**Toole for Measuring Scientific Productivity**

[add explanations for Journal Impact factor & h-Index from other notes]

Productivity is the ratio of some output value to some input value. In some enterprises productivity can be measured with high precision. A factory can easily measure how many devices or items are produced per man-hour of labor. The term scientific productivity denotes the research output measured at individual, organizational or country level.

During earlier days, the scientific productivity was measured by just counting the number of publications. Say for eg. Scientist ‘A’ (or Country or Organization) has published 25 journal articles and 15 books whereas Scientist ‘B’ (or Country or Organization) has published 12 journal articles and 5 books. Hence, the Scientist ‘A’ is more productive than the Scientist ‘B‘. However, the widespread availability of Internet and related technologies has made publishing scientific articles and books very easy and hence, just counting the number of publications became insufficient to assess the scientific productivity. The scientific productivity in today’s scholarly world is determined based on citation analysis i.e. bystudying the impact and assumed quality of an article, an author, or an institution based on the number of times the articles/ journals and/or authors have been cited by others.

The most popular tools for measuring the scientific productivity based on the citation analysis are the following:

1. Journal Impact factor [ Explanation given in another note]

2. h-Index [ Explanation given in another note]

3. Scimago Journal and Country Ranking

4. Source Normalized Impact per Paper (SNIP)

**SCImago Journal & Country Rank**

**SCImago Journal & Country Rank (SJR)** is a journal level metric for measuring scientific productivity developed by SCImago Lab, a technologically-based company offering innovative solutions to improve the Scientific Visibility and Online Reputation of the scientists., Spain. It ranks journals and compares journal citation among countries based on the citation data taken from the Scopus database of Elsevier.  Journals are assigned to major thematic categories as well as to specific subject categories as mentioned in Scopus. Unlike the Journal Citation Report of the Thomson Reuters, the SJR is a free resource available at **http://www.scimagojr.com.** It based on the idea that all the citations are not created equal. With SJR, the subject field, the quality and reputation of the journal have a direct effect on the value of a citation.

**Source Normalized Impact per Paper**

Source Normalized Impact per Paper (SNIP) is a journal-level metric for assessing scientific productivity. It weighs citations to a journal based on the number of citations in that field based on scopus database citations. Thus it facilitates direct comparison of sources in different fields. SNIP was created by Professor Henk Moed at the Centre for Science and Technology Studies (CTWS), University of Leiden, Netherlands.