Journal Ranking & Impact Factors

This practical workshop aims to highlight the main tools available to identify and compare journal rankings and impact factors. Their relative strengths and weaknesses will also be covered.

It will be useful for those intending to publish their research and who wish to identify journals in their field that receive higher number of citations which therefore can be considered to have the greater impact.

For those interested in identifying citations for a specific paper or author, the companion workshop ‘Who’s Citing You?’ would be more suitable.

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1 Why are journal rankings & impact factors useful?

- **To identify journals in which to publish:** journal rankings/impact factors can indicate which publications receive higher rates of citations.

- **To identify key journal titles within a subject field:** higher rankings/impact factors can indicate higher levels of influence and readership.

- **May be used by funding agencies** to assess grant applications and the outcomes of existing projects.

- **May be used to monitor and compare the research output of an institution:** to benchmark performance, identify strengths & weaknesses, allocate research funding.

2 What tools are available for measuring journal impact?

The most established source for journal rankings is the *Journal Citation Reports (JCR)* database but this workshop will also cover the following alternative tools: *SCImago (SJR), Source Normalized Impact per Paper (SNIP)* and *Google Scholar Metrics*. Each has their own strengths and weaknesses, particularly around the area of subject coverage.

**Points to consider:**

- As different ranking tools use different metrics and have different journal coverage, it is advisable to use several tools. The same journal can be ranked higher or lower depending on the tool used.

- It is difficult to compare journal rankings across disciplines as differing publication and citation behaviour leads to higher rankings in certain subjects.

- None of the current ranking tools adequately categorise multi-disciplinary journals.

- Journal rankings are not appropriate for all subject areas, particularly those with low citation frequency. Some disciplines also mainly publish in books or conference proceedings.
3 Journal Citation Reports (JCR)

Journal Citation Reports uses citation data drawn from over 10,800 leading journals from more than 2,500 publishers in over 83 countries. The JCR Science Edition contains data from over 8,400 journals and the Social Sciences Edition covers roughly 3,000 journals. There is no Arts and Humanities edition.

The Journal Impact Factor (JIF) is calculated by dividing the number of current year citations by the total number of items published within that journal during the previous two years. The more citations a journal receives, the greater its impact factor.

Using the journal Nature as an example

Total number of citations in 2013 to articles published in 2011 & 2012 = 72,420  
Total number of articles published in 2011 & 2012 = 1,710  

Impact Factor for 2013 = \frac{72420}{1710} = \textbf{42.351}

JCR strengths and weaknesses

- Selective and authoritative with good coverage of high impact journals
- Stronger in Science and Technology with fewer titles included from the Humanities
- New journals need to be in existence for at least 3 years before receiving its first impact factor which may be problematic for fast moving areas.
- Difficult to compare Impact Factors across disciplines as differing publication and citation behaviour leads to higher impact factors in certain subjects.
- Currently limited coverage of non-English language titles

3.1 Searching for the Impact Factor of a specific journal

1. Go to the Online Library and select Resources A-Z
2. Scroll down the list and select Journal Citation Reports (JCR)
3. Select the JCR Science Edition and the option to Search for a specific journal in the right hand box. Click Submit
Type in the journal title **NATURE**. Note that you can enter the full journal title, the abbreviation, a title word or the ISSN.

Click **Search** - the next screen presents you with various data and metrics.

Click on the journal title **NATURE** for more detailed information about its impact factor.

Click on the Impact Factor (**numerical value 42.351**) to see how it has been calculated.

Other metrics available are:

- **5-year Impact Factor** is the average number of times articles from the journal published in the past five years have been cited in the JCR year. It is calculated by dividing the number of citations in the JCR year by the total number of articles published in the five previous years. Citation behaviour varies between disciplines. In some fields there is a very rapid pace of citation activity whereas in others it takes longer to reach a peak of citation activity, so the impact is extended over a longer period of time. For this reason, the 5-Year Impact Factor may be a better indicator than the traditional 2 year factor.

