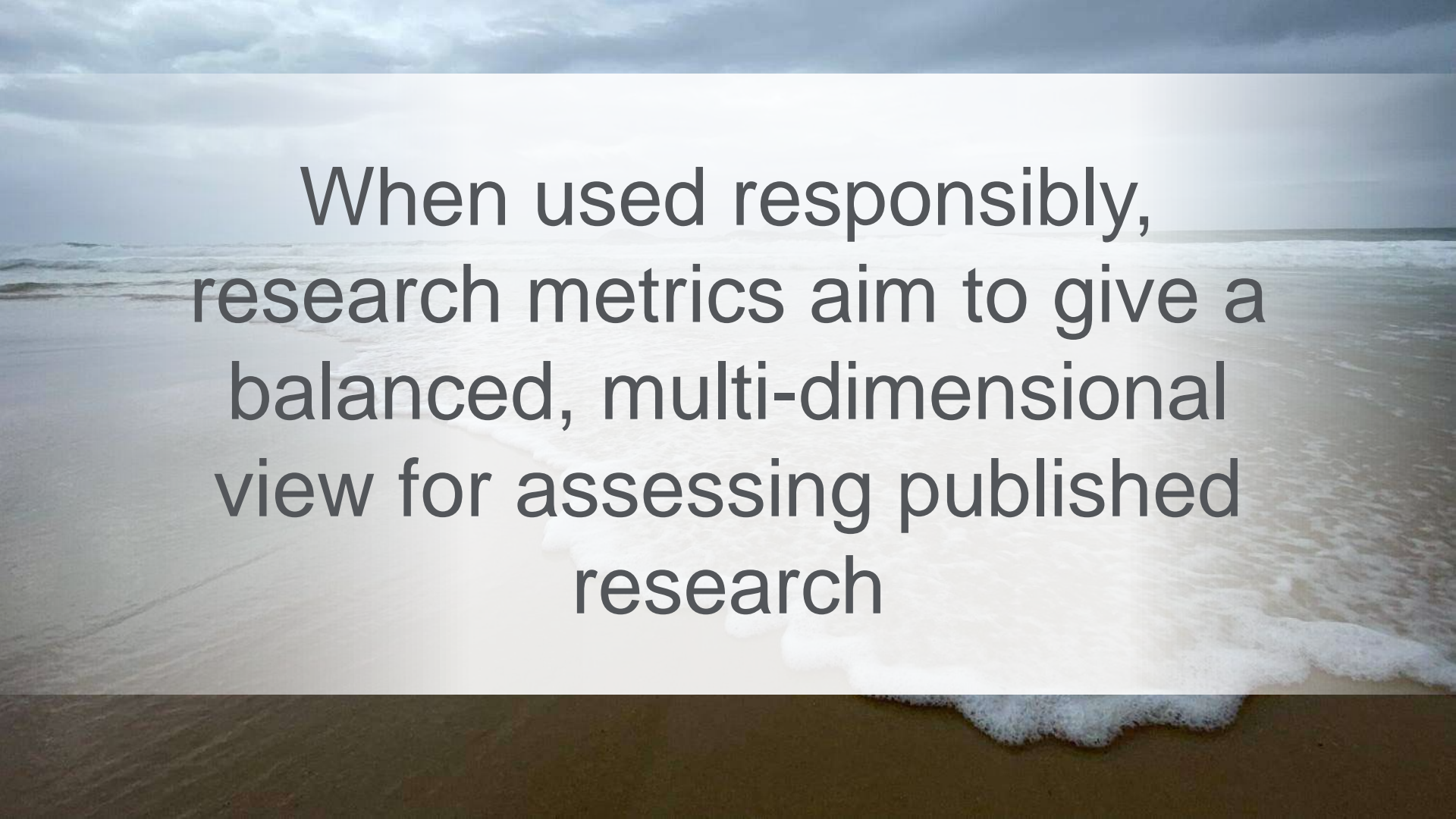




Responsible Metrics: measuring social impact

ENPROP Conference

Chris James, Senior Product Manager, SciVal
13th November 2019

A background image of a beach with waves crashing onto the shore under a cloudy sky. The text is overlaid on the image.

When used responsibly,
research metrics aim to give a
balanced, multi-dimensional
view for assessing published
research



- Worked for the past 15 years in the STM industry
- 2 years as a Senior Product Manager for our Research Metrics division
 - Launched CiteScore metrics
- 2 years as Senior Product Manager on SciVal
 - Big focus on the responsible use of metrics

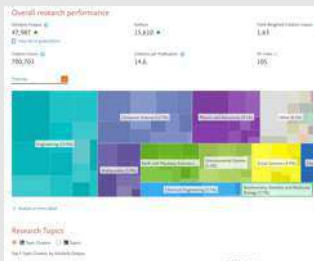
SciVal in a nutshell

SciVal offers quick, easy access to the research performance of over ~16,000 research institutions and 230 regions and countries



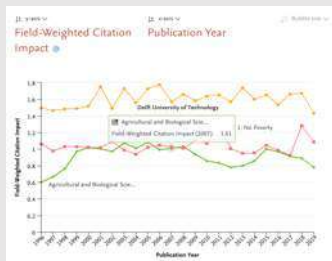
Visualize research performance

Ready-made-at a glance snapshots of any selected entity



Benchmark your progress

Flexibility to create and compare any research groups



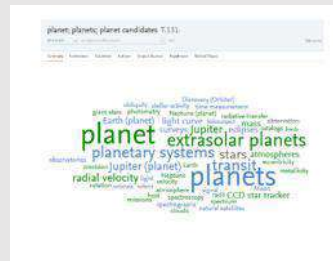
Develop collaborative partnerships

Identify and analyze existing and potential collaboration opportunities



Analyze research trends

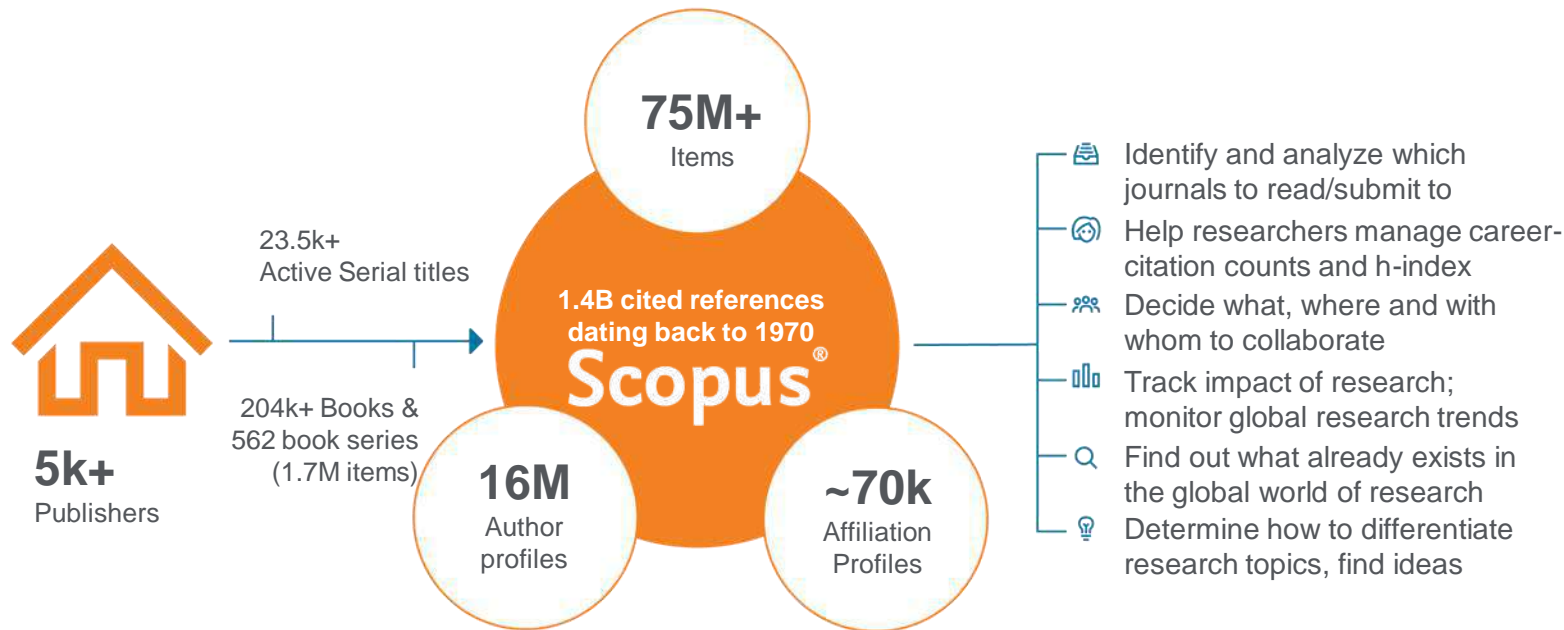
Analyze research trends to discover the top performers and rising stars



Using Scopus content from 1996

Scopus: the main data source for SciVal

Scopus is one of the largest curated abstract and citation databases of peer-reviewed literature, and features smart tools that allow you to track, analyze and visualize scholarly research.



