



Loughborough
University

Bibliometrics: Diversity's Friend or Foe?

Dr Elizabeth Gadd

@lizziegadd





#InAllLanguages

- READ
- SIGN
- SIGNATORIES
- EVENTS
- MEDIA
- INFO

Choose Language English ▾

Helsinki Initiative on Multilingualism in Scholarly Communication

Research is international. That's the way we like it! Multilingualism keeps locally relevant research alive. Protect it! Disseminating research



- Research Policy Manager (Publications)
- Chair, INORMS Research Evaluation WG
- Chair, LIS-Bibliometrics Forum
- Founder, The Bibliomagician Blog
- Champion, ARMA Research Evaluation SIG



Overview

- What the academy rewards & the consequences
- What the academy values
- Why it's so hard to 'measure' what we value
- And why we fall back on bibliometrics
- Is that a bad thing?
- So is bibliometrics diversity's friend or foe?



Fostering Bibliodiversity in Scholarly Communications – A Call for Action!

Today, my colleagues and I are issuing a “Call for Action!”

Fostering Bibliodiversity in Scholarly Communications
A Call for Action!
April 15, 2020



[READ THE FULL PAPER](#)

We are calling on the community to make concerted efforts to develop strong, community-governed infrastructures that support diversity in scholarly communications (referred to as bibliodiversity).

Diversity is an essential characteristic of an optimal scholarly communications system. Diversity in services and platforms, funding mechanisms, and **evaluation measures will** allow the research communications to accommodate the different workflows, languages, publication outputs, and research topics that support the needs and epistemic pluralism of different research communities. In addition, diversity reduces

What do we want?

- A diversity of people
- Evaluating a diversity of things
- Via a diversity of mechanisms
- To engender a more diverse research ecosystem
- That ultimately better serves our diverse world

What does the academy reward?

12:25 Thu 11 Jun 98%

King's Open Research Conference

Scientists are incentivized to...

- Publish (particularly in certain journals)
- Obtain grant funding
- Er...



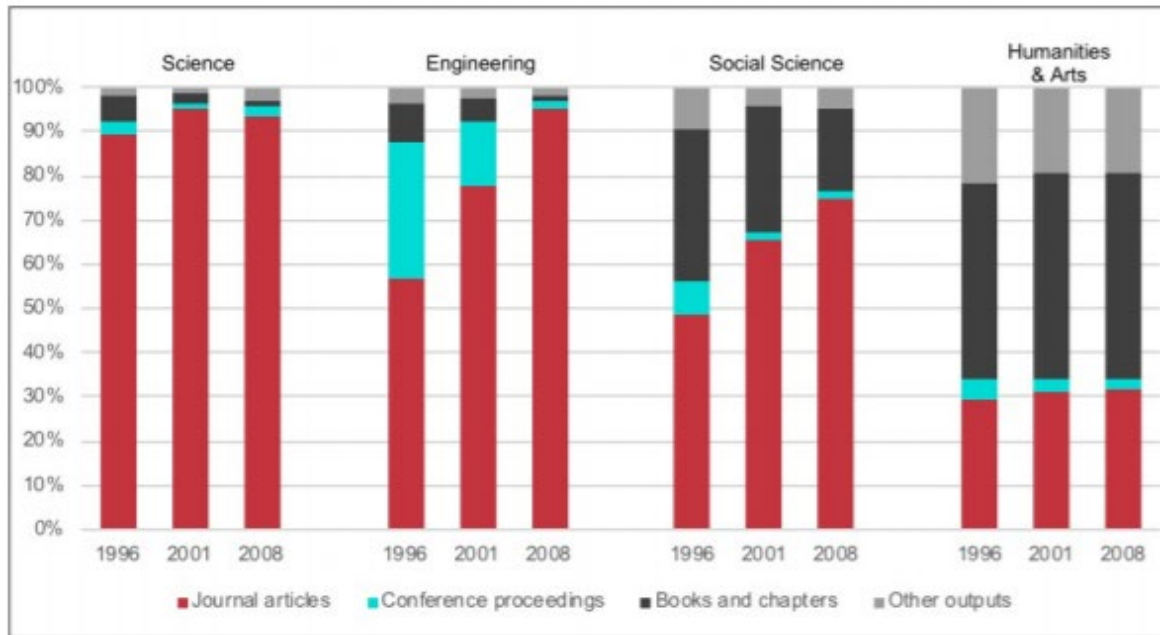
 University of
BRISTOL

 MRC Integrative
Epidemiology
Unit

...and not just any publications...

Growth in journal article contributions to UK RAE 1996-2008

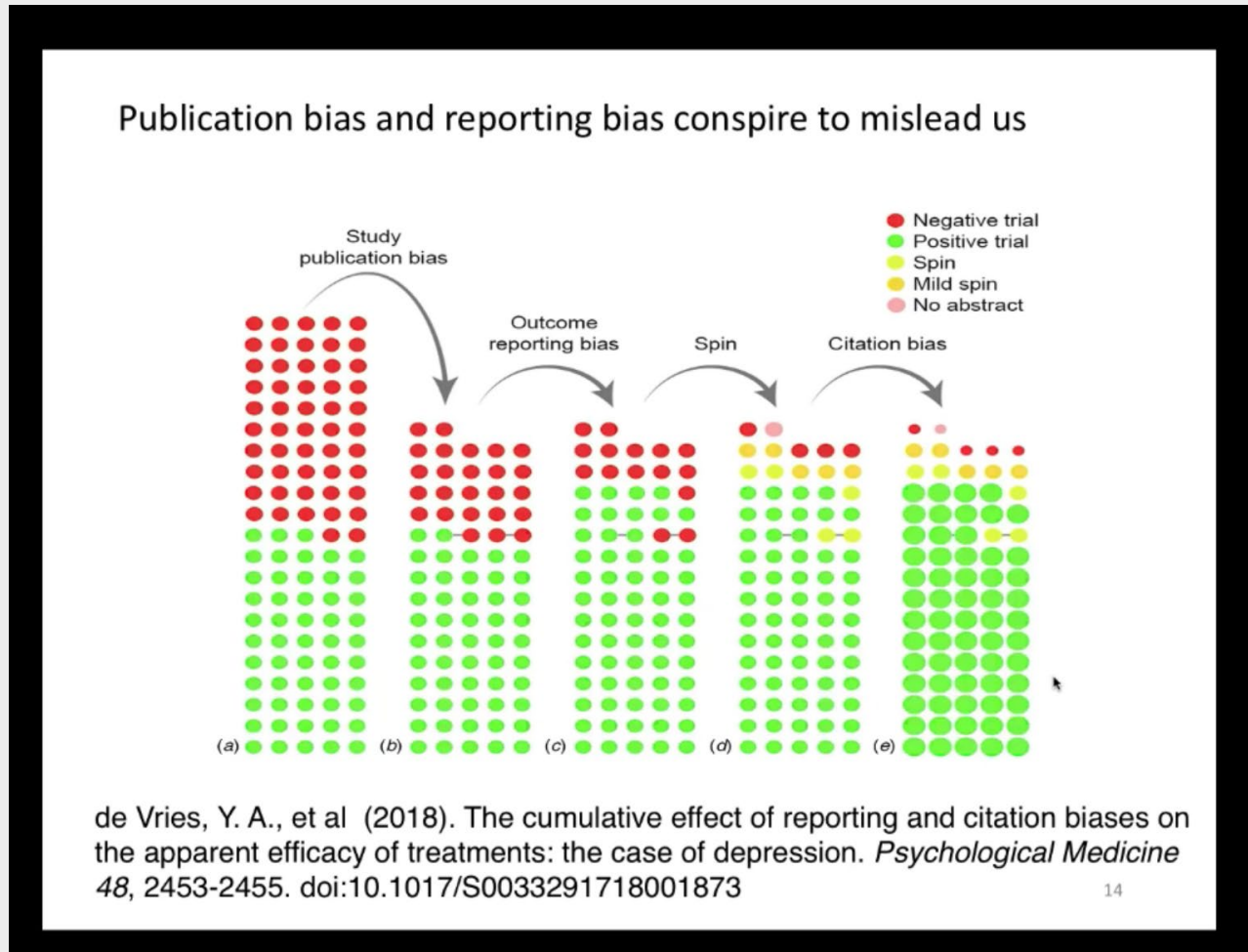
Figure 24 Submissions to the REF classified by area of research and type of publication, 1996 – 2008



Source: based on (Adams & Gurney, 2014)

