

Research Skills (Write a Bibliometric Paper)

Session 1: Introductions

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 All of my presentations are available online at:
https://figshare.com/authors/Nader_Ale_Ebrahim/100797

Abstract

Bibliometrics analysis is a powerful statistical tool that forms the foundation of contemporary scientific research. In the ever-evolving academic landscape, understanding the current state of knowledge within your research domain is not just valuable; it's essential. Join in this workshop series, guided by [Nader Ale Ebrahim](#), the visionary behind the [Research Tools](#) box. Uncover the power of bibliometric analysis and discover how it can transform your research journey. Gain the skills to navigate the wealth of data at your fingertips and turn it into exceptional research papers. He will delve into techniques like publication and citation counting, co-citation analysis, bibliographic coupling, keyword co-occurrence, and co-authorship networks. This hands-on workshop series will not only familiarize you with the details of literature search, paper writing, and journal selection but also empower you to disseminate your research effectively. It's time to elevate your research writing and make a lasting impact.

Keywords: Research Tools, Research Visibility, Research Impact, Bibliometrics, Paper Writing

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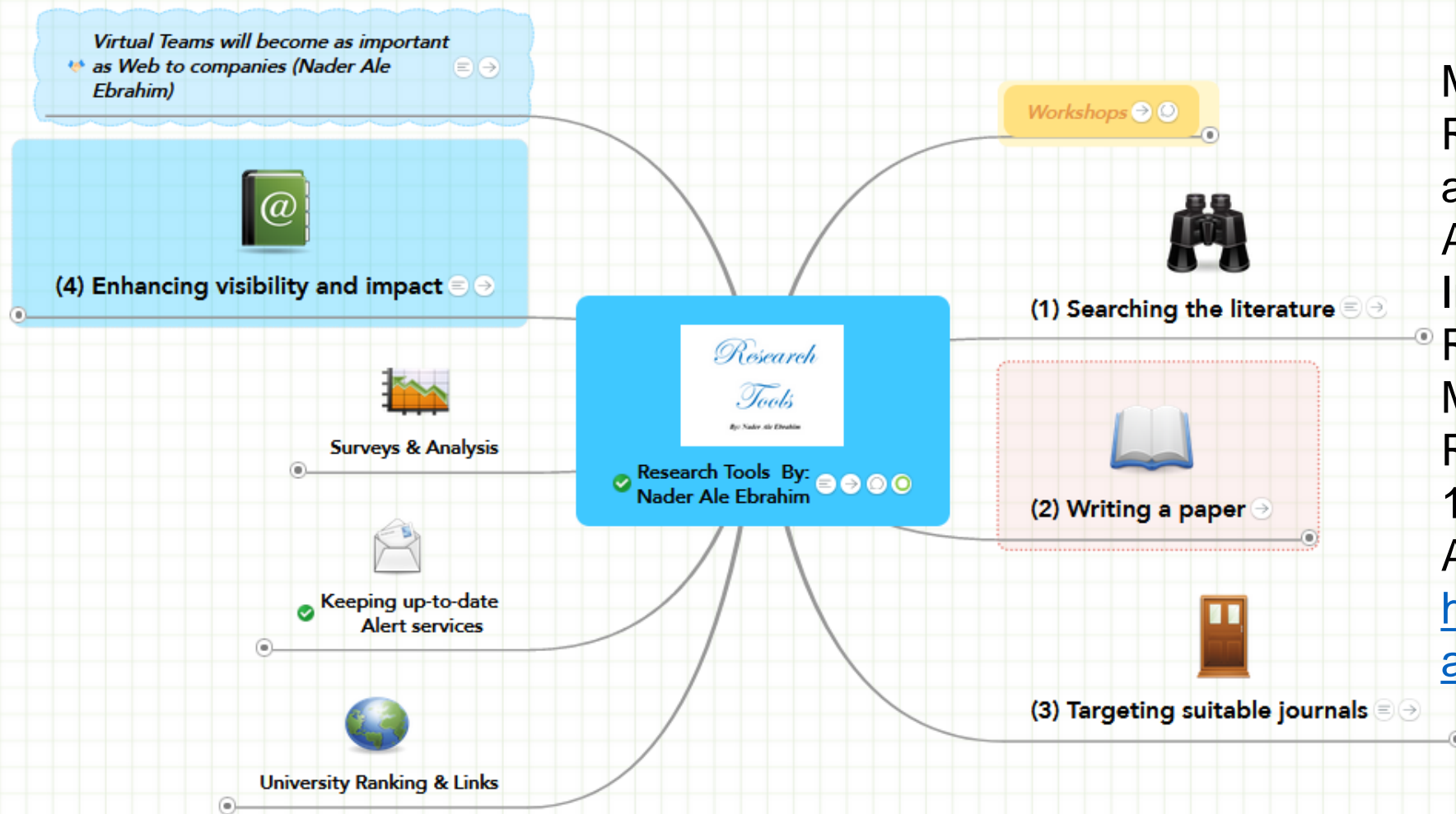
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No.	Session Title	Content Description	Date
1	Introduction to Bibliometrics	Introduction to bibliometrics and its role in research writing, Define key bibliometric measures used in research evaluation and assessment	March 9
2	Defining Your Research Objective and Analyzing Examples	How to define a clear research question or objective, Showcase examples of well-written bibliometric research papers, Analyze successful papers and identify key elements of their effectiveness	March 16
3	Keywords Selection	Effective selection and utilization of keywords in bibliometrics, Identifying and choosing search terms to retrieve relevant articles that align with research objectives	April 06
4	Navigating Data Sources	Identify and assess various data sources suitable for bibliometric research, Learn to access and utilize relevant data for in-depth analysis	April 13
5	Data Collection and Cleanup	Retrieving and cleaning data, removing duplicates, correcting errors, standardizing bibliographic information	April 20
6	Visualizing Patterns and Trends with VosViewer	Utilize VOSviewer for advanced data visualization and quantitative analysis in bibliometrics, Identify patterns and trends in research output	April 27
7	Unveiling Insights with Bibliometrix	Explore the functionalities of Bibliometrix for bibliometric analysis and data processing, Introduction to other visualization tools for quantitative analysis of bibliometric data	May 11
8	Ensuring Ethical Practices in Bibliometric Research	Understanding different types of plagiarism and the consequences of academic misconduct, Avoiding plagiarism, and ensuring ethical practices in bibliometric research	May 18
9	Crafting Impactful Bibliometric Papers	Structure bibliometric papers effectively to convey research findings and insights clearly, Highlight emerging trends, and address knowledge gaps in the relevant field	May 25
10	Enhancing Paper Quality and Analyzing Data	Criteria for evaluating the quality of papers in bibliometric research, Interpreting results, drawing conclusions about research questions/objectives, Enhance the overall quality of bibliometric papers	June 01
11	Navigating Publication: From Submission to Peer Review	Journal selection strategies for bibliometric papers, Manuscript submission process and guidelines, Understanding the peer review process, and addressing reviewer comments	June 08
12	Amplify Your Research Visibility and Impact	Implement strategies to increase research visibility and impact through effective dissemination, Leverage networking opportunities to reach a broader audience, and create a lasting impact	June 15