International Center for the Study of Research

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Local board member:
Professor Jacqueline Leta, Associate Professor,
Federal University of Rio de Janeiro

- **Listen closely to the research community's needs**
 - Identify, review, develop and foster the use of rich and precise qualitative and quantitative indicators
- **Robust, carefully-used indicators can help everyone make the most of the resources at their disposal to achieve their research aims**
 - Smart indicators also help accurately showcase research impact to the global community

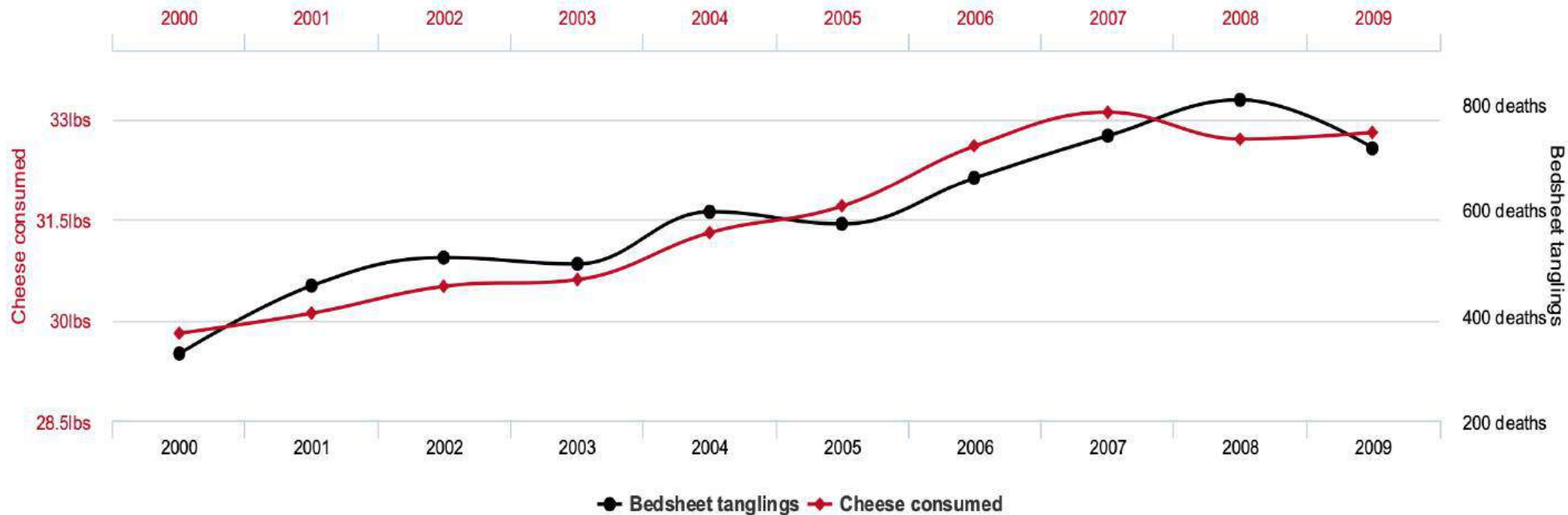
Just because data is more accessible to a broader audience, does not mean that they are sufficiently equipped to interpret what they receive