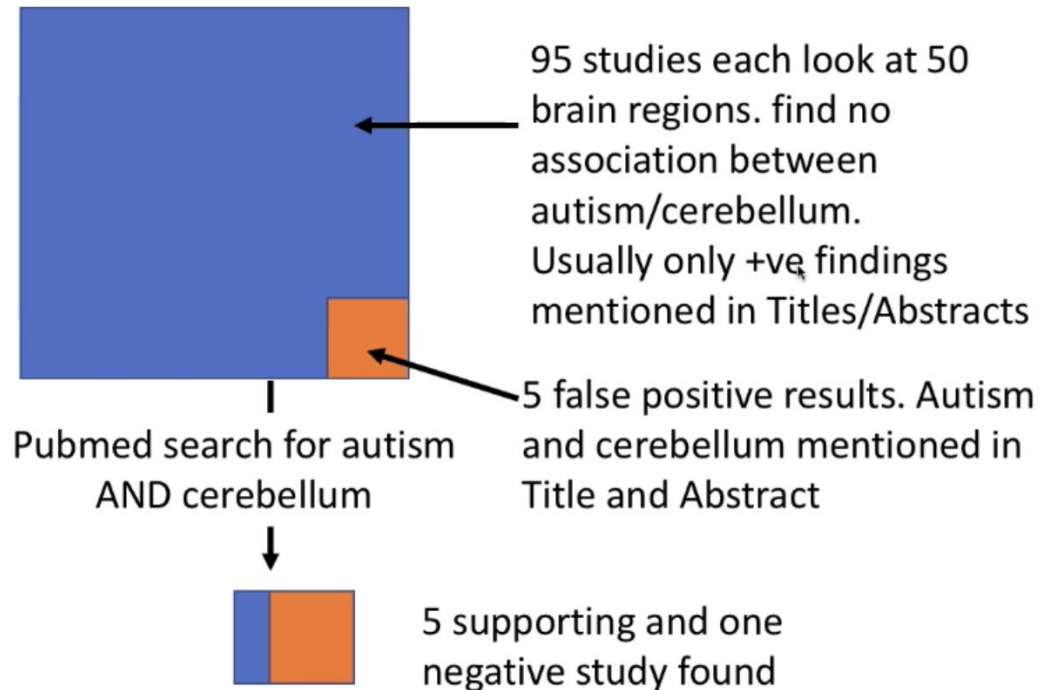
Review of the Research Excellence Framework Evidence Report (2018)
Technopolis Group

Reporting positive results



From Professor Dorothy Bishop presentation to King's Open Research Conference June 2020

100 relevant studies on brain region/disorder association



Example based on Lazic, S. (2016) Experimental Design for Laboratory Biologists¹⁷

In “prestigious” journals

Use of the Journal Impact Factor in academic review, promotion, and tenure evaluations

Erin C. McKiernan^{1,*}, Lesley A. Schimanski², Carol Muñoz Nieves², Lisa Matthias³, Meredith T. Niles⁴, and Juan Pablo Alperin^{2,5**}

¹Departamento de Física, Facultad de Ciencias, Universidad Nacional Autónoma de México

²Scholarly Communications Lab, Simon Fraser University

³John F. Kennedy Institute, Freie Universität Berlin

⁴Department of Nutrition and Food Sciences, Food Systems Program, University of Vermont

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**Corresponding author: juan@alperin.ca

Abstract

The Journal Impact Factor (JIF) was originally designed to aid libraries in deciding which journals to index and purchase for their collections. Over the past few decades, however, it has become a relied upon metric used to evaluate research articles based on journal rank. Surveyed faculty often report feeling pressure to publish in journals with high JIFs and mention reliance on the JIF as one problem with current academic evaluation systems. While faculty reports are useful, information is lacking on how often and in what ways the JIF is currently used for review, promotion, and tenure (RPT). We therefore collected and analyzed RPT documents from a representative sample of 129 universities from the United States and Canada and 381 of their academic units. We found that 40% of doctoral, research-intensive (R-type) institutions and 18% of master's, or comprehensive (M-type) institutions explicitly mentioned the JIF, or closely related terms, in their RPT documents. Undergraduate, or baccalaureate (B-type) institutions did not mention it at all. A detailed reading of these documents suggests that institutions may also be using a variety of terms to indirectly refer to the JIF. Our qualitative analysis shows that 87% of the institutions that mentioned the JIF supported the metric's use



Mainly closed or hybrid

23%

Journal articles in Web of Science over the past 5 years with a free version available

Indexed by databases skewed towards STEM

Table 3. Percentage of citations found by each data source, relative to the total number of citations found overall and by broad areas.

	N	% of citations found (relative to N)					
		Google Scholar	Microsoft Academic	Scopus	Dimensions	Web of Science	COCI
Humanities, Literature & Arts	89,337	87	39	31	29	25	18
Social Sciences	406,661	88	47	40	36	33	20
Business, Economics & Management	235,338	88	47	34	32	29	19
Engineering & Computer Science	691,164	88	63	61	54	48	30
Physics & Mathematics	317,320	90	57	64	59	59	36
Health & Medical Sciences	1,001,507	85	63	59	58	51	27
Life Sciences & Earth Sciences	571,817	89	68	64	63	60	32
Chemical & Material Sciences	253,990	90	69	75	72	72	32

Google Scholar, Microsoft Academic, Scopus, Dimensions, Web of Science, and OpenCitations' COCI: a multidisciplinary comparison of coverage via citations. Martin Martin et al. (2019)

...and in English

Journal selection criteria

To be considered for review, all journal titles should meet all of these minimum criteria:

- Consist of peer-reviewed content and have a publicly available description of the peer review process
- Be published on a regular basis and have an International Standard Serial Number (ISSN) as registered with the [ISSN International Centre](#) ↗
- Have content that is relevant for and readable by an international audience, meaning: have references in Roman script and have English language abstracts and titles
- Have a publicly available publication ethics and publication malpractice statement

That are well-cited

Cox, Brian E.

 University of Manchester ... [Show all affiliations](#) | [View this Researcher in Scopus](#) [↗] | [Why do the metrics look different to those in Scopus?](#) [↗]

2014 to >2018



no subject area filter selected



ASJC



[Data sources](#)

Summary

Topics

Collaboration

Published

Viewed

Cited

Economic Impact

[+ Add Summary to Reporting](#) [Export](#) [▼]

Overall research performance

[+ Add to Reporting](#)


Scholarly Output 

36


[View list of publications](#)

Field-Weighted Citation Impact 

3.52

Citation Count 

966

Citations per Publication 

26.8

h-index

70

h5-index 

33

...and cited positively?

Journal of Librarianship and Information Science volume 51, issue 1, P106-122 2016 DOI:
10.1177/0961000616657406

What does 'green' open access mean? Tracking twelve years of changes to journal publisher self-archiving policies

Elizabeth Gadd, Denise Troll Covey

Classification

<input checked="" type="checkbox"/>	supporting	✓	1
<input checked="" type="checkbox"/>	mentioning	🕒	23
<input checked="" type="checkbox"/>	disputing	?	1



What do we incentivise?

Only:

- Journal articles
- Reporting positive results
- In 'prestigious' journals
- (Mainly closed or hybrid)
- Indexed by commercial bibliographic databases
- That are biased towards STEM subjects
- And written in English
- That are well-cited

What are the consequences?

Only valuing publications leads to a lack of diversity...

- In the scholarly record (biblio-homogeneity)
- In those able to access the scholarly record (OA)
- Amongst those contributing to the scholarly record (OA APCs)
- Amongst those rewarded by the scholarly record

Indonesia's scientists voice concerns about the country's researcher ranking system

Critics flag unclear methodology, lack of credit for research contributions other than publications

by *Dalmeet Singh Chawla*

DECEMBER 31, 2018

Critics say the methodology and reasoning behind the metric, known as the **Science and Technology Index** (SINTA), are unclear. SINTA takes into account the number of journal and non-journal articles indexed in the database Scopus, the number of citations these documents accumulate in Scopus and Google Scholar, and researchers' h-index. The h-index is another controversial metric that is designed to measure researchers' productivity and the impact of their publications.



SUHARYO SUMOWIDAGDO

Lembaga Ilmu Pengetahuan Indonesia

NIDN /NIP/NIDK :

Scopus[®] H-Index : 91 | Google H-Index : 134 |

Experimental Particle Physics | High Performance Computing

52.84

Since 2017



INDAH SUCI WIDYAHENING

Universitas Indonesia

NIDN /NIP/NIDK : 0311107303

Scopus[®] H-Index : 7 | Google H-Index : 11 |

Family Medicine | Primary Health Care | Evidence based Medicine | Community Medicine

43.79

Since 2017



RIYANARTO SARNO

Institut Teknologi Sepuluh Nopember

NIDN /NIP/NIDK : 0003085905

Scopus[®] H-Index : 17 | Google H-Index : 20 |

Internet of Things | Business Process Management | Process Aware Information Systems | Knowledge Engineering

Smart Grids

40.62

Since 2017



I GEDE WENTEN

Institut Teknologi Bandung

NIDN /NIP/NIDK : 0015026202

Scopus[®] H-Index : 21 | Google H-Index : 30 |

Membrane Technology

38.16

Since 2017

... number of women = 1
... number of researchers in social sciences,
... arts and humanities = 0

Top Ten



ANWAR MALLONGI

Universitas Hasanuddin

NIDN /NIP/NIDK : 0016087401

Scopus[®] H-Index : 12 | Google H-Index : 11 |

Health and Environmental Risks Assessment | Environmental and Health Modeling

31.11

Since 2017



HANUNG ADI NUGROHO

Universitas Gadjah Mada

NIDN /NIP/NIDK : 0024027804

Scopus[®] H-Index : 10 | Google H-Index : 13 |

Biomedical signal & image processing & ana | computer vision | medical instrumentation | medical imaging | statistical pattern

30.93

Since 2017



ACHMAD NIZAR HIDAYANTO

Universitas Indonesia

NIDN /NIP/NIDK : 0024077601

Scopus[®] H-Index : 8 | Google H-Index : 12 |

Information Technology | Information System | Business Intelligence | Technology Adoption | Electronic Commerce

