Evaluating scholarly journals – main indicators

Publication Forum (Jufo) levels
- Publication Forum is a Finnish classification system for publication channels.
- There are 3 levels, based on the reviews of expert panels
  - 1 = basic level; 2 = leading level; 3 = top level

Journal impact factor:
- The oldest and most used indicator for measuring the impact of journals.
- Clarivate Analytics (former Thomson Reuters) has the exclusive rights to the impact factor and the IF numbers are only available in the Web of Science Journal Citation Reports (JCR) database, which is updated yearly.
- The impact factor is calculated as follows:
  - The number of times a journal’s articles have been cited in the JCR year is divided by the total number of articles published in the journal in the two previous years.
- There are many restrictions when it comes to the use of the impact factor and the indicators have been criticised e.g. for the following reasons:
  - The impact factors of journals of different disciplines are not comparable!
  - The impact factor favours disciplines, where the publication rate is fast and where new articles are reacted upon quickly -> The impact factors should always be compared between journals of the same discipline. IF is best suited for Science and Medicine.
  - Journals that publish many (review) articles usually have higher IF values than those that only publish a few articles. Disciplines that are broad and general are likely to have more articles with many citations than narrower disciplines (this is why journals in specialised disciplines tend to have low IF numbers).
  - When calculating the IF values, only the journal citations in Clarivate Analytics (former Thomson Reuters) JCR database are taken into account. JCR includes about 12 000 scientific peer reviewed journals of which 3200 are in the field of Social Sciences. This means that the citations of other journals and monographic publications are not included in the IF value calculations. However, the self-citations of journals are taken into account.
  - It is recommended to favour IF values of a longer perspective than two years (e.g. a 5 year impact factor).

H-index
- H-index is calculated as follows: A journal has an index of h, if h numbers of the articles (Np) published in the journal have been cited in other papers at least h times and the rest of the articles (Np-h) have been cited less than h times.
- In the evaluation of journals the h-index is usually calculated for a specific period of time, for example, for one year.
- The strength of the h-index is that individual highly-cited articles do not affect the index.
- H-index is comparable only within a discipline.
- Journals with large numbers of articles tend to have higher h-index.
- H-index is available in the following services: Scopus, SCImago Journal & Country Rank and Google Metrics/Publish or Perish.

Eigenfactor metrics:
- consists of Eigenfactor Score and Article Influence score:
  - The Eigenfactor Score and Article Influence Score intend to take into account the citation differences across disciplines and the prestige of the citing journal.
  - Scores are calculated based on the citations received over a five year period. Self-citations of a journal are not taken into account. The citation data is usually received from the Journal Citation Reports database.
  - Scores can also be calculated for books, theses, etc.
  - The Eigenfactor metrics are available from the Journal Citation Reports or free of charge at Eigenfactor.org.
  - Eigenfactor Score:
    - A journal’s Eigenfactor score of 0.95 means that the journal receives 0.95 % of all citations received by JCR journals.
  - Article Influence Score:
    - The relative importance of the journal on a per-article basis.
    - A journal’s Article Influence Score of 2.51 means that the average article published in the journal has around 2,5 times the importance of the mean journal in the JCR.
Journal Immediacy Index
- The Immediacy Index is the average number of times an article is cited in the year it is published.
- There are two indexes: Journal Immediacy Index and Aggregate Immediacy Index. They are both available in the Journal Citation Reports database.
- Journal Immediacy Index indicates how quickly articles in a journal are cited.
- Aggregate Immediacy Index of a collection of journals indicates how quickly articles in a subject category are cited.
- The Journal Immediacy Index is calculated by dividing the number of citations (in JCR) to articles published in a given year by the number of articles published in that year. The number of citable articles includes the research articles and reviews.

SCImago Journal Rank (SJR):
- SCImago Journal Rank (SJR) measures journal’s prestige by taking into account the subject field, quality and reputation of the journal.
- It accounts for both the number of citations received by a journal and the prestige of the journals where the citations come from (based on the SJR score). For example, if both journals A and B receive the same number of citations, the SJR indicator of Journal A is higher, if its citations come from more prestigious journals than journal B’s.
- SJR is calculated based on the Elsevier Scopus citations data over a three year period.
- The journal self-citations discount the indicator value. SJR is available in Scopus or free of charge through the SCImago Journal & Country Rank service.

Source Normalized Impact per Paper (SNIP)
- Source-Normalized Impact per Paper (SNIP) measures a source’s contextual citation impact. It takes into account the characteristics of the source’s subject field.
- SNIP is calculated based on the citation data of the Elsevier’s Scopus database over a period of 3 years.
- SNIP is available in Scopus or free of charge through the CWTS Journal Indicators website.

SJR and SNIP in comparison
- SJR is best for subject fields, where authors rapidly cite other works and which have a limited number of nuclear journals. SNIP suits better for evaluating journal impact in more heterogeneous fields, where journals are not the main publication channel.
- Life and Health Sciences usually have the highest SJR values (SJR tends to make the difference between journals larger and enhances the position of the most prestigious journals). Furthermore, Technology and Social Sciences tend to have the highest SNIP scores.
- The SNIP values of small and multi-disciplinary journals are best viewed with caution, as the scores may greatly vary from year to year.

CiteScore
- CiteScore is a free journal-level metric produced by Elsevier in 2016 and it is based on the Scopus data.
- CiteScore is based on citations from about 22,000 sources. CiteScore will be calculated on a monthly basis.
- CiteScore is calculated as follows: The number of times a journal’s documents have been cited over a period of three years is divided by the number of documents published in the journal during this time.
- CiteScore has been criticized e.g. for including all document types (also news, editorials, letters, etc.) which favours publications that provide a forum for news and discussion.

Sources:
Evaluating Scholarly Publications ResearchGuide created by Tritonia Academic Library / Johanna Hahto