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LITERATURE REVIEWING WITH RESEARCH TOOLS

Part 2: Finding proper articles

Nader Ale Ebrahim, PhD

Visiting Research Fellow

Centre for Research Services
Institute of Management and Research Services
University of Malaya, Kuala Lumpur, Malaysia

aleebrahim@um.edu.my

@aleebrahim

www.researcherid.com/rid/C-2414-2009
http://scholar.google.com/citations

16th May 2017

All of my presentations are available online at:
https://figshare.com/authors/Nader_Ale_Ebrahim/100797
Link to this presentation: https://doi.org/10.6084/m9.figshare.4668241.v1 (Old version)

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Read more: Ale Ebrahim, N. (2013). Introduction to the Research Tools mind map. *Research World*, *10*, Article A10.4. Retrieved from https://ssrn.com/abstract=2280007

Abstract

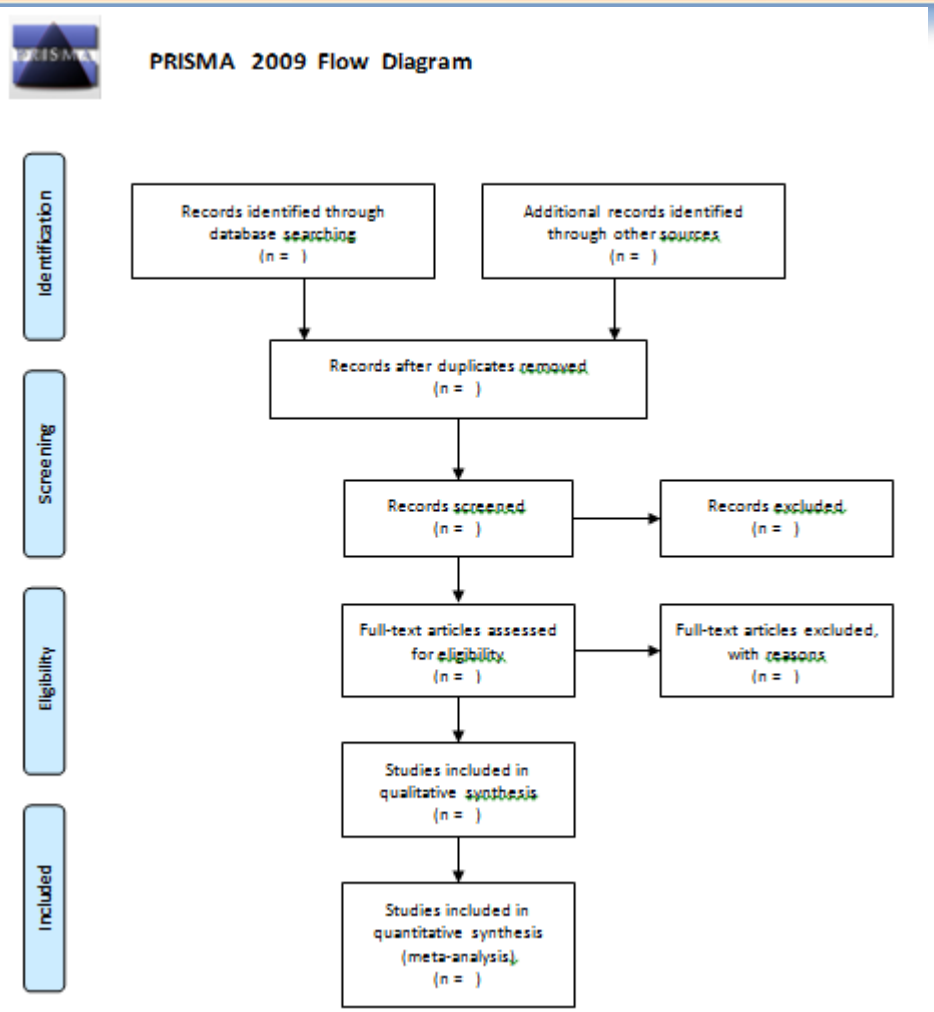
Abstract: "Research Tools" enable researchers to collect, organize, analyze, visualize and publicized research outputs. Dr. Nader has collected over 700 tools that enable students to follow the correct path in research and to ultimately produce high-quality research outputs with more accuracy and efficiency. It is assembled as an interactive Web-based mind map, titled "Research Tools", which is updated periodically. "Research Tools" consists of a hierarchical set of nodes. It has four main nodes: (1) Searching the literature, (2) Writing a paper, (3) Targeting suitable journals, and (4) Enhancing visibility and impact of the research. This workshop continues the previous one and some other tools from the part 1 (Searching the literature) will be described. The e-skills learned from the workshop are useful across various research disciplines and research institutions.

Keywords: Literature Review, Improve citation, Research impact, Open access, h-index, Research Visibility, Bibliometrics, Systematic literature review

Outline

No.	Topic
Day 2:	
12	Evaluate a paper quality
13	H-index
14	Publish or Perish
15	Evaluate a journal quality
16	The Institute for Scientific Information (ISI)
17	Impact Factor-Journal Ranking
18	Keeping up-to-date (Alert system)
19	How to Read a Paper
20	Mind mapping tools

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.

