Bibliometrics: Measuring the Impact of Your Publications

Jane Buggle
Deputy Librarian
Content

- Bibliometrics Defined
- Why Measure Impact?
- h-index
- Citation Tools
- Caveats
- Recommendations
Bibliometrics:

- “The branch of library science concerned with the application of mathematical and statistical analysis to bibliography; statistical analysis of books, articles, or other publications” (OED Online)

- Measurement of the productivity of individuals, research groups, institutions, countries, etc.
- Quantitative measure which combines publication and citation data analysis
- Statistical indicator of performance
- Instrument for evaluating and benchmarking
Why Measure Impact?

- To see who is reading and building on your research
- To identify possible research collaborators
- To corroborate grant applications
- To report back to funding agencies, industry and the general public
- To benchmark against the performance of peers
- To gain job promotion/tenure
- To identify further research priorities
- To advance the institution’s /country’s rating in league tables
Bibliometrics and the Individual

Professor Dermot Diamond, Principal Investigator, National Centre for Sensor Research, Dublin City University, talks about the value and use of bibliometrics in the context of evaluating an individual's research impact

https://www.youtube.com/watch?v=VeHdJLtmsFl
h-index

- Introduced by Jorge E. Hirsch in 2005

“I propose the index $h$, defined as the number of papers with citation number higher or equal to $h$, as a useful index to characterize the scientific output of a researcher”

“A scientist has index $h$ if $h$ of his/her $N_p$ papers have at least $h$ citations each, and the other $(N_p - h)$ papers have no more than $h$ citations each” (Hirsch, 2005)
Calculating the h-index

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<th>No. Citations</th>
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<tbody>
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<tr>
<td>8</td>
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h-index = 6
h-index
h-index: Limitations

- Professor Padraig Cunningham from UCD’s School of Computer Science and Information talks about some of the limitations of the h-index for early researchers:

https://www.youtube.com/watch?v=8BSXWKBuHXU
Citation Databases

- Thomson Reuters’ ISI Web of Science
- Elsevier’s Scopus
- Google Scholar
## Strengths and Weaknesses

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td><strong>Web of Science</strong></td>
<td><strong>Conference papers, theses, books and book chapters are excluded</strong></td>
</tr>
<tr>
<td>• Advanced citation searching and analysis features</td>
<td>• Limited coverage of non-English publications</td>
</tr>
<tr>
<td>• Citation data available from 1900</td>
<td></td>
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<tr>
<td>• Broad coverage of high impact journals</td>
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## Strengths and Weaknesses

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<tr>
<td>Scopus</td>
<td>• Advanced citation searching and analysis features</td>
<td>• Books, book chapters and theses excluded</td>
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<tr>
<td></td>
<td>• Better coverage of Social Science titles</td>
<td>• Citation data from papers published since 1996 only</td>
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<tr>
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<td>• Includes conference proceedings</td>
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## Strengths and Weaknesses

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<tr>
<td></td>
<td>• Free</td>
<td>• No quality control – lots of errors in data</td>
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<tr>
<td></td>
<td>• Covers non-English language titles</td>
<td>• Does not cover all journals</td>
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<tr>
<td></td>
<td>• Covers all types of publications including books and conference proceedings</td>
<td>• Coverage uneven across disciplines</td>
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<tr>
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<td>• Difficult to deal with name variants</td>
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How to set up your Google Scholar Citation Profile

https://www.youtube.com/watch?v=PVioeKCAdEs
Kevin Bryson

Lecturer in Bioinformatics & Systems Biology, University College London

Genome Analysis - Protein Structure - Biological System Modelling.

