

Resources, Reference management and Research metrics

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Agenda

- Resources used in scholarly research
- References, styles and reference management
- Channels of scholarly communication
- How to choose a journal?
- What are scholarly metrics?
- Why scholarly metrics?
- Computation of scholarly metrics
- Where to look for metrics?
- Limitations of metrics

Types of Sources of Information

Information Sources	Primary	Secondary	Tertiary
Examples	<ul style="list-style-type: none"> •Scholarly journals •Government organizations •Reputable organizations •Universities •Experts 	<ul style="list-style-type: none"> •Newspapers* •Magazines* •Website postings Abstracting and Indexing Databases	<ul style="list-style-type: none"> •Encyclopedias •Guidebooks •Textbooks Search Engines
Defining Characteristic/s	Where information (e.g., statistics, research results) originally come from	Reports or interprets information from primary sources	<ul style="list-style-type: none"> •Collects information from both primary and secondary sources •Offers a condensed description of a topic
Usefulness for Academic Essays	Best source , especially when facts, statistics, and research results are required	Can be useful, especially when another person's interpretation is required	<ul style="list-style-type: none"> •Only for providing background information on topics •Provides a reference list of primary and secondary sources

Resources @ IGIDR Library

➤ **Bibliographic Databases (Index with or without Abstract)**

- ✓ Library Catalogue [<http://opac.igidr.ac.in>]
- ✓ EBSCO Econlit (1886 onwards) [<http://search.ebscohost.com>]
- ✓ ISID Index to Indian Social Science Journals [<http://isid.org.in>] - Free
- ✓ Open Index Initiative [<http://oii.igidr.ac.in>] - Free

➤ **Full Text Databases:**

- ✓ JSTOR [<http://www.jstor.org>]
- ✓ Science Direct [<http://www.sciencedirect.com>] – Economics Titles
- ✓ Oxford University Press [Economics Titles]
- ✓ Sage Journals [<http://online.sagepub.com>] – Selected Titles
- ✓ Springer [<http://link.springer.com>] – Selected Titles
- ✓ Taylor and Francis [<http://www.tandfonline.com>] - Selected Titles
- ✓ Wiley Online Library [<http://onlinelibrary.wiley.com>] – Selected Titles

Resources @ IGIDR Library

➤ Statistical Databases:

- ✓ COMTRADE [<http://comtrade.un.org/db/default.aspx>]
- ✓ IMF Statistics [<http://elibrary-data.imf.org>] - Free
- ✓ World Bank Data [<http://data.worldbank.org>] - Free
- ✓ EPWRF Databases [<http://www.epwrfits.in>]
- ✓ Indiastat.com [<http://www.indiastat.com>]
- ✓ RBI – Banking Statistics [<http://dbie.rbi.org.in>] - Free
- ✓ UNIDO Statistics [<https://stat.unido.org/home>]

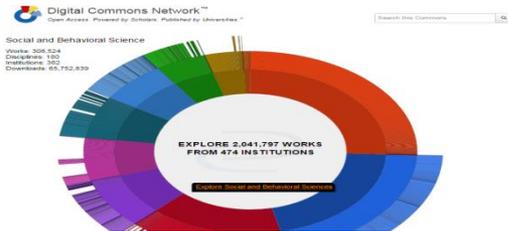
Resources on Internet

➤ Academic Search Engines:

- ✓ BASE [<http://www.base-search.net>]
- ✓ Get the Research [<http://www.gettheresearch.org>] – AI Based
- ✓ Google Scholar [<http://scholar.google.com>]
- ✓ Lens.org [<http://lens.org>]
- ✓ Microsoft Academic [<http://academic.microsoft.com>] – AI Based
- ✓ Open Knowledge Maps [<http://openknowledgemaps.org>] - Visual
- ✓ Semantic Scholar [<http://semanticscholar.org>] – AI Based



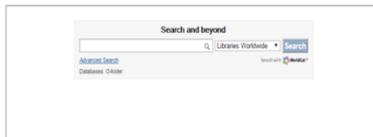
Digital Repository and Harvested Search engines