- **Journal Self Cites** calculates the journal’s Impact Factor without the contribution of self cites. Self-citations are the number of times a journal has cited from itself. This may not be unwarranted, especially in niche fields, or in particularly dominant publications. However, in some cases it may be a distortion of the journal’s true position (i.e. impact) within the discipline.
Journal Immediacy Index can be useful for identifying which journal is publishing “cutting edge” research. It measures how frequently the average article from a particular journal is cited within its same year of publication. The immediacy index is calculated by dividing the number of citations to articles published in a given year by the number of articles published in that same year.

8 Scroll back to the top of the page and select Impact Factor Trend. This chart illustrates how the Impact Factor for that journal has varied over time.

9 Click the Return to Journal button to return to previous screen.
3.2 Comparing impact factors within a subject category

1. Return to the JCR home page by clicking the Welcome button.

2. Select View a group of journals by and also choose Subject Category from the drop down menu. Click Submit.

3. Scroll through the subject category and select Psychology (you can choose more than one category by holding down the CTRL key. Mac users should use the Command key).

4. Select View Journal Data - this will display the impact information for the individual journals in the category.

5. The default setting for sorting results is Journal Title. You can use the pull down menu to change the sort option to Impact Factor, Total Cites, etc. Click Submit.

6. Select 5-Year Impact Factor from the Sorted By pull down menu and click Sort Again. The journals in the category will now be ranked according to their 5-Year Impact Factor.
7 Click in the Mark boxes to select a few titles and then click Update Marked List

8 Click the Marked List button at top left of page. You then have the option to save your results. Select either Save to File (e.g. as an Excel file) or Format for Print.

4 SCImago Journal Rank (SJR)

SCImago Journal Rank (SJR) is a freely available tool that uses the citation data contained within Elsevier’s Scopus database which covers over 21,000 journals. The SJR metric differs from the ISI Journal Impact Factor (JIF) in that it covers a three year citation period and takes into account the importance or prestige of the citing publication as well as the number of citations received by a journal. Self-citations are filtered out by capping the number of references that a journal may direct to itself at 33% of its total references.

4.1 SJR strengths and weaknesses

- Broader coverage of Social Sciences, Humanities and Engineering journals
- Wider coverage of Open Access journals
• More regional coverage than JCR
• Only peer-reviewed articles are counted as cited or citing
• It is updated twice a year. New journals are picked up more quickly
• Includes more low impact journals than JCR
• Does not allow comparisons between disciplines

4.2 Search for a specific journal title

1 Go to www.scimagojr.com

2 Select Journal Search from the main menu.

3 Type in the journal title Biomaterials. You can also search by Journal ISSN or publisher.

4 Click Search

5 Click on the journal Biomaterials.
The first chart shows the SCImago Journal Rank (SJR) in orange compared with the 2 year cites per document calculation in purple which is the same formula used by Thomson Reuters to calculate the Journal Impact Factor (JIF) within the JCR database. The SJR 2 year figure will not necessarily match the JIF as SCImago uses a different source database (Scopus) and also takes into account the higher quality of the citing journals in that year whereas the JCR database gives all citations the same weighting. Position your mouse on the graph to reveal precise annual figures.
Other charts show
- Citation versus self-citation
- Cites per document across 2, 3 and 4 years
- % of articles showing international collaboration
- Citable versus non-citable documents (those articles not considered to be primary research)
- Cited versus uncited documents

You are initially presented with the data in chart form but can change to tabular format by clicking on the data button at the top of the charts.

4.3 Comparing journal rankings within a subject category

1 Scroll back to the top of the page and select Journal Rankings from the main menu.

2 Select Subject Area “Earth and Planetary Sciences” from the pull down menu and then “Geology” as the Subject Category.

3 Click on the Refresh button.
This will display a list of the journals within the chosen subject category ranked by the SJR.

Using the pull down menu, change the **Order By** field to **Cites per Document (2 years)** and click on **Refresh**.