Per capita cheese consumption

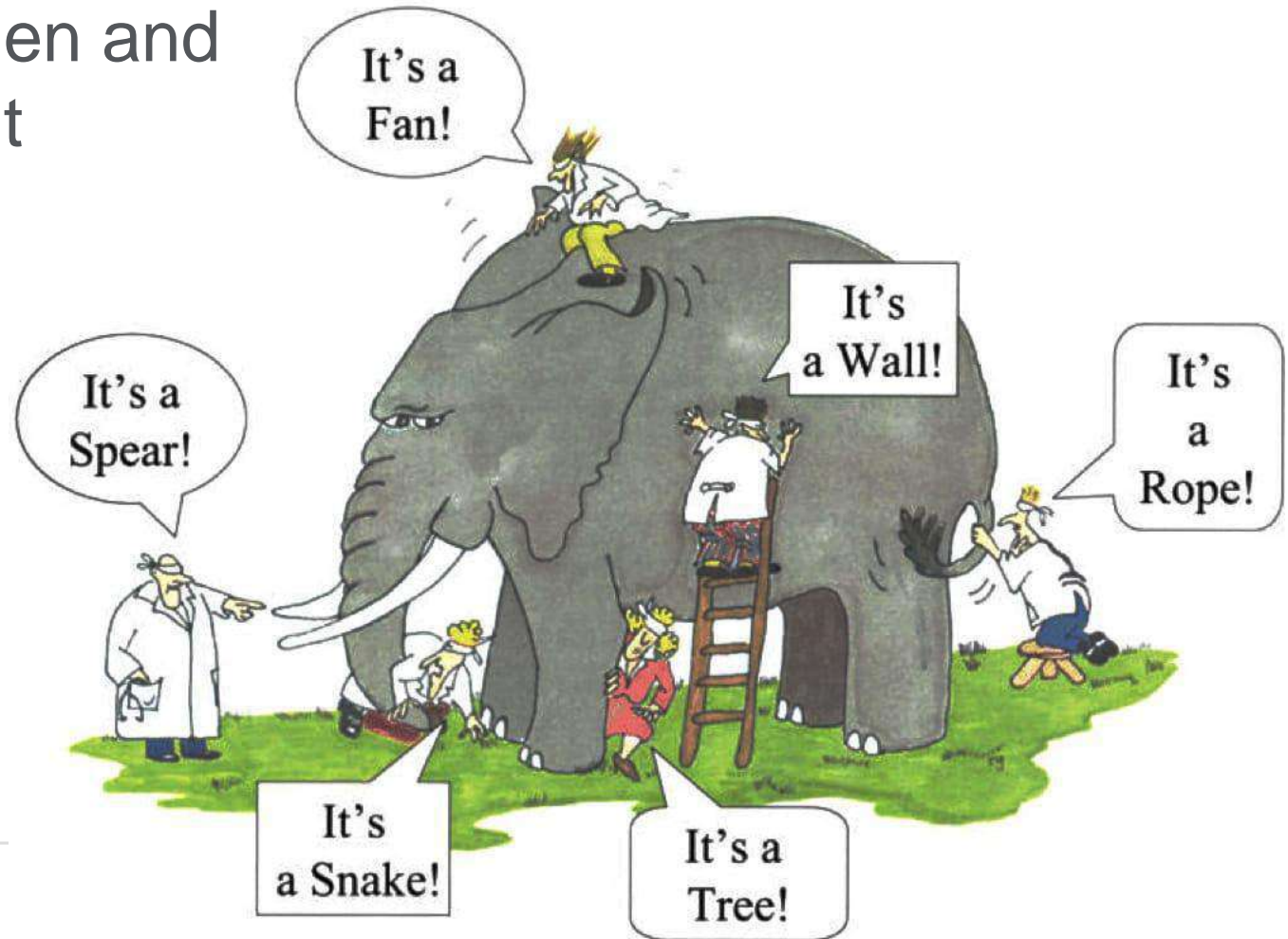
correlates with

Number of people who died by becoming tangled in their bedsheets



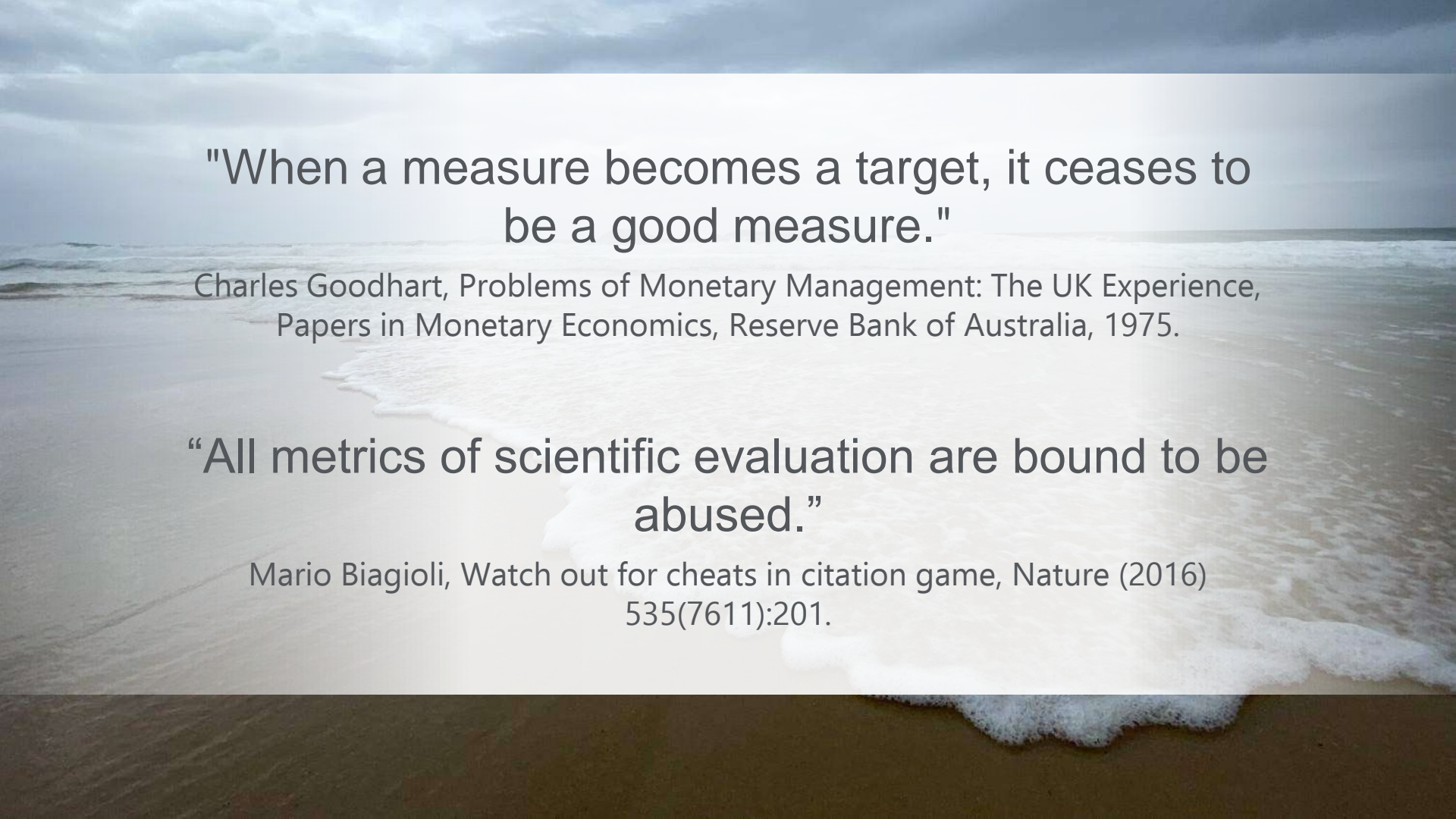
The blind men and the elephant

It's all about perspective



Only by combining their
perspectives can the blind
men accurately describe an
elephant





"When a measure becomes a target, it ceases to be a good measure."

Charles Goodhart, Problems of Monetary Management: The UK Experience, Papers in Monetary Economics, Reserve Bank of Australia, 1975.

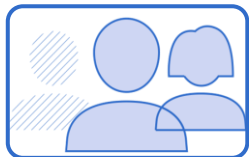
"All metrics of scientific evaluation are bound to be abused."

Mario Biagioli, Watch out for cheats in citation game, Nature (2016) 535(7611):201.

How can we all use metrics more responsibly?

There are some simple rules

What are you trying to measure?



Evaluate performance

- To understand
- To monitor

The “Science of science”
Plot progress against an objective



Demonstrate excellence

- To show off

Market an entity on promo materials or grant app



Model scenarios

- To compare

University rankings



Encourage change

- To reward
- To incentivise

A job, promotion, grant, prize or award
Measurement of open access content submitted

Beware of the risks for different entities

Individual						
Group						
HEI						
Country						
	Understand	Show off	Monitor	Compare	Incentivise	Reward

Figure 1. Risks associated with metric use in various settings

No real impact on entity

Be careful how you interpret

Use metrics with extreme care

	Low risk
	Medium risk
	High risk

Two Golden Rules for using research metrics

Always use both qualitative and quantitative input into your decisions

Benefit from the strengths of both approaches. Don't replace one with the other

Combining both approaches = **closer to the whole story**

Valuable intelligence comes when these approaches **show different messages**

Always use more than one research metric as the quantitative input

One metric's strengths can **complement** the weaknesses of others

There are many different ways of being excellent

Using multiple metrics drives desirable changes in behaviour (harder to game)

Example: importance of using multiple metrics - compensate for weaknesses

Field-Weighted Citation
Impact
= 2.53

with

Citations per Publication
= 27.8

- ✓ Compensates for differences in field, type and age
- ✓ Meaningful benchmark is “built in” – 1 is average for a subject area

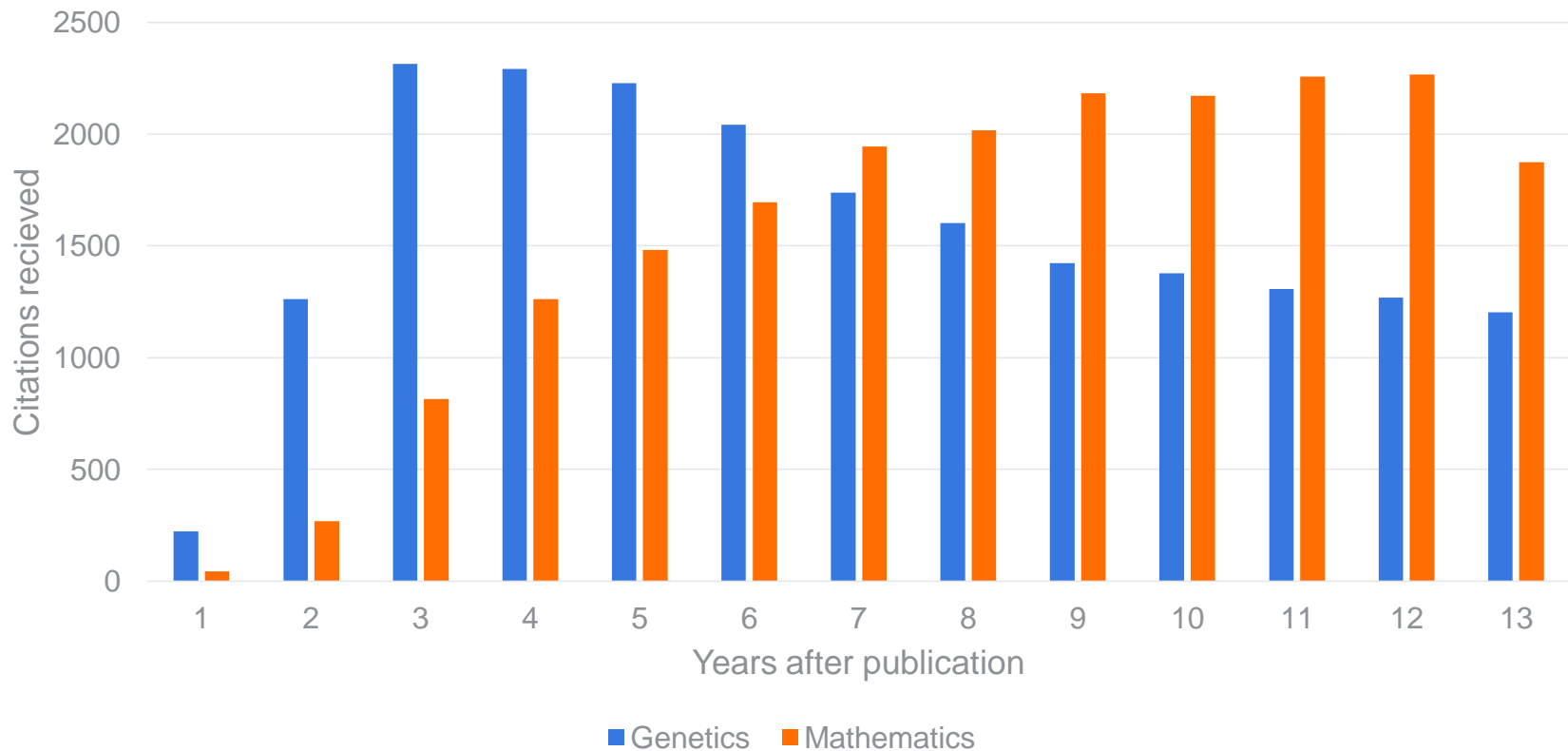
- × People may not like small numbers
- × Complicated; difficult to validate
- × No idea of magnitude: how many citations does it represent?