<http://network.bepress.com>

OAister

Find the world



<http://oaister.worldcat.org>



<https://ndl.iitkgp.ac.in>

Open Distributed Catalogues/Repositories



<http://repec.org>

eSocialSciences

<http://www.esocialsciences.org>



<http://papers.ssrn.com>



<https://osf.io/view/socarxiv/>

Sources for Preprints / Working papers

Open Data Sources

- ✓ [Census of India](#)
- ✓ [DRYAD](#) [Data Repository]
- ✓ [Figshare](#) [Data Repository]
- ✓ [ICSSR Data Portal](#)
- ✓ [India Data Portal](#)
- ✓ [International Monetary Fund \[IMF\]](#)
- ✓ [United Nations Data portal](#)
- ✓ [World Bank Data portal](#)

[Google Data Search Tool](#)



Open Access Resources

- ✓ [Directory of Open Access Journals](#) [DOAJ]
- ✓ [Directory of Open Access Books](#) [DOAB]
- ✓ [Open Access Theses and Dissertations](#) [OATD]
- ✓ [Open Dissertations](#)
- ✓ [Shodhganga](#) [Indian theses]



Tools for Search (Browser plugins or extensions):

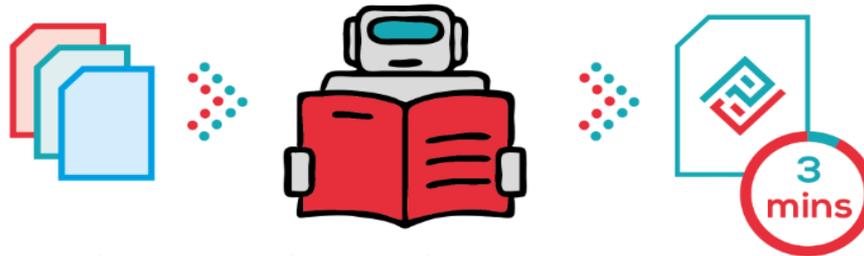
- ✓ [Google Scholar Button](#) [For finding papers] - Free
- ✓ [Lazy Scholar](#) [For finding papers, metrics and citations] - Free
- ✓ [Kopernio](#) [For finding free/open access papers] - Freemium
- ✓ [Unpaywall](#) [For finding free/open access papers] – Free
- ✓ [Scholarcy](#) [For analyzing the papers] – Free [Chrome Browser]

Summarizing Papers – AI Based

<https://www.paper-digest.com>

Artificial Intelligence summarizes
academic articles for you

Reducing reading time to **3 minutes!**



Should we use AI to make us quicker and more efficient researchers?

Paper Digest is a solution for researchers to quickly grasp the core ideas of a paper

Example: <http://www.accessecon.com/Pubs/EB/2019/Volume39/EB-19-V39-I4-P233.pdf>

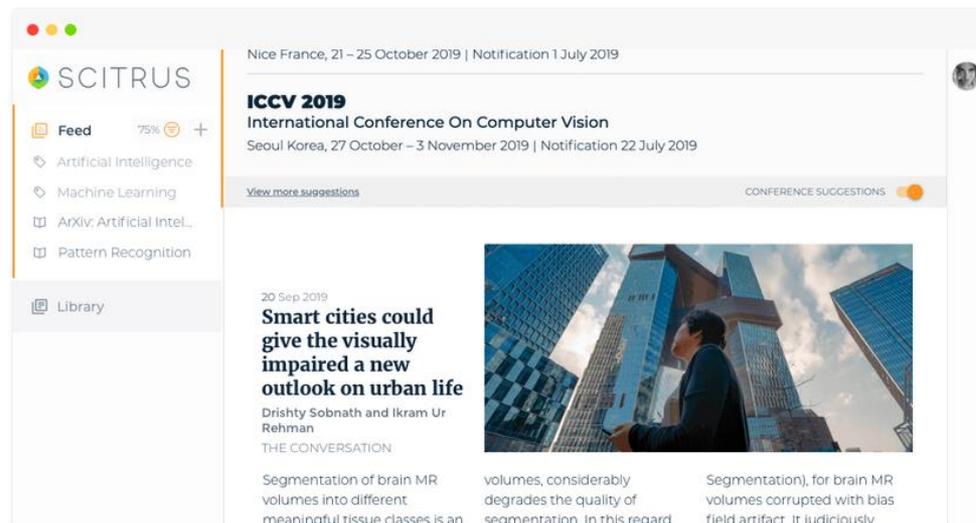
Feeds - Follow topics, journals, authors and more – AI Based