Critically Analyzing Information Sources

1- Initial Appraisal:

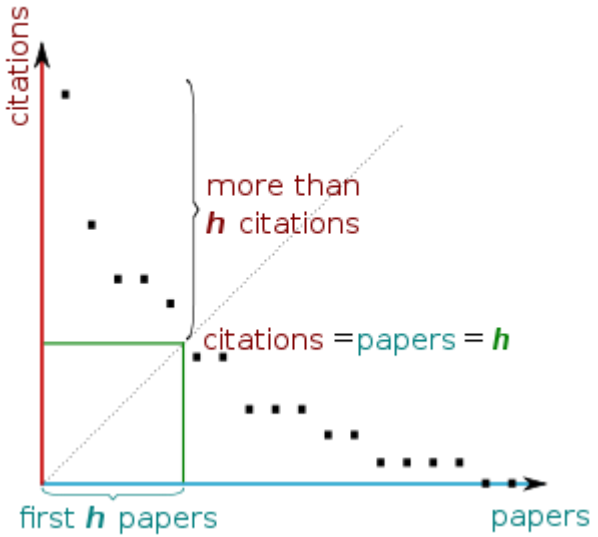
- Author
- Date of Publication
- Edition or Revision
- Publisher
- Title of Journal (Distinguishing Scholarly Journals from other Periodicals)

2- Content Analysis:

- Intended Audience
- Objective Reasoning
- Coverage
- Writing Style
- Evaluative Reviews

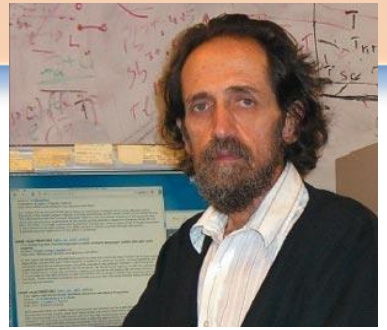
h-index (Jorge E. Hirsch)

- *A scientist has index h if h of [his/her] N_p papers have at least h citations each, and the other (N_p − h) papers have at most h citations each.*

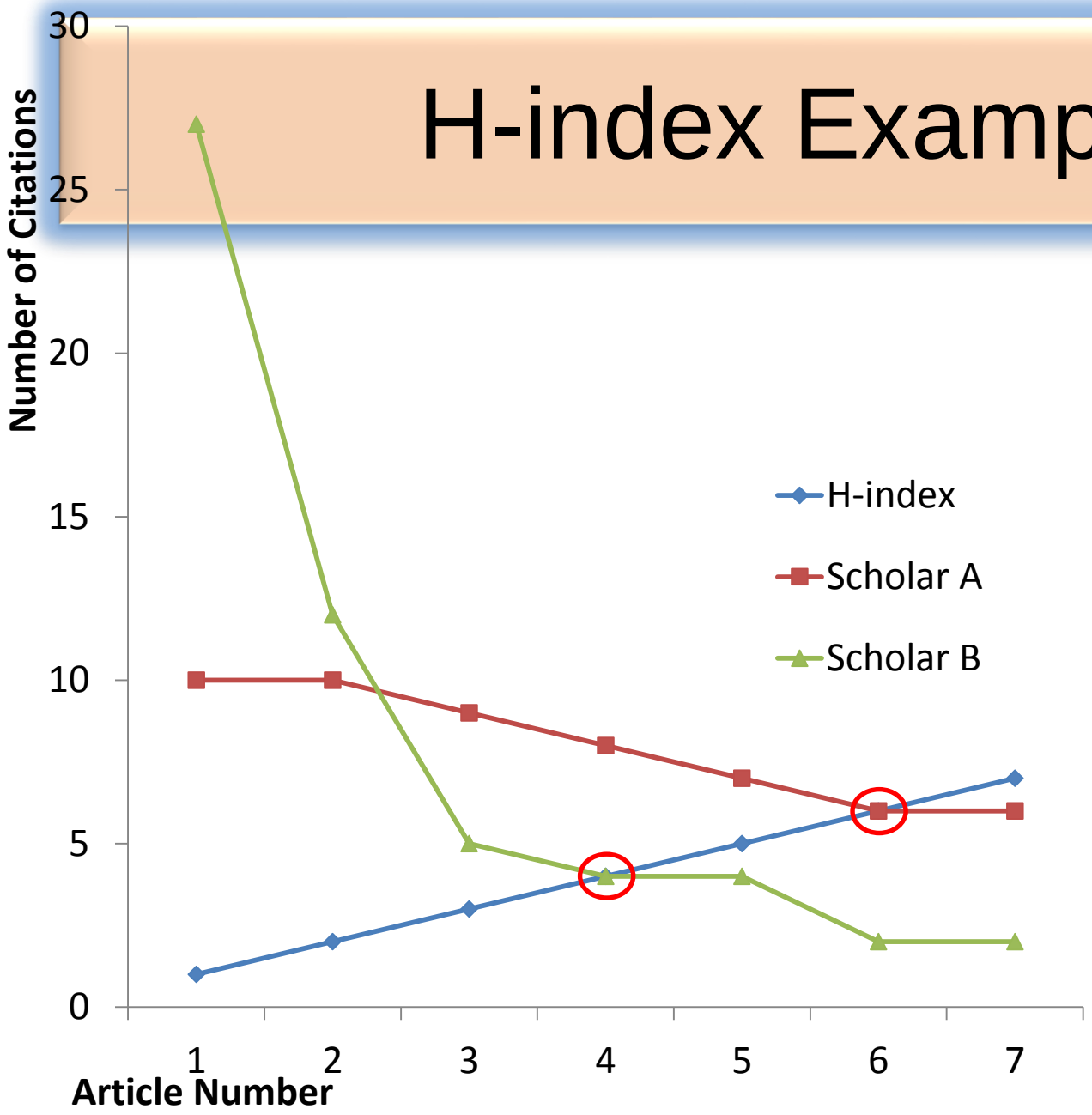


H-index from a plot of decreasing citations for numbered papers

H-index Example



Jorge E. Hirsch



Scholar A	Scholar B
10	27
10	12
9	5
8	4
7	4
6	2
6	2
56 citations	56 citations
h-index=6	h-index=4

Source: http://www.slideshare.net/librarian68/overview-of-citation-metrics

A scientist has index h if h of his/her Np papers have at least h citations each, and the other (Np-h) papers have no more than h citations each.

As an example, a researcher with an H-index of 15 has (of their total number of publications) 15 papers which have been cited at least 15 times each.

Researcher A			Researcher B	
Paper rank	Citations		Paper rank	Citations
1	10		1	1348
2	8		2	159
3	6		3	50
4	5		4	4
5	4		5	4
6	0		6	3

Neither researcher can have an H-index of more than 6.