- ✓ Large number
- ✓ Simple, easy to validate
- ✓ Communicates magnitude of activity

- × Affected by differences in field, type and age
- × Meaningless without additional benchmarking

To use these rules effectively
we must know the limitations of these metrics

Differences in rates of citation



To compare across subject areas - FWCI

FWCI indicates how the **number of citations** received by an entity's publications compares with the **average number of citations received by all other similar publications in the data universe**.

Fact -

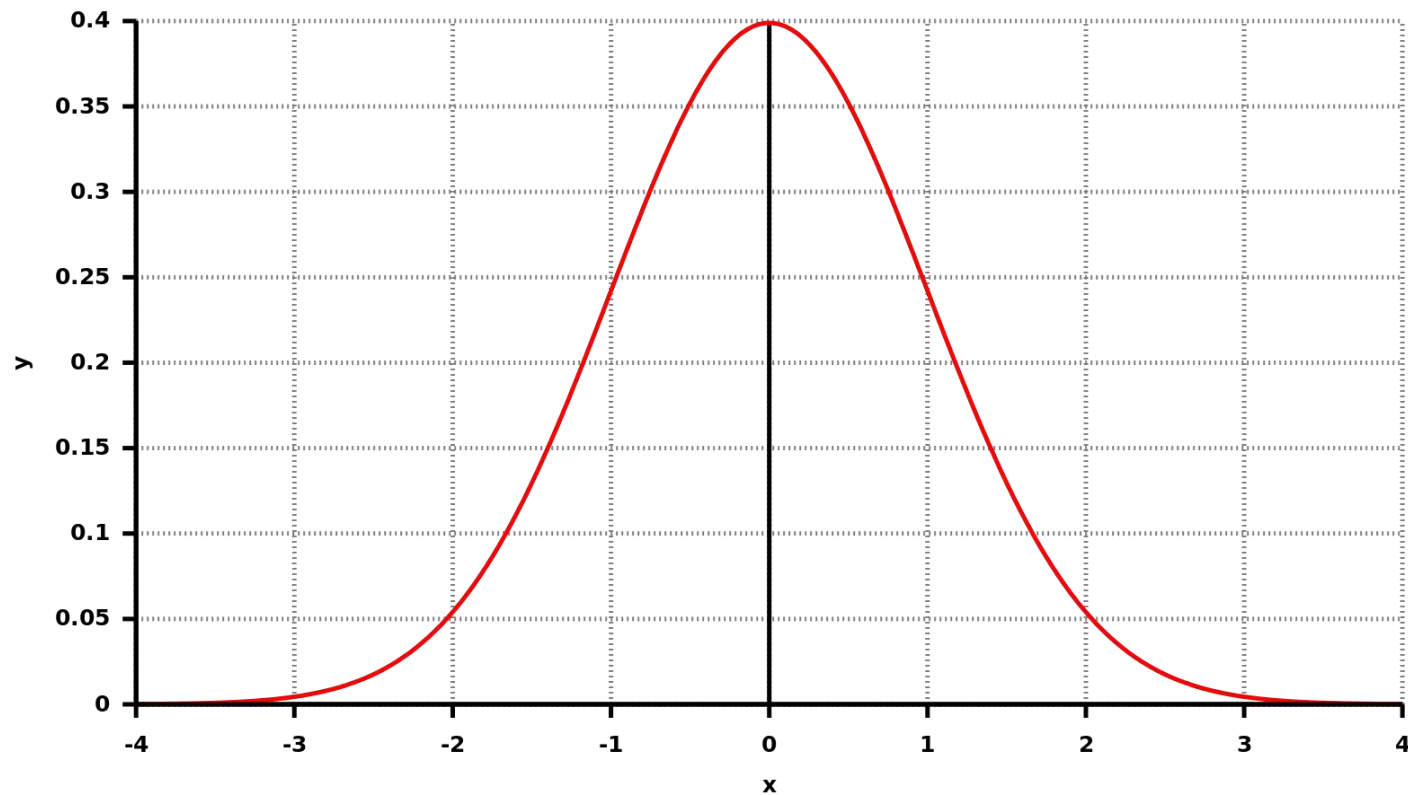
When looking at any entity, the FWCI is the **average** of all of the entity's publications

Averages work in nature, but beware with
research metrics



Fruit fly:
NOT ACTUAL SIZE

Normal distribution



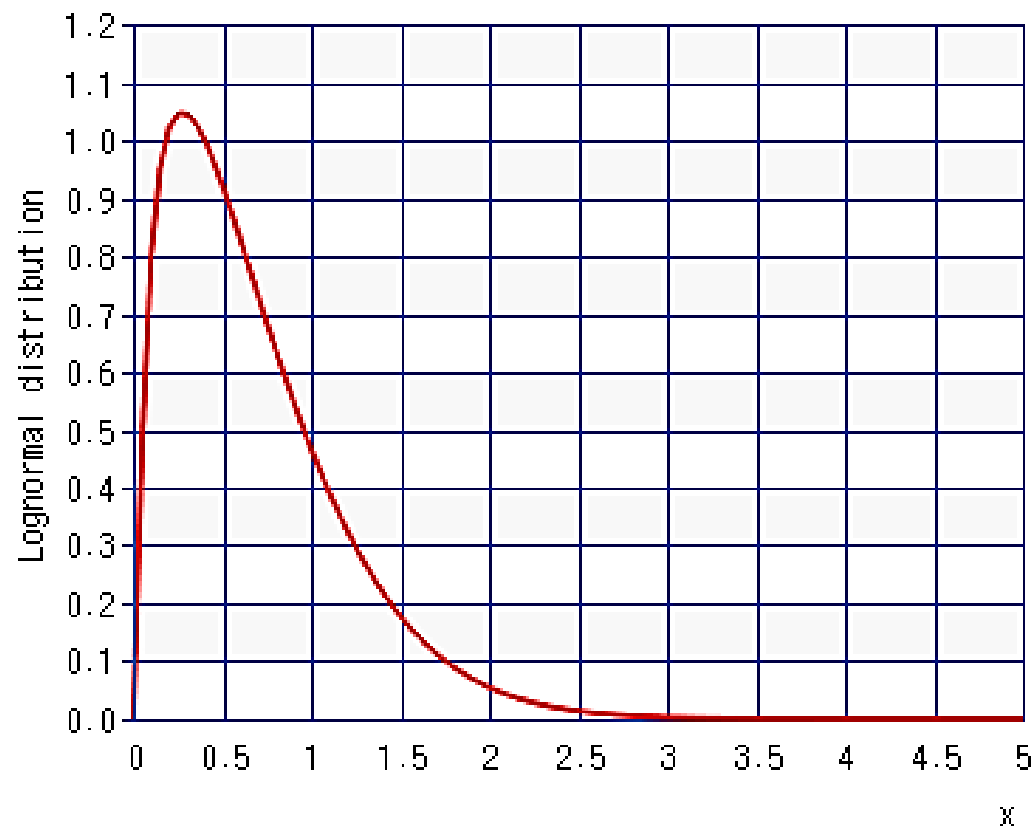
Distribution of fruit fly body lengths

Statistic	Value (mm)
Mean	45.5
Median	45.5
Mode	45
Range	36 – 55
Standard deviation	3.9

Distribution of citations to **Nature** 2008 papers

Statistic	Value
Mean cites per paper	275.1
Median	164
Mode	0
Range	0 – 4,735
Standard deviation	366.6

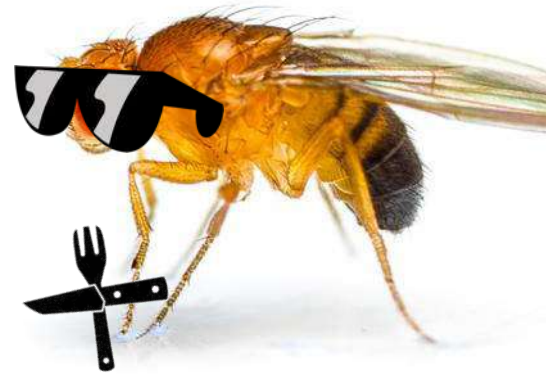
Typical skewed citation distribution



A thought experiment

What if we genetically modified fruit flies so that their body lengths distributed in the same pattern as citations?

