (AHCI) covers more than 1,800 journals in the arts and humanities. Coverage is from 1975 to present, with over 4.9 million records[23]
- [Emerging Sources Citation Index](#) (ESCI) covers more than 7,800 journals in all disciplines. Coverage is from 2005 to present, with over 3 million records[24]
- [Book Citation Index](#) (BCI) covers more than 116,000 editorially selected books. Coverage is from 2005 to present, with over 53.2 million records[25]
- Conference Proceedings Citation Index (CPCI) covers more than 205,000 conference proceedings. Coverage is from 1990 to present, with over 70.1 million records[26]

Regional databases[edit]

Since 2008, the Web of Science hosts a number of regional citation indices:

- [Chinese Science Citation Database](#), produced in partnership with the [Chinese Academy of Sciences](#), was the first indexing database in a language other than English[27]
- [SciELO Citation Index](#), established in 2013, covering Brazil, Spain, Portugal, the Caribbean and South Africa, and an additional 12 countries of [Latin America](#)[28]
- [Korea Citation Index](#) in 2014, with updates from the [National Research Foundation of Korea](#)[29]
- [Russian Science Citation Index](#) in 2015[30]
- Arabic Regional Citation Index in 2020[31]

Contents[edit]

The seven [citation indices](#) listed above contain references which have been cited by other articles. One may use them to undertake cited reference search, that is, locating articles that cite an earlier, or current publication. One may search citation databases by topic, by author, by source title, and by location. Two chemistry databases, *Index Chemicus* and *Current Chemical Reactions* allow for the creation of structure drawings, thus enabling users to locate [chemical compounds](#) and reactions.

Abstracting and indexing[edit]

The following types of literature are indexed: scholarly books, [peer reviewed](#) journals, original research articles, reviews, editorials, chronologies, abstracts, as well as other items. Disciplines included in this index are [agriculture](#), [biological sciences](#), [engineering](#), medical and [life sciences](#), [physical](#) and [chemical sciences](#), [anthropology](#), law, [library sciences](#), [architecture](#), dance, music, film, and theater. Seven citation databases encompasses coverage of the above disciplines.[12][13][32]

Other databases and products[edit]

Among other WoS databases are [BIOSIS](#) and [The Zoological Record](#), an [electronic index](#) of zoological literature that also serves as the unofficial register of scientific names in [zoology](#).

Web of Science includes other products providing data, analytics, insights, workflow tools, and professional services to researchers, universities, research institutions, governments, private and public research funding organizations, publishers, and research-intensive corporations.[33]

- EndNote is a commercial reference management software package, used to manage bibliographies and references when writing essays, reports and articles.
- EndNote Click (formerly Kopernio) is a freely available plugin allowing researchers to access papers in subscription-based scientific journals, to which they are subscribed through their higher education libraries, even when the user is off-campus. Using artificial intelligence, the tool automatically records the institutional subscriptions each user has and searches for full-text versions of selected papers to which the user may have access.[34][35]
- Publons was a commercial website that provided a free service for academics to track, verify, and showcase their peer review and editorial contributions for academic journals. It was launched in 2012 and was bought by Clarivate in 2017. It claimed that over 3,000,000 researchers joined the site, adding more than one million reviews across 25,000 journals.[36][37][38] In 2019, ResearcherID was integrated with Publons.[39]

- InCites
- Journal Citation Reports
- Essential Science Indicators
- ScholarOne
- Converis

Limitations in the use of citation analysis[edit]

Further information: Citation analysis and San Francisco Declaration on Research Assessment

See also: Impact factor § Criticism

As with other scientific approaches, scientometrics and bibliometrics have their own limitations. In 2010, a criticism was voiced pointing toward certain deficiencies of the journal impact factor calculation process, based on Thomson Reuters Web of Science, such as: journal citation distributions usually are highly skewed towards established journals; journal impact factor properties are field-specific and can be easily manipulated by editors, or even by changing the editorial policies; this makes the entire process essentially non-transparent.[40]

Regarding the more objective journal metrics, there is a growing view that for greater accuracy it must be supplemented with article-level metrics and peer-review.[40] Studies of methodological quality and reliability have found that "reliability of published research works in several fields may be decreasing with increasing journal rank".[41] Thomson Reuters replied to criticism in general terms by stating that "no one metric can fully capture the complex contributions scholars make to their disciplines, and many forms of scholarly achievement should be considered."[42]

Journal Citation Reports[edit]

This section is an excerpt from Journal Citation Reports.[edit]

