



Conducting Research: Literature Search to Writing **Review Paper**

Nader Ale Ebrahim, PhD

Visiting Research Fellow

Centre for Research Services Research Management & Innovation Complex University of Malaya, Kuala Lumpur, Malaysia



aleebrahim@um.edu.my



@aleebrahim

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



19th December 2016

All of my presentations are available online at:

https://figshare.com/authors/Nader_Ale_Ebrahim/100797

Link to this presentation: https://dx.doi.org/10.6084/m9.figshare.1100242.v1 (Old version)

Conducting Research: Literature Search to Writing Review Paper

Part 2: Finding proper articles

Nader Ale Ebrahim, PhD

Centre for Research Services
Research Management & Innovation Complex
University of Malaya, Kuala Lumpur, Malaysia
www.researcherid.com/rid/C-2414-2009
http://scholar.google.com/citations

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" can be defined as vehicles that broadly facilitate research and related activities. "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

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)



PRISMA 2009 Flow Diagram

Identification

Screening

Fleibility

Included

Records identified through Additional records identified through other sources database searching (n =)(n =)Records after duplicates removed (n =)Records screened Records excluded. (n =)(n =)Full-text articles assessed Full-text articles excluded, for eligibility. with reasons (n =)(n =)Studies included in qualitative synthesis (n =)Studies included in quantitative synthesis (meta-analysis), (n =)

From: 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

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

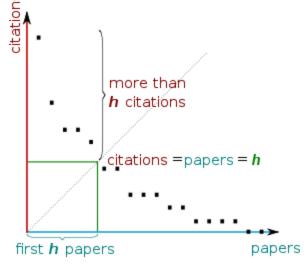
Coverage

Writing Style

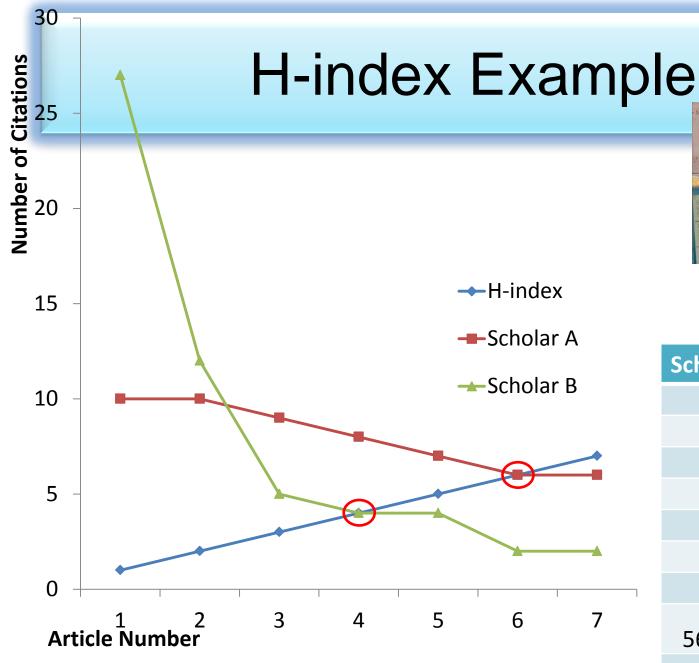
Evaluative Reviews

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



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	

©2016-2017 Nader Ale Ebrahim

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	Α	Researcher	В
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.

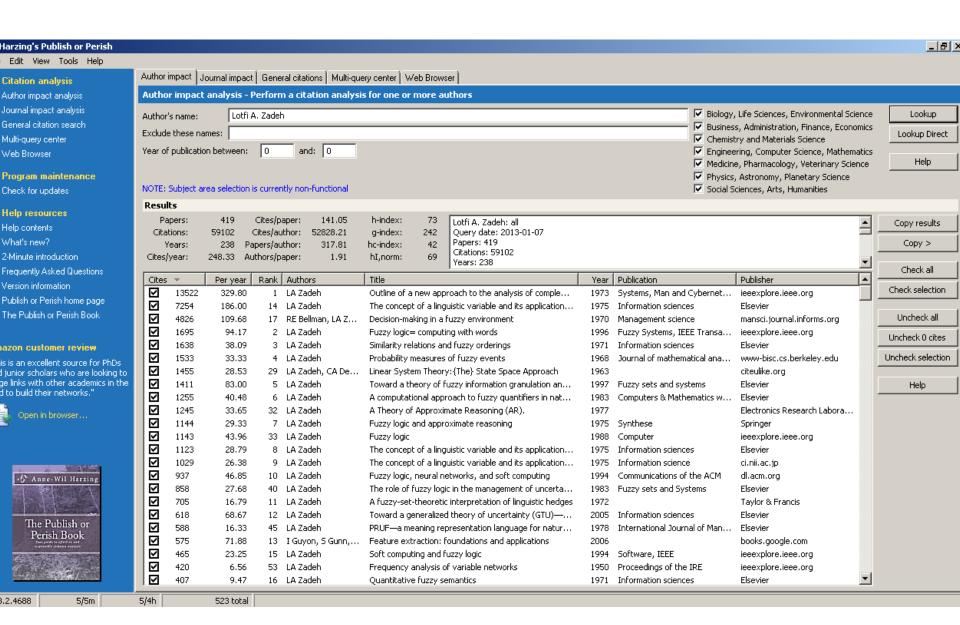
Source: http://guides.is.uwa.edu.au/content.php?pid=372347&sid=3050052

