iSkills: Research Metrics and Citation Analysis Tools. Researcher Metrics. Part 3.

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### By the end of the session, you will...



Know how to find citation information for authors and how this can be contextualised.



Be able to calculate a researcher's h-index and understand its limitations.



Appreciate how a researcher's output is broader than their publication list.



# What are research metrics?

- An attempt to quantify the impact of a piece of research.
- A means of ranking or comparing research in a quantitative way.
- Not an assessment of quality.

# What is citation counting?



- Count the citations to a particular individual.
- In theory
  - highly cited = widely read and influential.
- Tracks the sources of the citations.
- Large database companies count the number of citations authors receive.

# Is measuring researcher impact useful?



Using citation data can help researchers identify collaborators.



Controversial use of researcher level metrics in recruitment.



Look at metrics in the context of a researcher's whole career.



Must consider outputs beyond academic papers.



Many things can influence citationbased metrics!

#### **Using metrics responsibly**

Metrics do not supplant qualitative expert assessment.



# Author – h-Index

- Developed by Physicist Jorge E. Hirsch in 2005.
- Designed to account for both the *quantity* and *quality* of research produced.
- Sometimes funders or other bodies ask researchers for their h-index.
- Use of the h-index is controversial!

#### Calculating an H-index

- Considers
  - Number of papers produced.
  - Number of citations received.
  - List out papers from most cited to least cited.
  - E.g., an h-index of 5 means I have produced at least 5 papers that have been cited at least 5 times each.

Papers	Citations
1	43
2	31
3	17
4	11
5	7
6	4
7	3
8	1
9	0

#### Your Turn!

• Find the workbook here -

https://go.glam.ox.ac.uk/HT25Metrics3

- In the workbook try Activity A.
- Finding an H-index. Choose **one** of the following services to try.
  - Web of Science
  - Scopus
  - Google Scholar





## **Answers - Activity A**

- What h-index values did you have for Sarah Gilbert -
  - Scopus?
  - Web of Science?
  - Google Scholar?
- How many publications of Sarah Gilbert is the h-index based on?
- How easy was it to explore the underlying data for the h-index calculation?
- Did you find any author records that might also belong to Sarah Gilbert?

### **Discuss with your** partner

- What are the limitations to the h-index?
- Things to think about -
  - $\,\circ\,$  Is it fair for all academic careers?
  - $_{\odot}\,$  Are all subjects fairly represented?
  - $_{\odot}\,$  Are all research outputs included?





# Problems with the hindex

- Different citation patterns.
- A narrow view of a researcher's total output.
- Different source data = different h-index.
- Placement of authors in publications.
- Favours those with a longer research career.
- Gaming by self-citations.
- Lacks correlation with importance of research.



# ABC metrics

- Other proposed metrics exist but none have become established
- Try asking for a colleagues g index enjoy their expression
- They are all based on the concept of citation counting and contain similar inherent flaws
- Bihari, A., Tripathi, S., & Deepak, A. (2023). A review on h-index and its alternative indices. Journal of Information Science, 49(3), 624-665. <u>https://doi-org.ezproxy-</u> prd.bodleian.ox.ac.uk/10.1177/01655515211014478

## **Beamplots - Adding context**

- How does a researcher perform over time?
- How does a researcher's output compare against other similar papers?
- Web of Science provides us with the Author Impact Beamplot.
- The Beamplot gives you more than a single datapoint.

# **SCOPUS** Author Metrics

- Summary data on
  - Collaborations
  - Documents in top percentiles
  - Documents in 'top' journals as ranked by CiteScore
  - FWCI summary.
- Provides more data points and context for looking at a researcher's output over time.



### **Beyond the Research Paper**

# Other types of research output can be placed in repositories, cited and used for metrics.



# ORCID

- Unambiguously identify yourself.
- The number can be attached to -
  - Publications
  - Datasets
  - Grants
- <u>http://orcid.org/</u>
- An Example:
  - https://orcid.org/0000-0002-5240-7828



# Reasons to use ORCID



Clearly identify publications.



Easily display publications list and CV information using ORCID.



More reliable metrics calculations.



Identify more research outputs.

# Setting up ORCID

- You can set up ORCID through Oxford's own ORCID sign up system.
- Existing ORCID can be attached to an Oxford University affiliation.
- Takes about 5 minutes to set up.
- We have put some instructions on the handout.
- To get started and find out more visit -
  - <u>https://libguides.bodleian.ox.ac.uk/orcid</u>

## Make work easily citable

- DOI (Digital Object Identifier) numbers can be attached to many digital research outputs.
- Don't break like web links.
- Make it easy for people (and machines!) to locate research outputs.
- University services like ORA and the Sustainable Digital Scholarship Service (SDS) can make DOIs for certain types of data and research outputs.

# DOIs, Permalinks,

- DOI (Digital Object Identifier) numbers can be attached to many digital research outputs.
- Permalink vs browser link
- ISBN
- There are other subject specific identifies PubMed ID and international standards, etc.
- More likely to be found by metrics tools, particularly altmetrics.

#### Homework

 Instructions for setting up your ORCID are in the workbook as Activity B. Have a go!



### **Tools for Author Metrics**



# Any Questions?





## DORA

- San Francisco Declaration on Research Assessment (DORA).
- Oxford University is a signatory.
- Aims to improve the ways in which the outputs of scholarly research are evaluated.
- Critical of inappropriate use of journal level metrics like JIF and looks at other ways of evaluating research output.
- More information: <u>Read the Declaration</u> | <u>DORA (sfdora.org)</u>
- See also:
  - o Leiden manifesto for research metrics

#### University of Oxford Guidance on using research metrics

- The University has developed principles to promote responsible use of metrics.
- Based on DORA and the Leiden Manifesto.
- View the principles and implementation examples here -
- <u>https://researchsupport.admin.ox.ac.uk/inf</u>
  <u>ormation/principles</u>





Know how to find citation information for authors and how this can be contextualised.

# Recap of aims.



Be able to calculate a researcher's h-index and understand its limitations.



Appreciate how a researcher's output is broader than their publication list.

### **Further help**

- Videos, slides and handout (QR code)
- <u>https://www.bodleian.ox.ac.uk/ask</u> /workshops#/course/ISKILL0050
- Contact email
- <u>rachel.scanlon@bodleian.ox.ac.uk</u>
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