<https://www.scitrus.com>

Feed your mind
Shape your research

Follow topics, journals, authors and more to create a
research feed that adapts to your interests.

CREATE MY FEED



The screenshot displays the SCITRUS website interface. On the left is a sidebar with the SCITRUS logo and a 'Feed' section showing a 75% completion status and a list of topics: Artificial Intelligence, Machine Learning, ArXiv: Artificial Intel..., and Pattern Recognition. Below this is a 'Library' section. The main content area features a notification for 'Nice France, 21 – 25 October 2019' and a featured article for 'ICCV 2019 International Conference On Computer Vision' held in Seoul, Korea, from October 27 to November 3, 2019. The article, dated 20 Sep 2019, is titled 'Smart cities could give the visually impaired a new outlook on urban life' by Drishty Sobnath and Ikram Ur Rehman. It includes a photograph of a person in a dark jacket looking at a smartphone in a city with tall buildings. The article text is partially visible, discussing 'Segmentation of brain MR volumes into different meaningful tissue classes is an' and 'volumes, considerably degrades the quality of segmentation. In this regard'.

Citing and Referencing

‘Citing and Referencing’ refers to indicating in your written work, where from evidence, ideas, theories, facts, or any other information, were found by providing a description of the sources

In simple words: Acknowledging the original source (to avoid Plagiarism)

A reference could be a journal article, working paper, conference paper, thesis, source of statistics, blog post, etc.

Citation styles

Popular Citation Styles

And Who Uses Them!



MLA

English
Literature
Foreign Language
Communications
Religious Studies



APA

Psychology
Education
Business/Economics
Nursing
Linguistic Studies



Chicago

History
Art History
Fine Arts
Anthropology
Philosophy



IEEE

Engineering
Computer Science
Information Science



CSE

Biology
Physics
Chemistry
Geology

Always check with your instructor about what style to use!

APA, MLA and Chicago.

For a book:

- APA** Posner, R. (2004). *Catastrophe: Risk and response*. Oxford: Oxford University Press.
- MLA** Posner, Richard. *Catastrophe: Risk and Response*. Oxford: Oxford U P, 2004.
- Chicago** Posner, Richard. *Catastrophe: Risk and Response*. Oxford: Oxford University Press, 2004.

For an article in a periodical: (fulltext article from EBSCO)

- APA** Heider, K. (2009). Information literacy: The missing link in early childhood education. *Early Childhood Education Journal*, 36, 513-18. doi:10.1007/s10643-009-0313-4
- MLA** Heider, Kelly. "Information Literacy: The Missing Link in Early Childhood Education." *Early Childhood Education Journal* 36.6 (2009): 513-18. *Academic Search Premier*. Web. 22 Sept. 2010.
- Chicago** Heider, Kelly. "Information Literacy: The Missing Link in Early Childhood Education." *Early Childhood Education Journal* 36, (2009): 513-18. Accessed September 22, 2010. doi:10.1007/s10643-009-0313-4.

For web sources:

- APA** Sargent, J. (n.d.). *Anorexia nervosa: Judy's story*. Retrieved May 24, 2002 from <http://www.angelfire.com/ms/anorexianervosa/>
- MLA** Sargent, Judy. *Anorexia Nervosa: Judy's Story*. 24 May 2002. <http://www.angelfire.com/ms/anorexianervosa/>.
- Chicago** Sargent, Judy. "Anorexia Nervosa: Judy's Story." <http://www.angelfire.com/ms/anorexianervosa/>.

