Tired of Impact Factors? Try the SJR indicator

Martin Fenner, Gobbledygook

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Picking the right journal is one of the most important decisions when you start to work on a paper. You probably have a gut feeling of the journals that are best suited for your paper in progress. To make this decision more objective, you can rely on the Impact Factor of a journal. The Impact Factor is roughly the average number of citations per paper in a given journal and is published by Thomson Scientic. Higher Impact Factors mean more prestigious journals. This information is also frequently used for job or grant applications.

Impact factors have been around for more than 40 years and they generally been very helpful. But there are two big problems:

Impact Factors are published by one privately owned company
Given the importance of Impact Factors for many aspects of scientific publishing, it would be preferable if there were alternatives. And Impact Factors are not freely available, but must be purchased from Thomson Scientific.

Impact Factors might not be the best tool to measure scientific quality
Impact factors have several shortcomings. Because they are a convenient way to judge the scientific output of a person, organization, journal or country, they are often overused. They should for example not be used to compare journals in different fields, e.g. cell biology and particle physics. Measures like the Hirsch Number might be a better tool to measure the scientific output of an individual scientist. And sometimes the judgement of your peers in the field is more important than simple numbers.

The SCImago Journal Rank indicator tries to overcome these two shortcomings. The index was created by the SCImage Research Group, located at several Spanish universities. The index uses information from the Scopus abstract and citation database of research literature owned by Elsevier.

In contrast to the Impact Factor, the SJR indicator measures not simply the number of citations per paper. Citations from a journal with a higher SJR indicator lead to a higher SJR indicator for the cited journal (more details here). This approach is similar to PageRank (described in this paper), the algorithm for web searches by Sergey Brin and Lawrence Page that made Google what it is today. Eigenfactor is another scientific ranking tool that uses a PageRank

algorithm.

Most of the time, journals with high Impact Factors have high SJR indicators. Nature and Science are still head to head. We will find unexpected results and discrepancies between the two over time. In my field of oncology, both the Journal of the NCI and Cancer Research are ranked higher than the Journal of Clinical Oncology.

You can read more about the SJR indicator in this Nature News article.