Source: http://guides.is.uwa.edu.au/content.php?pid=372347&sid=3050052

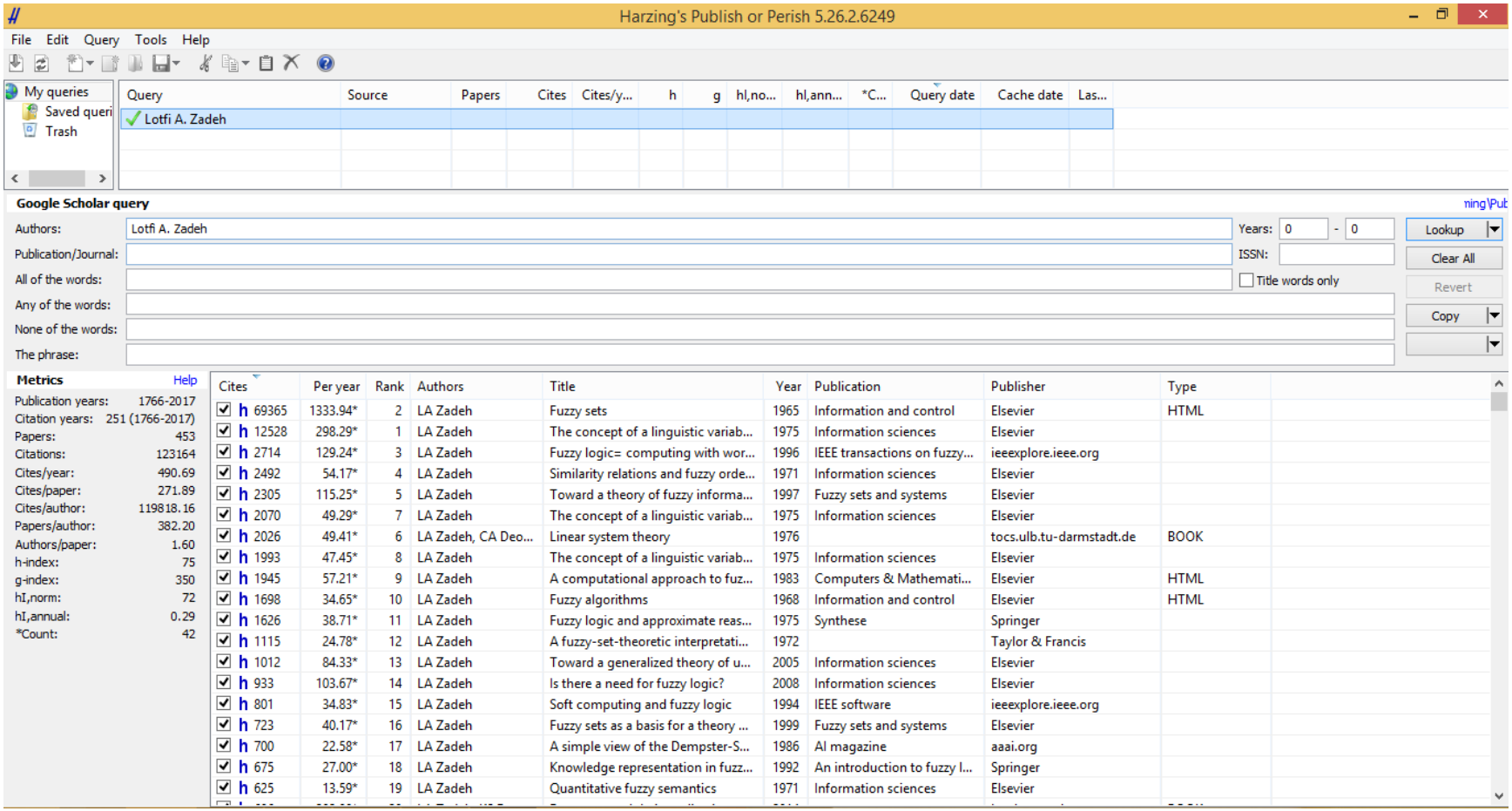
Publish or Perish

Publish or Perish is a free program that retrieves citations from Google Scholar and allows users to calculate:

- Total number of papers
- Total number of citations
- Average number of citations per paper
- Average number of citations per author
- Average number of papers per author
- Average number of citations per year
- Hirsch's h-index and related parameters
- The contemporary h-index
- The age-weighted citation rate
- Two variations of individual h-indices
- An analysis of the number of authors per paper

Source: http://guides.library.vu.edu.au/content.php?pid=251876&sid=2079929

Publish or Perish



Publish or Perish

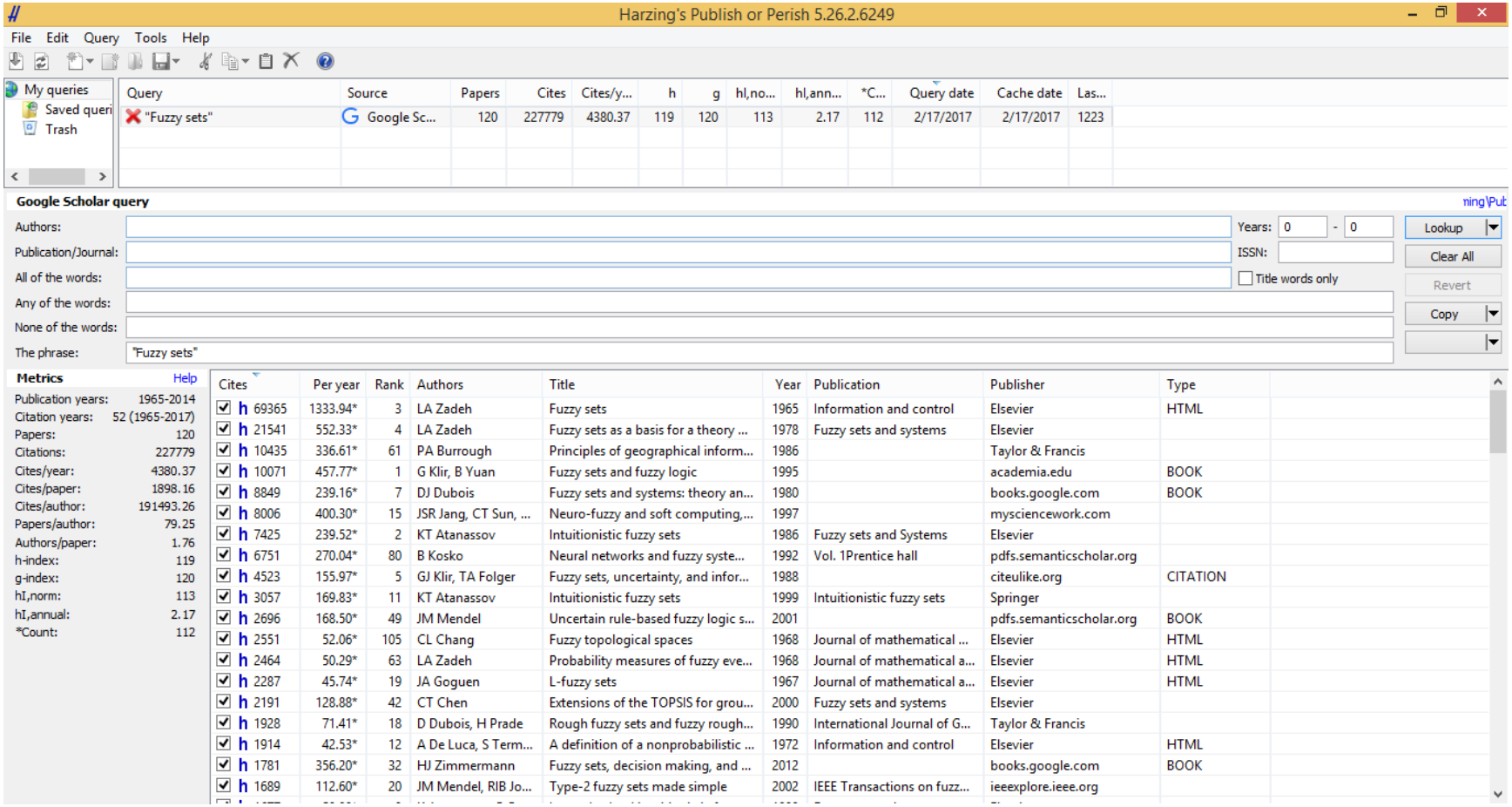
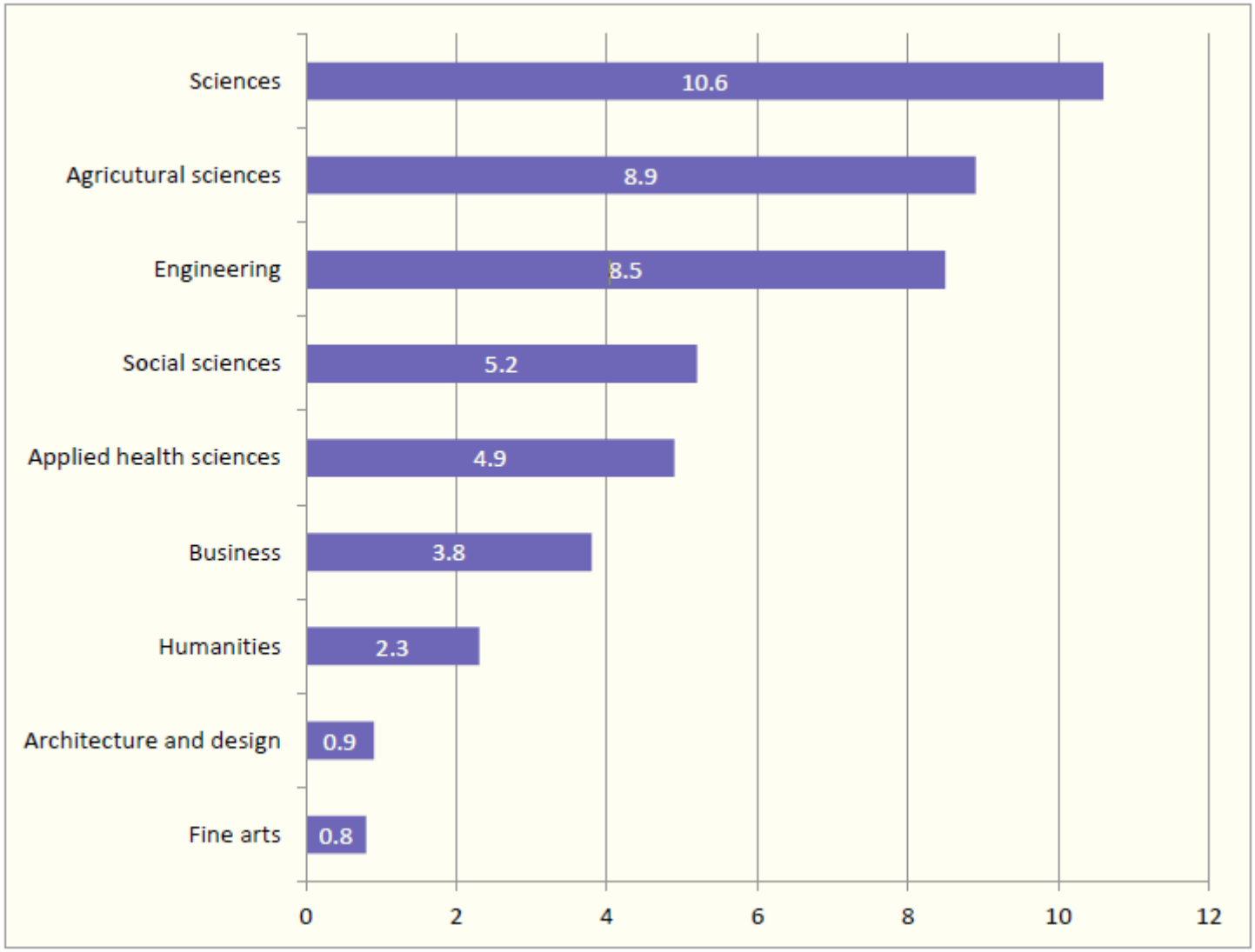


