Research Intelligence

Doing metrics responsibly: how far we’ve come since the Metric Tide
A supplier’s perspective

Chris James, Product Manager Research Metrics, Elsevier

ARMA, Liverpool
7th June 2017
# Awareness of metrics varies

<table>
<thead>
<tr>
<th><strong>Journal level</strong></th>
<th>% Awareness of Quality metrics</th>
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<tbody>
<tr>
<td></td>
<td>85%</td>
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<tr>
<td></td>
<td>18%</td>
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<td>15%</td>
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<td>11%</td>
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<td>10%</td>
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<table>
<thead>
<tr>
<th><strong>Book level</strong></th>
<th>% Awareness of Quality metrics</th>
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<tbody>
<tr>
<td></td>
<td>37%</td>
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<td>4%</td>
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<table>
<thead>
<tr>
<th><strong>Article or Author level (traditional)</strong></th>
<th>% Awareness of Quality metrics</th>
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<tr>
<td></td>
<td>68%</td>
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<td>57%</td>
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<table>
<thead>
<tr>
<th><strong>Article or Author level (Altmetrics)</strong></th>
<th>% Awareness of Quality metrics</th>
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<td>6%</td>
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<td>7%</td>
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<td>7%</td>
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<td>6%</td>
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<tr>
<td></td>
<td>2%</td>
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</tbody>
</table>
Users in different countries select different metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>World</th>
<th>Australia</th>
<th>Canada</th>
<th>China</th>
<th>Germany</th>
<th>Japan</th>
<th>United Kingdom</th>
<th>United States</th>
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</thead>
<tbody>
<tr>
<td>Field-Weighted Citation Impact</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Outputs in Top Percentiles</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Publications in Top Journal Percentiles</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Collaboration</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Citations per Publication</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Citation Count</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>h-indices</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>

Usage of metrics available in SciVal’s Benchmarking module from 11 March 2014 to 28 June 2015. A partial list of the metrics available at that time is shown, focusing on the most frequently-used. Scholarly Output is excluded since this is the default. Note that recently added metrics based on e.g. media mentions and awards data were not available at this time and so are not represented in this analysis.
Aware. Educate. Expand. Access

As a supplier we want to:
• Raise awareness on the types of available metrics
• Help educate users on the responsible use of metrics
• Engage with the research community to find out what they need and what is missing
• Provide tools and resources to help choose the correct metrics and undertake analyses

How have we started this journey?
Highlighting the:
• Basket of Metrics
• 2 Golden Rules
Aware: The basket of metrics

Get involved and help define the basket of metrics!

Research outputs are becoming more and more diverse.

Researchers have more opportunities to communicate their outputs, and research metrics are becoming more widely used by evaluators, alongside expert opinion, to help make sense of this wide-ranging set of skills and expertise.

The basket of metrics that researchers and their evaluators expect to use is becoming larger and more varied. The metrics in the basket need to be available for articles and researchers, as well as for journals and institutions.

We are asking you for your help to define the basket of metrics.

Please take a few minutes to complete this survey, which asks for your opinion on a model of research performance.

Go to survey

Thank you for your input,

Cambridge University Press
Elsevier
Emerald
European Association of Science Editors (EASE)
Taylor & Francis

https://blog.scopus.com/get-involved
Working together on a common belief

- A need to improve the measurement of all elements of the research landscape
- Initial meetings have taken place, but there is a long way to go
**Asked for feedback on this basket framework**

So far over 2,700 responses with ~75% from researchers

<table>
<thead>
<tr>
<th>Metric theme</th>
<th>Metric sub-theme</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Funding</strong></td>
<td>Awards</td>
</tr>
<tr>
<td><strong>B. Outputs</strong></td>
<td>Productivity of research outputs</td>
</tr>
<tr>
<td></td>
<td>Visibility of communication channels</td>
</tr>
<tr>
<td><strong>C. Research Impact</strong></td>
<td>Research influence</td>
</tr>
<tr>
<td></td>
<td>Knowledge transfer</td>
</tr>
<tr>
<td><strong>D. Engagement</strong></td>
<td>Academic network</td>
</tr>
<tr>
<td></td>
<td>Non-academic network</td>
</tr>
<tr>
<td></td>
<td>Expertise transfer</td>
</tr>
<tr>
<td><strong>E. Societal Impact</strong></td>
<td>Societal Impact</td>
</tr>
</tbody>
</table>

Available for articles, researchers, journals, institutions, subject fields…
Educate: Resources for Librarians and Researchers

• Providing practical information in one location

http://libraryconnect.elsevier.com/metricscards
Select the metrics to match the situation

