

A background network diagram consisting of numerous small black dots (nodes) connected by thin, light gray lines (edges). The nodes are scattered across the frame, with a higher density in the lower-left and middle-right areas, creating a complex web-like structure. The overall aesthetic is technical and data-driven.

iSkills: Research Metrics and Citation Analysis Tools. Part 1.

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Jan 2024

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



Understand what is meant by journal metrics and how they are calculated based on citation counting.



Appreciate the applications and limitations of journal level metrics.



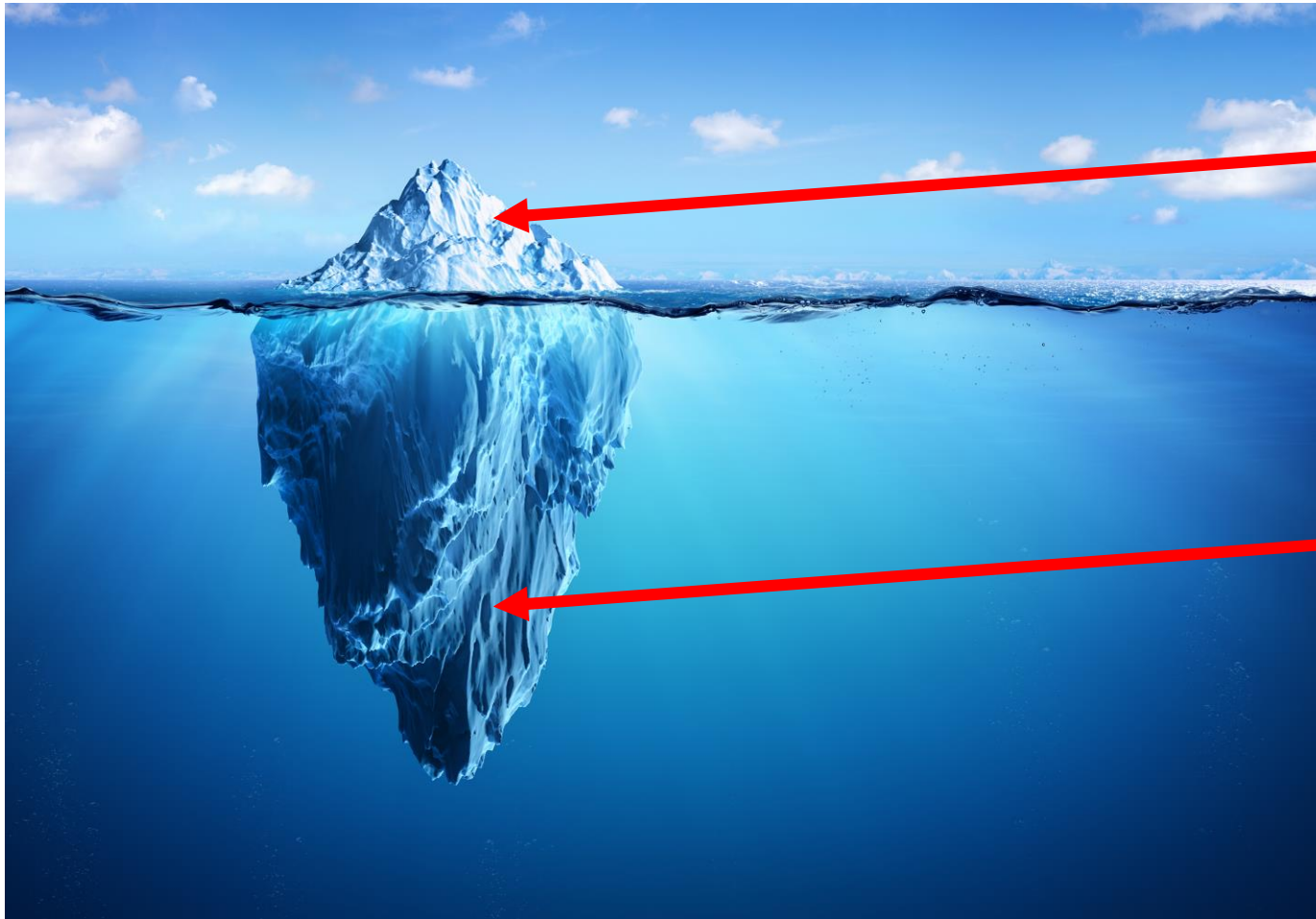
Be able to confidently use several software tools to find different journal level metrics.



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.

Not all research outputs are counted...



**Journal articles &
Conference Proceedings**

**Books, posters,
software, websites,
events, talks, datasets,
pre-prints, reports,
podcasts, blogs,
editorials...**

What is citation counting?



- Count how many times journals receive citations over a certain time.
- In **theory** -
 - Highly cited = Influential.
- Journals can be ranked by citation counts.
- Citation counting is undertaken by database providers.

How can journal metrics help me?



Identify popular titles in your field to follow.



Help identify publication options.



Familiarise yourself with journals in a new field.



Identify top open access journals.

Applying citation data

- Citation data forms part of the Times Higher Education World University Rankings.
- Citation data from Elsevier is used to calculate the '*Research Influence*' element.
- Research Influence accounts for a minority (30%) of the ranking score.
- Many other factors contribute to the score.
- More information: <https://www.timeshighereducation.com/world-university-rankings/world-university-rankings-2023-methodology>





Many things
can influence
citation-based
metrics!