Figure 1: Mean H-index Scores by Field of Study



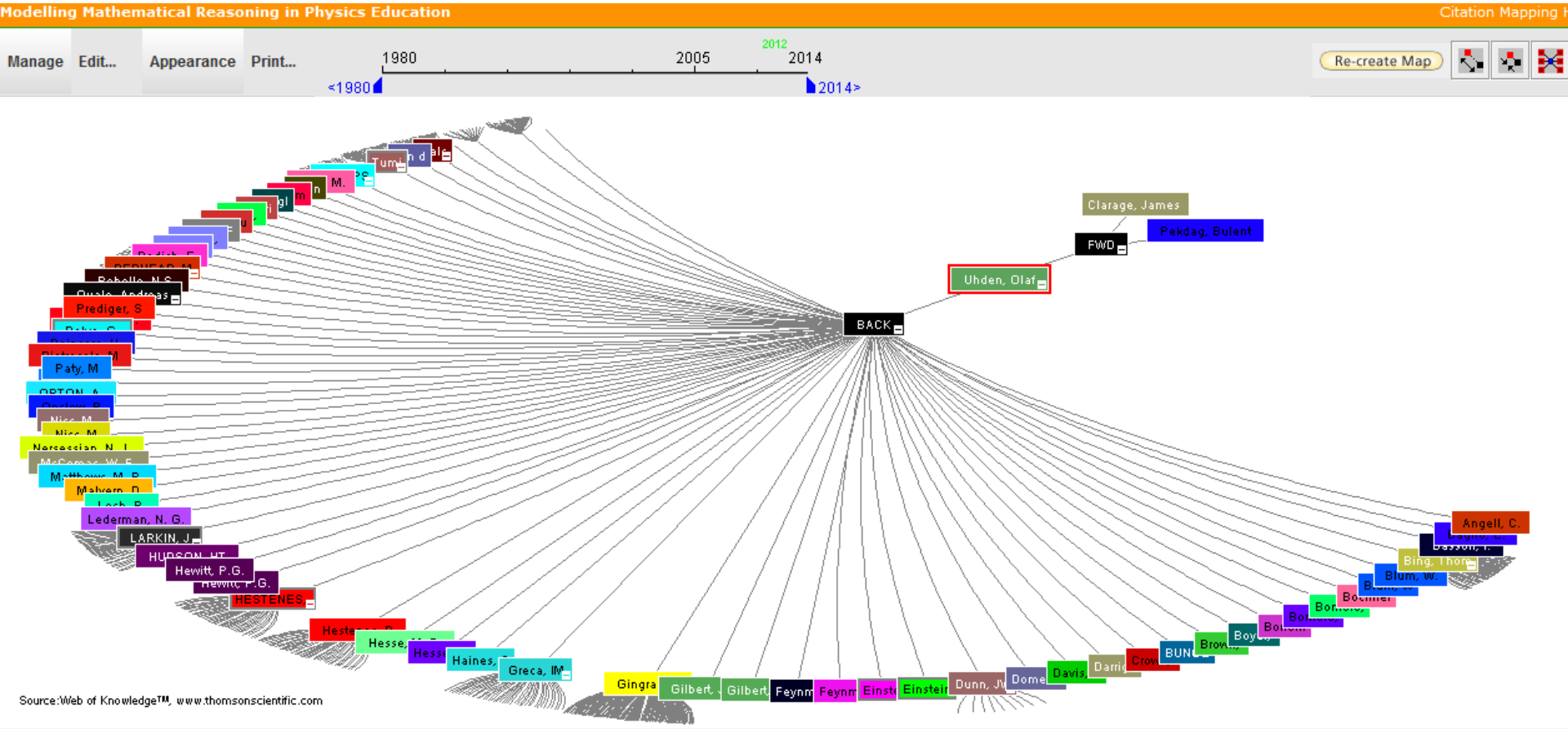
Source: Making Research Count: Analyzing Canadian Academic Publishing Cultures