Verified email at cs.ucl.ac.uk

Homepage

Citation indices

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Citations to my articles

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<td>The DISOPRED server for the prediction of protein disorder</td>
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<td>Protein annotation and modelling servers at University College London</td>
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<td>DWA Buchan, SM Ward, AE Lobley, TCO Nugent, K Bryson, DT Jones</td>
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<td>The complete genome sequence of Lactobacillus bulgaricus reveals extensive</td>
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<td>M Van de Guchte, S Penaud, C Grimaldi, V Barbe, K Bryson, P Nicolas, ...</td>
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Pauline Cummins

Unknown affiliation
Unknown interests
No verified email
My profile is private

Citation indices

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Citations to my articles

Select: All, None

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<td>f2f and cyberbullying among children in Northern Ireland: Data from the Kids</td>
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<td>Experiences of school bullying, psychological well-being and stress in</td>
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<td>Northern Ireland: Findings from the Young Life and Times survey, 2005</td>
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<td>Research in Education 83 (1), 54-66</td>
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<td>The stress and trauma of school victimization in Ireland: A retrospective</td>
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Devised by Harzing, Publish or Perish is a software program that retrieves and analyse academic citations. It uses Google Scholar to obtain the raw citations, then analyses these and presents metrics:

- Total number of papers and total number of citations
- Average citations per paper, citations per author, papers per author, and citations per year
- $h$-index
- Egghe's $g$-index
- The average annual increase in the individual $h$-index
- The age-weighted citation rate
- An analysis of the number of authors per paper.
### Harzing's Publish or Perish

**Author impact analysis - Perform a citation analysis for one or more authors**

- **Author's name:** "a harzing"
- **Exclude these names:**
- **Year of publication between:** [ ] and: 0
- **Data source:** Google Scholar

### Results

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### Citations and Per Year

- **Cites:** h 337
- **Per year:** 24.07
- **Authors:** AW Harzing
- **Title:** An empirical analysis and extension of the Bartlett and Ghoshal typology of multinationality in the context of international human resource management
- **Year:** 2000
- **Publication:** Journal of International Business Studies

- **Cites:** h 323
- **Per year:** 26.92
- **Authors:** AW Harzing
- **Title:** Acquisitions versus greenfield investments: International Strategy and Management
- **Year:** 2002
- **Publication:** Strategic management journal

- **Cites:** h 309
- **Per year:** 20.60
- **Authors:** AW Harzing
- **Title:** Managing the Multinationals: An International Study of Control Mechanisms
- **Year:** 1999
- **Publication:** Academy of Management Journal &

- **Cites:** h 282
- **Per year:** 56.40
- **Authors:** NJ Adler, AW Harzing
- **Title:** When knowledge wins: Transcending the sense and nonsense of academic rankings
- **Year:** 2009
- **Publication:** International Journal of Human Resource Management

- **Cites:** h 278
- **Per year:** 14.63
- **Authors:** AW Harzing
- **Title:** The persistent myth of high expatriate failure rates
- **Year:** 1995
- **Publication:** International Journal of Human Resource Management

- **Cites:** h 264
- **Per year:** 37.71
- **Authors:** AW Harzing, R van der Wal
- **Title:** Google Scholar: the democratization of citation analysis
- **Year:** 2002
- **Publication:** Journal of World Business

- **Cites:** h 261
- **Per year:** 13.55
- **Authors:** AW Harzing
- **Title:** Response rates in international mail surveys: results of a 22-country study
- **Year:** 2002
- **Publication:** Journal of World Business

- **Cites:** h 236
- **Per year:** 19.67
- **Authors:** AW Harzing, A Sorge
- **Title:** Of bears, bumble-bees, and spiders: The role of expatriates in controlling foreign subsidiaries
- **Year:** 2003
- **Publication:** Organization Studies

- **Cites:** h 213
- **Per year:** 19.00
- **Authors:** AF Harzing
- **Title:** Whose in charge? An empirical study of executive staffing practices in foreign subsidiaries
- **Year:** 2001
- **Publication:** International Journal of Human Resource Management

- **Cites:** h 150
- **Per year:** 19.00
- **Authors:** AW Harzing
- **Title:** Response Styles in Cross-National Survey Research A 26-country Study
- **Year:** 2006
- **Publication:** International Journal of Cross Cultural Management

