Research Evaluation Metrics

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) initiative to launch the open access (OA) curriculum has been a landmark toward fostering research and innovation in the digital age. The UNESCO OA curriculum for research scholars and librarians is a step forward in the strategy of OA to scientific information and research to spread knowledge globally.[1] The UNESCO OA Curriculum for Researchers includes five modules, namely:

- Module 1: Scholarly communications (ISBN 9789231000782)
- Module 2: Concepts of openness and OA (ISBN 9789231000799)
- Module 3: Intellectual property rights (ISBN 9789231000812)
- Module 4: Research evaluation metrics (ISBN 9789231000829)
- Module 5: Sharing your work in OA (ISBN 9789231000836).

The UNESCO also developed another set of OA curriculum for Library Schools, which includes four modules, namely:

- Module 1: Introduction to OA (ISBN 9789231000744)
- Module 2: OA infrastructure (ISBN 9789231000751)
- Module 3: Resource optimization (ISBN 9789231000768)
- Module 4: Interoperability and retrieval (ISBN 9789231000775).

The present work, namely research evaluation metrics (Module 4 in OA curriculum for researchers), is developed for nurturing researchers to comprehend the processes, types, and existing limitations of research metrics. The number of researchers and research outputs has increased considerably. However, mapping and evaluation of research outputs are a difficult task. Thus, citation analysis has become a useful tool. However, errors in the citation analysis are rampant. Therefore, some metrics are required for accurately evaluating the research. The module dwells on numerous methods for accurate research evaluation. The book contains four units. The first unit, namely *Introduction to Research Evaluation Metrics and Related Indicators*, discusses the four dimensions of research evaluation metrics and use of citation indicators for research evaluation. Research evaluation metrics facilitate the researchers in enhancing the productivity and perceptibility of a study, and simultaneously, improving their reputation and increasing their impact on the field. The author has discussed regarding self-citations and cited half-life of a journal.

The bibliometric, scientometric, and webometric concepts and three laws of bibliometric, namely Bradford's Law of Scattering, Lotka's Law of Scientific Productivity, and Zipf's Law of Word Occurrence are explained to make the researchers abreast with these citation analysis methods. Besides, the module author has explained various author-level indicators using the authors' public profile. In the second unit, i.e. *Innovation in Measuring Science and Scholarship*, functions of the online citation database, namely Web of Science (WoS), Scopus, Indian Citation Index (ICI), Cite Seer X, and Google Scholar have been discussed. In addition, the author has discussed analytical products with journal performance metrics, such as Journal Citations Report, SCImago Journal and Country Rank, and SCImago Institution Ranking, in this unit. The eigenfactor. org is hosted by Bergstrom Lab at the University of Washington, the USA. It is a freely available, searchable platform that ranks the journals by Eigen factor, article influence, and cost effectiveness. This tool is described

in detail in the unit. The third unit, *Article and Author Level Measurement*, discusses the benefits and features of the unique identifiers. Undoubtedly, these tools help the researchers to increase the visibility of their research. Two famous unique identifiers, such as researcher ID and Open Researcher and Contributor ID functionalities are explained. Article-level metrics (ALTMETRICS) reveal the scholarly papers that are read, discussed, saved, and recommended by scholars. The author has also explained systematically how the ALTMETRIC score is calculated. Several academic social networks, such as Academia, Research Gate, get CITED, and Social Science Research Network, have been discussed. In the fourth unit, i.e. *Online Citation Reference Management Tools*, the author has discussed online citations management tools, such as Mendeley, Cite U Like, Zotero, Google Scholar Library, and End Note Basic, and their benefits. The features and functionalities of these tools are explained in a step-wise manner. The author illustrates the procedures to use these tools using snapshots of each tool. At the end of each unit, objective-type and descriptive questions have been asked to know the understanding level of readers. Furthermore, numbers of video tutorials are mentioned at the end of each unit to make the module more interesting. The glossary of terms used in the module assist the readers to understand the technical terms used in the module. Overall, the module is well organized, and the author has used various snapshots to comprehend the concept. Throughout the module, the author has started the unit with basic introduction and summary to avoid any confusion among readers. This freely downloadable eBook is a must read for the academic researchers keen to know the nuances and latest developments in research evaluation.

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