Research Tools Box (Mind Map)



More info about the Research Tools is available at:
Ale Ebrahim, Nader, Introduction to the Research Tools Mind Map (June 14, 2013). Research World, Vol. 10, No. 4, pp. 1-3, Available at SSRN: <https://ssrn.com/abstract=2280007>

Source: <https://www.mindmeister.com/39583892/research-tools-by-nader-ale-ebrahim?fullscreen=1#>

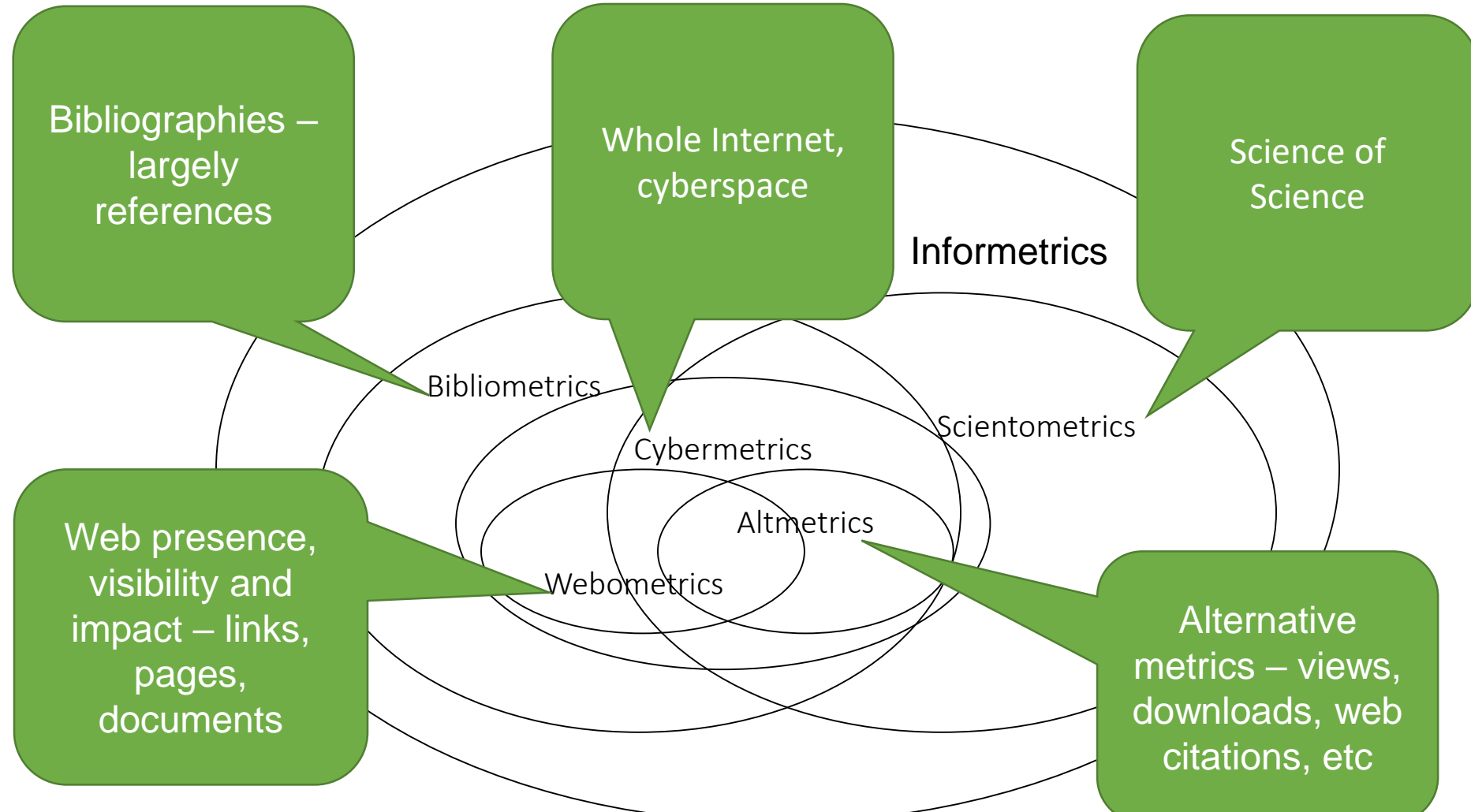
1- Introduction to Bibliometrics

A bibliometric study can be an independent article by itself

- The time it takes to complete a research paper can vary depending on various factors, including the complexity of the research, the amount of data involved, and your familiarity with the tools.
- For a bibliometrics paper, if you already have access to databases like SCOPUS and Web of Science and are proficient in using tools for data collection and analysis, it could take approximately a **month** or even less, assuming that you have a clear research question and methodology in mind.
- However, it's important to note that this is a rough estimate, and the actual timeframe may vary depending on the specifics of your project.

The definition

Informetrics, Scientometrics, Bibliometrics, Webometrics, Cybermetrics and Altmetrics



Source: Onyancha, Omwoyo Bosire. "Can informetrics shape biomedical research? A case study of the HIV/AIDS research in sub-Saharan Africa ." *Inkanyiso: Journal of Humanities and Social Sciences* 6.1 (2014): 49-65.

Frequently Used Terms for Research Evaluation Metrics

Term	Short Definition
Bibliometrics	Bibliometrics is a set of methods to quantitatively analyse academic literature and scholarly communications.
Informetrics	Informetrics is the study of quantitative aspects of information. This includes the production, dissemination, and use of all forms of information, regardless of its form or origin.
Scientometrics	Scientometrics is the study of quantitative features and characteristics of science, scientific research and scholarly communications.
Webometrics	Webometrics is the study of quantitative features, characteristics, structure and usage patterns of the world wide web, its hyperlinks and internet resources.
Cybermetrics	Cybermetrics is an alternative term for Webometrics.
Librametrics	Librametrics is a set of methods to quantitatively analyse availability of documents in libraries, their usage and impact of library services to its user community.