Metrics illuminate the impact of your research outputs. Promotion and tenure committees, funders, advisors, research team leaders and potential collaborators are all interested in information about impact. But where to start? Your library can advise you on metrics — found on Elsevier products or via other sources — that can help you to:

- Decide where to publish
  - CiteScore
  - SJR: SCImago Journal Rank
  - SNIP: Source Normalized Impact per Paper
  - Journal Impact Factor

- Add to online profile
  - h-index
  - percentile benchmark
  - scholarly activity online
  - scholarly commentary online
  - social activity online
  - media mentions

- Enrich promotion & tenure portfolio
  - h-index
  - percentile benchmark
  - scholarly activity online
  - scholarly commentary online
  - citation count
  - media mentions

- Apply/report to funders
  - h-index
  - percentile benchmark
  - scholarly activity online
  - scholarly commentary online
  - citation count
  - media mentions
  - journal metrics (e.g., CiteScore)

- Benchmark a collection of research outputs (for team leaders)
  - percentile benchmark
  - Field-Weighted Citation Impact
  - h-index (if in the same field)
  - Field-Weighted Download Impact

Both evaluation and profiling use cases

We are also hosting webinars, workshops, publishing seminars etc around the globe
Educate: Two Golden Rules for using research metrics

When used correctly, research metrics together with qualitative input give a balanced, multi-dimensional view for decision-making.

- Always use both qualitative and quantitative input into your decisions.
- Always use more than one research metric as the quantitative input.
Example: importance of using multiple metrics from the basket - compensate for weaknesses

Field-Weighted Citation Impact
= 2.53

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

Citations per Publication
= 27.8

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

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

- Affected by differences in field, type and age
- Meaningless without additional benchmarking
Expand: Developing new metrics

- The Swedish Foundation for International Cooperation in Research and Higher Education (STINT) worked with Elsevier to create a new metric – the Field-Weighted Internationalization Score (FWIS).
  - The metric allowed STINT to improve its understanding of international collaboration carried out by Swedish universities and was made globally available in SciVal.

- CiteScore metrics
  - There is evidence that journal metrics are still important complements to new and alternative metrics
  - Many titles are missing transparent and replicable metrics that are easy to access
CiteScore is a simple metric for all Scopus journals

CiteScore™ metrics

A free basket of comprehensive, transparent and current metrics that provide a simple way to measure the citation impact of serials, such as journals, conference proceedings and books, over a 3 year period.
CiteScore calculation

CiteScore 2016 value = \frac{A}{B}

Impact Factor 2016 value = \frac{A}{B}

<table>
<thead>
<tr>
<th>CiteScore</th>
<th>Impact Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = citations to 3 years of documents</td>
<td>A = citations to 2 or 5 years of documents</td>
</tr>
<tr>
<td>B = all documents indexed in Scopus, same as A</td>
<td>B = only citable items (articles and reviews), different from A (not editorials or letters-to-the-editor)</td>
</tr>
</tbody>
</table>
CiteScore is one of a family of related metrics
Journalmetrics.scopus.com website
Static values 2011-2016 for reporting, showcasing and exporting
Access: Metrics across platforms

- There are a host of tools that contain a range of metrics
- Plum Analytics further allows Elsevier to provide metrics beyond the traditional article and citation indicators

Scopus
SciVal
Pure
Mendeley
Plum Analytics
Summary

- Raise awareness on the types of available metrics
  - Basket of metric survey

- Help educate users on the responsible use of metrics
  - 2 Golden Rules
  - Online resources, webinars, workshops

- Engage with the research community to find out what they need and what is missing
  - Create new metrics to meet their needs

- Provide tools and resources to help choose the correct metrics and undertake analyses
  - Online tools and resources
  - SciVal, Scopus, Pure, Mendeley, PlumX

There is still a long way to go!!!
Questions?
Appendix
Filling the gap in the Scopus basket of journal metrics

SNIP and SJR

- 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?

CiteScore and associated metrics

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

- Affected by differences in field, type and age
- Meaningless without additional benchmarking
**Advantages of CiteScore metrics**

**Comprehensive**
- Based on Scopus, the world’s broadest abstract and citation database
- CiteScore metrics will be available for all serial titles, not just journals
- CiteScore metrics could be calculated for portfolios

**Transparent**
- CiteScore metrics will be available for free
- CiteScore metrics are easy to calculate for yourself
- The underlying database is available for you to interrogate

**Current**
- CiteScore Tracker is updated monthly
- New titles will have CiteScore metrics the year after they are indexed in Scopus
CiteScore 2015 correlates 75% with Impact Factor
Journals with CiteScore cover all levels of performance

- 22,256 titles have CiteScore 2015
- 22,620 titles have CiteScore Tracker 2016