Introductory Workshop to Bibliometrics

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Introduction

- 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?

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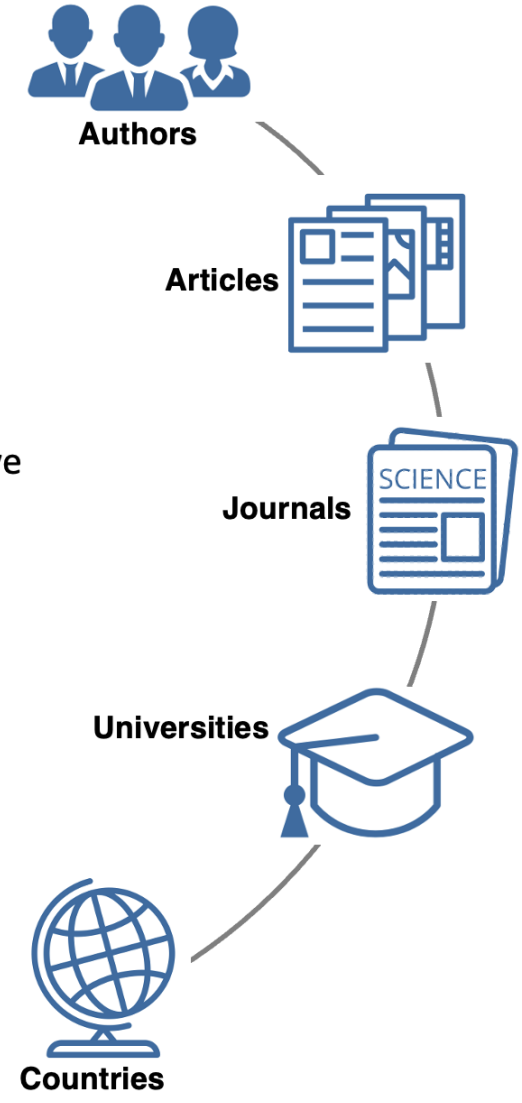
Following Donthu et al. (2021), Ellegaard and Wallin (2015), Aria and Cuccurullo (2017), and Bornmann and Mutz (2015) bibliometric analysis:

- 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

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.

Types of Analysis II

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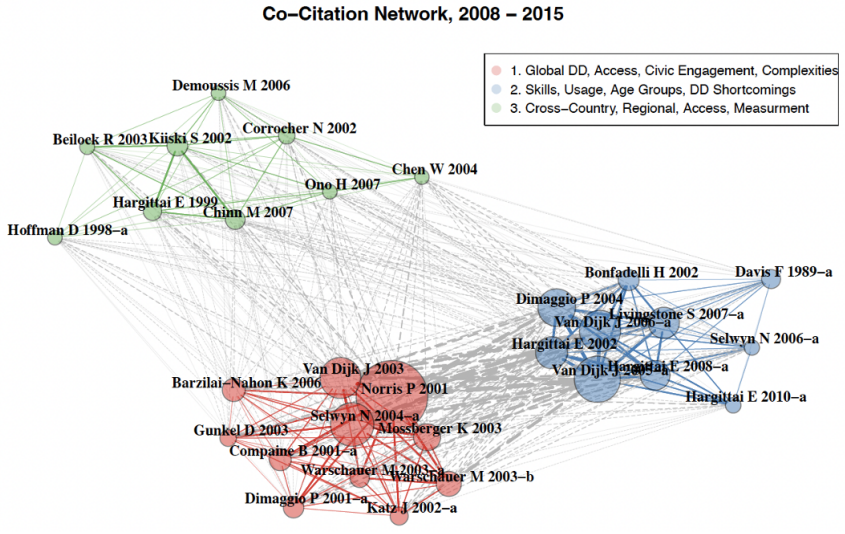
Science Mapping



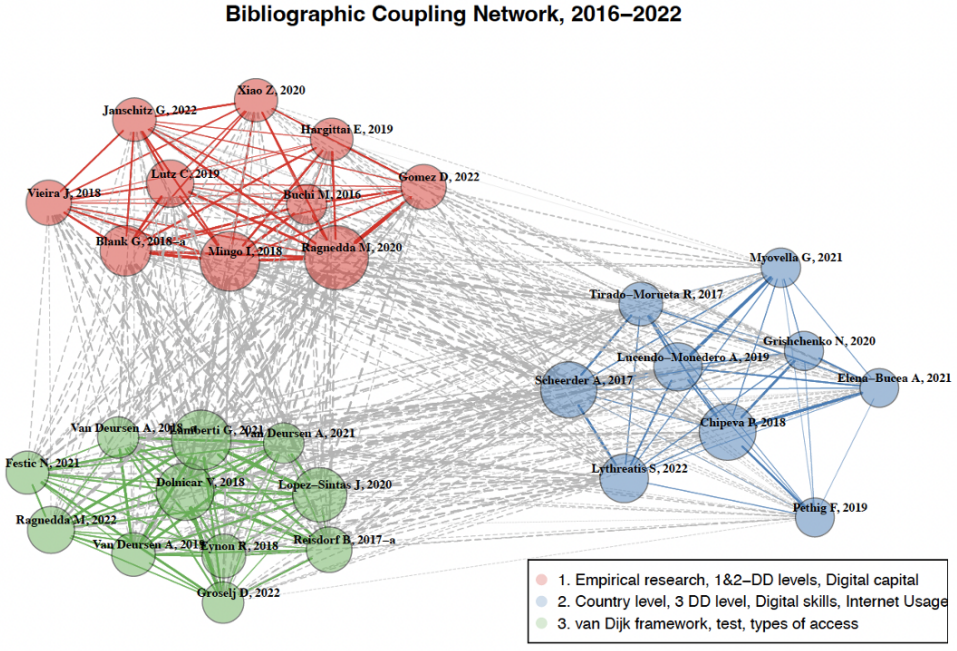
This refers to a set of techniques designed to visualise and examine structures, relationships, and trends within any field.