- Most fruit flies would not exist (mode = 0)
- The vast majority of fruit flies (~80%) would be well “below average”
- The King of Flies would measure 1 metre and eat all the Feijoada in Rio



How can I use it responsibly?

Entity	Should I use FWCI?	Why not?	What should I watch out for?
A Researcher	No!	Small number of publications can be skewed by outliers	Outliers – Bill Gates / fruit fly effect!
A Group of Researchers	Maybe	No, if number of publications is small	Outliers & Date Ranges
Research area for a country	Depends on the size of the submission	No, if number of publications is small	Outliers & Date Ranges & Coverage













An example of misinterpretation due to small numbers

- Did you know that the Federated States of Micronesia is the most impactful country in the World in the field of Engineering?

Countries & regions in the World

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

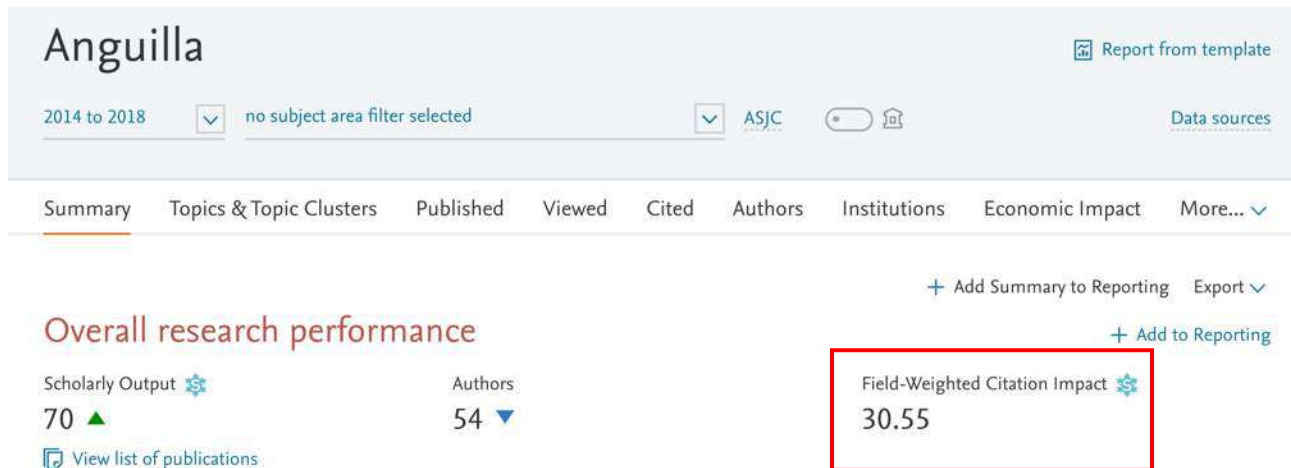
223 of the 232 countries & regions in the World have publications within Engineering (2009 to 2018):

Countries & regions	Scholarly Output	Authors	Field-Weighted Citation Im... 	
1.  Federated States of Micronesia	1 	1	10.54	
2.  Martinique	3 	3 	6.16	
3.  Maldives	8 	8 	5.07	

- We cannot derive conclusions with such small numbers.

Also beware of statistics based on large numbers of authors

- 'Hypercollaborative' co-authorship is when there are hundreds or thousands of co-authors
- May be a consequence of the rise 'Big Science' – a term used to describe research that requires major capital investment
- Effects are particularly visible for small countries



- Remove 28 pubs with +100 co-authors
- FWCI = 0.55



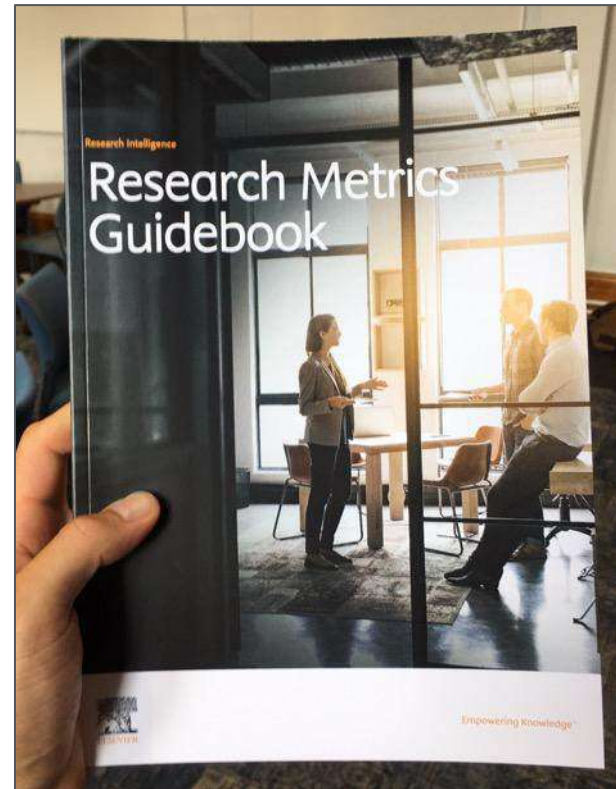
But it's not all bad!