Sources: <https://usu.instructure.com/courses/449395/pages/types-of-citation-styles>
<http://test.library.wvu.edu/lit/documenting-citing/citations/styles>

ARTICLE



Financial development and governance relationships

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IV. Findings

For the first time in SEM, each observed variable of latent variables should be larger than the standard factor load of 0.5 and be statistically significant (Fornell and Larcker 1981). As a result of the

In text citation

Bibliography

We attempted to model the relationships between various pillars of financial development and dimensions of governance by SEM methodology. The study utilized the data from the World Economic Forum presented in the financial development

References

Çelik, H. E., and Yılmaz, V. 2013. Lisrel 9.1 ile Yapısal Eşitlik Modellemesi: Temel Kavramlar-Uygulamalar-Programlama (Yenilenmiş 2. Baskı). Ankara: Anı Yayıncılık.

Chinn, M. D., and H. Ito. 2007. "Current Account Balances, Financial Development and Institutions: Assaying the World "Saving Glut". *Journal of International Money and Finance* 26 (4): 546–569. doi:10.1016/j.jimonfin.2007.03.006.

Feng, Y. 2003. *Democracy, Governance and Economic Performance: Theory and Evidence*. Cambridge, MA: MIT Press.

Governance Indicators for 1996– 2007." World Bank Policy Research Paper No. 4654.

Kaufmann, D., A. Kraay, and M. Mastruzzi. 2010. "The Worldwide Governance Indicators: A Summary of Methodology, Data and Analytical Issues". World Bank Policy Research Working Paper No. 5430. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130

Zotero – Reference management tool

zotero

Groups

Documentation

Forums

Get Involved

Log In

Upgrade Storage

Your personal research assistant

Zotero is a free, easy-to-use tool to help you
collect, organize, cite, and share research.

Download

Available for Mac, Windows, and Linux

New: Just need to create a quick bibliography? Try [ZoteroBib](#).

The screenshot shows the Zotero desktop application interface. The window title is "Zotero". The interface includes a sidebar on the left with a "My Library" section containing folders for "Book Reviews", "Colonial Medicine", "Dissertation", and "Science and Empire". The main area displays a list of items with columns for "Title", "Creator", and "Year". The "Info" tab is selected, showing details for a "Journal Article" titled "Circulation of Medicine in the Early Modern Atlantic World".