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

Types of Analysis III

Network Analysis

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



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

Why is it important?

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

Limitations

- Citations bias
- Bibliometrics does not replace in-depth reading the literature
- The Mathew effect

The role of digital platforms I

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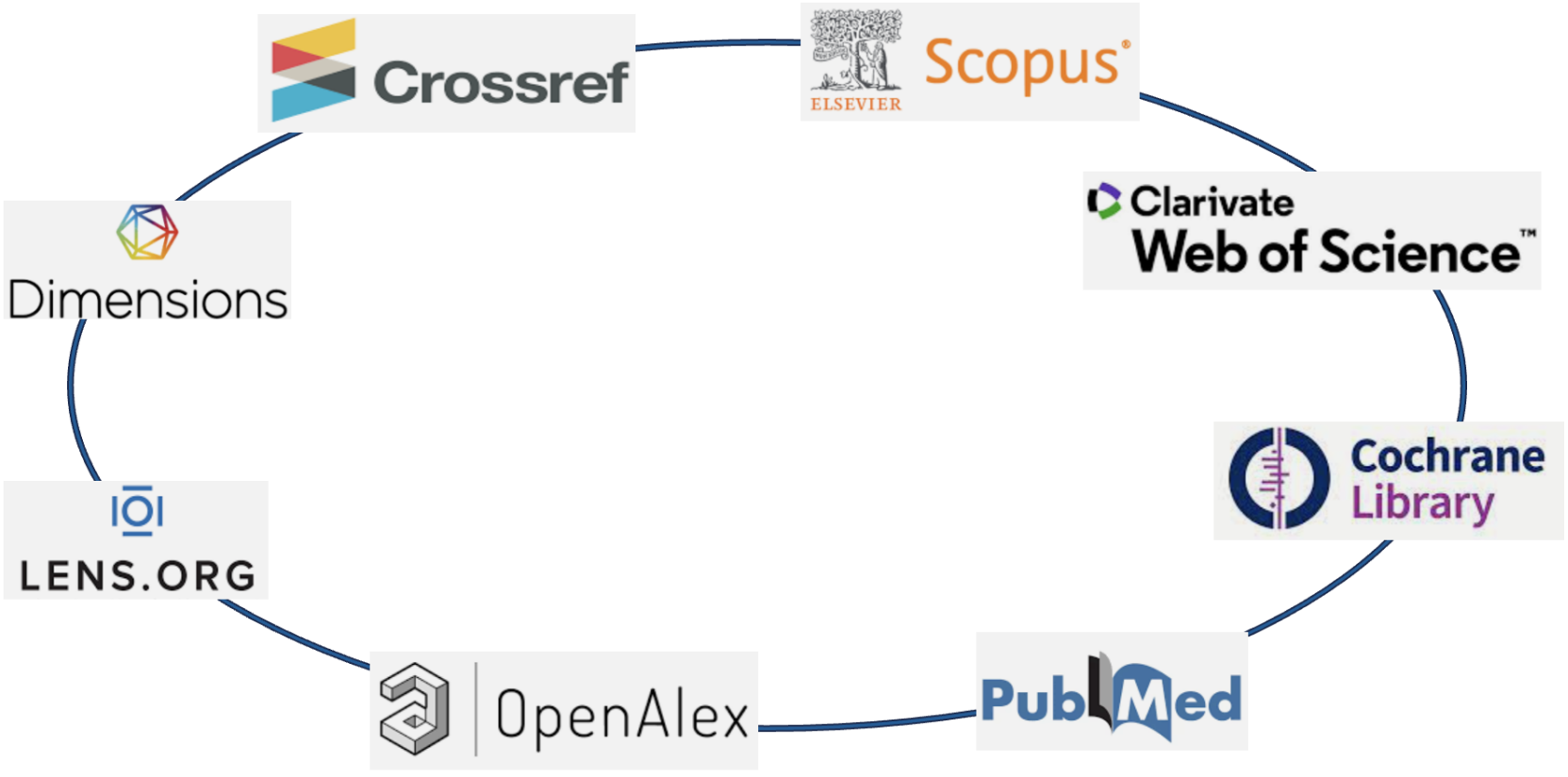
Digital libraries



The Web of Science and Scopus

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- Integrating Web of Science and Scopus databases is complex and requires a structured workflow, as pointed out by Echchakoui (2020) and Caputo and Kargina (2022).
- Merging these databases can help mitigate resource bias in research. However, other biases such as retrieval bias and medium bias may persist.

Hands-On The Data

Please open the University of Urbino Website and enter with your credentials to the Web of Science and Scopus platforms.

Google Drive Repository *Introductory Workshop to Bibliometrics*.

Resources

- Web of Science Core Collection: these are the abbreviations of column names.
- Bibliometrix Web Site: Shares documentation about bibliometrix package and biblioshiny application.

References I

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