Used responsibly, metrics can give valuable insights

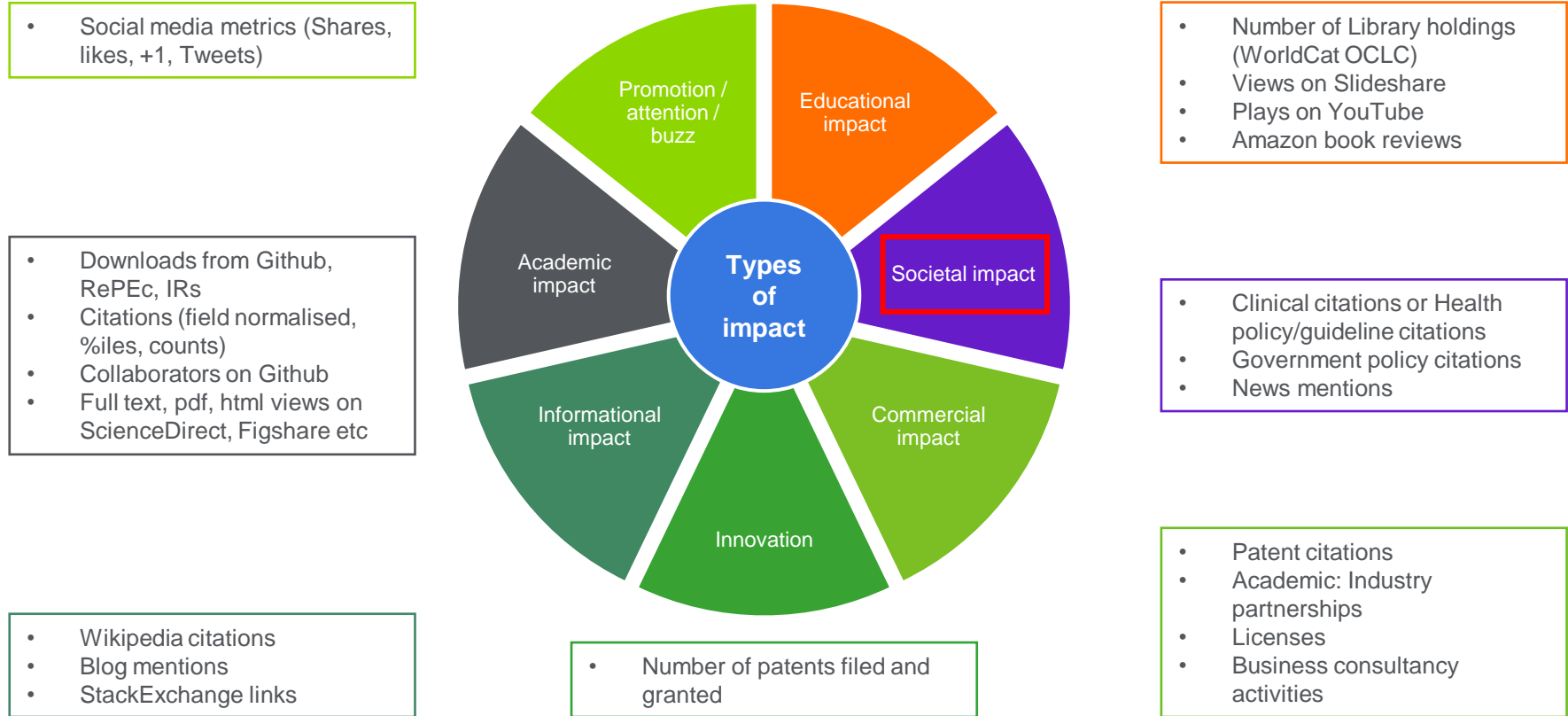
Metrics providers are giving guidance

Collaboration	▼	Field-Weighted Citation Impact ⚙️
Published	▼	
Viewed	▼	
Cited	▲	
⚙️ Citation Count		The ratio of citations received relative to the expected world average for the subject field, publication type and publication year. Learn more about this metric ↗
⚙️ Field-Weighted Citation Impact	>	<input type="checkbox"/> Include self-citations

- **Understanding the metrics**
- **Selection of appropriate metrics**
- **For each metric**
 - Situations in which they are useful
 - When to take care and how to address short-comings
 - Worked examples



Research metrics could help demonstrate a lot



Sustainable Development Goals - SDGs



Leading-edge information on the Sustainable Development Goals

Articles, tools, reports, events and more.

Browse the site, or try our new and improved search to find what you need.

Enter Search term

Search

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



SUSTAINABLE
DEVELOPMENT
GOALS

Map terms from 6 themes in
Sustainability report to SDGs
(2017)

Expert-vetted keywords
from [Elsevier Sustainability
report 2015](#) mapped to
SDGs

Additional keywords added
based on SDG descriptions

June 2019

Internal and external SDG
expert review

Dec 2018

Results in THE rankings

Query refinement based on
SDG targets and indicators
(2019)

Assess whether query
results relate to SDG
targets and indicators

Oct 2019

Identify missing terms and
terms resulting in false
positives

Generate new refined
query

Updated search queries

Results in SciVal

Feedback from community

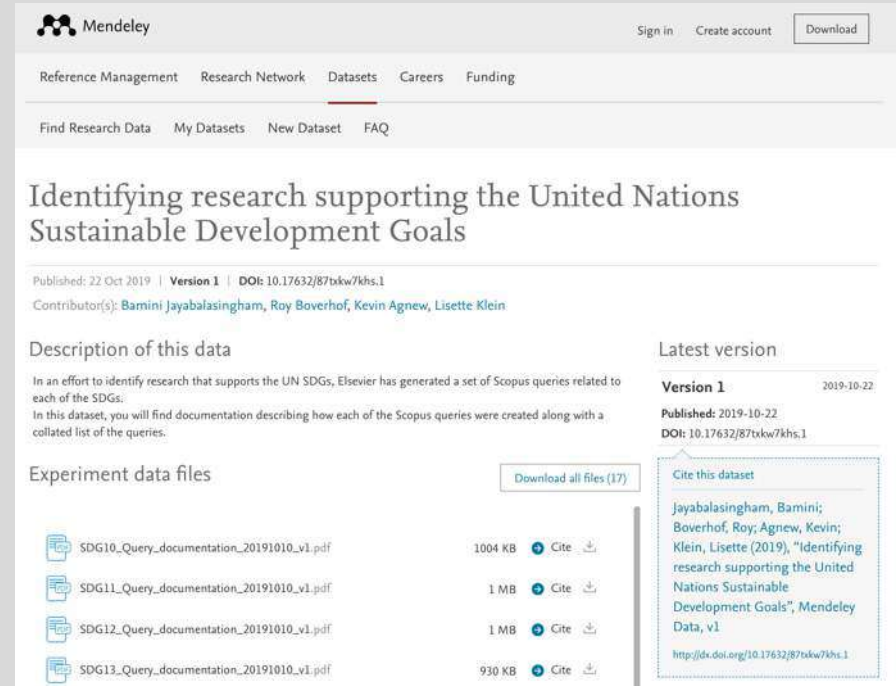
Validate feedback to
generate new query

The development of the SDG queries

SDG queries are transparent

On Mendeley data we have uploaded:

- The full Scopus query for each SDG
- The query development methodology documentation for each SDG
- Download them for free from Mendeley: <http://bit.ly/sdgddocs>



The screenshot shows the Mendeley dataset page for "Identifying research supporting the United Nations Sustainable Development Goals". The page includes a header with the Mendeley logo and navigation links (Sign in, Create account, Download). Below the header is a navigation bar with links to Reference Management, Research Network, Datasets (highlighted), Careers, and Funding. A secondary navigation bar contains links to Find Research Data, My Datasets, New Dataset, and FAQ. The main content area features the dataset title, publication date (22 Oct 2019), version (Version 1), DOI (10.17632/87txkw7khs.1), and contributors (Bamini Jayabalasingham, Roy Boverhof, Kevin Agnew, Lisette Klein). A description of the data explains the effort to identify research supporting the UN SDGs and provides a link to the documentation. The "Experiment data files" section lists four PDF files with their sizes and download links. A "Latest version" section shows the current version (Version 1) and its publication date. A "Cite this dataset" box provides the citation information and the DOI link.

Mendeley

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Reference Management Research Network **Datasets** Careers Funding

Find Research Data My Datasets New Dataset FAQ

Identifying research supporting the United Nations Sustainable Development Goals

Published: 22 Oct 2019 | Version 1 | DOI: 10.17632/87txkw7khs.1

Contributor(s): Bamini Jayabalasingham, Roy Boverhof, Kevin Agnew, Lisette Klein

Description of this data

In an effort to identify research that supports the UN SDGs, Elsevier has generated a set of Scopus queries related to each of the SDGs.

In this dataset, you will find documentation describing how each of the Scopus queries were created along with a collated list of the queries.

Experiment data files

File Name	Size	Download
SDG10_Query_documentation_20191010_v1.pdf	1004 KB	Download
SDG11_Query_documentation_20191010_v1.pdf	1 MB	Download
SDG12_Query_documentation_20191010_v1.pdf	1 MB	Download
SDG13_Query_documentation_20191010_v1.pdf	930 KB	Download

[Download all files \(17\)](#)

Latest version

Version 1 2019-10-22

Published: 2019-10-22
DOI: 10.17632/87txkw7khs.1

[Cite this dataset](#)

Jayabalasingham, Bamini; Boverhof, Roy; Agnew, Kevin; Klein, Lisette (2019), "Identifying research supporting the United Nations Sustainable Development Goals", Mendeley Data, v1

<http://dx.doi.org/10.17632/87txkw7khs.1>

SUMMARY

TITLE-ABS-KEY((city OR cities OR (human settlement) OR (human settlements) OR gentrification OR congestion OR transportation OR (public transport) OR urban OR metropol* OR town* OR municipal* OR housing OR slum* OR urbanization OR (sendai framework) OR [Disaster Risk Reduction] OR [DRR] OR [smart village] OR [smart villages] OR (resilient building) OR (resilient buildings) OR (sustainable building) OR (sustainable buildings) OR (building design) OR (buildings design) OR (zero energy building) OR (zero energy buildings) OR (zero-energy building) OR (zero-energy buildings) OR (basic service) OR (basic services))) AND PUBYEAR BEF 2018 AND PUBYEAR AFT 2012