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



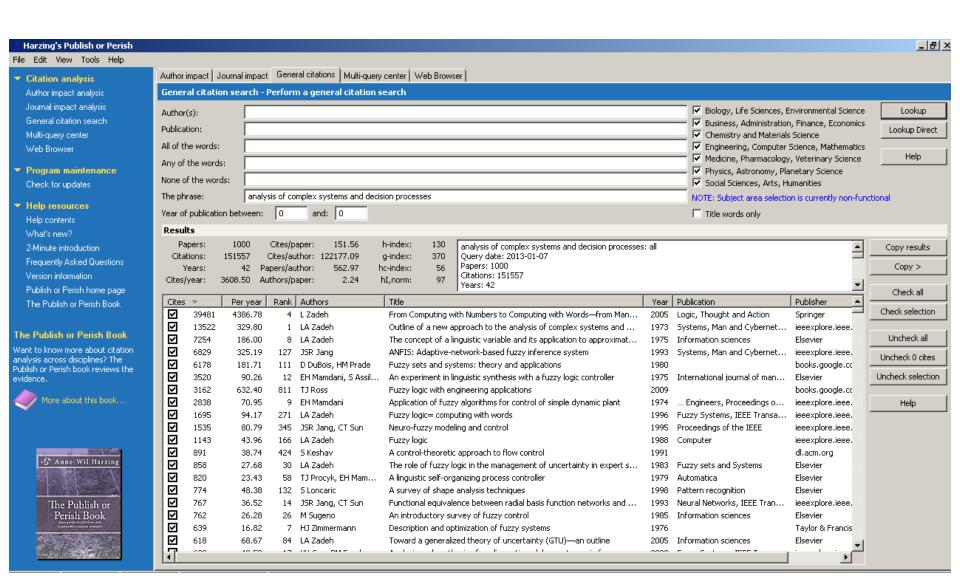
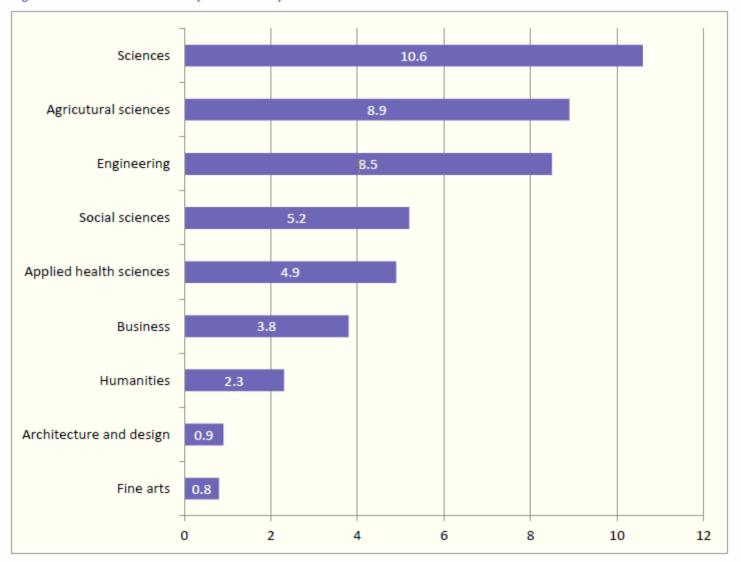


Figure 1: Mean H-index Scores by Field of Study



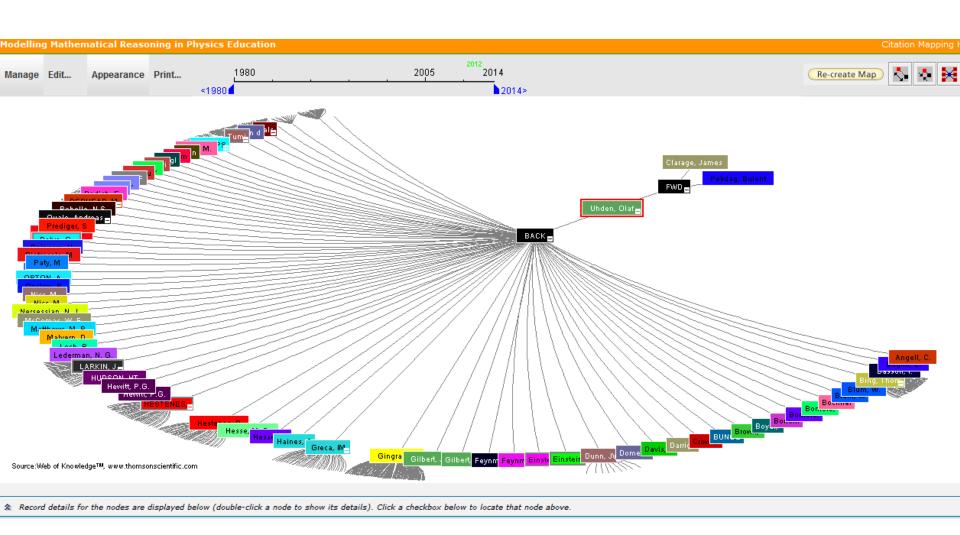
Source: Making Research Count: Analyzing Canadian Academic Publishing Cultures