30.88

Since 2017



MAURIDHI HERY PURNOMO

Institut Teknologi Sepuluh Nopember

NIDN /NIP/NIDK : 0016095811

Scopus[®] H-Index : 4 | Google H-Index : 17 |

Artificial Intelligence

29.61

Since 2017



MOHAMMAD BASYUNI

Universitas Sumatera Utara

NIDN /NIP/NIDK : 0021047304

Scopus[®] H-Index : 14 | Google H-Index : 16 |

Molecular Biotechnology | Plant Lipid Biochemistry | Plant Biology | Bioinformatics

29.58

Since 2017



TOLE SUTIKNO

Universitas Ahmad Dahlan

NIDN /NIP/NIDK : 0512067501

Scopus[®] H-Index : 13 | Google H-Index : 19 |

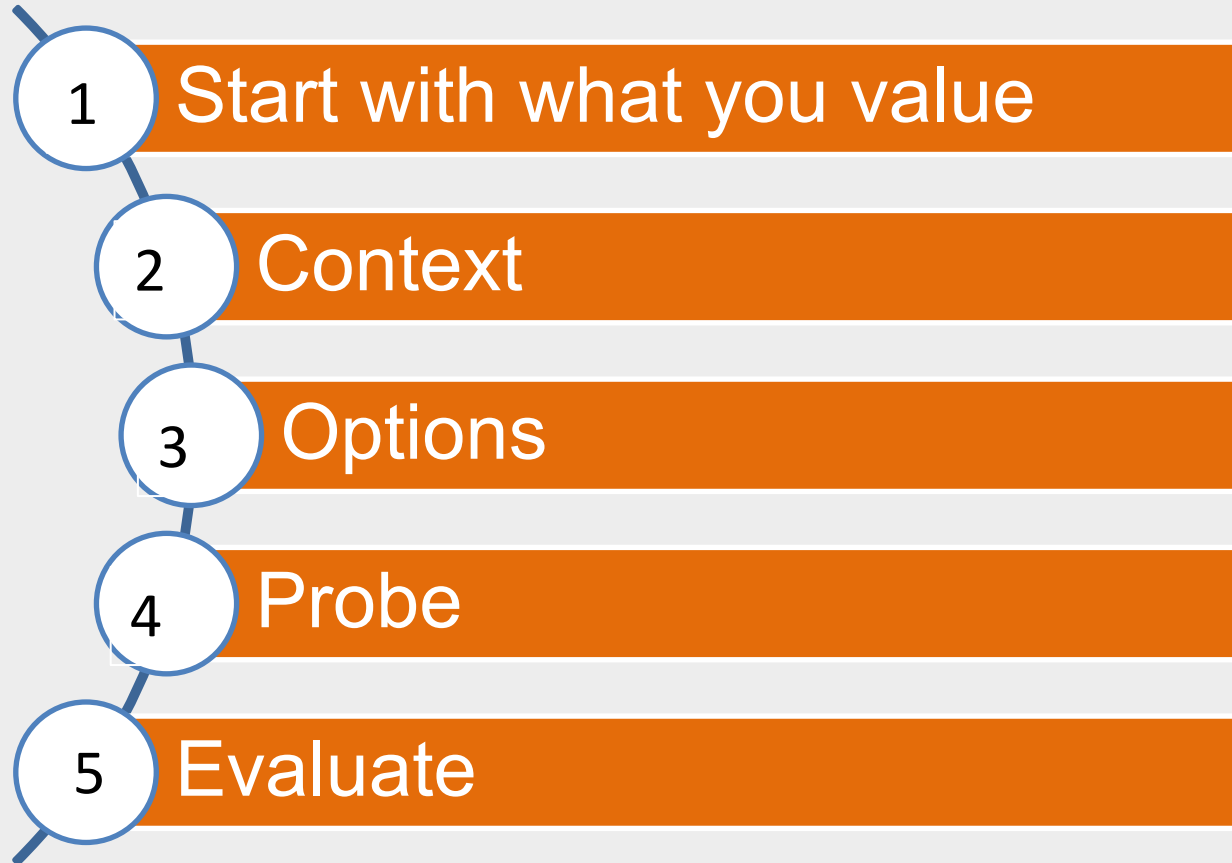
29.24

Since 2017

- “We are ranked, therefore we are.”
- “We are ranked, therefore we are all the same.”

What do we actually value?

Introducing the model



Start with what you value

- Not what others' value
- Not by the availability of data

The Streetlight effect: Measuring by available data not by mission



CONTEXT

Why are you evaluating?

- **Measure to analyse.** “Science of science” activities that study phenomenon for the sole purpose of understanding them better.
- **Measure to advocate.** “Pick me!” activities. The use of metrics to market an individual, group or university on promotional materials or grant applications.
- **Measure for accountability.** Plotting progress against an objective whether internally or externally set..
- **Measure to acclaim.** The use of indicators to compare one entity with another.
- **Measure to adapt.** The use of indicators to incentivise certain behaviours..
- **Measure to allocate.** Any activity that results in some kind of reward for the entity being measured, be this a job, promotion, grant, prize or award of any description.

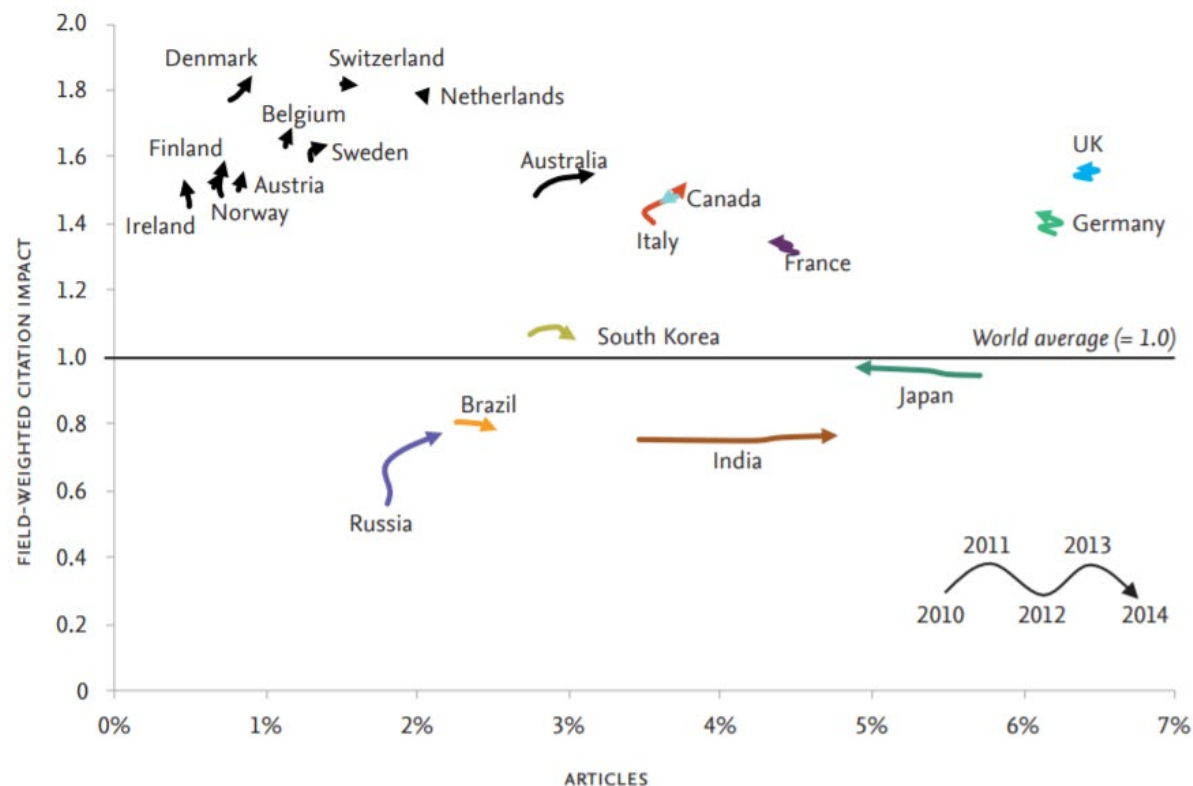
Understand who & why you're evaluating

		Country	HEI	Group	Individual
Analysis	To understand	Low impact	Low impact	Medium impact	Medium impact
Advocacy	To show off	Low impact	Low impact	Medium impact	Medium impact
Accountability	To monitor	Low impact	Medium impact	Medium impact	High impact
Acclaim	To benchmark	Medium impact	High impact	High impact	High impact
Adaptation	To incentivise	Medium impact	High impact	High impact	High impact
Allocation	To reward	High impact	High impact	High impact	High impact

Low impact	Low impact
Medium impact	Medium impact
High impact	High impact


Use of FWCI in measuring to understand

Panel A(2): The UK and comparator countries plus top ten countries with the highest field-weighted citation impact in 2014 among OECD countries with at least 5,000 publications in 2014 (excluding the US and China).



International Comparative Performance of UK Research Base – 2016 report on 2011-2014 data
https://www.elsevier.com/_data/assets/pdf_file/0018/507321/ELS-BEIS-Web.pdf

Use of FWCI to identify staff for redundancy...



So, these are the proposed criteria I (a historian, remember) wd have to meet to avoid being among the ~140 of whom ~65 will lose our jobs.

