

## **Unit 5: Open Access Research Impacts**

**Objective:** This unit briefly discusses the emergence of the open citation databases for text mining and data mining of open access literature.

### **Learning Outcomes**

After going through this topic, the participants are expected to be able to:

- Describe the process of evaluation of research in national and international contexts;
- Identify the tools used for evaluation of research;
- Explain the advantages and disadvantages of different evaluation metrics;
- Use emerging evaluation metrics to explain OA research impact.

### **Areas of focus**

- Metrics
- Emerging Indicators (H-Index and Derivatives)
- Open Citation Databases

### **Metrics**

- Citation databases help in measuring effectiveness, scientific productivity and impact of research literature.
- Because bibliometric indicators are based on evidence of usability of published literature – while cited literature are better used by the fellow researchers or successors, uncited literature is often unnoticed by the researchers.
- Thus, bibliometric indicators help in ranking scholarly journals, or identifying core journals, and making other similar productivity measurements.

### **Dimensions of Research Evaluation**



### **Concepts of Bibliometrics, Scientometrics and Webometrics**

Commonly Used Terms for Assessing Research Impacts

**Activity:** Review the terms in the file on pp. 57-58

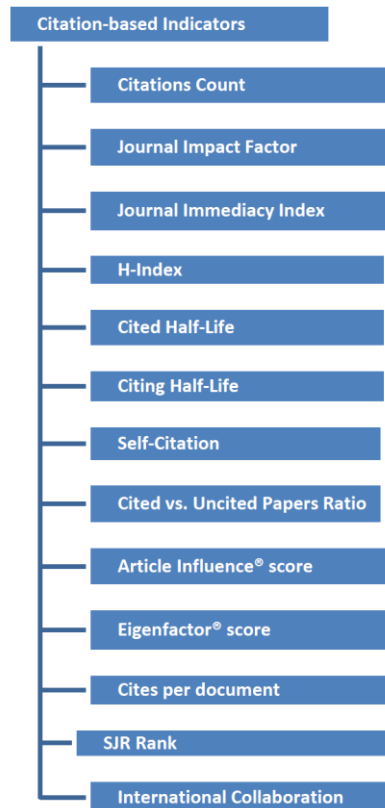
**Activity:** Review the applications of Scientometrics and Bibliometrics in Research Assessment

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## Common Bibliometric Indicators



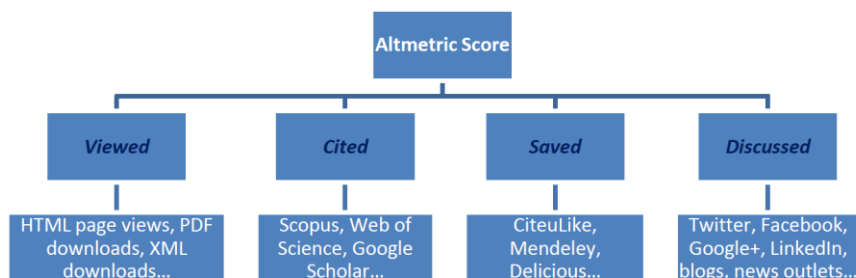
**Activity:** What do you make of these citation indicators? Pp. 60

**Activity:** Visit the Ranking Web of World Repositories – <http://repositories.webometrics.info> what do you make of it?

**Activity:** Study the methodology used – Visit <http://repositories.webometrics.info/en/Methodology> does it make sense to you? See Text Box 5.1: Methodology

### Article Level Metrics (Altmetrics)

#### Deriving an Altmetric Score



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### Emerging Indicators (H-Index and Derivatives)

- The Journal Citation Reports (JCR) is derived from the Web of Science
- JCR combines the Science Citation Index Expanded (SCI-E) and Social Science Citation Index (SSCI)
- JCR can only provide evaluation metrics based on overall journals' performance
- JCR failed to measure performance of individual papers and individual authors.
- The necessity of measuring scholarly impact of individual researchers led to the development of the H-Index by Physicist Jorge E. Hirsch
- The H-Index measures scholarly impact of individual researchers, and is the largest number  $h$  such that  $h$  publications have at least  $h$  citations. For example an H-Index value 6 denotes 6 publications have at least 6 citations each.
- An author H-Index can also be obtained for a journal, an affiliating institution, a research group.

**Activity:** in groups study a Google Scholar Public Profile of a researcher of your own – then that of your institution – then identify the different information details displayed – and other functions of the application that you would explore – could you encourage researchers in your institutions to open Google Scholar profiles?

- a) The Publish or Perish (POP) Software -
- b) POP is a freely downloadable software for personal non-profit use - used for author impact analysis.
- c) The software fetches bibliographic information of papers written by specified author from the Google Scholar search engine and presents different author citations metrics such as h-index, g-index, cites per paper, hc-index (the contemporary h-index), citations count for each paper, cumulative citations count, publishing years (i.e., productive years of a scientist), etc. Similarly, this software can also be used for journal impact analysis with similar citation metrics.

**Activity:** in groups study other freely available online portals available that derive different indicators for comparative impact analysis of authors, journals, institutions, and countries – see pp. 66. – what metrics does each of these applications support?

### Open Citation Databases

- The Open Citations project (OpCit) is a conceptual framework for publishing bibliographic and data citations as linked open data within Open Citations Corpus (OCC).
- OpCit gathers citation data from OAI compliant open archives such as arXiv.org and PubMed Central for “reference linking and citation analysis for open archives”.
- Its citation-based linked open data are gathered in a central database called ‘Citebase’ for citation analysis and data mining.

**Homework – pp. 68-70 – then review the Glossary of terms**

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