Journal Citation Reports (*JCR*) is an annual publication by Clarivate.[43] It has been integrated with the Web of Science and is accessed from the Web of Science Core Collection. It provides information about academic journals in the natural and social sciences, including impact factors. The *JCR* was originally published as a part of the *Science Citation Index*. Currently, the *JCR*, as

a distinct service, is based on [citations](#) compiled from the *[Science Citation Index Expanded](#)* and the *[Social Sciences Citation Index](#)*.[44] As of the 2023 edition, journals from the *[Arts and Humanities Citation Index](#)* and the *[Emerging Sources Citation Index](#)* will also be included.[45]

See also[[edit](#)]

- [arXiv](#)
- [CiteSeerX](#)
- [CSA databases](#)
- [Dialog (online database)](#)
- [Energy Citations Database](#)
- [Energy Science and Technology Database](#)
- [ETDEWEB](#)
- [Google Scholar](#)
- [h-index](#)
- [Indian Citation Index](#)
- [J-Gate](#)
- [List of academic journal search engines](#)
- [Materials Science Citation Index](#)
- [PASCAL database](#)
- [PubMed Central](#)
- [Répertoire International de Littérature Musicale](#)
- [ResearchGate](#)
- [Serbian Citation Index](#)
- [VINITI Database RAS](#)

References[[edit](#)]

1. ^ Jump up to:*a b* Matthews, Tracy. *["LibGuides: Web of Science platform: Web of Science: Summary of Coverage"](#)*. *clarivate.libguides.com. Retrieved Apr 17, 2021.*
2. **^** *["The History of ISI and the work of Eugene Garfield"](#)*. *Clarivate. Retrieved Aug 13, 2023.*
3. **^** *["Acquisition of the Thomson Reuters Intellectual Property and Science Business by Onex and Baring Asia Completed"](#)* *(Press release). Retrieved 13 December 2017 – via PR Newswire.*
4. **^** Jacso, Peter. The impact of Eugene Garfield through the prism of Web of Science. Annals of Library and Information Studies, Vol. 57, September 2010, P. 222. [PDF](#)
5. **^** Garfield, Eugene, Blaise Cronin, and Helen Barsky Atkins. The Web of Knowledge: A Festschrift in Honor of Eugene Garfield. Medford, N.J.: Information Today, 2000.
6. **^** Garfield, Garfield, Eugene. Citation indexing: Its theory and application in science, technology, and humanities. New York: Wiley, 1979, P. 1. [PDF](#)
7. ^ Jump up to:*a b* [Overview and Description](#). ISI Web of Knowledge. Thomson Reuters. 2010. Accessed on 2010-06-24
8. **^** *["Web of Knowledge > Real Facts > Quality and Quantity"](#)*. *Retrieved 2010-05-05.*
9. **^** "*Thomson Reuters introduces century of social sciences*". Information Today 26.10 (2009): 10. General OneFile. Web. 23 June 2010. [Document URL](#).
10. **^** Thomson Reuters introduces century of social sciences." Computers in Libraries 29.10 (2009): 47. General OneFile. Internet. 23 June 2010. [Document URL](#)
11. ^ Jump up to:*a b* *["Overview - Web of Science"](#)* *(Overview of coverage gleaned from promotional language.). Thomson Reuters. 2010. Retrieved 2010-06-23.*

12. ^ Jump up to:ᵃ ᵇ *Lee, Sul H. (2010). ["Citation Indexing and ISI's Web of Science"](). The University of Oklahoma Libraries. Retrieved 2010-06-23.*

13. ^ Jump up to:ᵃ ᵇ *["Web of Knowledge - Real Facts - IP & Science - Thomson Reuters"](). Archived from [the original]() on 2017-02-24. Retrieved 24 February 2017.*

14. ^ Jump up to:ᵃ ᵇ [Bulleted fact sheet](). Thomson Reuters. 2014.

15. ^ [1] Survey by Elsevier

16. ^ *["Some Searching Conventions"](). President and Fellows of Harvard College. December 3, 2009. Retrieved 2010-06-23.*

17. ^ *Else, Holly (2018-08-15). ["How Unpaywall is transforming open science"](). Nature. **560** (7718): 290–291. [Bibcode]():[2018Natur.560..290E](). [doi]():[10.1038/d41586-018-05968-3](). [PMID]() [30111793]().*

18. ^ *Else, Holly (March 14, 2022). ["Ukrainian researchers pressure journals to boycott Russian authors"](). Nature. **603** (7902): 559. [Bibcode]():[2022Natur.603..559E](). [doi]():[10.1038/d41586-022-00718-y](). [PMID]() [35288680](). [S2CID]() [247452826]().*