The University will consult with the Trade Unions on a set of criteria to reduce the group of around 627 academic posts 'in scope' to a group of around 140 posts that will subsequently be 'at risk' of redundancy. The loss of 65 posts will come from this 'at risk' pool. The criteria that we are proposing to apply to identify the 'at risk' pool are defined below. However, please note that these criteria are subject to consultation with the Trade Unions and therefore may change.

If staff meet or exceed one or more of the proposed criteria below, they will not be at risk.

- Research and other income in the four-year period from 1 August 2012 to 31 August 2016 of £400k, £300k, £200k or more respectively for staff in Grades 9, 8, 7/6; or
- Research awards from 1 August 2015 to 31 March 2017 of £225k, £150k, £75k or more respectively for staff in Grades 9, 8, 7/6; or
- A sum of Field-Weighted Citation Impact greater than 1.5
- Staff on a core, permanent teaching only, teaching focused or teaching scholarship contract

Where staff have had a significant period of absence from work (three months or more) due to maternity leave or sickness absence for example, we will consider the data in these cases and seek to mitigate any adverse impact attributable to the period of absence, e.g. by using a time period that is more relevant to the individual circumstances. Equally we will give consideration as to how the criteria may need to be adjusted in relation to staff who have a disability.

♡ 82 15:53 - 13 May 2017ⓘ

💬 200 people are talking about this>

OPTIONS

Options

- Is your measure a suitable proxy for what you're measuring?
- Quantitative measures are for quantifiable things...
 - Citations, publications, money, students
- Qualitative measures for qualifiable things...
 - Quality, diversity, excellence, value
- Beware using quantitative indicators as a proxy for qualitative things
 - Citations \neq quality
 - Ranking position \neq excellence

PROBE

Probe for potential negative impacts

1. Who does this discriminate against?
2. How could this be gamed?
3. What might the perverse incentives and consequences be?
4. Do the benefits of measuring outweigh the cost of measuring?
5. Is evaluating research actually going to make it any better?

You don't fatten a pig by weighing it



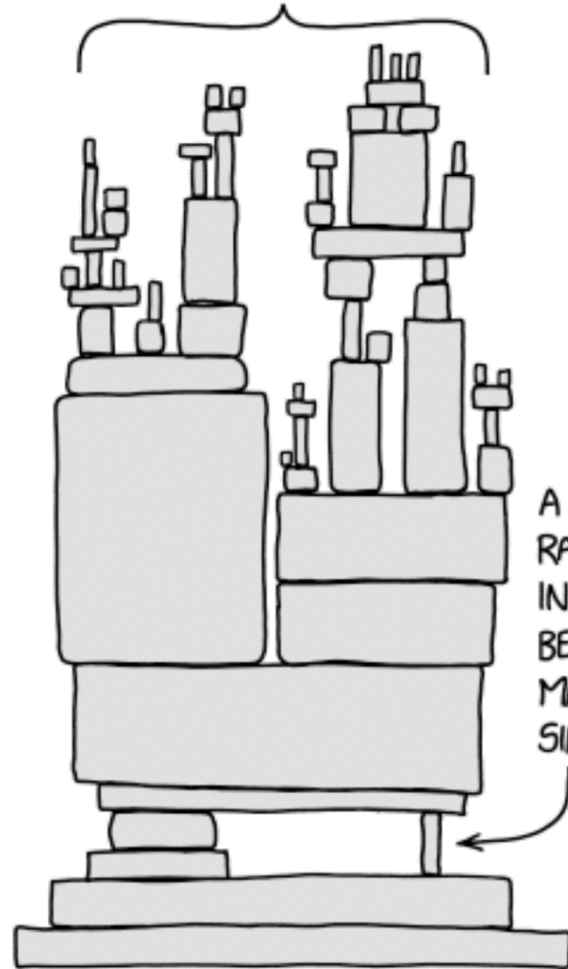
[This Photo](#) by Unknown Author is licensed under [CC BY-ND](#)

EVALUATE your evaluation...

So what DO we value?

- A diversity of people
- A diversity of disciplines
- A diversity of findings (positive & negative)
- A diversity of output types (code, data, designs, sculpture, trade journals)
- A diversity of impacts
- A diversity of researcher activities
- But other things too.

ALL MODERN DIGITAL
INFRASTRUCTURE



A PROJECT SOME
RANDOM PERSON
IN NEBRASKA HAS
BEEN THANKLESSLY
MAINTAINING
SINCE 2003



So what DO we value?

- A diversity of people
- A diversity of disciplines
- A diversity of findings (positive & negative)
- A diversity of output types (code, data, designs, sculpture, trade journals)
- A diversity of impacts
- A diversity of researcher activities
- And other things too.

C. DIVERSITY OF ACTIVITIES

8. **Researcher as teacher and supervisor:** Teaching and supervisory activities, as well as the skills and merits accumulated in them, are seen as an integral part of a researcher's work. The evaluation shall take into account that different researchers have different opportunities for teaching and supervision.
9. **Societal impact and interaction:** Societal interaction is expected of researchers. To evaluate societal impact and interaction, it is necessary to first define their meaning and to determine the evidence used to examine them and their relative significance with regard to the scientific quality of the research and other work roles.



7

GOOD PRACTICE IN RESEARCHER EVALUATION

10. **Activity in research and other communities:** Researchers' activities in research and other communities are to be considered in the evaluation. Researchers' contribution in various roles and the significance of this contribution to the researchers' own work and the research community should be considered.
11. **Considering the characteristics of research fields:** In relation to the goals of the evaluation, researchers are evaluated as representatives of their field of research.

Five principles

- responsible research practices;
- transparent reporting;
- open science;
- valuing a diversity of types of research;
- and recognizing all contributions to research and scholarly activity.

The Hong Kong Manifesto for Assessing Researchers: Fostering Research Integrity

David Moher¹, Lex Bouter², Sabine Kleinert³, Paul Glasziou⁴, Mai Har Sham⁵

¹Centre for Journalology, Clinical Epidemiology Program, Ottawa Hospital Research Institute; School of Epidemiology and Public Health, University of Ottawa, Ottawa, Canada; ²Department of Epidemiology and Biostatistics, Amsterdam University Medical Centers, location VUmc, and Department of Philosophy, Faculty of Humanities, Vrije Universiteit, Amsterdam, The Netherlands; ³*The Lancet*, London Wall Office, London, UK; ⁴Centre for Research in Evidence-Based Practice, Bond University, Gold Coast, Qld, Australia; and ⁵School of Biomedical Sciences, LKS Faculty of Medicine, The University of Hong Kong, Pokfulam, Hong Kong SAR, China

**So why don't we just measure,
and therefore incentivise, a
broader diversity of things?**

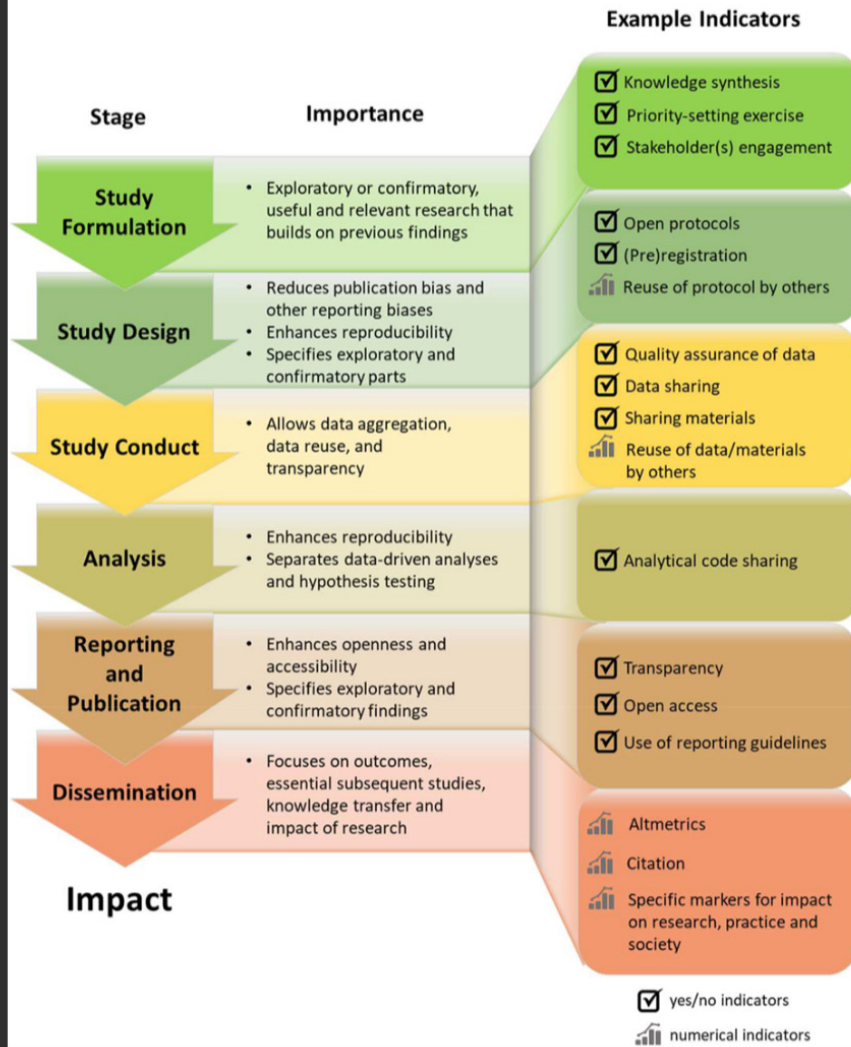
Four challenges

- 1) We only value (some of) these things as a means to an end, not an end in itself
- 2) We need to enable some of these things before we can measure them
- 3) We can only measure these things in a qualitative local way
- 4) There are no global data sources