[illegible]

TITLE=ABS-KEY ({city OR cities OR {human settlement} OR {human settlements} OR urban OR metropol* OR town* OR municipal* } AND {gentrification OR congesti
OR transportation OR {public transport} OR housing OR slum* OR {sendai
framework} OR {Disaster Risk Reduction} OR {DRR} OR {smart city} OR {smart cities} OR {resilient
building} OR {resilient buildings} OR {sustainable building} OR {sustainable buildings} OR {building
design} OR {buildings design} OR urbanization OR {zero energy building} OR {zero energy
buildings} OR {zero-energy building} OR {zero-energy buildings} OR {basic service} OR {basic
services} OR {governance} OR {citizen participation} OR {collaborative planning} OR {participatory
planning} OR {inclusiveness} OR {cultural heritage} OR {natural
heritage} OR {UNESCO} OR {disaster} OR {ecological footprint} OR {environmental
footprint} OR {waste} OR {pollution} OR {pollutant*} OR {waste water} OR {recycling} OR {circular
economy} OR {air quality} OR {green space} OR {green spaces} OR {nature inclusive} OR {nature
inclusive building} OR {nature inclusive buildings})) AND PUBYEAR < 2018 AND PUBYEAR > 2012


SDG Feedback

We'll gather feedback in 2020 to improve the SDG queries.

- Work with subject matter experts
- Gather feedback via a website:
- Likely to follow the pilot done on SDG 6:

<https://sdgresources.relx.com/feedback>

 **RELX**
SDG Resource Centre



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**6 CLEAN WATER AND SANITATION**

Match SDG 6 Research Publications to Targets and Indicators

To understand the research landscape related to SDG 6, we developed a query to identify research publications that support the SDG 6 targets and indicators. Below is a random selection of publications retrieved by the query. Help us match the publications to the specific targets and indicators by selecting the Match to Indicators option next to each title.

Source	Year	Cited by	Title	Authors	Feedback
Journal of Environmental Management	2018	2	A modified MBR system with post advanced purification for domestic water supply system in 180-day CELSS: Construction, pollutant removal and water allocation	Li T., Zhang L., Ai W., Dong W., Yu Q.	Match to Indicators
Data in Brief	2018	19	Data on microbiological quality assessment of rural drinking water supplies in Poldasht county	Yousefi M., Saleh H.N., Yaseri M., Mahvi A.H., Soleimani H., Saeedi Z., Zohdi S., Mohammadi A.A.	Match to Indicators
Environmental monitoring and assessment	2018	2	Irrigation water quality and the threat it poses to crop production: evaluating the status of the Crocodile (West) and Marico catchments, South Africa	du Preez G.C., Wepener V., Fourie H., Daneel M.S.	Match to Indicators
Water (Switzerland)	2018	2	An integrated water-saving and quality-guarantee uncertain programming approach for the optimal irrigation scheduling of seed maize in Arid Regions	Guo S., Wang J., Zhang F., Wang Y., Guo P.	Match to Indicators

[Show more documents](#)

In the meantime, the SDG queries are available in SciVal

And here are some of the things you can do with them

SDG 11: Sustainable Cities and Communities

[Report from template](#)

2014 to 2018

[Data sources](#)[Summary](#)[Institutions](#)[Countries](#)[Authors](#)[Scopus Sources](#)[Keyphrases](#)

Overall research performance

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

Scholarly Output

127,347

[View list of publications](#)

Views Count

3,640,675

Field-Weighted Citation Impact

1.17



International Collaboration

27,261



Keyphrase analysis

[+ Add to Reporting](#)Top 50 keyphrases by relevance, based on 127,347 publications | [Learn about keyphrase calculations](#)

2014 to 2018



	<input type="checkbox"/> Countries & territories	Scholarly Output	Citations per Publication	Field-Weighted Citation Impact
1.	<input type="checkbox"/> China	25,790	8.0	1.15
2.	<input type="checkbox"/> United States	22,700	10.4	1.60
3.	<input type="checkbox"/> United Kingdom	8,117	11.3	1.94
4.	<input type="checkbox"/> Italy	6,743	9.7	1.73
5.	<input type="checkbox"/> India	6,485	5.0	0.93
6.	<input type="checkbox"/> Australia	5,146	11.6	1.80
7.	<input type="checkbox"/> Spain	5,056	10.7	1.55
8.	<input type="checkbox"/> Germany	4,845	10.5	1.69
9.	<input type="checkbox"/> Canada	4,752	10.7	1.63
10.	<input type="checkbox"/> Brazil	4,145	5.3	0.84
11.	<input type="checkbox"/> France	3,887	8.6	1.42
12.	<input type="checkbox"/> Japan	3,836	6.0	0.97
13.	<input type="checkbox"/> Netherlands	2,985	12.7	2.07



Hide tags

2014 to 2018

no subject area filter selected

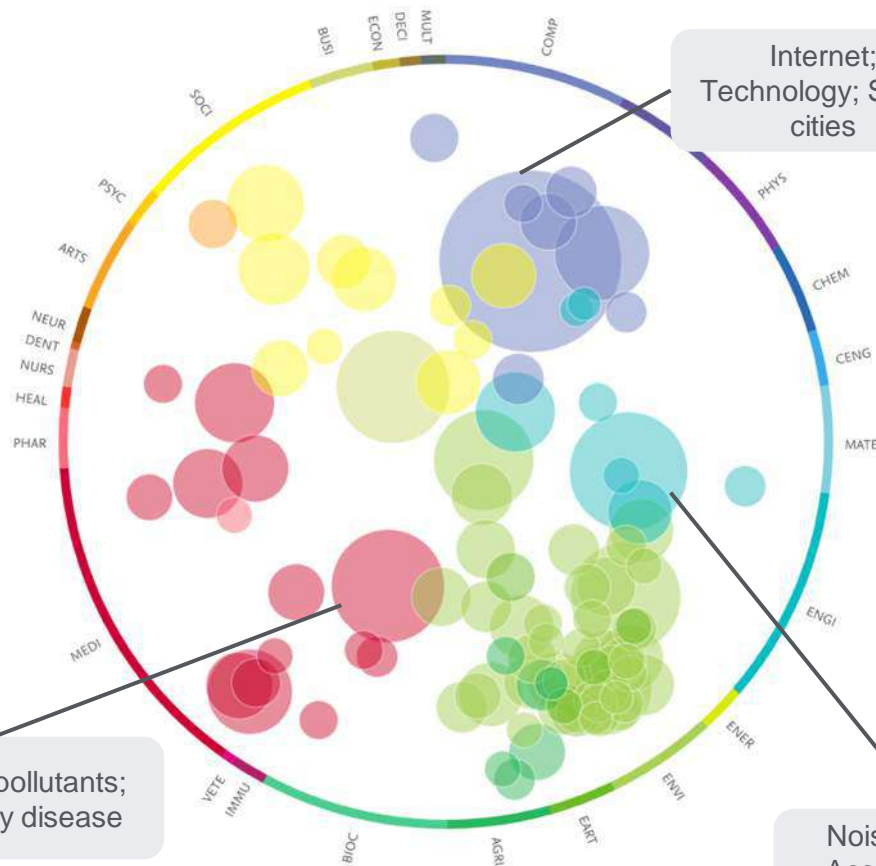
Publication Sets

- ☒ Publications in Brazil within SDG 11: Sustainable Cities and Communities | 2014 to 2018
- ☐ 1 pub
- ☐ Publications at World Bank within SDG 1: No Poverty | 2014 to 2018
- ☐ SDG 1 - No Poverty (2009 - 2020)
- ☐ SDG 10 - Reduced Inequality (2009 - 2020)
- ☐ SDG 2 - Zero Hunger (2014 - 2020)
- ☐ SDG 4 - Quality Education (2009 - 2020)
- ☐ SDG 5 - Gender Equality (2009 - 2020)
- ☐ SDG 6 - Clean Water and Sanitation (2009 - 2020)
- ☐ SDG 9 - Industry, Innovation and Infrastructure (2009 - 2020)

+ Add Publication Sets

x Remove all entities from this section

Brazil; Air pollutants;
Respiratory disease



Internet;
Technology; Smart
cities

Internet; Technology; Smart cities

T:13953

Prominence percentile

99.768

Scholarly Output

Publications in Brazil
within SDG 11:
Sustainable Cities
and Communities |
2014 to 2018

