Introduction to Bibliometrics for Beginners

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Outline

• What is Bibliometrics

• Use and Misuse of Bibliometrics

• Author & Article Level Metrics & Tools: Scopus, Google Scholar, Altmetric.com

• Choosing Appropriate Metrics
Bibliometrics refers to the quantitative analysis of scholarly output & is one form of indicator used for:

• Evaluating research
• Awarding research grants
• Recruitment / Promotion
• Discovering relevant publications
Be aware:

• Bibliometrics measures “Citation Impact” not “Quality”

• Works better in some disciplines than others so only meaningful to compare within the same field

• Doesn’t capture practitioner or policy impact very well

• Metrics are not the “whole picture” and no replacement for qualitative peer review
“Within the REF, it is not currently feasible to assess the quality of UoAs using quantitative indicators alone.”
Author & Article Level Metrics
Key Metrics

• Citations / Citations per publication
• Total publications / output
• % International/National/Corporate Collaboration
• % Output in Top Citation Percentiles
• % Output in Top Journal Percentiles
• Field-weighted citation impact
• h-index
Field-Weighted Citation Impact

Normalizes citation impact for differences across disciplines, type of paper and age of paper

A FWCI of 1.00 indicates that the publications have been cited at world average for similar publications

A FWCI of 1.5 means the publications have been cited 50% more than the expected level for similar publications

Available through SciVal.com
**h-Index**

Aims to capture both productivity (output) and impact (citations)

How many $h$ of a researcher's publications have at least $h$ citations each
h-Index: Caveats

• Doesn’t distinguish between single and multi-author articles

• Can’t compare across disciplines as citation practices vary

• Takes no account of differences in career length which can affect the total number of publications and citations

*See also hIa:
http://www.harzing.com/publications/white-papers/from-h-index-to-hia
Tools

Citation Metrics
• Scopus (Elsevier)
• SciVal (Scopus) - groups & benchmarking
• Google Scholar Citations
• Web of Science (Clarivate)

Altmetrics
• Altmetric Explorer
• Research Repository UCD
Differences between Tools

• Coverage varies depending on discipline and type of output

• No one tool covers all publications :-(

• Quality of the data (e.g. Google Scholar)

• Always state which tool you used to calculate the metrics for transparency

*Scopus is the data source for THE & QS rankings
Scopus Coverage (blue bar)

Fig. 1 Coverage in Scopus and Web of Science of 70,500 peer-reviewed scholarly publications in journals, series and books from the higher education sector in Norway 2005–2012

Sample of 146 researchers in Univ. of Melbourne
How Many Grains of Salt Must We Take When Looking at Metrics?

By ANGELA COCHRAN | FEB 8, 2017 | 11 COMMENTS

We all want to be scored. We want to know exactly where we stand. We want to know how much people like us. In other words, we want metrics. I am not an expert on human behavior so I really can’t explain the science behind this but it seems a universal human condition.

Despite there being solid evidence that workers experience anxiety and are demoralized by being ranked in performance evaluations, companies face lots of resistance from staff to get rid of ratings and rankings.
Tools: Scopus

Available at www.scopus.com & off campus via UCD Library

Coverage:
Approx 120,000 books,
22,000 journals,
80,000 conference proceedings
Author search

Documents  Authors  Affiliations  Advanced

Author last name
Byrne

Author first name
C*

Affiliation
university college dublin

Show exact matches only

e.g. Smith

e.g. University of Toronto
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View last title ▼
### Citation Overview

This is an overview of citations for these authors.

114 Cited Documents from "CAMPBELL, William C."  

**Author h-index: 21**

Scopus is in progress of updating pre-1996 cited references going back to 1970. The h-index might increase over time.

#### View h-graph

**Date range:** 2005 to 2015

- Exclude self citations of selected author
- Exclude self citations of all authors
- Exclude Citations from books

Edit the data for this graph and the citation table below.

#### Documents

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Tips for using Scopus

• Keep your Scopus Author ID profile up to date / accurate and merge any name variants

• Link it with your ORCID (orcid.org)

• Search for metrics for comparable peers or high performing peers to benchmark your own performance and identify where they are publishing highly cited papers
SciVal can also generate combined metrics for a group or School etc. based on Scopus data.
Tools: Google Scholar Profiles

Useful for tracking citations & visibility

Michelle Dalton
University College Dublin
Bibliometrics, Elearning, Library & Information Science, Information literacy
Verified email at ucd.ie

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Profile updates

- Automatically update the list of articles in my profile. (recommended)
- Don't automatically update my profile. Send me email to review and confirm updates.
Developed by Anne-Wil Harzing:
http://www.harzing.com/resources/publish-or-perish
7 ways to make your Google Scholar Profile better

1. Clean up your Google Scholar Profile data
   Thanks to Google Scholar Profiles’ “auto add” functionality, your Profile might include some articles you didn’t author.

2. Add missing publications to your Profile
   Google Scholar is pretty good at adding new papers to your profile automatically, but sometimes articles can fall through the cracks.

3. Increase your “Googleability”
   One benefit to Google Scholar Profiles is that they function as a landing page for your publications. But that functionality only works if your profile is set to “public.”

4. Use your Google Scholar Profile data to get ahead
   Though Google Scholar Profile’s limitations mean you can’t use it to completely replace your CV, you can use your Profile data to enhance your CV. You can also use your Profile data in annual reports, grant applications, and other instances where you want to document the impact of your publications.

Source: http://blog.impactstory.org/make-google-scholar-better/
New perspectives of impact

ACADEMIC IMPACT
- Journal Impact Factor
- Citation counts
- H-index
- Number of publications

Traditional bibliometrics

Can be slow to accrue

SOCIETAL IMPACT
- Download counts
- Page views
- Mentions in news reports
- References in policy
- Mentions in social media
- Mentions in blogs
- Reference manager readers
  ... etc.

Alternative metrics “altmetrics”

Source: altmetric.com
Altmetrics

• Article-level ‘mentions’ from mainstream media, social media, policy documents & more for any item with a numeric identifier

• Capture practitioner/policy impact/engagement

• Real-time indicators

• Can show how people are engaging with your research

• May indicate future citations?
So far, Altmetric has seen 18 news stories from 18 outlets.

The Soda War, Your Wallet and Waistline
Economy Watch, 10 Jun 2016
Soda drinks are under attack in the US and the UK, but the weapons employed on the two fronts are different.

L’interdiction de fumer dans les lieux publics bénéfique pour la santé
Doctissimo News, 08 Feb 2016
De nouvelles recherches parues cette semaine montrent que l’interdiction de fumer mise en place par certains pays réduit les...
Altmetrics are also displayed on Research Repository UCD

Inequality and crime

Kelly, Morgan

Recommended citation:
Available at: http://hdl.handle.net/10197/523 DOI: 10.1162/003465300559028

File name: kellym_article_pub_004.pdf
Size: 1.125Mb
Format: PDF

Permanent link: http://hdl.handle.net/10197/523
Date: 2000-11

Impact and interest
This item's downloads: 12073
See more details

Citations in Scopus®: 205
See more details

- Picked up by 1 news outlets
- Blogged by 1
- Referenced in 4 policy sources
- Tweeted by 10
- 3 readers on Mendeley
- 1 readers on CiteULike
...along with detailed download statistics for each item
Choosing appropriate metrics
• Bibliometrics are just one way to demonstrate impact

• State the data source you used (& time period where relevant) for transparency

• Maintain accurate publication records & author profiles

• Always compare like with like – Don’t use journal metrics for an individual article/researcher

• Use more than one metric

• Provide context where possible
What to include in your CV:

• Books
• Book chapters
• Journal articles
• Conference papers
• Working papers
• Patents
• Government publications
• Datasets etc.

Metrics:
• Number of citations
• Your h-Index
• Downloads/views from Repository
• Other altmetrics if appropriate
• Reviews of book or book chapter
Publications

Summary: Since 2004 I have published 21 peer-reviewed journal articles (18 as first/corresponding author) and 3 book chapters. I have an h-index of 6 as calculated using Web of Science or 7 as calculated using Google Scholar. The following lists ISI Impact Factors and citations according to Google Scholar.

Peer-Reviewed Journal Articles (published or accepted for publication):

Mesoudi, A. (in press). How cultural evolutionary theory can inform social psychology, and vice versa. Psychological Review. [Impact Factor 11.77]


Research Publications (listed earliest to latest):

- ISI Thompson H-index (all journal publications = 6; research publications = 5)
- Google Scholar H-index (all journal publications = 7; research publications = 5)
- 16 original articles (authorship: 10 first, 4 senior, 1 second, 1 other)
- 29 abstracts (authorship: 25 first, 1 senior)
With altmetrics such as downloads and mentions, don’t just list the number but provide context:

Examples from Duke University Medical Library: http://guides.mclibrary.duke.edu/c.php?g=217135&p=1434257
Key Take Aways

• Keep your author profiles up-to-date & accurate

• No one measure of “impact” - context is key

• Best practice: Use a ‘basket’ or selection of different and appropriate metrics to tell your impact story
Questions?

Further help and information:

http://libguides.ucd.ie/bibliometrics

Contact:
Michelle Dalton
michelle.dalton@ucd.ie
Scholarly Communications Librarian