Four challenges

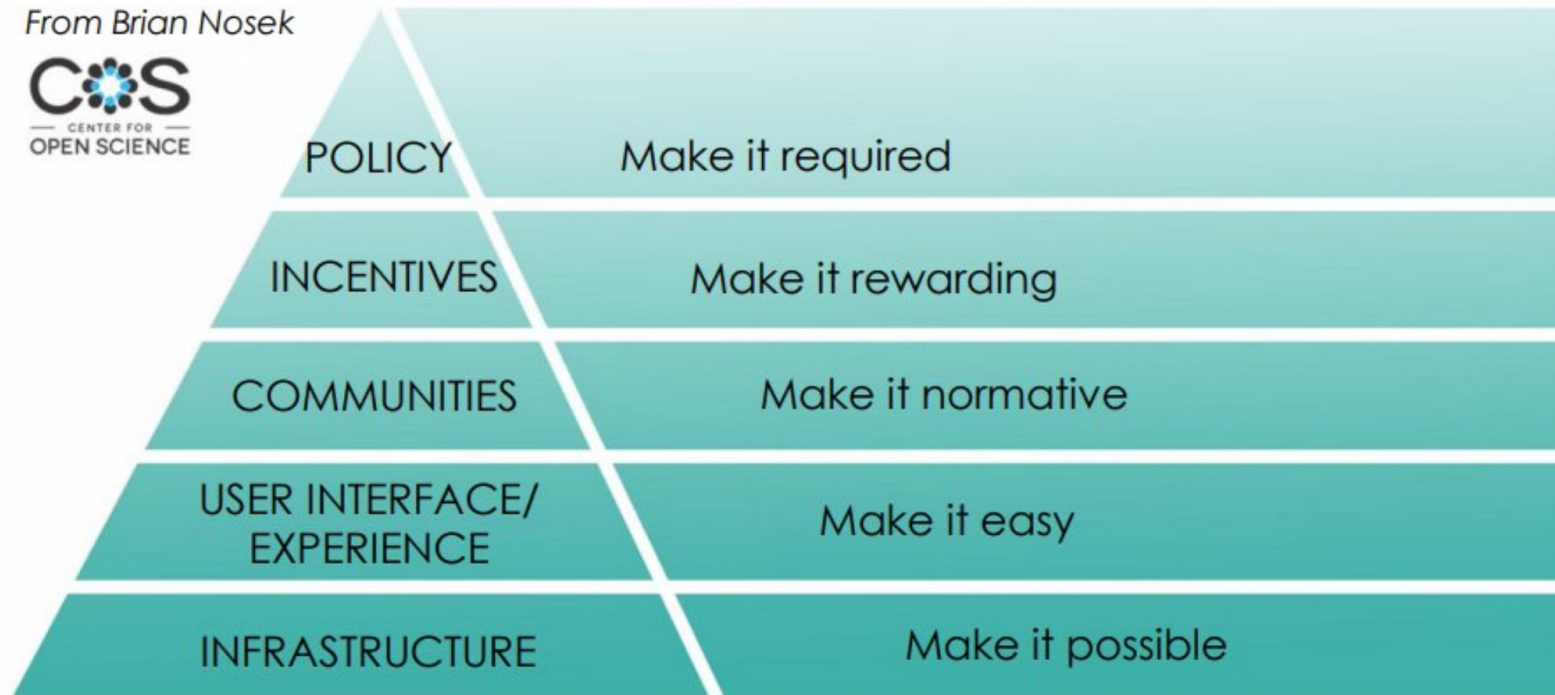
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Indicators of responsible research practices



Changing a Research Culture

From Brian Nosek



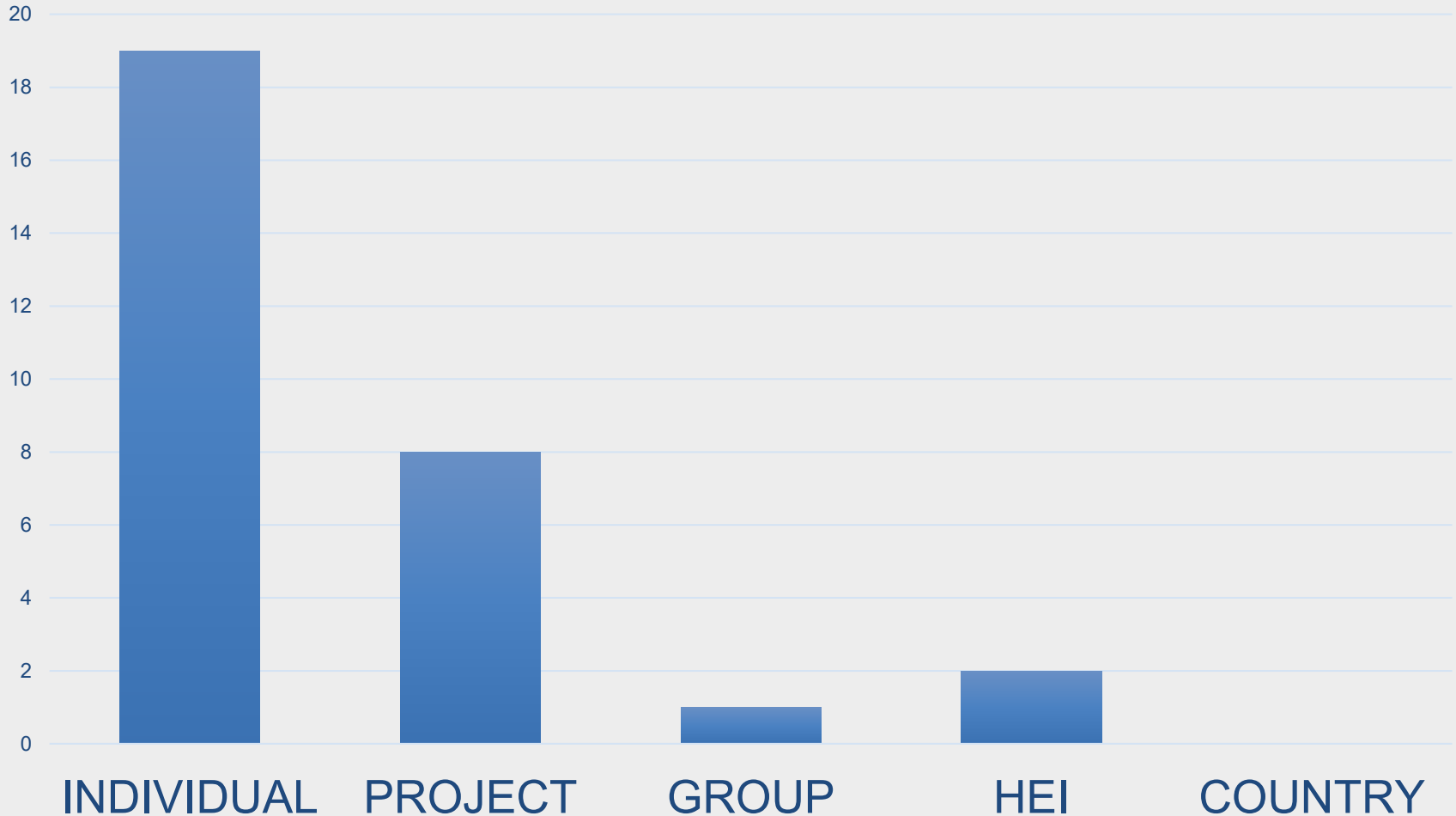
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Research evaluation innovations (DORA)

ORIGINATOR	TOOL/APPROACH
EU Open Science WG on Rewards	OSCAM
Assessing Quality in European Educational Research	EERQI
Quality & Relevance in the Humanities	QRIH
International Development Research Centre (IDRC)	RQ+
French National Research Agency (ANR)	Pre-proposals & new peer review process
Australian NHMRC	Peer review guide
FWF (Austrian Sci Fund)	10 publications, 10 achievements
Cancer Research UK	Significance and impact of 3-5 key research achievements
EMBO	Important outcomes approach
Health Research Board Ireland	Wider range of outputs
Open Research Funders Group	Incentivisation Blueprint
Swiss National Science Foundation	SciCV
Dutch NOW	Narrative CV for ECRs
US NIH	Biosketch
Wellcome Trust	OA Policy
Académie des Sciences, Leopoldina and Royal Society	Statement
Canadian Federation for the Humanities and Social Sciences	Broad definition of impact & how to assess
CIRAD	ImpresS for environmental & social impact
Committee for Public Information (TJNK) and the Federation of Finnish Learned Societies (TSV)	Good practice in researcher evaluation
Ghent University	Vision statement for evaluating research
Univ Calif Berkeley	Contributions
Univ Calif Irvine	Accomplishments
University College London	Academic Careers Framework
Univ Colorado School of Med	Statement
Univ Med Centre Utrecht	Biosketches +
UT Southwestern	Cover letter/skype interviews

Where's the focus of research evaluation innovation?



Four challenges

- 1) We only value (some of) these things as a means to an end, not an end in itself
- 2) We need to enable some of these things before we can measure them
- 3) We can only measure these things in a qualitative local way
- 4) There are no global data sources

THE Impact Rankings 2020 by SDG: climate action (SDG 13) methodology

April 17, 2020

[Browse the full Impact Rankings 2020 results](#)

This ranking explores universities' research on climate change, their use of energy and their preparations for dealing with the consequences of climate change.

Please view the [methodology](#) for the Impact Rankings 2020 to find out how these data are used in the overall ranking.

Metrics

Research on climate action (27%)

- Proportion of papers in the top 10 per cent of journals as defined by Citescore (10%)
- Field-weighted citation index of papers produced by the university (10%)
- Number of publications (7%)



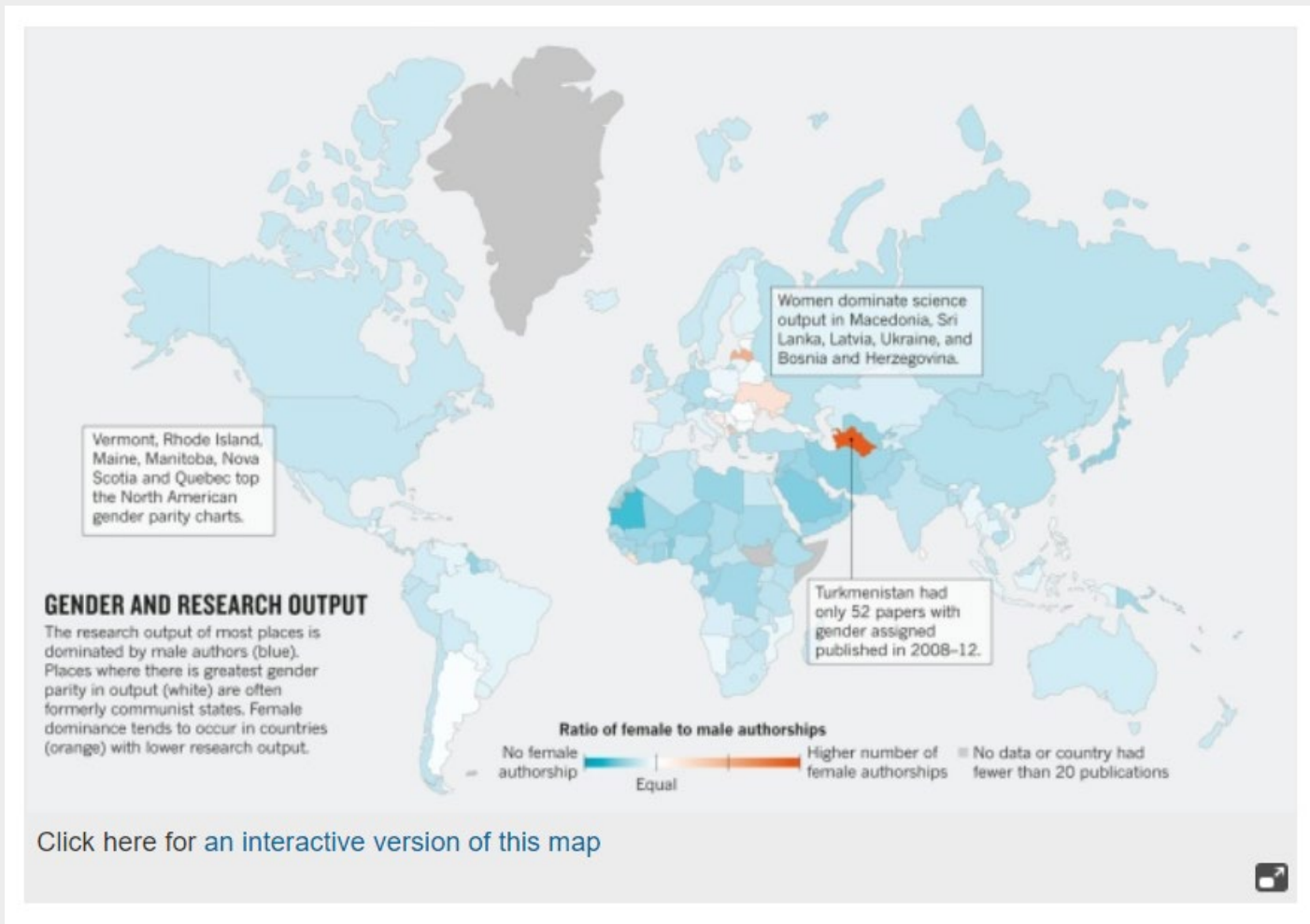
Why we measure publication output

- You can count them
- The data collection is systematic
- ...and global
- All disciplines produce them (to varying degrees)
- They are broadly equivalent
- They are assessed by peers (via peer review & citations)
- We do actually value them as the record of scholarship

Can't we use bibliometric data to support diversity?

- Large scale studies to highlight diversity problems in research
- Local studies to support diversity initiatives

Bibliometrics: Global gender disparities in science (2013) Sugimoto et al.



Research excellence in the Global South: bibliometric evidence of 21st century trends

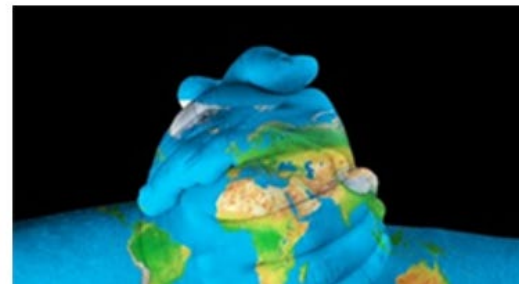
Robert Tijssen, Jos Winnink

🕒 October 2nd, 2018

💬 No comments

🏷️ Africa, South America, research performance, international cooperation, catching-up ...

The 21st century world of science is still a very unequal world, dominated by the advanced economies in the 'Global North' with sophisticated science systems: this is where the vast majority of scientific research is done and where most of Nobel prize laureates did their breakthrough discoveries. Being among the best in scientific research is



Citations and Sub-Area Bias in the UK Research Assessment Process

Alan Dix

Talis, Birmingham, UK

and University of Birmingham, Birmingham, UK

<http://alandix.com/ref2014/>

results – scary

apparent emergent bias – 5-10 fold!

sub-areas:

theory vs. applied

institutions:

Russell Group vs pre vs post 1992

+ gender impact

where metrics may be biased ...

... panel more so!

having impact on policy

recruitment, investment



metrics are
rubbish
but ... (far)
people are worse

Alan Dix

University of Birmingham and Talis

<http://alandix.com/ref2014/>

Inclusion of data in the bibliographic record that supports what we value:

- CRediT data for a wider view of contribution
- Open Access status
- Funding information
- Links to pre-registration information, software, datasets, use of reporting guidelines
- Lay summaries and videos to improve accessibility

Challenge 1

- Bibliographic record is skewed towards
 - positive studies
 - journal-based disciplines
 - representation of men
 - the global north
 - the English language

Increase in AI-based evaluation

The screenshot shows a browser window with the URL thebibliomagician.wordpress.com/2020/07/23/ai-based-citation-evaluation-tools-good-bad-or-ugly/. The page header includes the WordPress logo, 'My Sites', 'Reader', and 'AMP' icons. The main header features the 'LIS BIBLIOMETRICS' logo (a blue book icon with a bar chart) and the title 'THE BIBLIOMAGICIAN' with the subtitle 'Comment & practical guidance from the LIS-Bibliometrics community'. A navigation menu contains 'Home', 'About', 'Resources', and 'Competencies'. The article content shows the date 'JULY 23, 2020' and the title 'AI-based citation evaluation tools: good, bad or ugly?'. On the right, there is a 'FOLLOW US' section with social media icons for Twitter and a partially visible 'Custom' icon.

Challenge 2:

- Bibliographic data is largely owned by big corporations

Publishers moving into analytics

Elsevier agreement with Dutch consortium

This has led to the agreement that VSNU, NFOU, NWO and Elsevier are pleased to announce today, and which comprises:

- 1 Open Access Publishing and Reading services.** This is a national deal that covers reading rights to quality, peer-reviewed content across Elsevier's extensive portfolio of journals and supports the aim of 100 percent open access publishing for all members of the consortium. From today, 95 percent of Dutch articles published in Elsevier journals can be made immediately open access through this agreement. The vast majority of Elsevier's journals already offer an immediate open access option and, as part of this agreement, the company has committed to work towards immediate open access options across all remaining titles.
- 2 Open Science Services for Research Intelligence and Scholarly communication.** Elsevier will work with the Dutch partners to co-develop new services that help disseminate and evaluate knowledge. The parties will undertake a number of pilot projects to refine and adapt these services to meet the needs of the Dutch Research Institutions and to support the broader ambition of public engagement with science. These pilots will be conducted according to the collaboration principles as mentioned above.

Precision analytics for research excellence

Understand your place in the global engineering research landscape and make strategic decisions about the direction of your projects with a dynamic new tool based on the IET's renowned Inspec database.