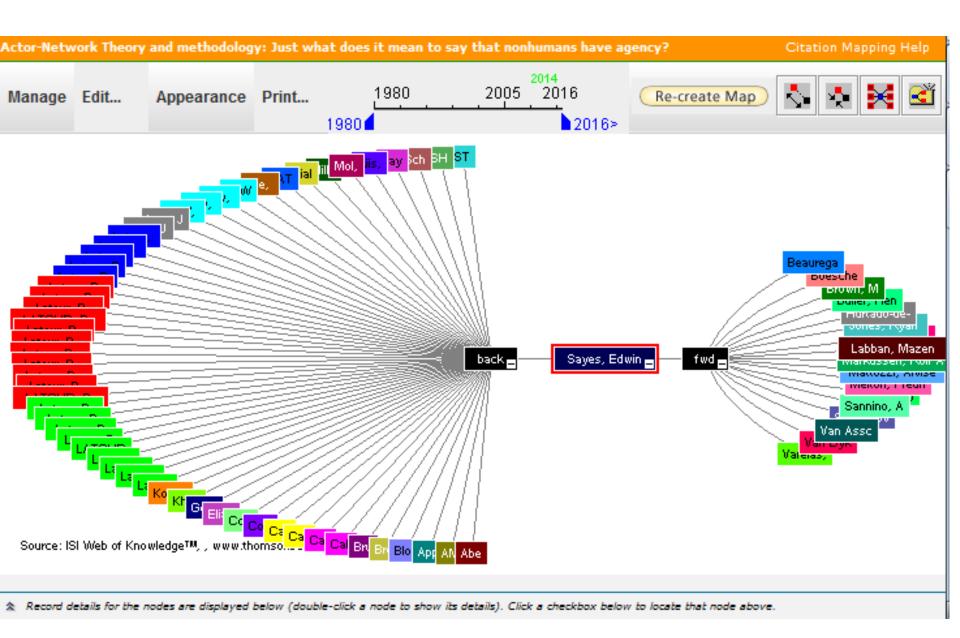
Web of Science

 Web of Science® is perhaps the most wellknown 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.

Web application to calculate the single publication h index

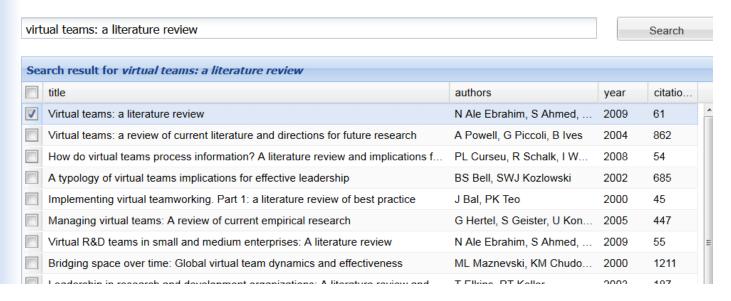


Web application to calculate the single publication h index

(and further metrics) based on Google Scholar

by Andreas Thor (University of Leipzig, Germany) and Lutz Bornmann (Max Planck Society, Germany)

- Search Google Scholar
- Select one
 publication (you
 may additionally
 select duplicates)



The single publication h index has been introduced by Schubert (2009) as the h-index calculated from the list of citing publications of one single publication.

Source: http://labs.dbs.uni-leipzig.de/gsh/

For More Info.

How to do an Effective Literature Search?

