Research Merits

Learn to evaluate your own scientific activity using basic bibliometrics tools

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Marja Kokko, Matti Rajahonka

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What a researcher might want to know about bibliometrics and evaluation of research activity

- Definition of bibliometrics
- The principle types of research evaluation (individual researcher, discipline, country etc.)
- Citation data sources - their strengths and weaknesses
- **Template for researcher´s curriculum vitae (CV that best describes the merits of the researcher in a comprehensive, truthful and comparable manner)**
- TUTKA (Research and publication data system at the University of Jyväskylä) and National research and publication data system Juuli
- How to increase your visibility as a researcher (Parallel publishing and Open Access, researcher's networks)
- Researcher ID
- Tools such as:
- Web of Science (WoS) and Journal Citation Reports (JCR)
- Scopus and SCImago's Journal and Country Rank
- Google Scholar and Publish or Perish
- Julkaisufoorumi (Publication Forum)

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Bibliometrics and evaluation of research activity

Bibliometrics is the **quantitative analysis** of research publications and other research outputs e.g.:

- Number of publications (suitable and used in all fields)
- Number of cited publications and the total number of citations (suitable in specific fields)
- Number of times <u>a publication</u> has been cited (suitable in specific fields)
- h-index (suitable in specific fields)
- Journal Impact Factors (suitable in specific fields)

Underlying assumption: The number of times a publication has been cited by other publications is a measure of the importance of the research.

Qualitative analysis:

- Peer review –process (suitable and used in all fields)
- Peer review means that other scientific experts <u>in the same field</u> check research papers for **validity, significance and originality**.

The principle types of research evaluation

- Individual researchers in the same field and at a similar career stage (recruitment, project funding)
- University/department in relation to other universities/departments in the same field (national funding)
- A specific field in Finland by Academy of Finland (for example *Evaluation of communications research*, *International evaluation of physics research*)

Citations and citation data sources

When using bibliometric data, you need to keep in mind that:

- Each measure and tool has advantages and disadvantages (there is no single tool that gives a complete picture of a researcher's scientific activity)

- Citations take time to accrue (notice disciplinary differences in publishing practices).

- The raw count of citations and analyses depend on database content:
  - No database lists all publications. Even the 3 main sources i.e. Web of Science, Scopus and Google Scholar vary substantially in content.
  - Journals are the predominant publication type in databases. (Inclusion of other publications e.g. books, book chapters, conference papers and theses is improving).

- Bibliometrics are best suited to the fields of medicine and natural sciences, because publishing in these disciplines is centered in international, peer-reviewed journals.

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Citation databases

- Citation databases are databases of bibliographic information about publications.

- Data is gathered from thousands of scholarly journals and, increasingly, other publication sources such as conference proceedings and books.

- Citation databases also store the references (citations) that authors include in the reference list of their publication and so can be used to search for publications that cite a known author or work.

- Compare WoS, Scopus and Google Scholar (ToR)

- Read more: **Evaluation based on academic publishing** (ToR)

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Bibliometrics and Social Sciences & Humanities

- The ongoing change: In all disciplinary groups, refereed articles in international scientific journals are highly valued within the scientific community.

- In social sciences and humanities monographs and edited books are still a very common type of publication.

- Publishing for non-academic audience is important in SSH -fields.

- Bibliometrics are less suited to the Social Sciences and Humanities because books are usually not indexed in citation databases and citations in general take more time to accrue.

- Journal coverage in Scopus is more comprehensive than Web of Science for the Humanities and Social Sciences.

- Ulrichsweb is tool to discover (among other things) subject classifications of a journal and abstracting & indexing databases.

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Researcher identification

Researcher identification:

- Precondition to utilize tools like Author's Impact
- The issue of author misidentification can lead to problems with research accuracy and quality, career advancement and tenure, global collaboration among researchers and identification and attribution of funding for institutions and individual authors alike.
- ORCID - Open Researcher and Contributor ID.
- ResearcherID - WoS - can be integrated with ORCID.
- Scopus Author Identifier - can be integrated with ORCID.
- Google Scholar Citations + Publish or Perish.

- More info about researcher identification (ToR).