For researchers

Improve your research outcomes with unique insights

- Stay up-to-date with the latest global trends in engineering and physics research.
- Discover new topics related to your field and the resources you need to get up to speed.
- Identify the best journals and conferences to publish your research.



For your library

Support your research base with powerful new tools from a trusted source

- Identify key resources for your researchers and faculties in line with research output.
- Support researchers' understanding of topics beyond their field.
- Monitor and support growth in institution research output.



For your institution

Chart your course for research excellence

- Set priorities and develop strategies for your research projects
- Compare your institution with collaborators and competitors to set valuable benchmarks.
- Find collaboration opportunities to demonstrate impact.



**Publishers before:
“You know that article you gave me?
let me sell it to you”**

Publishers before:

**“You know that article you gave me?
let me sell it to you”**

Publishers now:

**“You know that data you gave me? let
me sell it to you”**

Not sharing their references

Elsevier references dominate those that are not open at Crossref

Posted on [November 24, 2017](#) by [David Shotton](#)

Yesterday (November 23rd 2017) I was working with Daniel Ecer of eLife (d.ecer@elifesciences.org) to dig some hard facts out of the analyses he undertook on data he downloaded from Crossref in September 2017 (Ecer, 2017). Because of its dominant position in the scholarly publishing world, in this, the second of two related posts, I report the results for references from works published by Elsevier.

These show that, of all 956,050,193 references from journal articles stored at Crossref, 305,956,704 (32.00%) are from journal articles published by Elsevier, none of which are in the Crossref “Open” category, freely available for others to use.

Put another way, of the 470,008,522 references from journal articles stored at Crossref that are not open, 305,956,704 (65.10%) are from journals published by Elsevier.

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We are very pleased to adopt CASRAI CRediT and help academics receive fairer recognition for work. CRediT increases research integrity and transparency for all stakeholders involved in the advance of science.



Will this data be locked up too?

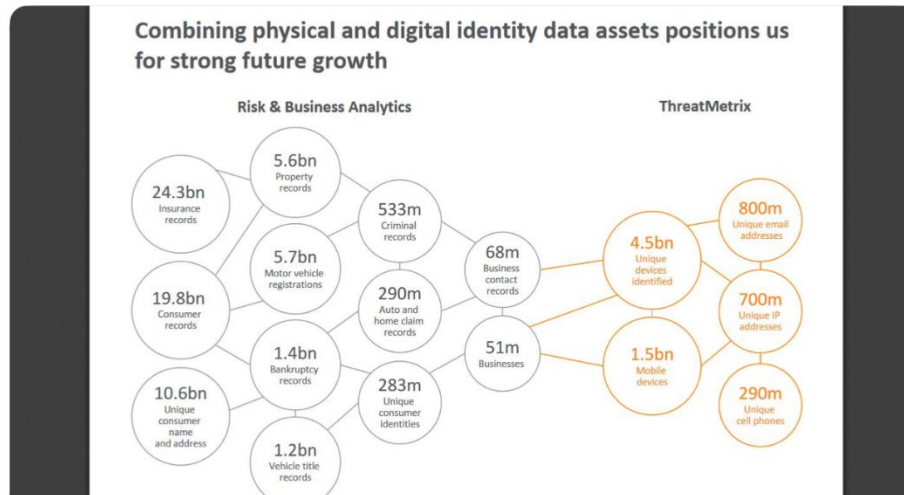
And where does it end?



Wolfie Christl
@WolfieChristl

ThreatMetrix is owned by LexisNexis Risk Solutions / RELX. Together, they claim to have data on hundreds of millions of people including names, addresses, phone numbers, email addresses, insurance records, criminal records and data on 4.5 billion devices.

relx.com/~media/Files/...





Wolfie Christl @WolfieChristl · 2d

Does RELX, the scientific publisher, use personal/behavioral data on academic scholars who access publications via Elsevier for its data brokerage and risk management services? I don't know.

In any case, ScienceDirect (RELX/Elsevier) embeds ThreatMetrix (RELX/LexisNexis Risk).

The screenshot shows the ScienceDirect website interface for the 'Arabian Journal of Chemistry'. The article title is 'Nanoparticles: Properties, applications and toxicities'. Below the article, the browser's developer tools network tab is open, showing several requests to 'online-metrix.net'. The selected request is a GET request for 'clear1.png?CSS350...', which has a status of 204. The request headers show 'Accept: image/webp,*/*', 'Accept-Encoding: gzip, deflate, br', 'Accept-Language: en-US,en;q=0.5', 'Connection: keep-alive', 'Cookie: thx_global_guid=754...', and 'Host: h.online-metrix.net'. The response headers show 'Server: Apache', 'Strict-Transport-Security: max-age=31536000', 'X-Content-Type-Options: nosniff', and 'X-XSS-Protection: 1; mode=block'.



Wolfie Christl @WolfieChristl · 2d

So, if I read a paper on the ScienceDirect site, it transmits data to a domain (online-metrix) that belongs to ThreatMetrix, which stores a personal identifier ('thx_global_guid') in my browser and gets info about my system and the paper I accessed.

To summarise:

- We reward a very narrow subset of the literature
- Which excludes many from scholarly participation & success
- We value a much broader range of things
- But they are hard to 'measure' so we fall back on bibliometrics
- That's not always bad, especially as bibliographic data expands to describe things we value
- Except such data is inherently unrepresentative
- ...and largely owned by commercial entities

So, bibliometrics: diversity's friend or foe?

**Bibliometrics make a good servant
and a terrible master.**

It's all about context

		Country	HEI	Group	Individual
Analysis	To understand	Green	Green	Yellow	Yellow
Advocacy	To show off	Green	Green	Yellow	Yellow
Accountability	To monitor	Green	Yellow	Yellow	Red
Acclaim	To benchmark	Yellow	Red	Red	Red
Adaptation	To incentivise	Yellow	Red	Red	Red
Allocation	To reward	Red	Red	Red	Red

Green	Low impact
Yellow	Medium impact
Red	High impact

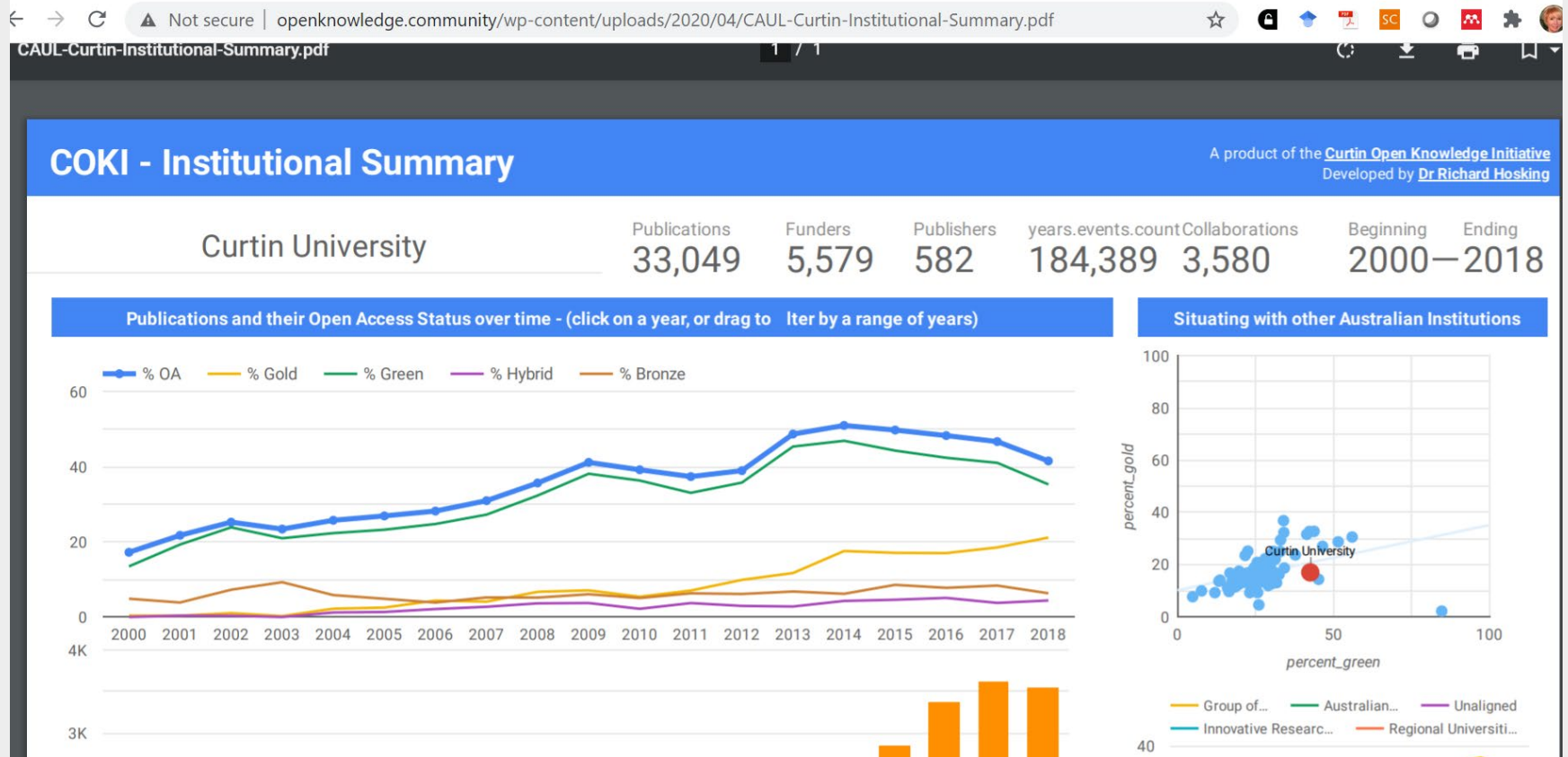
The need for evaluative diversity

For evaluating:

- Researchers
- Research projects
- Research groups
- University departments
- Research institutions
- Countries

The need for more innovation at higher levels of aggregation

COKI Open Knowledge Dashboards



Reporting guidelines league table



RESEARCH ARTICLE

Turning the tables: A university league-table based on quality not quantity [version 1; peer review: 2 approved]

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v1 **First published:** 29 Apr 2019, 8:583 (<https://doi.org/10.12688/f1000research.18453.1>)
Latest published: 29 Apr 2019, 8:583 (<https://doi.org/10.12688/f1000research.18453.1>)

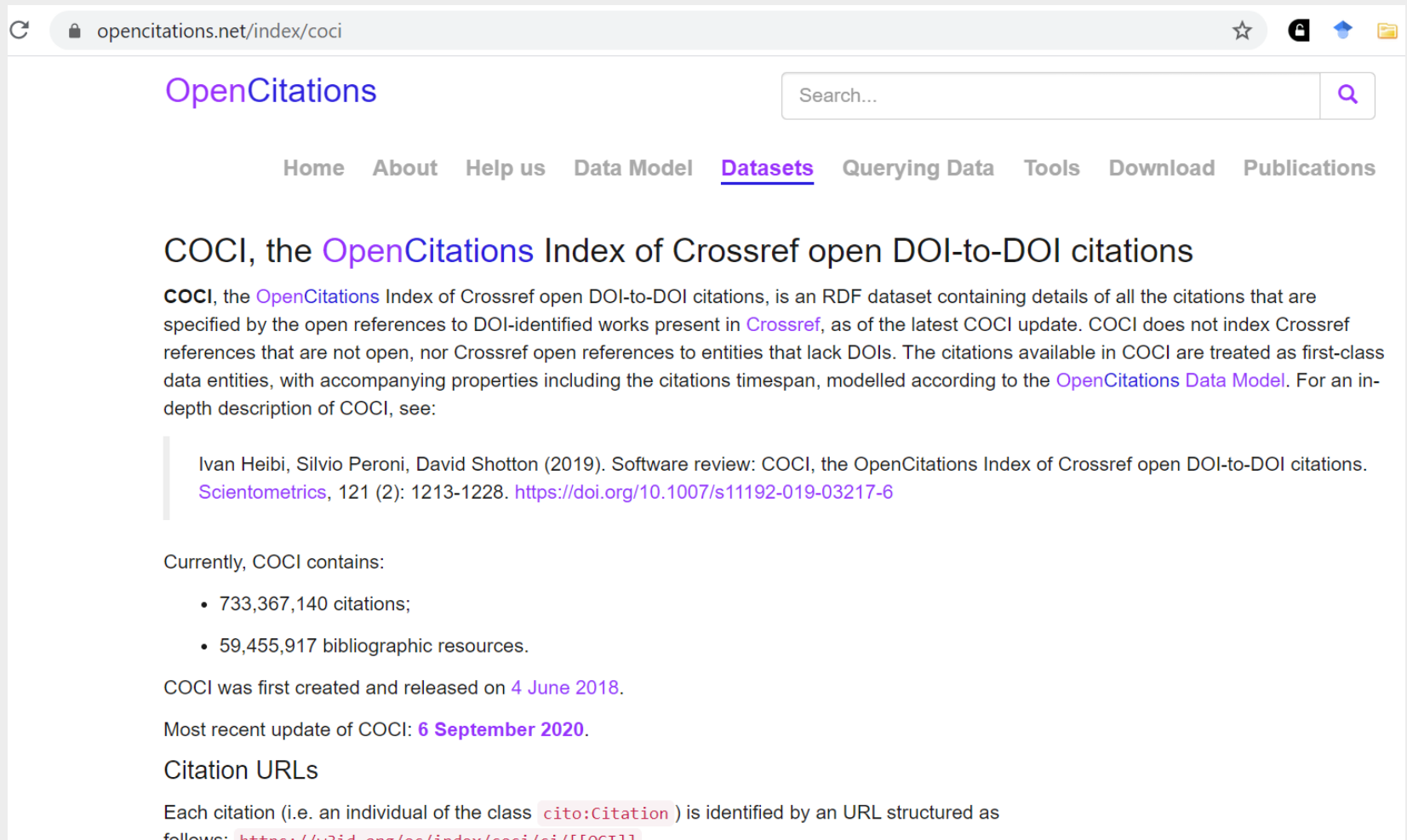
Abstract

Open Peer Review

Reviewer Status  

Invited Reviewers

COCI Crossref Open Citations Index



The screenshot shows a web browser window with the URL opencitations.net/index/coci. The page title is "OpenCitations" and it features a search bar. The navigation menu includes links for Home, About, Help us, Data Model, **Datasets**, Querying Data, Tools, Download, and Publications. The main heading is "COCI, the OpenCitations Index of Crossref open DOI-to-DOI citations". The text describes COCI as an RDF dataset of open DOI-to-DOI citations from Crossref. A citation by Ivan Heibi, Silvio Peroni, and David Shotton (2019) is highlighted in a light blue box. Below this, it states that COCI currently contains 733,367,140 citations and 59,455,917 bibliographic resources. It also notes the first release on 4 June 2018 and the most recent update on 6 September 2020. The "Citation URLs" section explains that each citation is identified by a URL structured as `https://doi.org/10.1007/s11192-019-03217-6`.

opencitations.net/index/coci

OpenCitations

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COCI, the OpenCitations Index of Crossref open DOI-to-DOI citations

COCI, the [OpenCitations](#) Index of Crossref open DOI-to-DOI citations, is an RDF dataset containing details of all the citations that are specified by the open references to DOI-identified works present in [Crossref](#), as of the latest COCI update. COCI does not index Crossref references that are not open, nor Crossref open references to entities that lack DOIs. The citations available in COCI are treated as first-class data entities, with accompanying properties including the citations timespan, modelled according to the [OpenCitations Data Model](#). For an in-depth description of COCI, see:

Ivan Heibi, Silvio Peroni, David Shotton (2019). Software review: COCI, the OpenCitations Index of Crossref open DOI-to-DOI citations. *Scientometrics*, 121 (2): 1213-1228. <https://doi.org/10.1007/s11192-019-03217-6>

Currently, COCI contains:

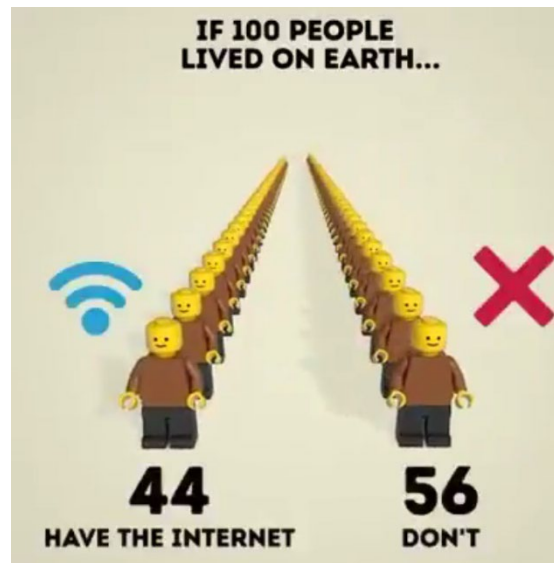
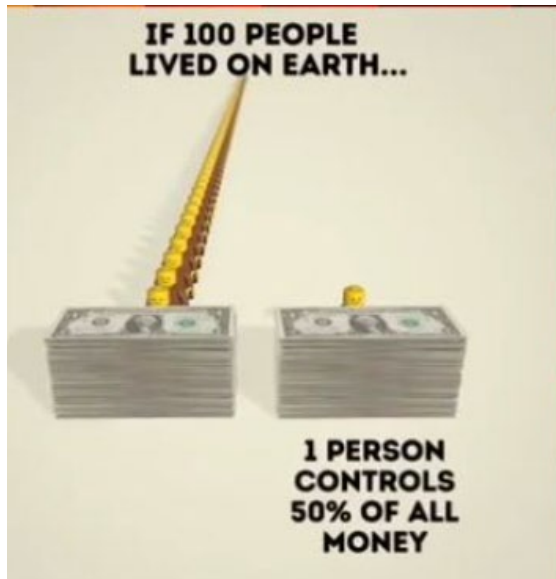
- 733,367,140 citations;
- 59,455,917 bibliographic resources.

COCI was first created and released on [4 June 2018](#).

Most recent update of COCI: [6 September 2020](#).

Citation URLs

Each citation (i.e. an individual of the class `cito:Citation`) is identified by an URL structured as follows: `https://doi.org/10.1007/s11192-019-03217-6`



Ultimately, research evaluation will never be fair until our research environment is fair

Thank you for listening

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