- **Cites:** h 149
- **Per year:** 49.67
- **Authors:** AW Harzing
- **Title:** The Publish Or Perish Book: A Guide to the Software
- **Year:** 2011
- **Publication:** International Journal of Human Resource Management

- **Cites:** h 148
- **Per year:** 13.45
- **Authors:** AJ Feely, AW Harzing
- **Title:** Language management in multinational companies
- **Year:** 2003
- **Publication:** Cross Cultural Management: An International Journal

- **Cites:** h 137
- **Per year:** 9.79
- **Authors:** AW Harzing
- **Title:** Cross-national industrial mail surveys: why do response rates differ between countries?
- **Year:** 2002
- **Publication:** Journal of Organizational Behavior

- **Cites:** h 122
- **Per year:** 10.17
- **Authors:** AW Harzing
- **Title:** Are our referencing errors undermining our scholarship and credibility? The case of Europe
- **Year:** 2003
- **Publication:** Advances in international management

- **Cites:** h 121
- **Per year:** 11.00
- **Authors:** AW Harzing, J van Ryssseveldt
- **Title:** The role of culture in entry-mode choices: from neglect to myopia
- **Year:** 2004
- **Publication:** International Human Resource Management

- **Cites:** h 121
- **Per year:** 24.20
- **Authors:** AW Harzing, R van der Wal
- **Title:** A Google Scholar h-index for journals: An alternative metric to measure journal impact
- **Year:** 2004
- **Publication:** Journal of the American Society for Information Science and Technology

- **Cites:** h 117
- **Per year:** 19.50
- **Authors:** AW Harzing, AJ Feely
- **Title:** The language barrier and its implications for HQ-subsidiary relationships
- **Year:** 2008
- **Publication:** Cross Cultural Management: An International Journal

- **Cites:** h 108
- **Per year:** 8.31
- **Authors:** AW Harzing
- **Title:** An analysis of the functions of international transfer of managers in MNCs
- **Year:** 2003
- **Publication:** Advances in international management

- **Cites:** h 105
- **Per year:** 21.00
- **Authors:** N Noorderhaven, AW Harzing
- **Title:** Knowledge-sharing and social interaction within MNEs
- **Year:** 2007
- **Publication:** Human Resource Management

- **Cites:** h 102
- **Per year:** 25.50
- **Authors:** AW Harzing, A Pinnington
- **Title:** Country-of-origin, localization, or dominance effect? An empirical investigation of HMT
- **Year:** 2010
- **Publication:** The International Journal of Human Resource Management

- **Cites:** h 96
- **Per year:** 9.60
- **Authors:** J Barry Hodling, M Brown
- **Title:** A knowledge transfer perspective of strategic assignment purposes and their path-dependence
- **Year:** 2008
- **Publication:** European Journal of Information Systems

- **Cites:** h 28
- **Per year:** 12.86
- **Authors:** AW Harzing, A Pinnington
- **Title:** Ranking journals in business and management: a statistical analysis of the Harzing d-index
- **Year:** 2008
- **Publication:** European Journal of Information Systems
Altmetrics

- The growth of social media and collaborative tools have enabled scholars to disseminate, discuss and manage research information in new ways.

- This activity can be measured and can provide additional information about the usage and reach of scholarly output.

- https://www.youtube.com/watch?v=Alsg7AyrhM
Bibliometrics - Caveats

Professor Ray O'Neill, Vice President for Research, National University of Ireland Maynooth highlights some of the limitations of using bibliometric data

https://www.youtube.com/watch?v=1OLvh1VMgN8
Suggestions

- Set up your Google Scholar Profile and keep it up to date
- Consider depositing your scholarly work in eSource, the DBS institutional repository - all content is automatically discoverable by Google Scholar
- Never mix metrics from different sources
- Check what metrics are required for funding applications
- It is likely that the QQI will soon start to look for institutional/departmental metrics in PRs and validations
- The development of a coordinated DBS Research Strategy which assimilates developments in the research area in the context of our institution.
Bibliography:


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