It is possible to download the data in Excel format by clicking on the green arrow symbol above the chart.
SNIP is one of the few tools that allows comparison of journal rankings across disciplines. Using citation data from the Scopus database, SNIP takes into account differing citation behaviour by weighting or “normalising” citations based on the total number of citations in a subject field. The impact of a single citation is given higher value in subject areas where citations are less likely, and vice versa. Immediacy is also considered - how quickly a paper is likely to have an impact in a given field. However unlike JCR and SJR, SNIP does not attempt to remove or limit journal self-citations.

5.1 Search for a specific journal title
Go to www.journalindicators.com

1. Click on Indicators
2. Type in the journal title Journal of Marketing in the Select Sources search box
3 Click on **Journal of Marketing** from the list of results

<table>
<thead>
<tr>
<th>Title</th>
<th>P</th>
<th>SNIP</th>
<th>Stability interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Journal of Marketing</td>
<td>154</td>
<td>4.36</td>
<td></td>
</tr>
<tr>
<td>2 Journal of Marketing Research</td>
<td>254</td>
<td>2.44</td>
<td></td>
</tr>
<tr>
<td>3 British Journal of Marketing</td>
<td>251</td>
<td>1.33</td>
<td></td>
</tr>
</tbody>
</table>

4 The following indicators for this title are displayed since 1999.
- SNIP (Source Normalized Impact per Paper) = Average number of citations per publication, corrected for differences in citations practices between fields.
- P (number of publications)
- RIP (Raw Impact per Publication) = Average number of citations per publications
- Percentage of journal self-citations

5 Click on the indicator pull down menu to change graph display from SNIP to RIP etc. Position your mouse on the graph to reveal precise annual figures.
**5.2 Compare rankings within a subject field**

6. Click on **Indicators** in the top menu bar.

7. In the **Subject Area** section, use the drop down menus to select **Business, Management and Accounting** as a main area and then **Accounting** as a sub-area.

   ![Journal indicators](image)

8. Results are displayed in order of SNIP values but this order can be changed by using the pull down menu in the **Select Sources and Sort Order** section.

   ![Journal indicators](image)

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**6 Google Scholar Metrics (GSM)**

Google Scholar Metrics was established in April 2012 and ranks journals using the h-index. Although more commonly associated with the assessment of researchers’ careers, this metric can also be used to evaluate journals. A journal with an h-index of 12 has published 12 papers with at least 12 citations each. Google has chosen a five-year time frame for calculating the h-index and also shows the median number of citations obtained by the articles that contribute to the h5-index.
The figures are based on citations from all articles that were indexed in Google Scholar as of June 2014 and currently covers papers published between 2009 and 2013. Only journals that have published at least 100 articles in the last five years are included in GSM. Publications that received no citations are also excluded. Other sources have been included such as repositories, and selected conference papers in Computer Science and Electrical Engineering;

6.1 GSM strengths and weaknesses

- Includes more journals and other publication types
- Freely available with a simple interface
- Links directly to articles
- Covers non-English language titles
- Poor quality control and lack of standardization resulting in errors in bibliographic data and duplication of journal titles.
- Coverage is uneven across disciplines
- No source list of journal titles & other material
- Only the top 20 journals are displayed for each subject area or category.
- Journals that publish more papers will have proportionally larger values
- GSM results should therefore only be used in conjunction with other journal ranking tools.

6.2 Comparing journal rankings within a subject category

1. Go to [http://scholar.google.co.uk/](http://scholar.google.co.uk/)

2. Click on Metrics at the top of the page. The top 100 publications in English are displayed in order of their five-year h-index and h-median. Such rankings are also available for nine other languages.
For English language titles alone, it is possible to see the top 20 journals ranked within specific subject areas. Click on Social Sciences and then Subcategories. Choose Education and then Early Childhood Education.

To see which articles in a publication were cited the most, click on its h5-index number.

The disciplines and subcategories in which a journal has been classified and its position are shown. The first item has been cited 174 times. Click on the cited by number to view all of the articles that cite it.

Search for a specific journal title

Type the journal title “Harvard Business Review” in the search box at the top of the screen and click on the Search symbol.
2  Click on the **h5-index number** to see the full record for that title.