19. ^ *["Web of Science Databases"](). Clarivate. Retrieved August 24, 2018.*

20. ^ *["Web of Science fact book"]() (PDF). Clarivate. Archived from [the original]() (PDF) on 2018-04-11. Retrieved August 24, 2018.*

21. ^ *["Science Citation Index Expanded"](). Web of Science Group. Retrieved 2022-01-26.*

22. ^ *["Social Sciences Citation Index"](). Web of Science Group. Retrieved 2022-01-26.*

23. ^ *["Arts & Humanities Citation Index"](). Web of Science Group. Retrieved 2022-01-26.*

24. ^ *["Emerging Sources Citation Index"](). Web of Science Group. Retrieved 2022-01-26.*

25. ^ *["Book Citation Index"](). Web of Science Group. Retrieved 2022-01-26.*

26. ^ *["Conference Proceedings Citation Index"](). Web of Science Group. Retrieved 2022-01-26.*

27. ^ *["Chinese Science Citation Database"](). Retrieved Apr 17, 2021.*

28. ^ *["Thomson Reuters Collaborates with SciELO to Showcase Emerging Research Centers within Web of Knowledge"](). Retrieved Apr 17, 2021.*

29. ^ *["Thomson Reuters Collaborates with National Research Foundation of Korea to Showcase the Region's Research in Web of Science"](). Retrieved Apr 17, 2021.*

30. ^ *Reuters, Thomson. ["RSCI - IP & Science - Thomson Reuters"](). Retrieved 10 December 2016.*

31. ^ *["Arabic Citation Index"](). Retrieved Apr 17, 2021.*

32. ^ *["Coverage - Web of Science"](). Thomson Reuters. 2010. Retrieved 2010-06-23.*

33. ^ *["World's largest publisher-neutral citation index and research intelligence platform"](). Web of Science Group.*

34. ^ *Else, Holly (2018-04-10). ["Web of Science owner buys tool that offers one-click access to journal articles"](). Nature. [doi]():[10.1038/d41586-018-04414-8](). Retrieved 2019-05-12.*

35. ^ *["Clarivate buys AI-technology start-up Kopernio"](). Research Information. 2018-04-10. Retrieved 2019-05-12.*

36. ^ *Ravindran, Sandeep (2016-02-08). ["Getting credit for peer review"](). Science. American Association for the Advancement of Science. Retrieved 2016-09-15.*

37. ^ Spence, Paul: ["Wellington startups that stayed up"](), in *Idealog*, 15 September 2016

38. ^ *["Publons New Index Reveals Who is Doing Lion's Share of Peer Review"](). 3 October 2017.*

39. ^ *["Your ResearcherID of Web of Science moved to Publons"](). [Wageningen University & Research](). 2019-04-24. Retrieved 2021-12-06.*

40. ^ Jump up to:ᵃ ᵇ [San Francisco Declaration on Research Assessment: Putting science into the assessment of research, December 16, 2012]()

41. ^ *Brembs, Björn (2018). ["Prestigious Science Journals Struggle to Reach Even Average Reliability"](). Frontiers in Human Neuroscience. **12**: 37. [doi]():[10.3389/fnhum.2018.00037](). [PMC]() [5826185](). [PMID]() [29515380]().*

42. ^ Thomson Reuters Statement Regarding the San Francisco Declaration on Research Assessment [2]

43. ^ *Ramakrishnan, RamaRavikumar. ["LibGuides: Journal Citation Report : Getting Started: Home"](). libguides.ntu.edu.sg. Retrieved 2023-04-26.*

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44. **^** *Garfield, Eugene (2007). ["The evolution of the Science Citation Index"](#) (PDF). [International Microbiology](#). **10** (1): 65–69. [doi](#):[10.2436/20.1501.01.10](#). [PMID](#) [17407063](#).*

   - ["Overview"](#). Journal Citation Reports. Thomson Reuters. 2010. Archived from [the original](#) on 25 June 2010. Retrieved 25 June 2010.

   - ["About Us"](#). Thomson Reuters. 2010. Archived from [the original](#) on 1 January 2011. Retrieved 25 June 2010.

   - Venkatraman, Archana (September 2009). "Journals cherish IF status symbol: but impact factor is not the only citation metric that matters". [Information World Review](#): 7.

45. **^** *Quaderi, Nandita (2022-07-26). ["Announcing changes to the 2023 Journal Citation Reports"](#). Clarivate. Retrieved 2023-04-17.*