Application Training Module Series I by Customer Education Team

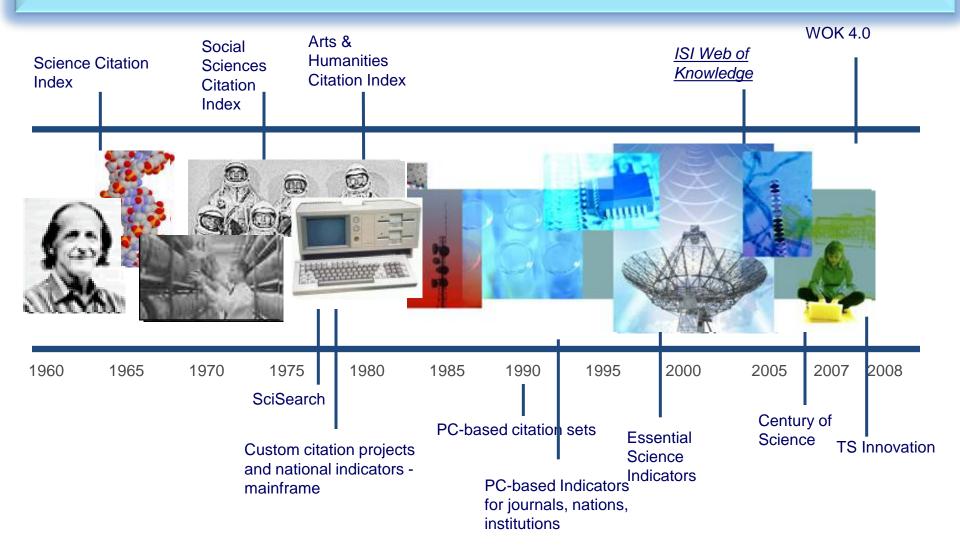
ts.training.asia@thomson.com



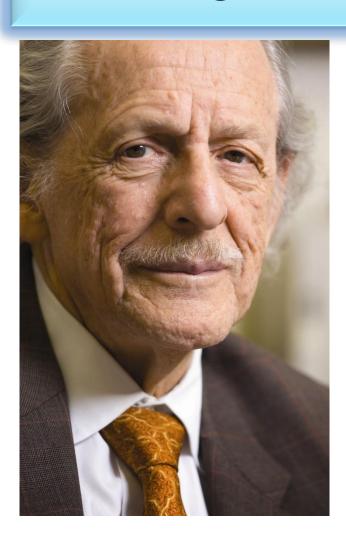
The Institute for Scientific Information (ISI)

- The Institute for Scientific Information (ISI) was founded by <u>Eugene</u>
 <u>Garfield</u> in 1960. It was acquired by <u>Thomson Scientific & Healthcare</u> in
 1992, became known as **Thomson ISI** and now is part of the Healthcare &
 Science business of the multi-billion dollar <u>Thomson Reuters Corporation</u>.
- ISI offered <u>bibliographic database</u> services. Its speciality: <u>citation indexing</u> and analysis, a field pioneered by Garfield. It maintains citation databases covering thousands of <u>academic journals</u>, including a continuation of its long time print-based indexing service the <u>Science Citation Index</u> (SCI), as well as the <u>Social Sciences Citation Index</u> (SSCI), and the <u>Arts and Humanities</u> <u>Citation Index</u> (AHCI). All of these are available via ISI's <u>Web of Knowledge</u> database service.

Thomson Reuters (formerly ISI) has been the authority on citation data for over 50 years.



Eugene Garfield, Ph.D.



Founder & Chairman Emeritus
Institute for Scientific Information (ISI)

For more Info

The Institute for Scientific Information (ISI)

The ISI also publishes annual <u>Journal Citation Reports</u> which list an <u>impact</u> <u>factor</u> for each of the journals that it tracks. Within the scientific community, journal impact factors play a large but controversial role in determining the kudos attached to a scientist's published research record.

A FAST AND EFFICIENT SEARCH FOR A BETTER DISCOVERY EXPERIENCE

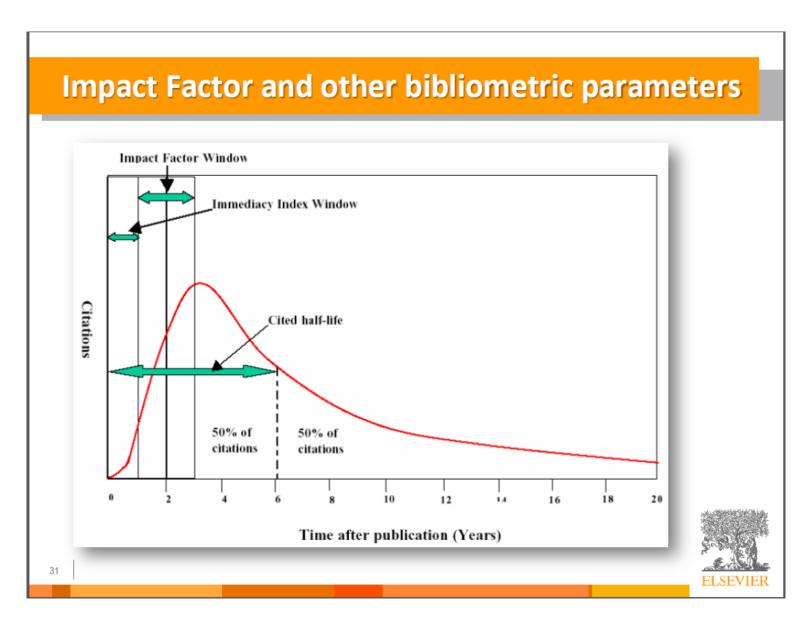
Thomson Reuters (formerly ISI)

Web of Knowledge is today's

premier research platform for
information in the sciences,
social sciences, arts, and
humanities.