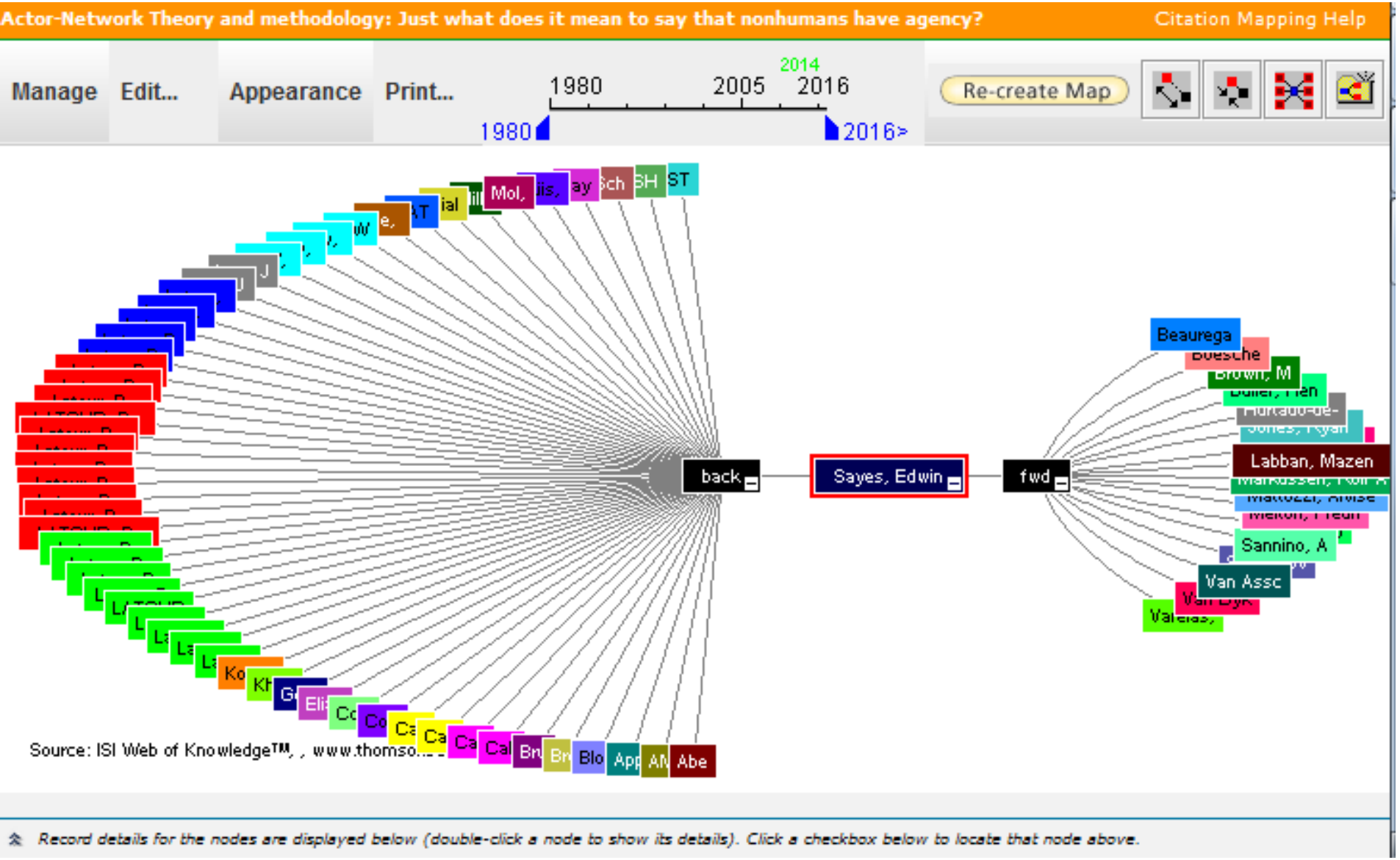
Web of Science

- Web of Science® is perhaps the most well-known tool for determining the number of times a publication has been cited.

- Web of Science® is made up of three citation indexes owned by Thomson Scientific:
  - Science Citation Index ®
  - Social Sciences Citation Index ®
  - Arts & Humanities Citation Index ®.

Source: http://guides.library.vu.edu.au/content.php?pid=251876&sid=2079929





Paper/journal quality

- Another guide to paper/journal quality is the general reputation of the association, society, or organization publishing the journal.
- Leading professional associations such as American Psychological Association (APA) or the Institute of Electrical and Electronics Engineers (IEEE) publish a range of journals that are highly regarded.

The Institute for Scientific Information (ISI)

- The **Institute for Scientific Information** (ISI) was founded by Eugene Garfield in 1960. It was acquired by Thomson Scientific & Healthcare in 1992, became known as **Thomson ISI** and now is part of the Healthcare & Science business of the multi-billion dollar Thomson Reuters Corporation.

- ISI offered bibliographic database services. Its speciality: citation indexing and analysis, a field pioneered by Garfield. It maintains citation databases covering thousands of academic journals, including a continuation of its long time print-based indexing service the Science Citation Index (SCI), as well as the Social Sciences Citation Index (SSCI), and the Arts and Humanities Citation Index (AHCI). All of these are available via ISI's Web of Knowledge database service.

Impact Factor

- The most commonly used measure of journal quality is Impact Factor. This is a number which attempts to measure the impact of a journal in terms of its influence on the academic community. Impact Factors are published by Thomson-ISI

What are journal impact factors?

Impact factors are a measure of the "quality" of a journal - they identify the most frequently cited journals in a field.

Impact factors can be used to:

identify journals in which to publish

identify journals relevant to your research

confirm the status of journals in which you have published

The Impact factor formula

The impact factor of a journal is based on the average number of times that articles published in that journal in the two previous years (e.g. 2008 and 2009) were cited in the subsequent year (i.e. 2010). This is calculated using the following formula:

$$= \frac{\text{Cites in 2010 to items published in 2008 and 2009}}{\text{Number of items published in 2008 and 2009}}$$

If an impact factor is lower than 1.0 that means there were more articles published in the journal than there were cites to those articles in any given year.

Source: http://guides.library.vu.edu.au/content.php?pid=251876&sid=2437240

Be aware that...

- Many journals do not have an impact factor (sources other than JCR need to be consulted).
- The impact factor cannot assess the quality of individual articles.
- Only research articles, technical notes and reviews are “citable” items. Editorials, letters, news items and meeting abstracts are “non-citable items”.

Source: http://guides.library.vu.edu.au/content.php?pid=251876&sid=2437240

CiteScore

CiteScore 2015 methodology

CiteScore 2015 counts the citations received in 2015 to documents published in 2012, 2013 or 2014, and divides this by the number of documents published in 2012, 2013 and 2014.

3-year publication window

The 3-year CiteScore time window was chosen as a best fit for all subject areas. Research shows that a 3-year publication window is long enough to capture the citation peak of the majority of disciplines.

Frequency

	CiteScore	CiteScore Tracker (on Scopus.com)
Calculated	Annually	12 times per year
Updates	None	Monthly

Document types

All types of documents (research articles, review articles, conference proceedings, editorials errata, letters, notes, and short surveys) are included in the CiteScore calculation. Although articles in press are included in Scopus they are not included in the calculation.

Source: https://journalmetrics.scopus.com/

Network Analysis Interface for Literature Studies (NAILS project)

Important papers

The most important papers and other sources are identified below using three importance measures: 1) in-degree in the citation network, 2) citation count provided by Web of Science (only for papers included in the dataset), and 3) PageRank score in the citation network. The top 25 highest scoring papers are identified using these measures separately. The results are then combined and duplicates are removed. Results are sorted by in-degree, and ties are first broken by citation count and then by the PageRank.

Source: http://nailsproject.net/ & http://hammer.nailsproject.net/analyses/new

Keeping up-to-date (Alert system)

What is an alert service?

- Many journal databases and book publishers offer free alert services. These are an effective means of keeping track of the latest research.
- Alert services come in different forms. The most common include:
  - a search alert. This is a saved search which alerts you when a book or article that matches your search terms is published.
  - a TOC (Table of Contents) alert. Such an alert notifies you when a new issue of a journal is published, and provides you with the issue's table of contents.
  - a citation alert. This advises you when a new article cites a particular work.
  - Most alert services are email-based. An increasing number are now offered as an RSS feed. If you are just beginning, you might like to try email alerts first. These are generally easier to create.

Keeping up-to-date

Create a Google Alert

- Enter the topic you wish to monitor.
- Search terms:
- Type:
- How often:
- Email length:
- Your email:

Keeping up-to-date

[Scopus Citation Tracker]

How to Read a Paper

THE THREE-PASS APPROACH

1-The first pass

The first pass is a quick scan to get a bird's-eye view of the paper. You can also decide whether you need to do any more passes. This pass should take about five to ten minutes and consists of the following steps:

1. Carefully read the title, abstract, and introduction
2. Read the section and sub-section headings, but ignore everything else
3. Read the conclusions
4. Glance over the references, mentally ticking off the ones you've already read.

Source: Keshav, S. (2007). How to read a paper. *ACM SIGCOMM Computer Communication Review*, *37*(3), 83-84.

THE THREE-PASS APPROACH

1- The second pass

In the second pass, read the paper with greater care, but ignore details such as proofs. It helps to jot down the key points, or to make comments in the margins, as you read. The second pass should take up to an hour. You should be able to summarize the main idea of the paper, with supporting evidence, to someone else.

1. Look carefully at the figures, diagrams and other illustrations in the paper. Pay special attention to graphs.
2. Remember to mark relevant unread references for further reading (this is a good way to learn more about the background of the paper).

Source: Keshav, S. (2007). How to read a paper. *ACM SIGCOMM Computer Communication Review*, *37*(3), 83-84.

THE THREE-PASS APPROACH

1- The third pass

To fully understand a paper, particularly if you are reviewer, requires a third pass. The key to the third pass is to attempt to virtually re-implement the paper: that is, making the same assumptions as the authors, re-create the work. By comparing this re-creation with the actual paper, you can easily identify not only a paper's innovations, but also its hidden failings and assumptions.

This pass can take about four or five hours for beginners, and about an hour for an experienced reader.

Source: Keshav, S. (2007). How to read a paper. *ACM SIGCOMM Computer Communication Review*, *37*(3), 83-84.

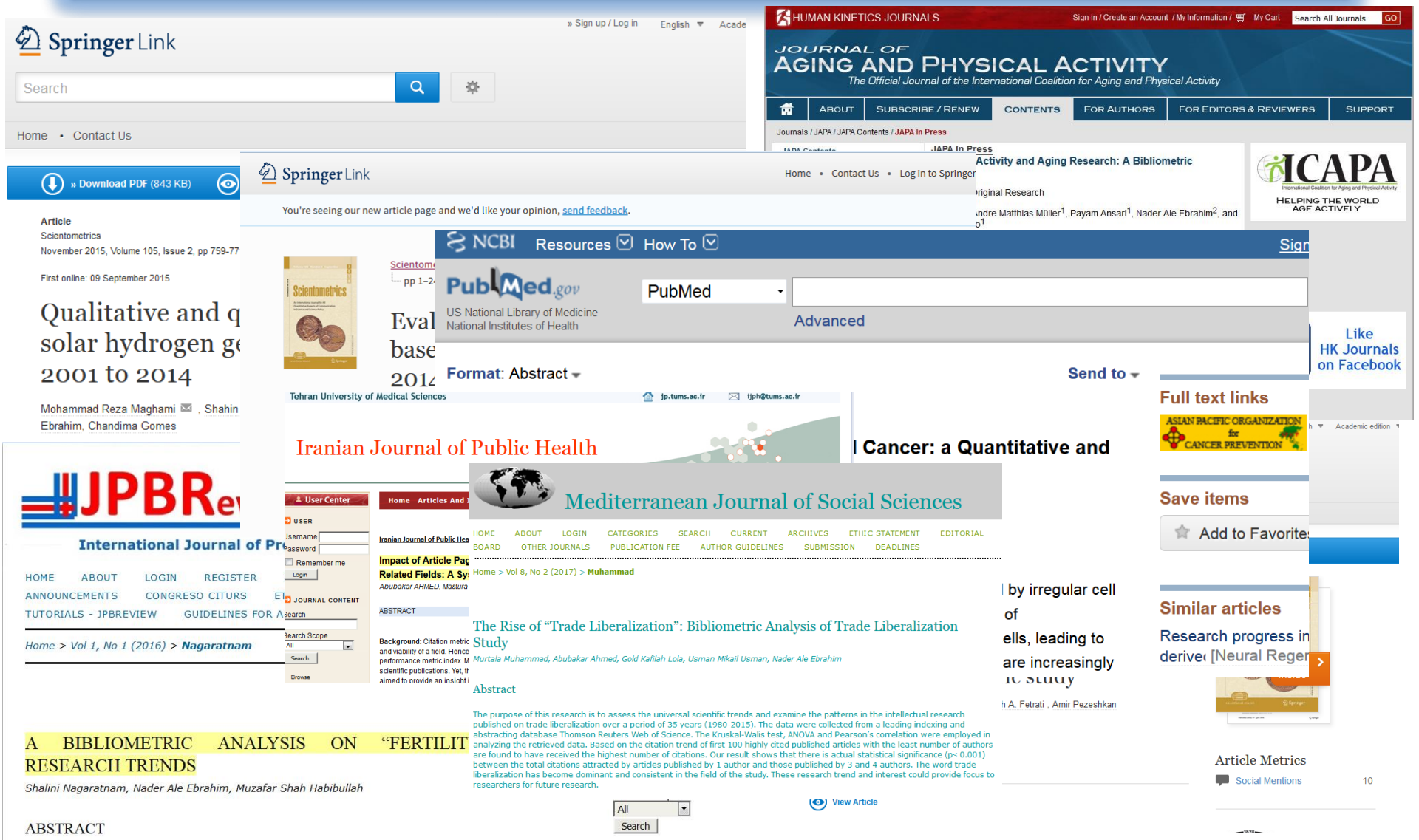
Mind Map Tools

Source: **Mind Map Tools, By:**Seyyed Ali Fattahi Computer PhD Candidate FTSM UKM