Publication share
World

Analyze Topic

[Worldwide](#)

Noise pollution;
Acoustic Noise;
Noise Map



Hide tags



2014 to 2018



Research Areas

- ☒ SDG 11: Sustainable Cities and Communities
- ☐ Agricultural and Biological Sciences (miscellaneous)
- ☐ SDG 10: Reduced Inequality
- ☐ SDG 12: Responsible Consumption and Production
- ☐ SDG 13: Climate Action
- ☐ SDG 14: Life Below Water
- ☐ SDG 15: Life on Land
- ☐ SDG 16: Peace and Justice Strong Institutions
- ☐ SDG 1: No Poverty
- ☐ SDG 2: Zero Hunger
- ☐ SDG 3: Good Health and Well-being
- ☐ SDG 4: Quality Education
- ☐ SDG 5: Gender Equality
- ☐ SDG 6: Clean Water and Sanitation
- ☐ SDG 7: Affordable and Clean Energy
- ☐ SDG 8: Decent Work and

[+ Add Research Areas](#)[× Remove all entities from this section](#)

Scholarly Output



Total value

Zoom in to see more details per countries & regions

Scholarly Output



Total value

[Metric details](#)

SDG 11: Sustainable Cities and Communities

[Report from template](#)

2014 to 2018

[Data sources](#)[Summary](#)[Institutions](#)[Countries](#)[Authors](#)[Scopus Sources](#)[Keyphrases](#)

Top Institutions

South America



Brazil



All sectors

[reset filter](#)

Table



Visualization

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

Top 100 Institutions in this Research Area, by Scholarly Output

[View on Chart](#)

<input type="checkbox"/>	Institution	Scholarly Output	Citations per Publication	Field-Weighted Citation Impact	Citation Count
1. <input type="checkbox"/>	Universidade de Sao Paulo	677	6.7	1.02	4,554
2. <input type="checkbox"/>	Universidade Federal do Rio de Janeiro	295	5.8	0.78	1,717
3. <input type="checkbox"/>	Universidade Federal de Minas Gerais	223	5.3	0.97	1,177
4. <input type="checkbox"/>	Universidade Estadual de Campinas	206	5.1	1.09	1,059
5. <input type="checkbox"/>	Fundacao Oswaldo Cruz	202	8.8	1.36	1,779
6. <input type="checkbox"/>	Universidade Estadual Paulista Julio de Mesquita Filho	194	5.3	0.81	1,037
7. <input type="checkbox"/>	Universidade Federal do Rio Grande do Sul	182	6.2	0.70	1,124
8. <input type="checkbox"/>	Universidade Federal do Parana	178	8.3	1.18	1,483



Activity of Universidade de Sao Paulo



Within: **SDG 11: Sustainable Cities and Communities** | Year range used for metrics: 2014 to 2018

Summary

Compare to your Institution

+ Add Summary to Reporting

+ Add to Reporting

Performance

Scholarly Output

677



View list of publications

Views Count

21,288

Field-Weighted Citation Impact

1.02



Citation Count

4,554

International Collaboration

259



Collaboration

+ Add to Reporting

International Collaboration

Publications co-authored with Institutions in other countries



Universidade de Sao Paulo:
38.3%

Academic-Corporate Collaboration

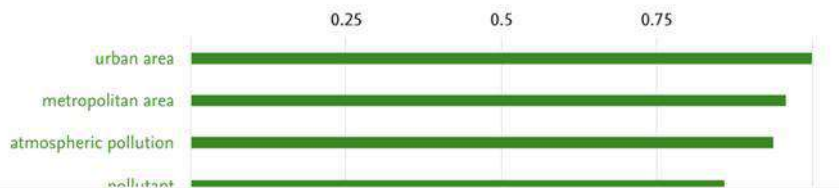
Publications with both academic and corporate affiliations

Top 15 keyphrases

+ Add to Reporting

Based on 677 publications

Relevance of keyphrase



International collaboration impact

2014 to 2018



no subject area filter selected







Collaboration

[+ Add to Reporting](#) [Shortcuts](#) 

Scholarly Output in Publications in Brazil within SDG 11: Sustainable Cities and Communities | 2014 to 2018, by amount of international, national and institutional collaboration



Metric		Scholarly Output	Citations	Citations per Publication	Field-Weighted Citation Impact
 International collaboration	28.1%	1,164	11,766	10.1	1.59
 Only national collaboration	34.0%	1,409	5,571	4.0	0.61
 Only institutional collaboration	31.7%	1,314	3,938	3.0	0.51
 Single authorship (no collaboration)	6.2%	258	506	2.0	0.45

It's more effective to strengthen existing impactful collaboration



Hide tags



2014 to 2018



Publication Sets

☒ Publications in Brazil within
SDG 11: Sustainable Cities and
Communities | 2014 to 2018

☐ 1 pub

☐ Brazil Publications in SDG 2:
Zero Hunger with
international collaboration |
2014 to 2018

☐ Publications at World Bank
within SDG 1: No Poverty |
2014 to 2018

☐ Publications in Brazil within
SDG 2: Zero Hunger | 2014 to
2018

☐ SDG 1 - No Poverty (2009 -
2020)

☐ SDG 10 - Reduced Inequality
(2009 - 2020)

☐ SDG 2 - Zero Hunger (2014 -
2020)

☐ SDG 4 - Quality Education
(2009 - 2020)

+ Add Publication Sets

✕ Remove all entities from this section

Scholarly Output



Total value

0 1 4,145



Scholarly Output



Total value

Zoom in to see more details per countries & regions



Hide tags



Publication Sets



Publications in Brazil within
SDG 11: Sustainable Cities and
Communities | 2014 to 2018

+ Add Publication Sets

× Remove all entities from this section

2014 to 2018



Top Institutions

North America



United States



All sectors



reset filter

Table

Visualization

+ Add to Reporting Export

Top 100 Institutions in this Publication Set, by Scholarly Output

View on Chart

<input type="checkbox"/>	Institution	Scholarly Output ↓	Views Count ↓	Field-Weighted Citation Impact ↓
1. <input type="checkbox"/>	Harvard University	36	1,447	2.06
2. <input type="checkbox"/>	Yale University	30	816	2.94
3. <input type="checkbox"/>	University of California at Berkeley	18	837	5.45
4. <input type="checkbox"/>	Massachusetts Institute of Technology	14	1,145	2.85
5. <input type="checkbox"/>	Pacific Northwest National Laboratory	12	287	2.44
6. <input type="checkbox"/>	Brookhaven National Laboratory	11	232	2.39
7. <input type="checkbox"/>	University of California at Irvine	11	357	2.06
8. <input type="checkbox"/>	University of Colorado Boulder	11	279	2.36
9. <input type="checkbox"/>	Emory University	10	1,026	10.10
10. <input type="checkbox"/>	University of California at San Diego	10	1,339	13.72
11. <input type="checkbox"/>	New York University	9	261	1.19
12. <input type="checkbox"/>	Stanford University	8	596	3.88

Activity of Harvard University



Within: **Publications in Brazil within SDG 11: Sustainable Cities and Communities | 2014 to 2018** | Year range used for metrics: 2014 to 2018

Summary Compare to your Institution

by keyphrase by metric

Publications

[+ Add to Reporting](#)

	Harvard University	Universidade de Sao Paulo
Scholarly Output 	36	677
Publications in Top Percentiles  In top 10% worldwide	12	87
Publications in Top Journal Percentiles  In top 10% journals by <u>CiteScore Percentile</u> 	24	193

Citations

[+ Add to Reporting](#)

	Harvard University	Universidade de Sao Paulo
Citation Count 	741	4,605
Citations per Publication 	20.6	6.8
Field-Weighted Citation Impact 	2.06	1.02

New Report - Cocktail today (4 pm)

International Collaboration of all Brazilian institutions + specific information on the Brazilian Institutions in the Capes PrInt Project.



Research in Brazil towards International Collaboration

Research output, impact and levels of
collaboration of Brazilian Institutions
that are part of the PrInt Project



Summary

- Understand what you are trying to measure and the potential implications
- Understand the limitations of the metrics you are using as a measure
- Apply the Two Golden Rules
- Be transparent and open to those you are measuring
- Join us for cocktails – there's time before the game!





Obrigado

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