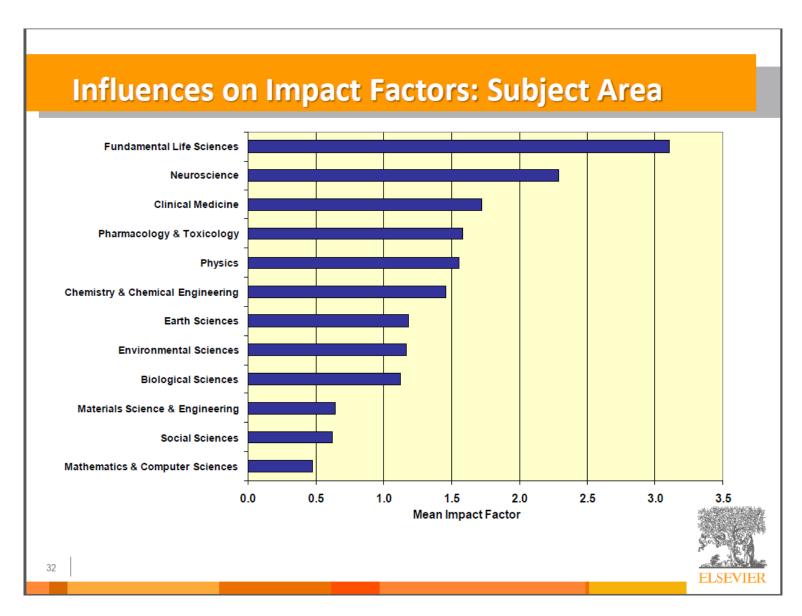
Impact Factor

 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



Impact Factor-Journal Ranking

- Relative impact factors are often a better guide to the importance of a journal than raw numbers. JCR allows you to compare the impact factors of different journals in the same subject area
- The Economic History Review has an impact factor of 1.051. At first glance, it would appear that this journal is relatively unimportant. In fact, it is arguably the premier Englishlanguage journal in its field (its major competitor, the Journal of Economic History Review, has an even lower impact factor: a mere 0.529!). Far more illuminating is the journal's relatively high impact factor compared to other journals in the history of the social sciences. Economic History Review ranks first out of 15 journals in the Thomson-ISI's list of journals in this subdiscipline.



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:

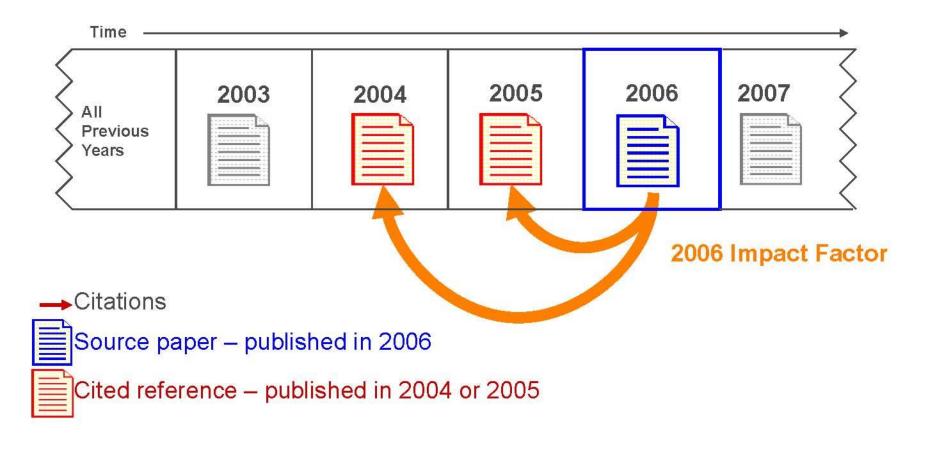
Cites in 2010 to items published in 2008 and 2009
 Number of items published in 2008 and 2009

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".



The average number of citations in 2006 to scholarly material that was published in the prior two years



INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH Impact Factor in 2008

Cites in 2008 to items published in:

2007 = 144

Number of items published in:

2007 = 278

2006 = 280

2006 = 270

Sum: 424

Sum: 548

Calculation:

Cites to recent items

<u>424</u> =

0.774

Number of recent items

548

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

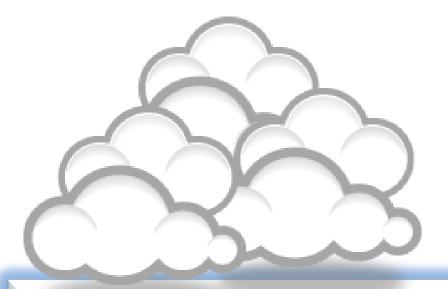
The 3-year CiteScore time window was chosen as a best fit for all subject areas. Research shows that a 3-year publication window is long enough to capture the citation peak of the majority of disciplines.