Task for second session

- Measure the downloaded papers/journal's quality
- Turn on Alert system in WoS and other databases
- Read Keshav, S. (2007). How to read a paper. *ACM SIGCOMM Computer Communication Review*, *37*(3), 83-84.
- Create your literature review Mind Map

My recent publications



Questions?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Twitter: @aleebrahim


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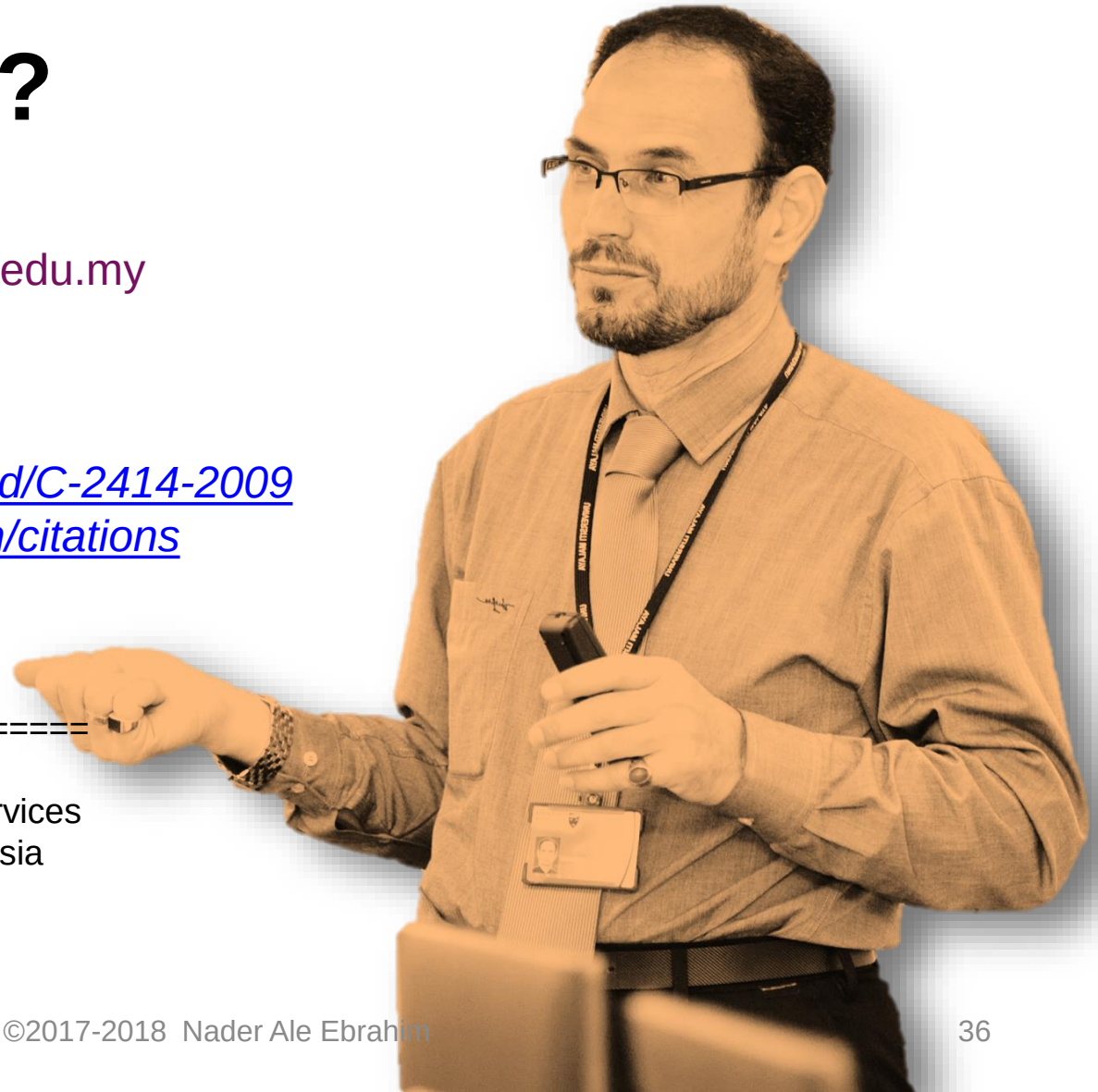

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3. Keshav, S. (2007). How to read a paper. ACM SIGCOMM Computer Communication Review, 37(3), 83-84.
4. Mind Map Tools, By:Seyyed Ali Fattahi Computer PhD Candidate FTSM UKM
5. Knutas, A., Hajikhani, A., Salminen, J., Ikonen, J., Porras, J., 2015. Cloud-Based Bibliometric Analysis Service for Systematic Mapping Studies. CompSysTech 2015.

My recent publication:

1. Muhammad, M., Ahmed, A., Lola, G. K., Mikail Usman, U., & Ale Ebrahim, N. (2017). The Rise of "Trade Liberalization": Bibliometric Analysis of Trade Liberalization Study. Mediterranean Journal of Social Sciences, 8(2), 97-104. http://ssrn.com/abstract=2928551

My recent presentations:

1. Ale Ebrahim, Nader (2017): Citation Tracking for Future Collaboration and Improving H-index. https://doi.org/10.6084/m9.figshare.4982114.v1
2. Ale Ebrahim, Nader (2017): Improving Research Visibility Part 3: Online Profiles. https://doi.org/10.6084/m9.figshare.4959788.v1
3. Ale Ebrahim, Nader (2017): Publishing Research Support Documents in Open Access Platform. https://doi.org/10.6084/m9.figshare.4929635.v1
4. Ale Ebrahim, Nader (2017): Improving Research Visibility Part 2: Pre/Post Prints Preparation. https://doi.org/10.6084/m9.figshare.4906484.v1
5. Ale Ebrahim, Nader (2017): Academic Social Network for Enhancement of Research Visibility and Impact. https://doi.org/10.6084/m9.figshare.4903202.v1