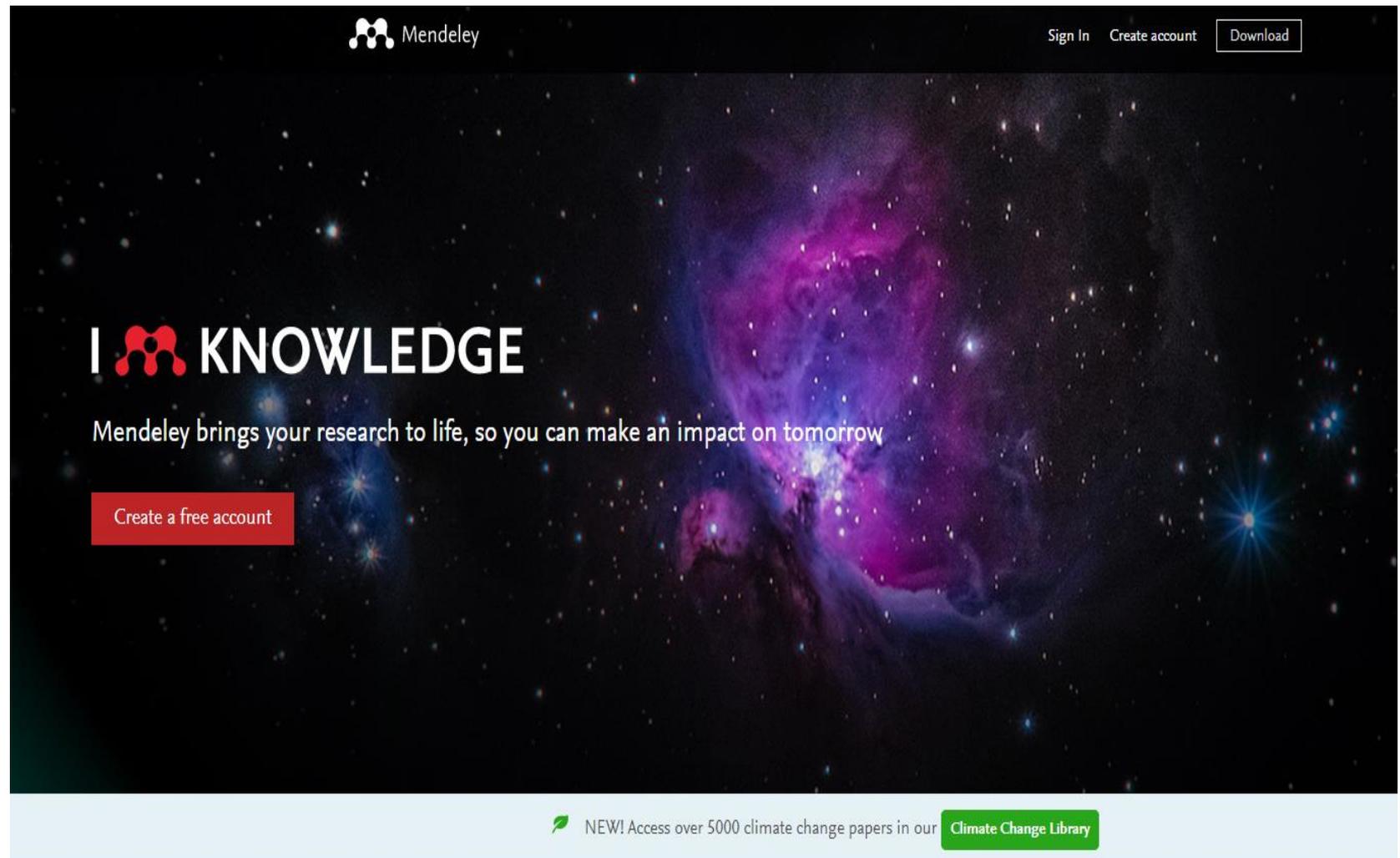
Title	Creator	Year
▶ Guerre, maladie, empire. Les services de santé militaires en ...	Zaugg	2016
▶ Officiers de santé et soignantes créoles face à la fièvre jaune	Nobi	2016
▶ The Emergence of Tropical Medicine in France	Osborne	2014
▶ Colonial Disease, Translation, and Enlightenment: Franco-Briti...	Charters	2014

Info Notes Tags Related

Item Type Journal Article

Title Circulation of Medicine in the Early Modern Atlantic World

Mendeley – Reference management tool



The image shows the Mendeley website landing page. The background is a dark space scene with a large, colorful nebula in shades of purple, pink, and blue. The Mendeley logo, consisting of three red circles connected by lines, is in the top left. To its right is the word "Mendeley". In the top right corner, there are links for "Sign In", "Create account", and a "Download" button. The main heading "I KNOWLEDGE" is prominently displayed, with the "I" being a large white letter and "KNOWLEDGE" in a smaller white font. Below this is the tagline "Mendeley brings your research to life, so you can make an impact on tomorrow". A red button with the text "Create a free account" is positioned below the tagline. At the bottom of the page, there is a light blue banner with a green leaf icon, the text "NEW! Access over 5000 climate change papers in our", and a green button labeled "Climate Change Library".

Mendeley

Sign In Create account Download

I KNOWLEDGE

Mendeley brings your research to life, so you can make an impact on tomorrow

Create a free account

NEW! Access over 5000 climate change papers in our [Climate Change Library](#)

Channels of Scholarly Communication

- ✓ Conference papers
- ✓ Working or Discussion Papers
- ✓ Preprints / Post Prints
- ✓ Journal articles
- ✓ Newspaper/Magazine/Newsletter Articles
- ✓ Book chapters and Books
- ✓ Blog posts / