



Introductory Workshop to Bibliometrics

Luis Carlos Castillo

University of Urbino
Ph.D. Program in Global Studies

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- ▶ This section will provide an overview of bibliometrics and the importance of bibliometric analysis.
- ▶ Search in the Web of Science and Scopus platforms.
- ▶ Identify different tools but focusing on R programming language.

What is Bibliometrics?



Following [Donthu et al. \(2021\)](#), [Ellegaard and Wallin \(2015\)](#), [Aria and Cuccurullo \(2017\)](#), and [Bornmann and Mutz \(2015\)](#) bibliometric analysis:

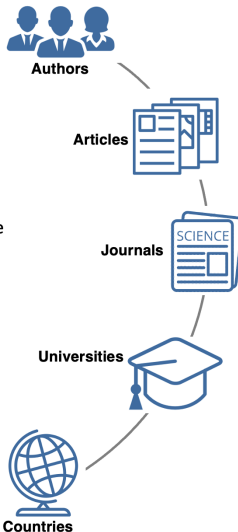
- ▶ Is a methodology that applies quantitative techniques to bibliographic data and plays a vital role in evaluating research output.
- ▶ This technique allows researchers to uncover emerging trends identifying knowledge gaps in specific domains and analyze a significant quantity of documents .
- ▶ It offers three types of analysis: performance analysis, science mapping, and network analysis.

Types of Analysis I



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Performance Analysis

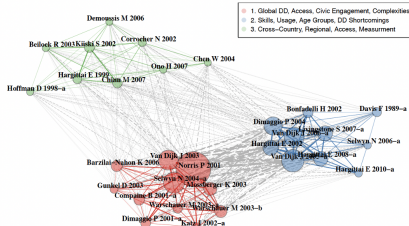


This entails making interpretative descriptions of various research components:

Typical measures include citation count, the number of publications, the H-index, and the G-index.

Science Mapping

Co-Citation Network, 2008 – 2015



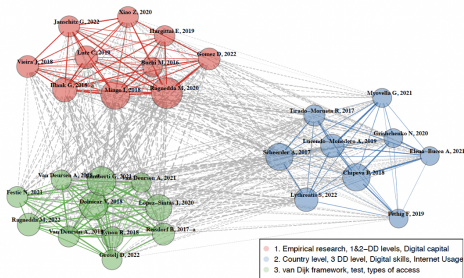
Typical **metrics** include similarity measures, such as co-citation analysis, bibliographic coupling, and co-authorship analysis.

This refers to a set of techniques designed to visualise and examine structures, relationships, and trends within any field.

Network Analysis

This involves utilising measures and principles from graph theory to comprehend various connections among elements of research.

Bibliographic Coupling Network, 2016–2022



Standard metrics used include the degree of centrality and betweenness centrality, among others.

Why is it important?



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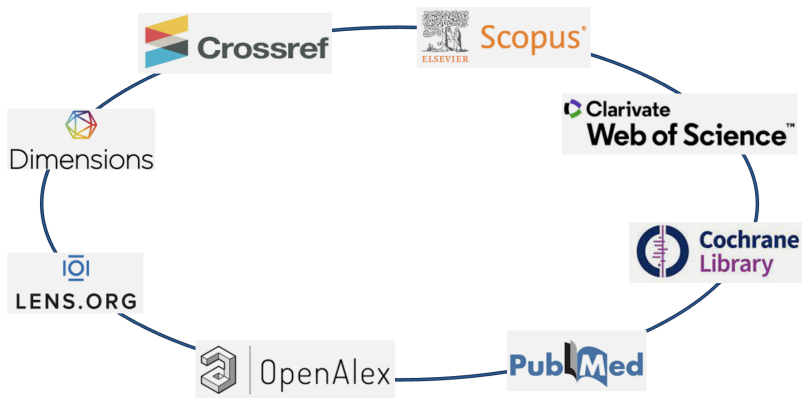
- ▶ Identifying Relevant Literature
- ▶ Assessing Research Impact
- ▶ Understanding Research Trends
- ▶ Choosing Where to Publish
- ▶ Choosing Where to Do Research

The role of digital platforms I



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Digital libraries



Web of Science and Scopus



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- Aria, M. and Cuccurullo, C. (2017). bibliometrix: An r-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4):959–975. Citation Key: Aria2017.
- Bornmann, L. and Mutz, R. (2015). Growth rates of modern science: A bibliometric analysis based on the number of publications and cited references. *Journal of the Association for Information Science and Technology*, 66(11):2215–2222. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/asi.23329>.
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., and Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133:285–296.
- Ellegaard, O. and Wallin, J. A. (2015). The bibliometric analysis of scholarly production: How great is the impact? *Scientometrics*, 105(3):1809–1831. Citation Key: ellegaard2015.