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Tools for evaluation:
WoS and Scopus

o **Web of Science (WoS)** and **Journal Citation Reports (JCR)**
  - o The original citation database.
  - o JCR measures the impact of journals – Impact Factor.

o **Scopus** and **SCImago's Journal and Country Rank**
  - o Scopus has a somewhat more comprehensive database than WoS (conference publications)

How to find your Citation data and Hirsch- (h) index in Web of Science?

- Conduct an Author Search in *Web of Science Core Collection.*
  - Use your surname and first initial: for example *Smith, J.*
- Choose e.g. *Organizations* or *Source Titles* to filter the result, or add the right publications to a *Marked List*. You can also check the *Result Sets*, and see if WoS has grouped your publications correctly.
- Click *Create Citation Report* on the top of a list > > >
  - Sum of Times Cited.
  - Sum of Times Cited without self-citations.
  - Citing Article data.
  - h-index.
- If you have a ResearcherID you can choose *Save to ResearcherID.*

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How to find your Citation data and Hirsch- (h) index in Scopus?

- Conduct an Author search .
- Choose the right author set by clicking the author name.
- Click Citation Overview > > >
  - Sum of Times Cited (You can exclude Self citations)
  - Citing Article data
  - h-index
- If Scopus has created multiple Author profiles from your publications, you can *Request to merge authors.* You can also *Request to remove documents from author.*
- If you have an ORCID-account you can click *Add to ORCID* on the Author information page.

Tools for evaluation:
Google Scholar + Citations

- **Google Scholar** collects information about publications and citations. Types represented include scholarly books, journal articles, conference papers, technical reports, theses, pre- and post-prints etc.

- Google Scholar's strength is the broad scope of content for both types of publications and disciplines.

- However, quality of data does not match the standards of Web of Science or Scopus.

- **Google Scholar Citations** requires a Google account – making it public requires a verified institutional e-mail address.

Publish or Perish

- Use [Publish or Perish](#) to retrieve, 'clean' and analyze academic citations from Google Scholar.

- Tool: Author impact analysis.

- [More information](#).

Julkaisufoorumi

- **[Julkaisufoorumi](#) (Publication Forum)**
  - The funding for Finnish universities will be partially based on publication activity based on Publication Forum criteria.

- The Publication Forum system is based on quality classification of scientific publication channels - journals, publication series and book publishers - in all research fields.
  - The rating levels: 1 = basic; 2 = leading; 3 = top

- ✓ The classification is best suited for <u>the follow-up of the progress made within the research area's or unit's own publication activity</u>.

- ✓ Publication Forum classification is not suited for interdisciplinary comparisons.

Good to know: other measures of research impact

Other measures you could use as an indication of your research impact:

- Altmetrics: number of downloads (for example your publication, theses and Dissertation, downloaded in JYX), visibility in social media, bookmarking etc .
- For books:
  - Number of book reviews by experts within the same field
  - Number of publisher book sales and the number of libraries holding a copy of the publication (a librarian can check this for you)
- Citations by non-traditional sources e.g. internal government reports.
- For a robust measure of research impact, use bibliometric measures in conjunction with qualitative assessment (e.g. peer review) of the content of a publication.

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Template for researcher´s curriculum vitae

[Template for researcher´s curriculum vitae](#)

🔶 CV that describes the merits of the researcher in a comprehensive, truthful and comparable manner.

"…12. Scientific and societal impact of research

- Total number of publications and, e.g., **10 most important and/or most cited publications according to a relevant database** (a **list of publications according to the Publication Type Classification** used by the Ministry of Education, Science and Culture as a separate attachment)
- Artistic works and processes
- Merits related to the production and distribution of research results and research data
- Merits related to the application of research results
- Invention disclosures, patents and other commercialisation-related merits (e.g. spin-off companies and trademarks)
- Merits in science communication and expert assignments in the media …"

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Research and publication data systems

- [TUTKA](#) (Research and publication data system at the University of Jyväskylä)
    - [Submit information about your publication to the library.](#)
- National research and publication data system [Juuli.](#)

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How to increase your visibility as a researcher

- **Parallel publishing and Open Access in JU**
  - Attach the final draft to your Tutka-submission.
  - OA-policies will be checked by the library.

- Researcher network:
  - ✓ ResearchGate
  - ✓ academia.edu
  - ✓ Researcher networks in your own subject.

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