Using metrics responsibly

Publication culture

Different output types

Limited citation data

Manipulation or gaming

Reason for citations

Journal Impact Factor (JIF)

$$\text{Journal impact factor for 2021} = \frac{\text{Number of citations received in 2021 to articles published in 2019 and 2020}}{\text{Total number of articles published during 2019 and 2020}}$$

- A Journal Impact Factor of 1.0 means that, *on average*, published articles have been cited once in the last two years.
- Uses Clarivate citation data (i.e. Web of Science)
- Journal Citation Reports used to explore data.



CiteScore from Scopus

- How is CiteScore different to JIF?
 - Uses a similar methodology to calculate mean average citations.
 - **BUT**
 - Uses a 4-year window of data.
 - Based on Scopus data.
- Different subject categories.

Your Turn! No. 1

- We are going to do part A in the workbook.
- Group 1 – please look at JCR
- Group 2 – please look at Scopus Sources

Download the workbook here:

<https://tinyurl.com/MetricsMT23pt1>



Answers for Part A

- How many journals did you get for JCR and how many for Scopus Sources for the Ecology category/subject?
- For the JCR group – How did self-citations affect the JIF score?
- Where the top journals mainly publishing primary research or review articles?
- Which 3 journal titles came top for JCR and which 3 for Scopus Sources?
- Were the top titles what you expected for your field?

JIF & CiteScore Limitations and Cautions

Difference between disciplines.

Can be influenced by self-citations back to content in the same journal.

Type of articles (review versus original paper) or publication (open access)

Does not differentiate between positive and negative reasons for citations.


Beware of making faulty inferences from journal level metrics to the quality of individual papers.

An example

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children **(1,663 citations in WoS)**

Original 'Lancet' paper, Andrew Wakefield MMR Vaccine Controversy

RETRACTED: Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children (Retracted article. See vol 375, pg 445, 2010)

 **Retracted Publication**

[Wakefield, AJ; Murch, SH; \(...\); Walker-Smith, JA](#)

Feb 28 1998 | [LANCET](#) 351 (9103) , pp.637-641

1,663
Citations

26
References

SJR – Scimago Journal Ranking



Weighted citations – a citation from a prestigious journal is worth more.



A journal increases prestige by having its articles cited more frequently by other prestigious journals.



Based on a 3-year window of data from Scopus.



Values >1 indicate papers are cited more than the average.

Your Turn! No. 2

- In the workbook try Part B.



Answers for Part B

- Did you notice any differences with the top journals in the SJR versus JIF or CiteScore?

Demo - Exporting Data

- You may want to export metrics data to a spreadsheet.
- Firstly, you need a database account.
- Set up accounts in WoS and in SCOPUS.



Google Scholar Metrics

Google Scholar



Articles Case law

- Ranks journals according to an h-index.
- To rank highly, a journal must publish many frequently cited articles.
- You can browse journals by broad subject area and subcategory.

Your Turn! No. 3

- In the workbook try Part C.



Essential Science Indicators (ESI)

- ESI allows you to look for journals which contain a large proportion of highly cited, top or hot papers.
- Based on Clarivate/Web of Science data.





ESI - Demo

- In this demonstration we show you how to search ESI for top journals in a particular field.

Your Turn! No. 4

- In the workbook try Part D.



Answers for Part D

For China -

- Which research field has the highest citations?
- Which research field has the highest top papers?
- How does it compare with the highest cites?
- Where did Oxford rank?

BrowZine

- A user-friendly way to access our e-journal collections.
- Follow journals you find in JCR, Scopus Sources or ESI.
- Get the latest contents lists for your favourite journals.
- Set up automatic e-mail alerts.

The screenshot displays the BrowZine Library interface. At the top, there are navigation links: "BrowZine Library", "My Bookshelf" (with a count of 22), and "My Articles". On the right, it states "Access Provided By Bodleian Libraries (University of Oxford)".

The main content area features the Bodleian Libraries logo and the text "ACCESS PROVIDED BY Bodleian Libraries UNIVERSITY OF OXFORD". Below this is a search bar with the prompt "FIND JOURNAL BY TITLE, SUBJECT, OR ISSN" and a magnifying glass icon.

Underneath the search bar is a "BROWSE SUBJECTS" section with four categories, each accompanied by a bookshelf icon:

- Arts and Humanities
- Biological Sciences
- Biomedical and Health Sciences
- Business and Economics

On the right side of the interface, there is a vertical collage of various journal covers, including "nature medicine", "Journal of Materials Chemistry", "Cell", "postmedieval", and "C&E CHEMICAL & ENGINEERING".

In your own time...

- In the workbook try Part E and set up BrowZine to keep track of new journals you may have found.



Summary

Journal
Citation
Reports

Journal Impact
Factor (JIF)

Scopus
Sources

CiteScore

SJR Scimago

Google
Scholar

Journal H-index

Essential
Science
Indicators

Country/Institution
data

Hot & Highly cited
papers



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: [Read the Declaration | DORA \(sfdora.org\)](https://sfdora.org)

Recap of aims...



Understand what is meant by journal metrics and how they are calculated based on citation counting.



Appreciate the applications and limitations of journal level metrics.



Be able to confidently use several software tools to find different journal level metrics.

Further help

- Videos, slides and handout (QR code)
- <https://www.bodleian.ox.ac.uk/ask/workshops#/course/ISKILL0050>
- Contact email
- rachel.scanlon@bodleian.ox.ac.uk
- oliver.bridle@bodleian.ox.ac.uk
- [@radcliffescilib](https://twitter.com/radcliffescilib) on Twitter/X



**Any
Questions?**