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.



Keeping up-to-date (Alert system)

Keeping up-to-date

Alert services are an effective means of keeping track of the latest research.

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.

Why subscribe to an alert service?

There is often a time delay between the point when a new article is published in a journal and it is indexed by one of the database services. Alert services will automatically keep you informed of new journal issues and articles on your topic or research interest when **new relevant material is made available.** Many of the large online research databases provide an automated alerting service.

Before using any current awareness services you should review the literature to establish a clear awareness of the topic that you would like to be kept up-to-date with on a regular basis. In this way you will increase the relevancy of the alerts you receive to your area of research. You can receive automated updates of newly published journal articles via email alert or via RSS Feed.

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

ZELOC Z

SpringerAlerts













ISI Web of Knowledge**

The MIT Press



Scopus Citation Tracker

Conference Alerts





AllConferencealerts.com - Conference call for research papers





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).

THE THREE-PASS APPROACH

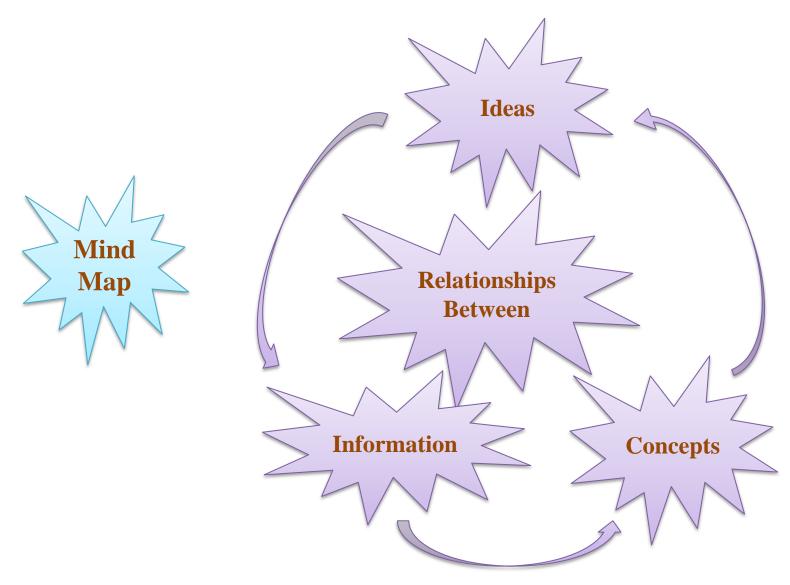
1- The third pass

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.



Mind mapping tools



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

Mind Map Tools









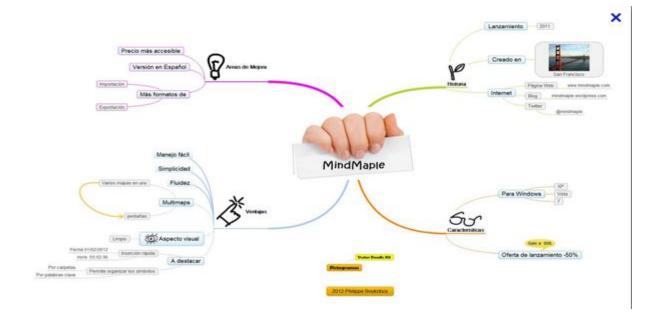


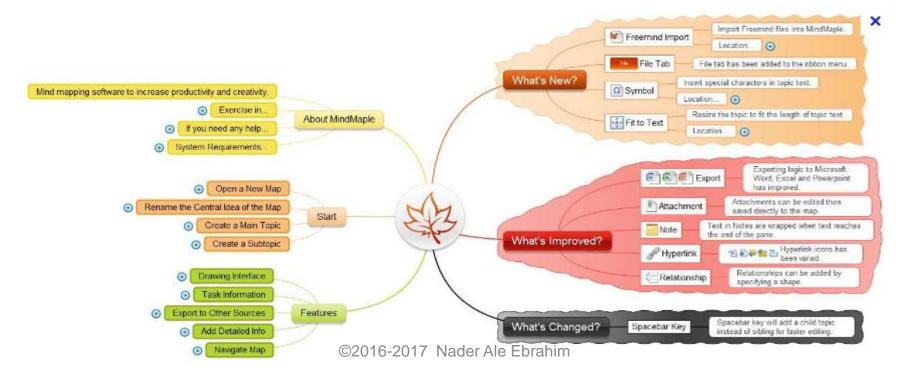




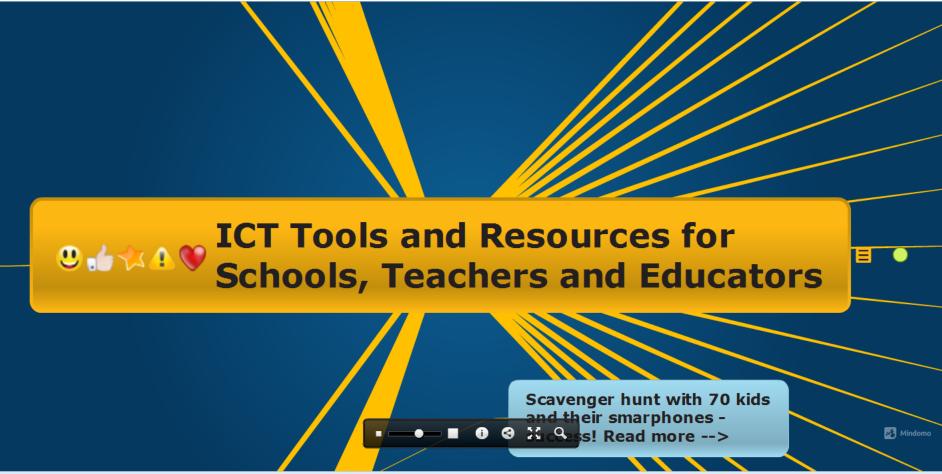
Source: Mind Map Tools, By: Seyyed Ali Fattahi Computer PhD Candidate FTSM UKM







Example: MinDomo

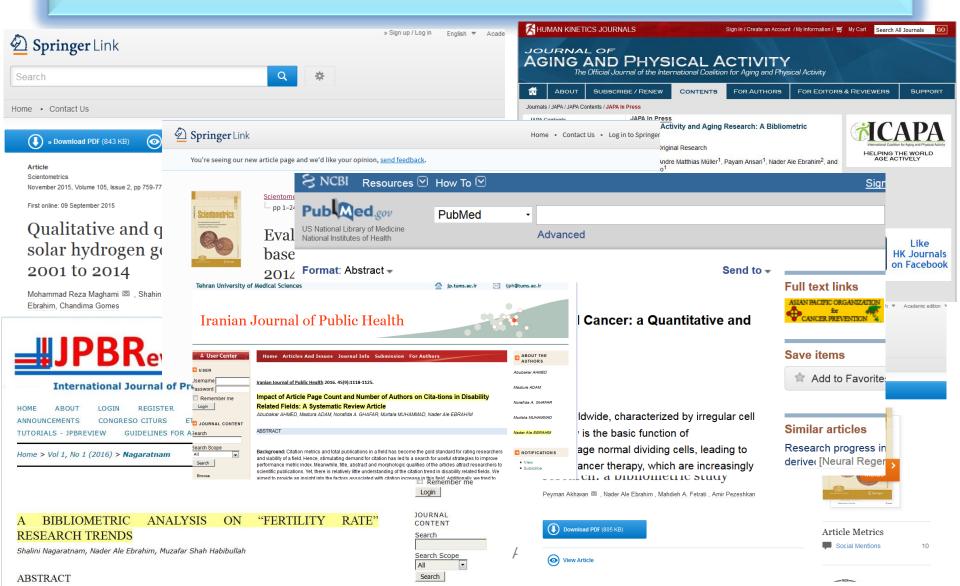




Task for second session

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

My recent publications





CENTRE FOR RESEARCH SERVICES RESEARCH MANAGEMENT & INNOVATION COMPLEX (IPPP)

UNIVERSITY OF MALAYA

Questions?

E-mail: aleebrahim@um.edu.my

y

Twitter: @aleebrahim



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

Nader Ale Ebrahim, PhD

Centre for Research Services
Research Management & Innovation Complex
University of Malaya, Kuala Lumpur, Malaysia
www.researcherid.com/rid/C-2414-2009
http://scholar.google.com/citations

References

- 1. Ale Ebrahim, N. (2013). Introduction to the Research Tools mind map. Research World, 10, Article A10.4. Retrieved from http://www1.ximb.ac.in/RW.nsf/pages/A10.4
- 2. Martín-Martín, A., Orduna-Malea, E., Ayllón, J. M., & López-Cózar, E. D. (2016). The counting house, measuring those who count: Presence of Bibliometrics, Scientometrics, Informetrics, Webometrics and Altmetrics in Google Scholar Citations, ResearcherID, ResearchGate, Mendeley, & Twitter. EC3 Reseach Group: Evaluación de la Ciencia y de la Comunicación Científica Universidad de Granada and Universidad Politécnica de Valencia (Spain), In Progress,. doi:10.13140/RG.2.1.4814.4402
- 3. 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
- 4. Keshav, S. (2007). How to read a paper. ACM SIGCOMM Computer Communication Review, 37(3), 83-84

My recent publications:

- 1. Akhavan, P., Ale Ebrahim, N., Fetrati, M. A., & Pezeshkan, A. (2016). Major trends in knowledge management research: a bibliometric study. Scientometrics 1-16. doi:10.1007/s11192-016-1938-x
- 2. Nagaratnam, S., Ale Ebrahim, N., & Habibullah, M. S. (2016). A Bibliometric Analysis on "Fertility Rate" Research Trends. International Journal of Professional Business Review, 1(1), 1-14. doi:10.5281/zenodo.58318
- 3. Shakiba, M., Ale Ebrahim, N., Danaee, M., Bakhtiyari, K., & Sundararajan, E. (2016). A Comprehensive Comparison of Educational Growth within Four Different Developing Countries between 1990 and 2012. Revista de Gestão e Secretariado, 6(3), 152-174. doi:10.7769/qesec.v6i3.486
- 4. Müller, A. M., Ansari, P., Ale Ebrahim, N., & Khoo, S. (2015). Physical Activity and Aging Research: A Bibliometric Analysis. Journal Of Aging And Physical Activity In Press. doi:10.1123/japa.2015-0188
- 5. Maghami, M., Navabi Asl, S., Rezadad, M. i., Ale Ebrahim, N., & Gomes, C. (2015). Qualitative and Quantitative Analysis of Solar hydrogen Generation Literature From 2001 to 2014. Scientometrics 105(2), 759-771.: http://dx.doi.org/10.1007/s11192-015-1730-3
- 6. Shakiba, M., Zavvari, A., Ale Ebrahim, N., & Singh, M. J. (2016). Evaluating the academic trend of RFID technology based on SCI and SSCI publications from 2001 to 2014. Scientometrics First Online: 08 August 2016, 1-24. http://dx.doi.org/10.1007/s11192-016-2095-y
- Farghadani, R., Haerian, B. S., Ale Ebrahim, N., & Muniandy, S. (2016). 35Year Research History of Cytotoxicity and Cancer: a Quantitative and Qualitative Analysis. Asian Pac J Cancer Prev, 17(7), 3139-3145. doi:10.14456/apicp.2016.66
- AHMED, A., Mastura, A., GHAFAR, N. A., MUHAMMAD, M., & ALE EBRAHIM, N. (2016). Impact of Article Page Count and Number of Authors on Citations in Disability Related Fields: A Systematic Review Article. Iranian Journal of Public Health, 45(9), 1118-1125. https://dx.doi.org/10.6084/m9.figshare.3979656.v1

My recent presentations:

- 1. Ale Ebrahim, N. (2016). Improve Research Visibility by Establishing an Academic Blog. Paper presented at the 4th SERIES OF INTRODUCTORY WORKSHOP ON: Strategies to Enhance Research Visibility, Impact & Citations, Centre for Research Services, Institute of Research Management and Services (IPPP)", University of Malaya. https://dx.doi.org/10.6084/m9.figshare.4315169.v3
- 2. Ale Ebrahim, N. (2016). Where to publish? A Journal selection procedure for receiving the highest citation and impact. Paper presented at the 4th SERIES OF INTRODUCTORY WORKSHOP ON: Strategies to Enhance Research Visibility, Impact & Citations, Centre for Research Services, Institute of Research Management and Services (IPPP)", University of Malaya. https://dx.doi.org/10.6084/m9.figshare.4287710.v1
- 3. Ale Ebrahim, N. (2016). Essential steps to write a Bibliometric paper. Paper presented at the Introductory workshop on "Procedure to write a Bibliometric paper", Meeting Room 14-4, Wisma R&D, University of Malaya, Kuala Lumpur, Malaysia. https://dx.doi.org/10.6084/m9.figshare.4292927.v1
- 4. Ale Ebrahim, N. (2016). Online Repository: Extending Research Visibility, Readership, and Impact Paper presented at the 4th SERIES OF INTRODUCTORY WORKSHOP ON: Strategies to Enhance Research Visibility, Impact & Citations. Retrieved from https://dx.doi.org/10.6084/m9.figshare.4248950.v1
- 5. Ale Ebrahim, N. (2016). Create and maintain an up-to-date ResearcherID & ORCID profile. Paper presented at the 4th SERIES OF INTRODUCTORY WORKSHOP ON: Strategies to Enhance Research Visibility, Impact & Citations. Retrieved from https://dx.doi.org/10.6084/m9.figshare.4234619.v1
- 6. Ale Ebrahim, N. (2016). A PART OF RESEARCH METHODOLOGY COURSE: Introduction to the Research Tools. Paper presented at the RESEARCH METHODOLOGY COURSE (HXGH 6101) SEMESTER I, 2016/2017. Retrieved from https://dx.doi.org/10.6084/m9.figshare.4231682.v1
- 7. Ale Ebrahim, N. (2016). Create a Google Scholar Profile to Increase Research Visibility. Paper presented at the 4th SERIES OF INTRODUCTORY WORKSHOP ON: Strategies to Enhance Research Visibility, Impact & Citations. Retrieved from https://dx.doi.org/10.6084/m9.figshare.4214274.v1
- 8. Ale Ebrahim, N. (2016). Kudos: Improving the Reachability and Research Impact. Paper presented at the 4th SERIES OF INTRODUCTORY WORKSHOP ON: Strategies to Enhance Research Visibility, Impact & Citations. Retrieved from https://dx.doi.org/10.6084/m9.figshare.4264964.v1