Research Skills
Session 2: Selecting keywords

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https://publons.com/researcher/1692944
http://scholar.google.com/citations

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

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Abstract

Keywords (commonly called search terms), are the words that researchers enter into the database search box. Keywords search, help researchers to find relevant papers to their research interest. The researcher need to select appropriate alternative keywords to reach the maximum number of published documents. There are some tools for choosing the best set of keywords for a research. Dr. Nader has collected over 700 Research Tools that enable researchers to follow the correct path in research for producing high-quality research outputs with more accuracy and efficiency. The workshop concentrates on how to choose the right keywords for your research.

Keywords: H-index, Improve citations, Research tools, Bibliometrics, Research visibility, Research impact

Do Research, Don't Re-Search

Research Tools Mind Map

Web of Science
SCOPUS
EndNote
OATD
& many more Research Tools

dtSearch
SpringerExemplar
Qiqqa
Academic Phrasebank
& many more tools

Research Tools
By: Nader Ale Ebrahim

Virtual Teams will become as important as

(1) Searching the literature

(2) Writing a paper

(3) Targeting suitable journals

(4) Enh

Journal Citation Reports
Journal Metrics
Manuscript matcher
Find the perfect journal for your arti
& many more Research Tools

393.7k views

Session *Topic*

1. Introduction
2. Selecting keywords
3. Finding Research Papers
4. Evaluate a paper quality
5. Managing Research
6. Read a paper
7. Indexing Desktop Research Tools
8. Avoid Scientific Misconduct
9. Writing a Paper
10. Improve paper quality
11. Target Suitable Journal
12. Improve your Research Visibility and Impact

Tasks for the first session

1. **Structure & planning your research** (Draw the literature map)
2. **Read:**
   - https://www.dlsweb.rmit.edu.au/lsu/content/2_AssessmentTasks/assess_tuts/lit_review_LL/reading.html
   - Cottrell, S. (2005). *Critical thinking skills - Developing Effective Analysis and Argument*. Basingstoke: Palgrave Macmillan.
   - Chapter 3 of "Creswell, J. W. (2012). *Educational research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (4th ed.). Boston: Pearson Education, Inc*"
   - Chapter 3 of "Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Edinburgh Gate, Harlow, Essex CM20 2JE, England: Pearson Education Limited."

Outline

No.	Topic
1	Major Citation Databases
2	Web of Science Core Collection
3	SCOPUS
4	Identifying a Research Problem
5	Reviewing the Literature
6	Developing a search strategy, Finding keywords
7	The literature review process
8	Selecting Keywords
9	Master Keywords List

Major Multidisciplinary Citation Databases

- **Web of Science**

- **SCOPUS**

- **Google Scholar**

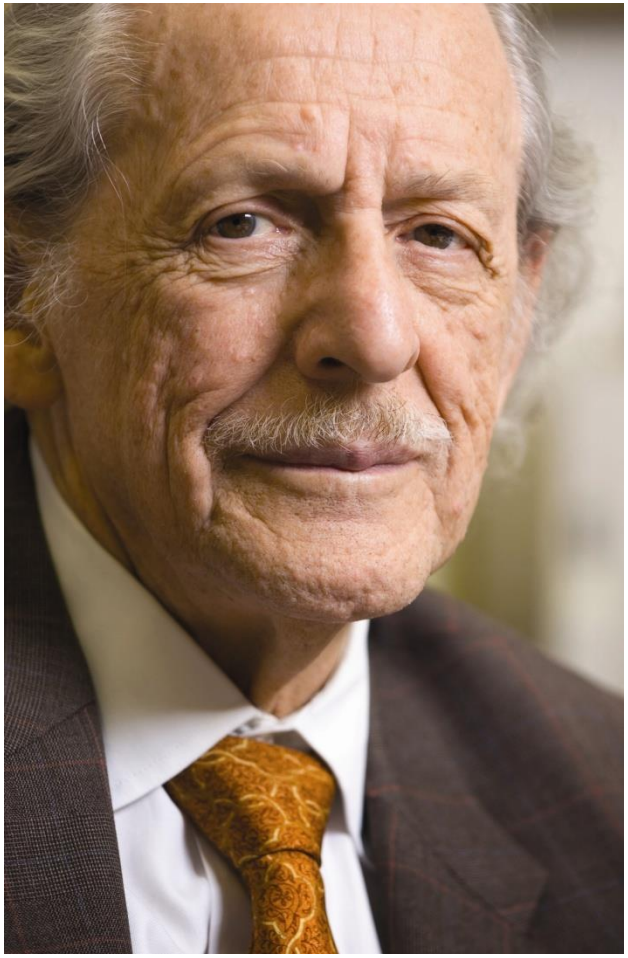
- **Microsoft Academic**

The Institute for Scientific Information (ISI)

The **Institute for Scientific Information** (ISI) was founded by Eugene Garfield in 1960. ISI was acquired by Thomson Scientific & Healthcare in 1992, and became known as **Thomson ISI**. It was a part of the Intellectual Property & Science business of Thomson Reuters until 2016, when the IP & Science business was sold, becoming Clarivate Analytics. In February 2018, Clarivate announced it will re-establish ISI as part of its Scientific and Academic Research group.[6] It exists as a group within Clarivate as of November 2018.

Source: https://en.wikipedia.org/wiki/Institute_for_Scientific_Information

Eugene Garfield, Ph.D.