Patentometrics	Patentometrics is a set of methods to quantitatively analyse patent databases, patent citations and their usage patterns.
Altmetrics	Altmetrics is new metrics proposed as an alternative to the widely used journal impact factor and personal citation indices like the h-index. The term altmetrics was proposed in 2010, as a generalization of article level metrics, and has its roots in the twitter #altmetrics hashtag.
Article Level Metrics (ALM)	Article level metrics is an alternative term for Altmetrics.

Source: Das, A.-K. (2015). [Research Evaluation Metrics](#). 7, place de Fontenoy, 75352 Paris 07 SP, France: United Nations Educational, Scientific and Cultural Organization.

A bibliometric study

- Statistically analysis patterns of publication within a specific research area or body of literature
- Measuring academic and organizational performance based on several indicators such as number of publications, number of citations, and collaboration networks
- Analyses the research productivity, top-cited publications, countries' scholarly outputs, most frequent keywords and the trend of publications to quantitatively explore a specific research area
- Visualize the trends in existing literature and overview current state-of-the-art topics to help future research

Source: S. A. Ebrahim, J. Poshtan, S. M. Jamali and N. A. Ebrahim, "Quantitative and Qualitative Analysis of Time-Series Classification Using Deep Learning," in *IEEE Access*, vol. 8, pp. 90202-90215, 2020, doi: [10.1109/ACCESS.2020.2993538](https://doi.org/10.1109/ACCESS.2020.2993538).

Reasons for bibliometric studies

1. **Assessing Research Impact**
2. Identifying Research Trends
3. Evaluating Institutional Performance
4. Comparing Research Entities
5. Strategic Research Planning
6. Authorship and Collaboration Analysis
7. Journal and Publication Analysis
8. Funding and Grant Applications
9. Research Evaluation and Promotion
10. Quality Assurance
11. Identifying Research Gaps
12. Benchmarking and Best Practices

Bibliometrics provides a quantitative measure of the impact and influence of scholarly research. Researchers and institutions use metrics like citation counts and the H-index to gauge how often their work is cited by peers, which can reflect the significance of their contributions.

Reasons for bibliometric studies

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Bibliometric analysis can reveal emerging research trends and hot topics within a particular field. By tracking keyword co-occurrence or analyzing citation patterns, researchers can stay up-to-date with the latest developments in their area of study.

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Universities and research institutions use bibliometrics to assess their research productivity and impact. This information can be crucial for rankings and funding allocation.

Reasons for bibliometric studies

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Researchers, universities, and countries often compare their bibliometric data with peers to determine how they stack up in terms of research output and impact. This can inform strategic decisions and collaborations.

Reasons for bibliometric studies

1. Assessing Research Impact
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3. Evaluating Institutional Performance
4. Comparing Research Entities
5. **Strategic Research Planning**
6. Authorship and Collaboration Analysis
7. Journal and Publication Analysis
8. Funding and Grant Applications
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Bibliometric analysis can guide strategic planning for research initiatives. Institutions can identify research strengths and weaknesses and allocate resources accordingly.

Reasons for bibliometric studies

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Researchers can use bibliometrics to analyze authorship and collaboration patterns. This can help identify potential collaborators, track co-authorship networks, and evaluate the reach of research collaborations.

Reasons for bibliometric studies

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Bibliometrics are used to assess the influence and reputation of academic journals. Journal Impact Factors help researchers decide where to publish their work, and institutions use this information to evaluate faculty contributions.

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Researchers often include bibliometric data in grant applications to demonstrate the potential impact of their proposed research. Funding agencies use bibliometrics to assess the track record and potential of researchers and projects.

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Academic promotions and tenure decisions frequently consider bibliometric data as evidence of a researcher's contributions to their field. High citation counts and a strong publication record can enhance career prospects.

Reasons for bibliometric studies

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Researchers can use bibliometrics to assess the quality of their own work and publications by tracking how often they are cited by others and the impact of their research on the field.

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Bibliometric studies can help identify gaps in existing literature. Researchers can determine areas where there is limited published research, suggesting opportunities for new investigations.

Identifying Research Gaps

Figure 2-1 Focus of the literature review: SMEs, Virtual R&D teams and NPD

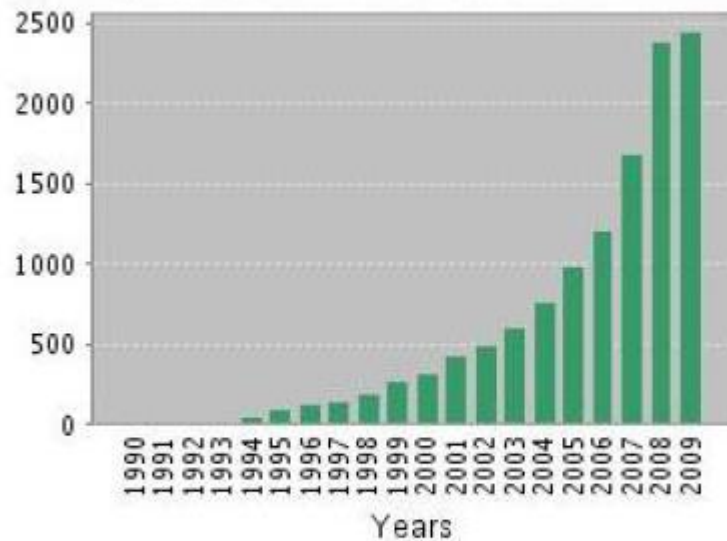


Figure 2-2 Citations trend of "SMEs"
(Source Web of Science® (2009))

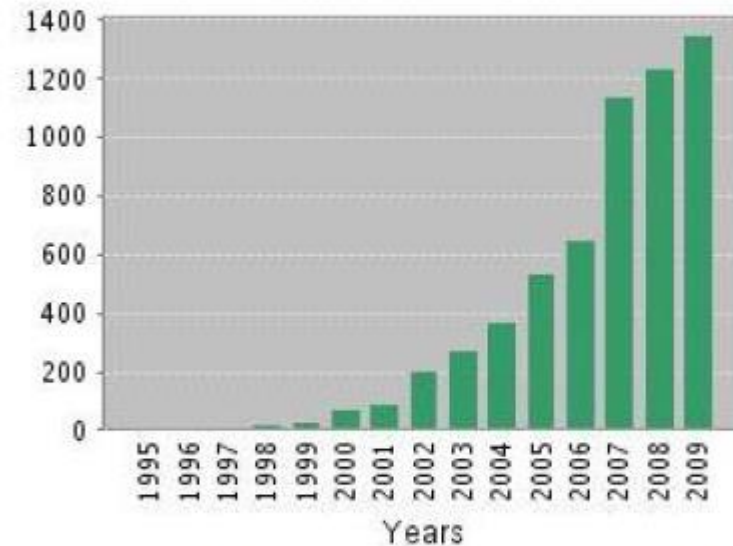


Figure 2-3 Citations trend of "Virtual teams"
(Source Web of Science® (2009))

Source: Ale Ebrahim, N. (2012). *Development of an effectual collaborative model for new product development in SMEs through virtual R&D teams* UNIVERSITY OF MALAYA].



Identifying Research Gaps

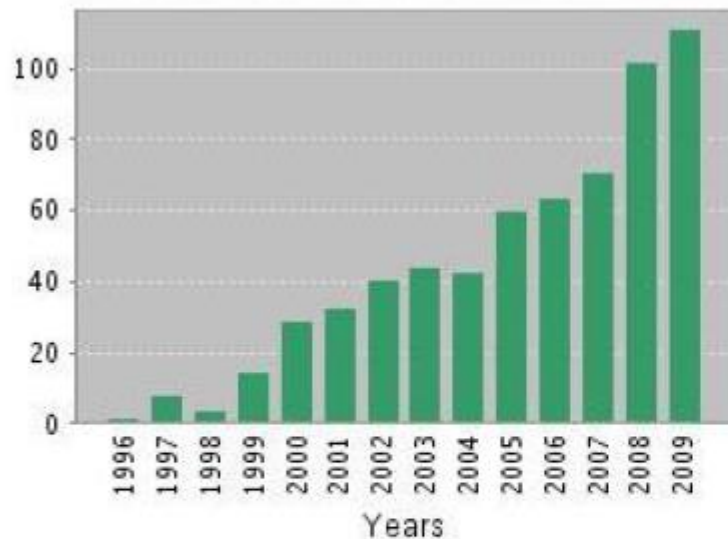


Figure 2-4 Citations trend of "SMEs and R&D" (Source Web of Science® (2009))

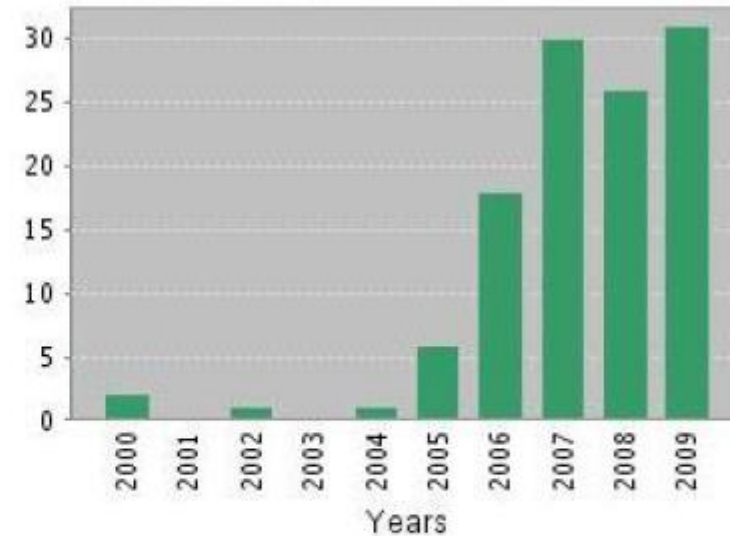


Figure 2-5 Citations trend of "R&D and Distributed Teams" (Source Web of Science® (2009))

Source: Ale Ebrahim, N. (2012). *Development of an effectual collaborative model for new product development in SMEs through virtual R&D teams* UNIVERSITY OF MALAYA].

Identifying Research Gaps

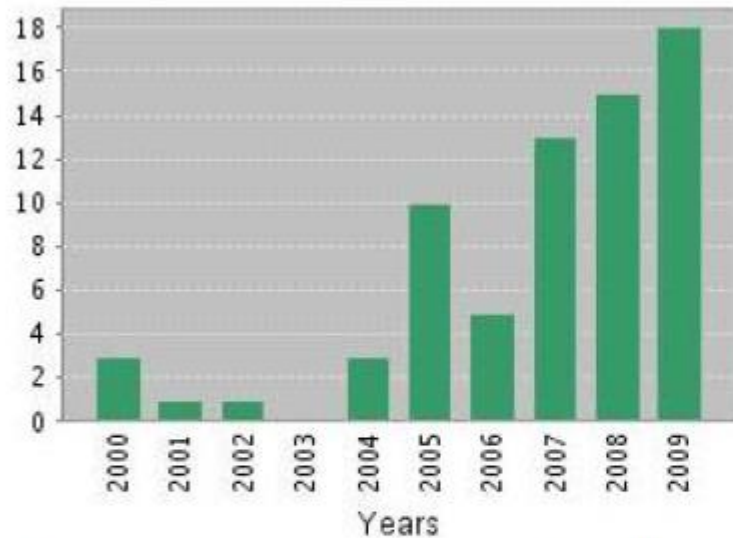


Figure 2-6 Citations trend of "Virtual R&D teams" (Source Web of Science® (2009))

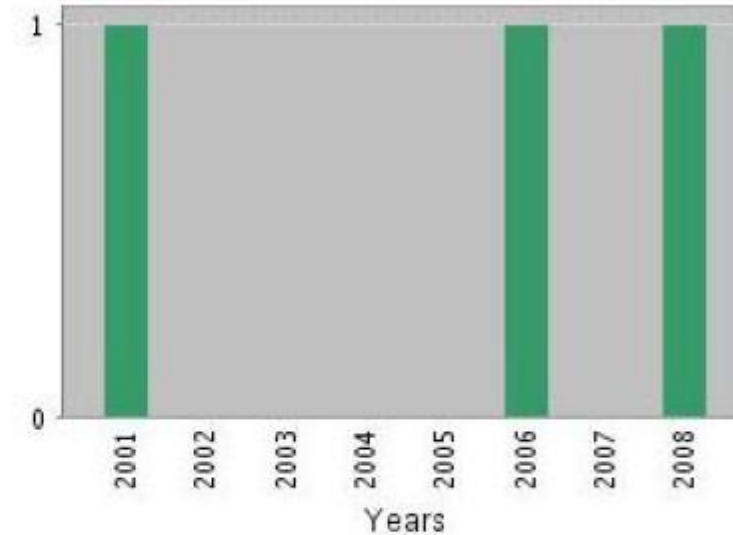


Figure 2-7 Article publications trend of "SMEs and Virtual R&D teams" (Source Web of Science® (2009))

Source: Ale Ebrahim, N. (2012). *Development of an effectual collaborative model for new product development in SMEs through virtual R&D teams* UNIVERSITY OF MALAYA].

Reasons for bibliometric studies

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bibliometrics provide benchmarks against which researchers and institutions can compare themselves. This allows for the identification of best practices and areas for improvement.

Reasons for bibliometric studies

In summary, bibliometric studies play a crucial role in the **evaluation, assessment**, and strategic planning of research activities. They provide valuable insights into the **impact of research**, help researchers stay informed about **trends**, and assist institutions in making data-driven decisions regarding resource allocation and research priorities.

Define key bibliometric measures used in research evaluation and assessment



About the Toolkit ▾

Explore Metrics

Choose Metrics

Use Cases

Resources




HELPING YOU NAVIGATE THE RESEARCH METRICS LANDSCAPE

The Metrics Toolkit is a resource for researchers and evaluators that provides guidance for demonstrating and evaluating claims of research impact. With the Toolkit you can quickly understand what a metric means, how it is calculated, and if it's good match for your impact question.

Source: <http://www.metrics-toolkit.org/>


 Open access |  | Research article | First published online August 22, 2019

A Crisis in “Open Access”: Should Communication Scholarly Outputs Take 77 Years to Become Open Access?


[Abbas Ghanbari Baghestan](#)  , [Hadi Khaniki](#), [...], and [Mahmoud Danaee](#)  [View all authors and affiliations](#)


[All Articles](#) | <https://doi.org/10.1177/2158244019871044>


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 Metrics and citations


 Figures and tables

Abstract

This study diachronically investigates the trend of the “open access” in the Web of Science (WoS) category of “communication.” To evaluate the trend, data were collected from 184 categories of WoS from 1980 to 2017. A total of 87,997,893 documents were obtained, of which 95,304 (0.10%) were in the category of “communication.” In average, 4.24% of the documents in all 184 categories were open access. While in communication, it was 3.29%, which ranked communication 116 out of 184. An Open Access Index (OAI) was developed to predict the trend of open access in communication. Based on the OAI, communication needs 77 years to fully reach open access, which undeniably can be considered as “crisis in scientific publishing” in

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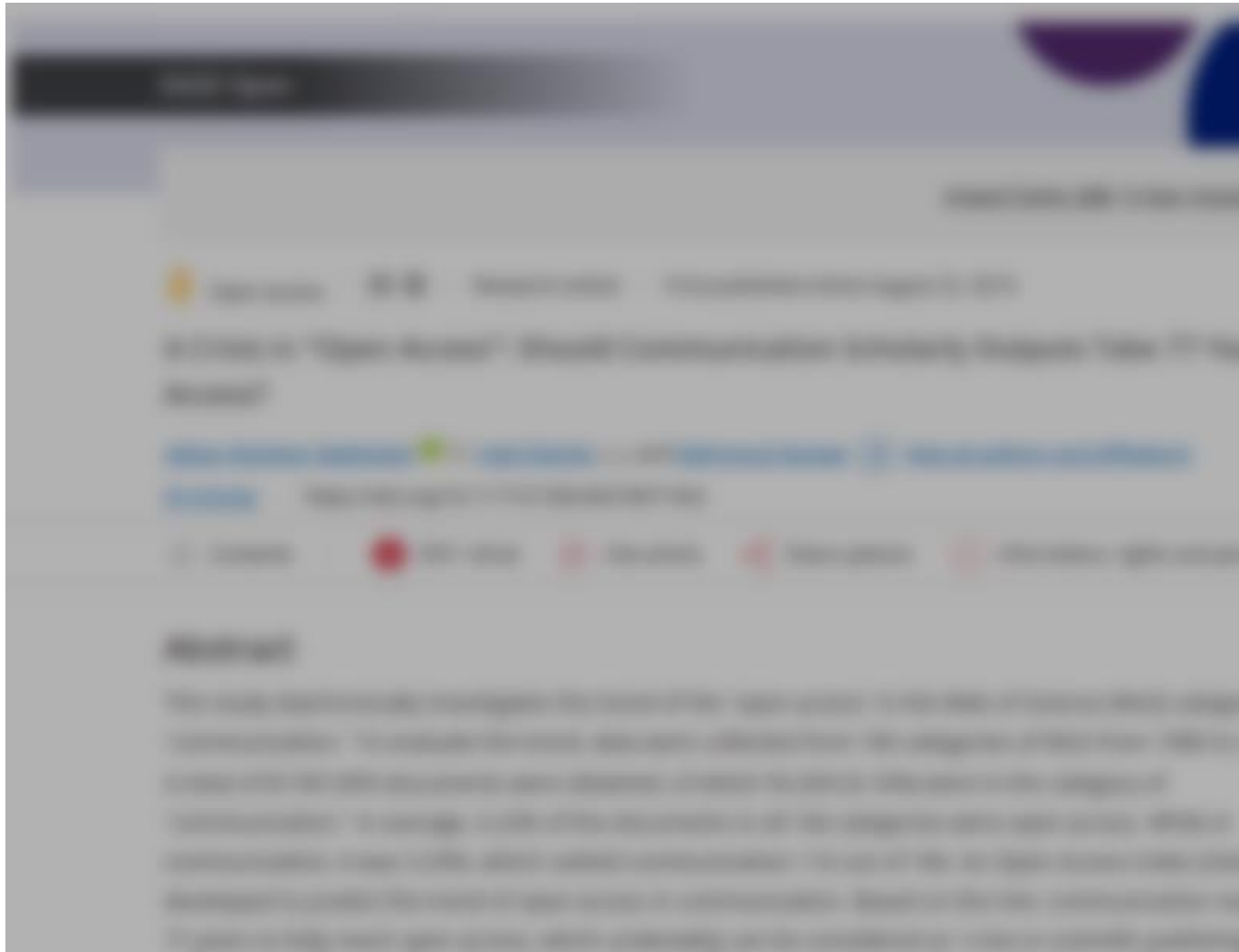
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Metrics and citations



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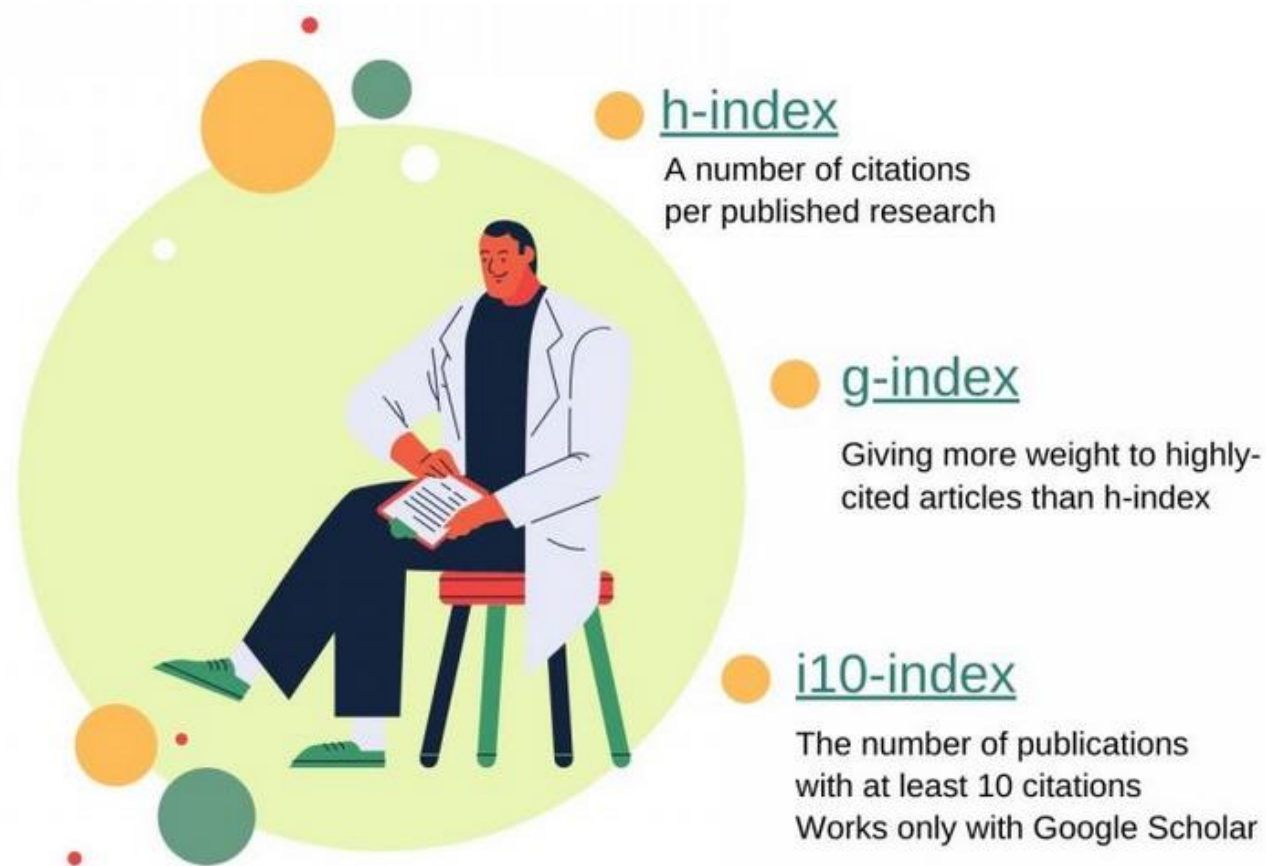
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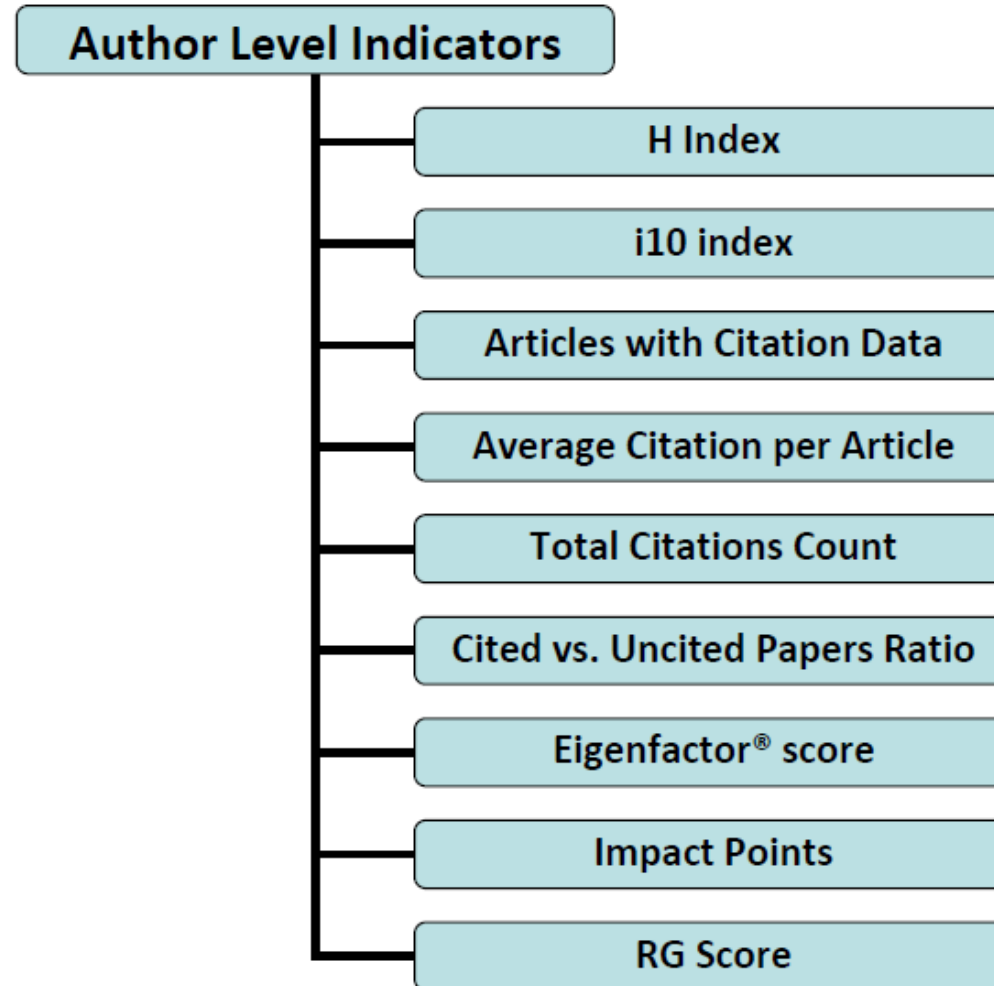


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Indices for author-level metrics

Source: <https://www.labsexplorer.com/c/the-rise-of-altmetrics-shaping-new-ways-of-evaluating-research> 214

Author Level Indicators



Source: Das, A.-K. (2015). [Research Evaluation Metrics](#). 7, place de Fontenoy, 75352 Paris 07 SP, France: United Nations Educational, Scientific and Cultural Organization.

Citation Count:

This is a fundamental bibliometric measure that quantifies how many times a research paper, author, or institution's work has been cited by other researchers. It is an indicator of the influence and visibility of research output.

H-Index:

The H-index is a measure that combines both the number of publications and their citation counts. An author has an H-index of h if they have h papers that have been cited at least h times each. It provides a more comprehensive view of an author's impact.

Egghe's G-Index:

The G-index is similar to the H-index but places more weight on highly cited papers. It aims to give more credit to researchers who have a few highly influential papers.

Field-Weighted Citation Impact (FWCI):

FWCI normalizes citation counts by considering the expected citation rates within a specific research field. It helps in comparing the impact of publications across different disciplines.

To-Do List Session 1: Introduction to Bibliometrics

1. Write an introduction paragraph about Bibliometrics





**The floor is open to questions and discussions about Research Skills, Session 1:
Introductions.**



Thank you

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 <https://publons.com/researcher/1692944>
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My Recent Publications

1. Haidari, S., Hashemi, Z., Jamali, S. M., & Ale Ebrahim, N. (2023). Quantitative and qualitative analysis of executive functions: a bibliometric approach. *Current Psychology*. <https://doi.org/10.1007/s12144-023-05033-x>
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