Founder & Chairman Emeritus
Institute for Scientific Information (ISI)

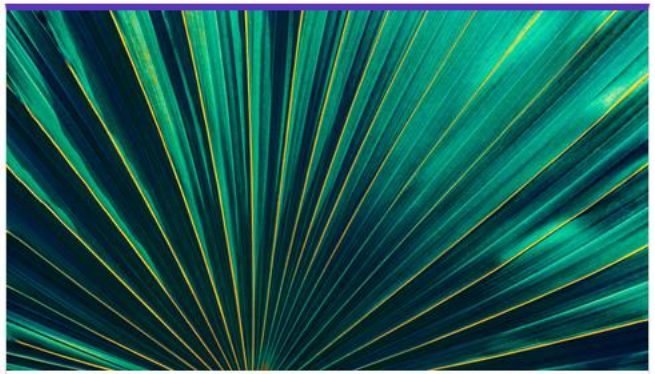
For more Info

Source: http://www.garfield.library.upenn.edu/

Web of Science Group | Who we are for | Products | Resources | Services | ISI | A Clarivate Analytics company

Web of Science Core Collection

A trusted, high quality collection of journals, books, and conference proceedings



- 1.5 billion cited references dating back to 1900
- 74.8 million total records
- 10.1 million total Open Access records
- 21,100+ unique global journals
- 254 disciplines

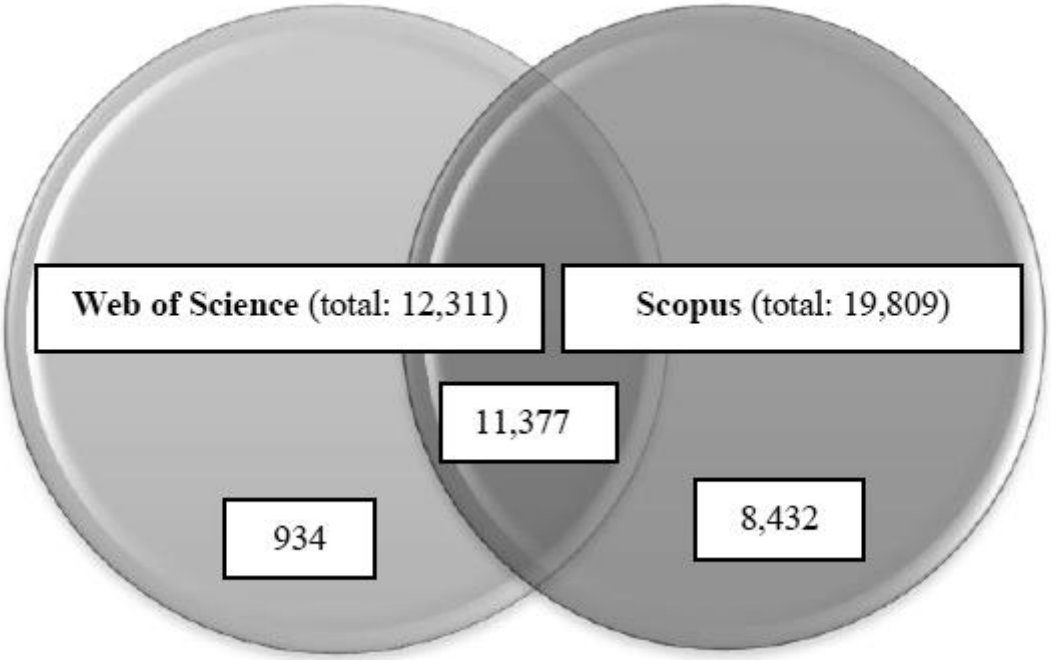
Source: https://clarivate.com/webofsciencegroup/solutions/web-of-science-core-collection/

Scopus (Launched 2004)

Scopus is Elsevier's abstract and citation database launched in 2004. Scopus covers nearly **36,377** titles from approximately **11,678** publishers, of which **34,346** are peer-reviewed journals in top-level subject fields: life sciences, social sciences, physical sciences and health sciences.

Source: https://en.wikipedia.org/wiki/Scopus

A Comparison between Two Main Academic Literature Collections: Web of Science and Scopus Databases



Source: Aghaei Chadegani, Arezoo and Salehi, Hadi and Yunus, Melor Md and Farhadi, Hadi and Fooladi, Masood and Farhadi, Maryam and Ale Ebrahim, Nader, A Comparison between Two Main Academic Literature Collections: Web of Science and Scopus Databases (April 7, 2013). Asian Social Science, Vol. 9, No. 5, pp. 18-26, April 27, 2013. Available at SSRN: http://ssrn.com/abstract=2257540

Identifying a Research Problem

Researchers begin a study by identifying a research problem that they need to address. They write about this "problem" in the opening passages of their study and, in effect, give you as a reader the rationale for why the study is important and why you need to read their study.

Reference: Creswell, J. W. (2012). *Educational research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (4th ed. ed.). Boston: Pearson Education, Inc.*

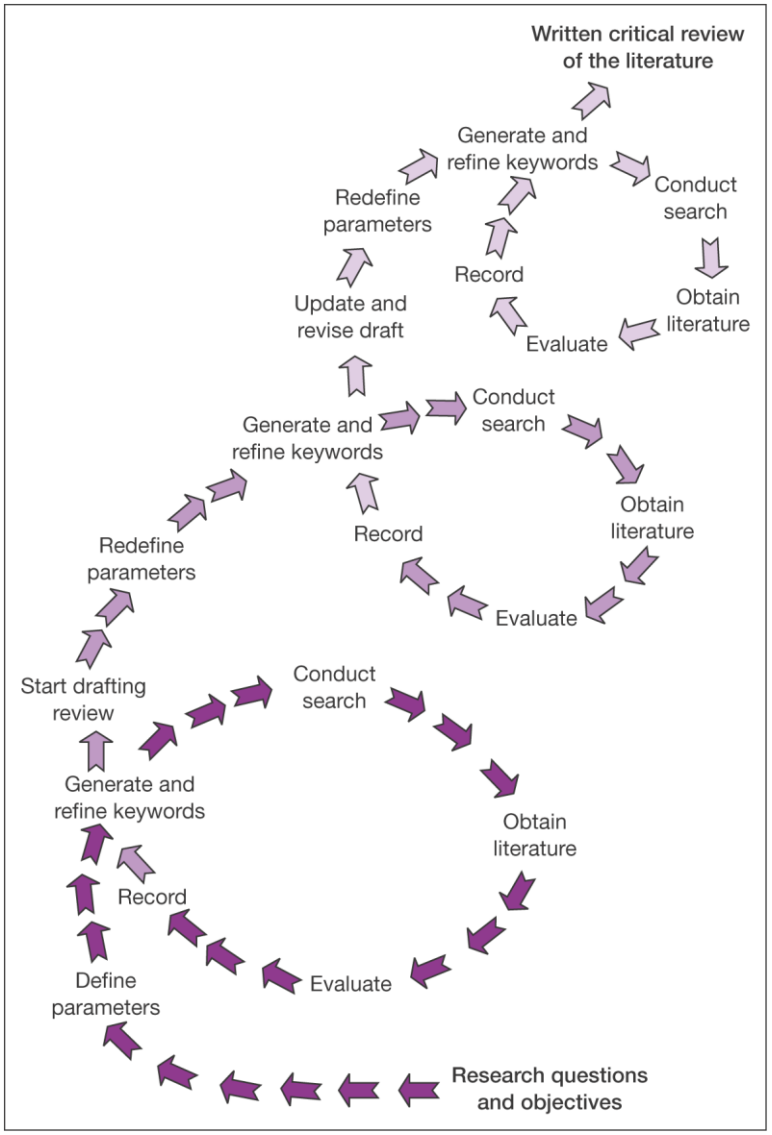
Reviewing the Literature

With so much information available, searching and locating good literature on your topic can be challenging. Five steps will provide a sense of how researchers proceed in reviewing the literature are:

1. ***Identify key terms to use in your search for literature.***
2. ***Locate literature about a topic by consulting several types of materials and databases,*** **including those available at an academic library and on the Internet.**
3. ***Critically evaluate and select the literature for your review.***
4. ***Organize the literature you have selected by abstracting or taking notes on the*** **literature and developing a visual diagram of it.**
5. ***Write a literature review that reports summaries of the literature for inclusion in your*** **research report.**

Reference: Creswell, J. W. (2012). *Educational research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (4th ed. ed.). Boston: Pearson Education, Inc.*

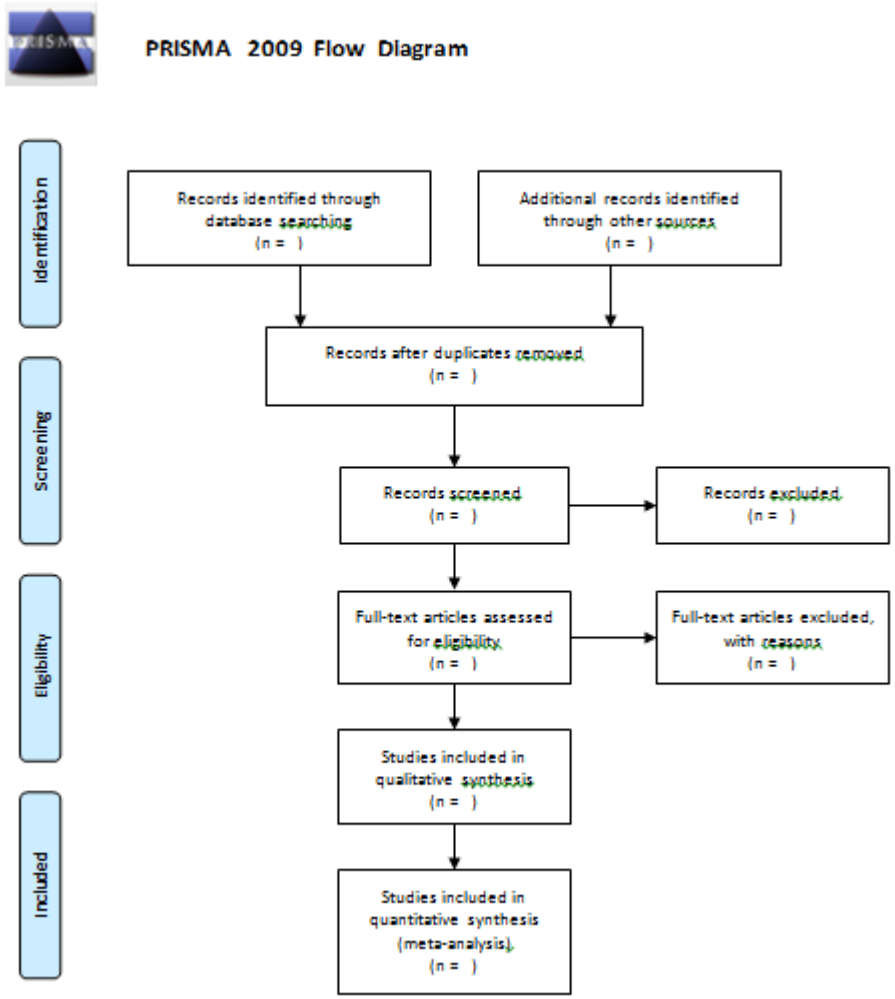
Developing a search strategy, Finding keywords



The literature review process

Source: © Mark Saunders, Philip Lewis, Adrian Thornhill and Martin Jenkins 2003, Research methods for business students / Mark Saunders, Philip Lewis, Adrian Thornhill. —5th ed.

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.

Effective searching

» Developing a search strategy
- » Searching the library catalogue
- » Finding journal articles and papers
- » Searching the Internet
- » Other sources

Source: http://learnline.cdu.edu.au/myresearch/plan/searchstrategy.html

Developing a search strategy

- » Defining the topic
  » Considering the scope of your topic
  » Identifying the main or important aspects
  » Compiling a list of keywords
  » Developing your search strategy
- It is important to develop a search strategy to, not only, find the information you need but to also clarify your topic.

Source: http://learnline.cdu.edu.au/myresearch/plan/searchstrategy.html

How to Find and Develop a Viable Research Topic?

Step One: Identify a Topic.

Step Two: Test Your Topic.

Test the main concepts or keywords in your topic **by looking them up** in the appropriate background sources or **by using them as search terms.**

If you are finding too much information and too many sources, narrow your topic by using the **and** operator

Finding too little information may indicate that you need to broaden your topic.

Source: http://guides.library.cornell.edu/c.php?g=32323&p=203723

Improving Readership of Your Articles

Appearing at the top of the list of search results, and having a useful description of your work, greatly improve the likelihood that a reader will find and download your document.

- Abstracts should include **keywords** that potential readers are likely to use in searches. It is especially valuable to modify and reuse words that appear in the document's title and full text to improve the article's rank when readers search for those words.

- The **first sentence of the abstract** is all that is likely to be displayed in the search page results, so make your first sentence one that will encourage readers to click the link.

Research Tools Mind Map

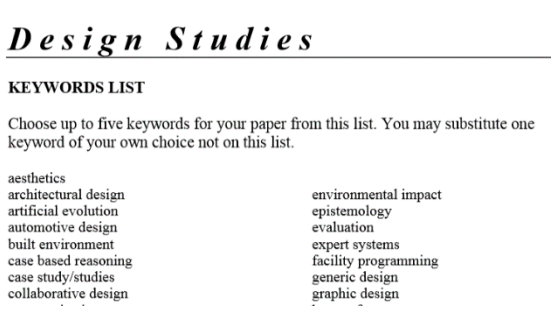
Selecting Keywords

Scopus®

Clarivate Analytics

Google Trends

MASTER KEYWORDS LIST
Journal of International Business Studies



Design Studies

KEYWORDS LIST

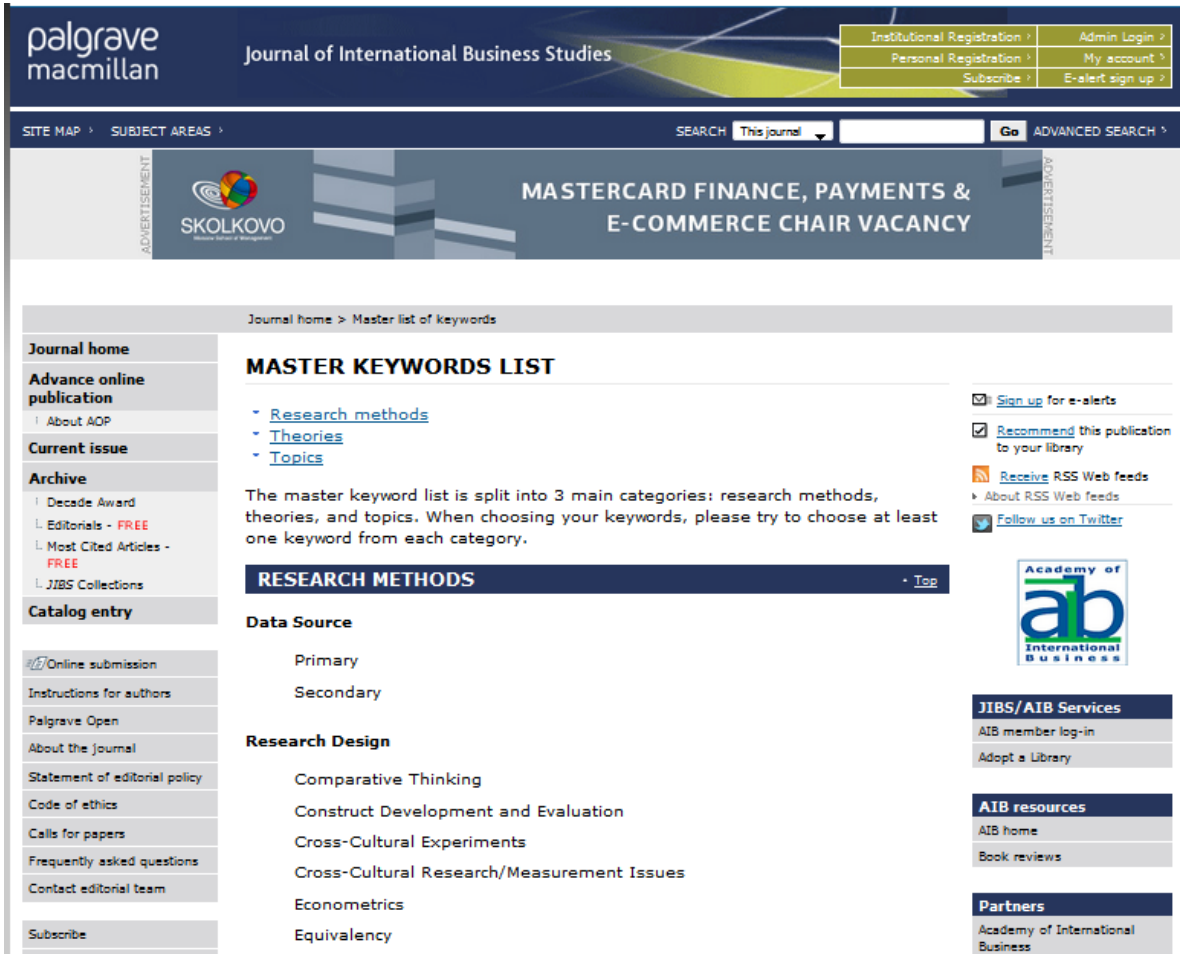
Choose up to five keywords for your paper from this list. You may substitute one keyword of your own choice not on this list.

aesthetics
architectural design
artificial evolution
automotive design
built environment
case based reasoning
case study/studies
collaborative design
environmental impact
epistemology
evaluation
expert systems
facility programming
generic design
graphic design

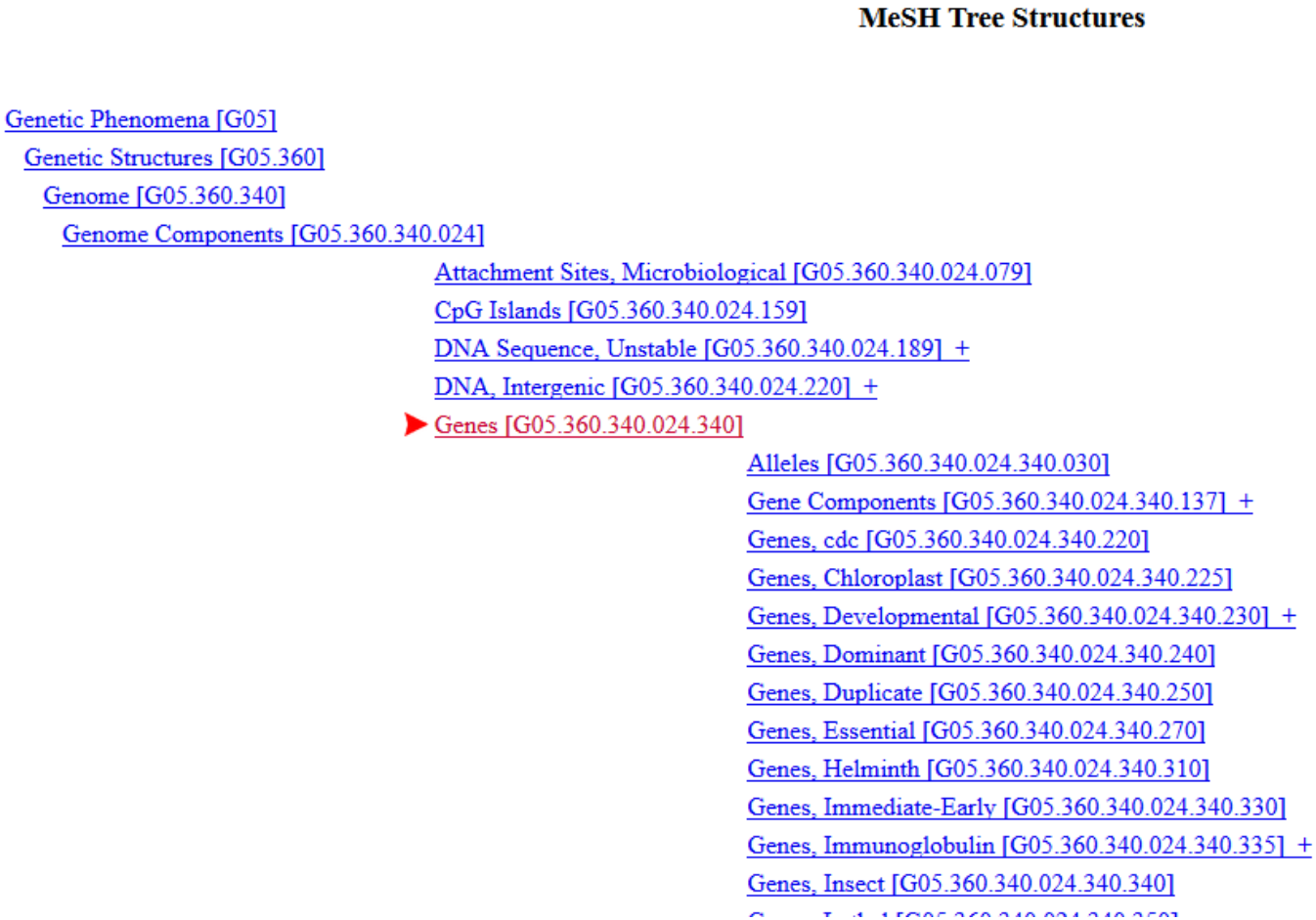
Medical Subject Headings MeSH

MeSH (Medical Subject Headings)

Master Keywords List



MeSH Tree Structures for "Genes"



Foundations of searching

- Virtual AND (Team* OR group OR “Virtual R&D Teams”) NOT (Management OR Manager)
- The toolset?
  1. “phrase searching”
  2. truncat*
  3. OR
  4. AND, NOT
  5. (brackets OR parentheses)

Truncation

Symbol	Retrieves
*	Zero or more characters *carbon* *carbon, hydrocarbon, polycarbonate*
$	Zero or one character colo$r *color, colour*
?	One character only en?oblast *entoblast, endoblast*

THOMSON REUTERS

Keywords Plus

- KeyWords Plus® are index terms created by Thomson Reuters from significant, frequently occurring words in the titles of an article's cited references.

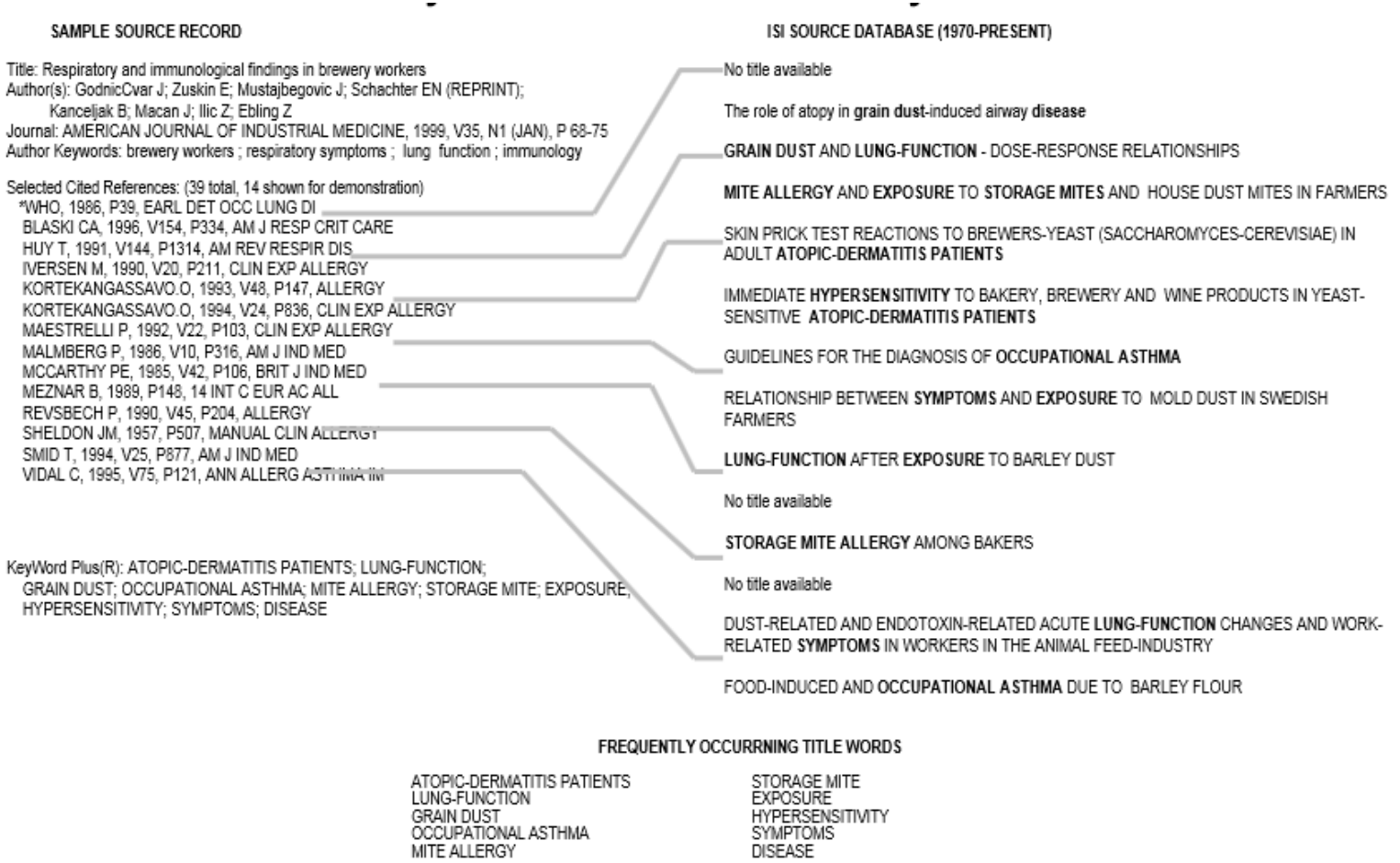
Source: http://images.webofknowledge.com/WOK46/help/WOS/h_fullrec.html

Keywords and Keywords Plus®

Authors sometimes provide a list of keywords or terms that they feel best represent the content of their paper. These keywords are contained in the ISI record (1991 data forward, depending on the database) for each article and are searchable. In addition, ISI generates KeyWords Plus for many articles. **KeyWords Plus** are words or phrases that frequently appear in the titles of an article's references, but do not necessarily appear in the title of the article itself. KeyWords Plus may be present for articles that have no author keywords, or may include important terms not listed among the title, abstract, or author keywords.

Source: http://wos.isitrial.com/help/helpdefs.html

Keywords Plus® Creation Cycle



Source: http://www.lib.vt.edu/help/handouts/databases/wos-workbook-8.pdf

Keywords Plus- Example

- New Product Development in Virtual Environment (ISI Indexed)
- Author Keywords: New product Development; Virtual teams; Concurrent Collaboration; Review paper
- KeyWords Plus: DEVELOPMENT TEAMS; PERFORMANCE; TECHNOLOGY; KNOWLEDGE; COMMUNICATION; PERSPECTIVE; INTEGRATION; INNOVATION; NETWORK; WORKING

Keywords Selection

Results: 26
(from Web of Science Core Collection)
You searched for:
TITLE: ("Envelope Design")
Timespan: All years. **Indexes:** SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH.

Results: 477
(from Web of Science Core Collection)
You searched for:
TITLE: (("efficiency envelope*") OR (envelope NEAR/5 building) OR (envelope NEAR/5 energy) OR ("envelope* energy* saving*") OR ("Envelope* System*") OR ("thermal* envelope*") OR ("Envelope* Design*"))
Timespan: All years. **Indexes:** SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH.

Keywords Selection

TABLE 1: Search phrases used

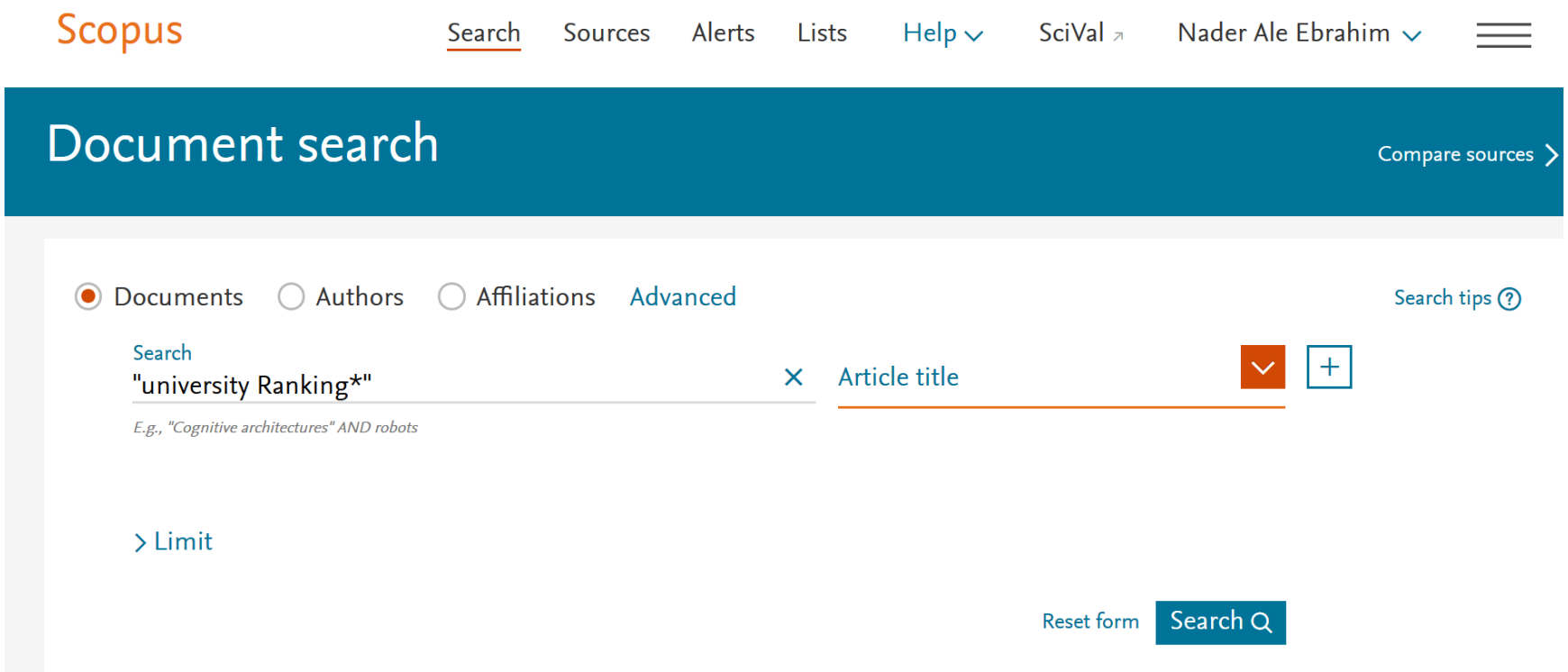
Field	Search Strings
general/other	brain surgery – neurosurgery – hydrocephalus – peripheral nerve surgery
vascular	aneurysm surgery – arteriovenous malformation* – carotid endarterectomy – cavernous malformation – extracranial intracranial bypass – intracranial aneurysm* – [intracranial or intracerebral] and [hematoma or hemorrhage] – subarachnoid hemorrhage – vasospasm
tumor	brain tumor surgery – meningioma – glioblastoma* – glioma – meningioma – radiosurgery – radiotherapy
trauma	brain injury – coma – head injury – brain damage – spinal injury
functional	deep brain stimulation – epilepsy surgery – Parkinson's surgery – spinal cord stimulation – trigeminal neuralgia – stereotactic – stereotaxic – stereotaxy
spine	spine fusion – spine fixation – spine surgery – spinal surgery – spinal fusion – spinal fixation – [cervical or thoracic or lumbar] and [disc* or disk*]

* The asterisk was included in the search string as a wild card character. For example, the search "disc*" would return results for "disc" or "discs" or "discectomy."

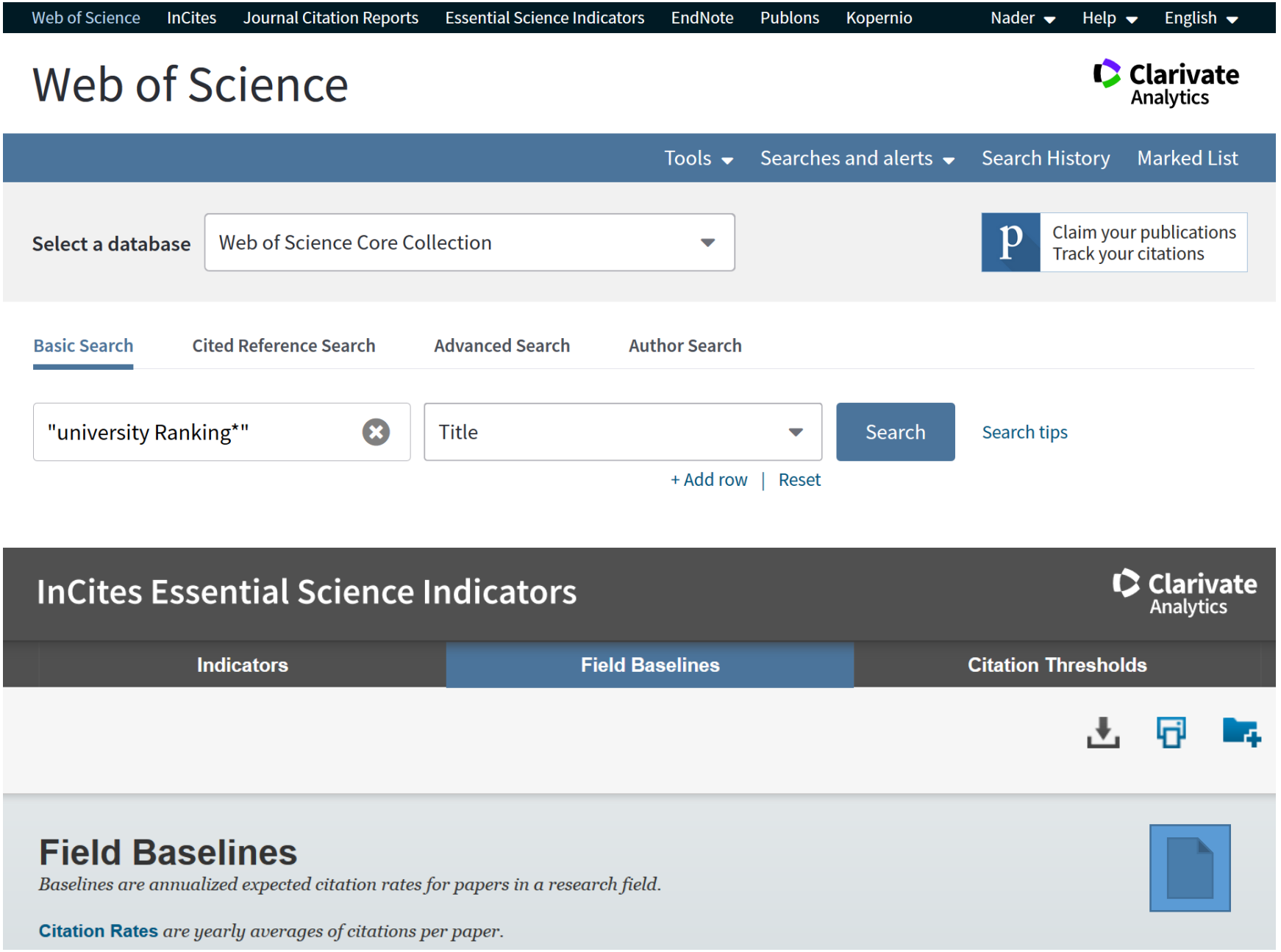
Source: Ponce, F. A., & Lozano, A. M. (2014). Highly cited works in neurosurgery. Part II: the citation classics A review (vol 112, pg 233, 2010). Journal Of Neurosurgery 120(5), 1252-1257. doi: 10.3171/2014.2.JNS14358a

SciVal

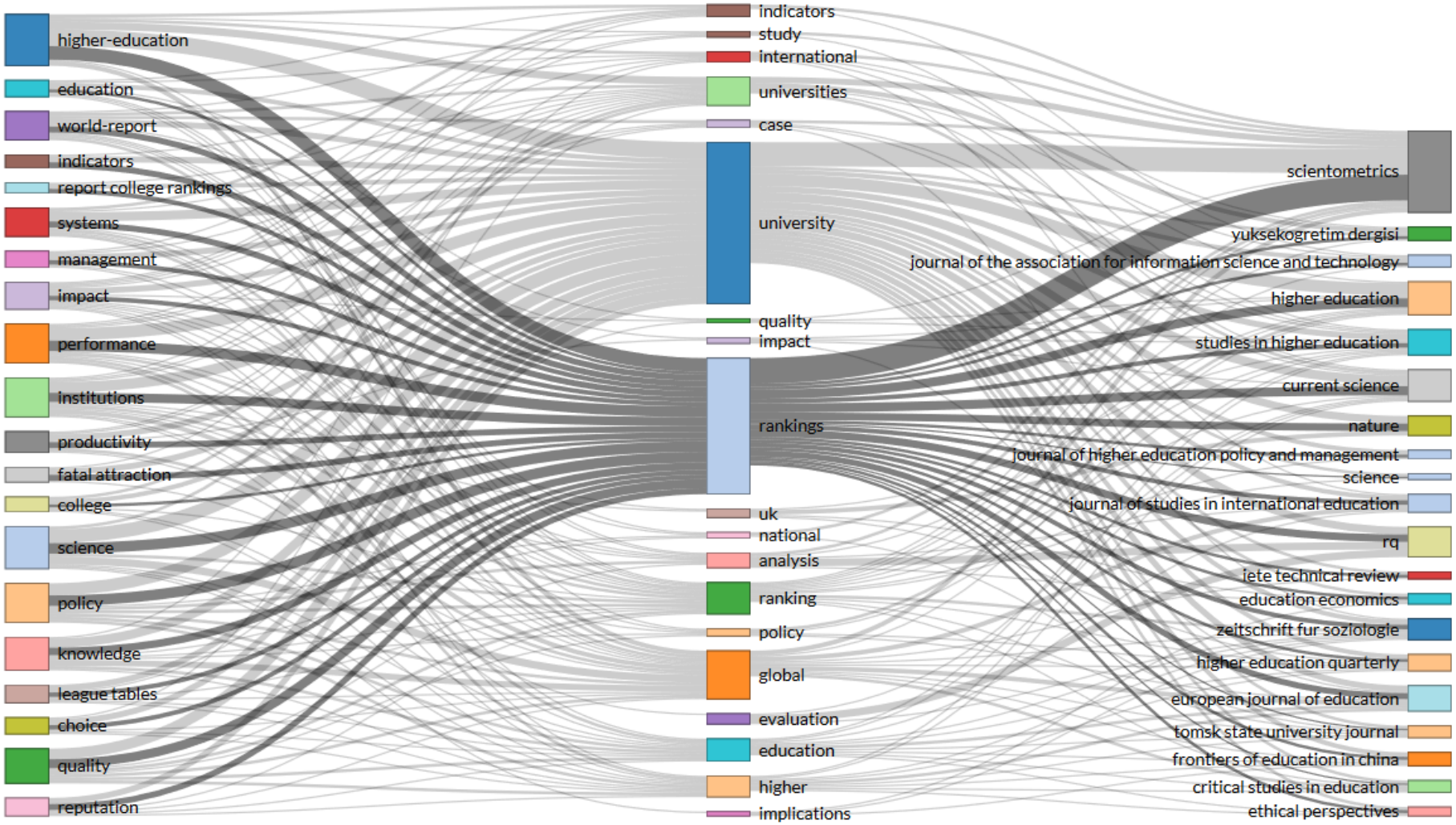
https://www.scival.com



https://www.scopus.com



http://apps.webofknowledge.com



The graph created by **bibliometrix (**Aria, M. & Cuccurullo, C. (2017). **bibliometrix: An R-tool for comprehensive science mapping analysis**, Journal of Informetrics, 11(4), pp 959-975, Elsevier, DOI: 10.1016/j.joi.2017.08.007)

Tasks for the second session

1. Create the log file for your search term/s
2. Identify the main keywords set for your research
3. Identify the alternative keywords set for your research
4. Evaluate the search terms
5. Looking for selected keywords sets on:
   - ✓ SCOPUS
   - ✓ Web of Science Core Collection

Thank you!

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https://publons.com/researcher/1692944
http://scholar.google.com/citations

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

My recent publication:

1. A. Ghanbari Baghestan, H. Khaniki, A. Kalantari, M. Akhtari-Zavare, E. Farahmand, E. Tamam, N. Ale Ebrahim, H. Sabani, and M. Danaee, (2019) "A Crisis in "Open Access": Should Communication Scholarly Outputs Take 77 Years to Become Open Access?," *SAGE Open,* vol. 9, no. 3, pp. 1-8,
2. Ale Ebrahim, S., Ashtari, A., Pedram, M. Z., & Ale Ebrahim, N. (2019). Publication Trends in Drug Delivery and Magnetic Nanoparticles. Nanoscale Research Letters, 14(59). doi: https://doi.org/10.1186/s11671-019-2994-y
3. Parnianifard, A., Azfanizam, A., Ariffin, M., Ismail, M., & Ale Ebrahim, N. (2019). Recent developments in metamodel based robust black-box simulation optimization: An overview. Decision Science Letters, 8(1), 17-44. doi:10.5267/j.dsl.2018.5.004. Available at SSRN: https://ssrn.com/abstract=3192794
4. Elaish, M. M., Shuib, L., Ghani, N. A., Mujtaba, G., & Ale Ebrahim, N. (2019). A Bibliometric Analysis of M-Learning from Topic Inception to 2015. International Journal of Mobile Learning and Organisation, 13(1), 91-112. https://doi.org/10.1504/IJMLO.2019.096470
5. Nordin, N., Samsudin, M.-A., Abdul-Khalid, S.-N., & Ale Ebrahim, N. (2019). Firms' sustainable practice research in developing countries: Mapping the cited literature by Bibliometric analysis approach. International Journal of Sustainable Strategic Management, 7(1/2). doi:. https://doi.org/10.1504/IJSSM.2019.099036

My recent presentations:

1. Ale Ebrahim, Nader (2019): Research Skills Session 1: Introduction. figshare. Presentation. https://doi.org/10.6084/m9.figshare.9931163.v1
2. Ale Ebrahim, Nader (2019): Introduction to "Research Tools": Tools for Collecting, Writing, Publishing, and Improving Research Visibility. figshare. Presentation. https://doi.org/10.6084/m9.figshare.8258957.v1
3. Ale Ebrahim, Nader (2018): Publishing Procedure and Strategies to Improve Research Visibility and Impact. figshare. Presentation. https://doi.org/10.6084/m9.figshare.7475036.v1
4. Ale Ebrahim, Nader (2018): Scientific Misconduct. figshare. Presentation. https://doi.org/10.6084/m9.figshare.7471988.v1
5. Ale Ebrahim, Nader (2018): Collecting, Writing, and Publishing via "Research Tools". figshare. Presentation. https://doi.org/10.6084/m9.figshare.7472273.v1

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2. Creswell, J. W. (2012). Educational research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (4th ed. ed.). Boston: Pearson Education, Inc.
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4. Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097
5. Ponce, F. A., & Lozano, A. M. (2014). Highly cited works in neurosurgery. Part II: the citation classics A review (vol 112, pg 233, 2010). Journal Of Neurosurgery 120(5), 1252-1257. doi: 10.3171/2014.2.JNS14358a
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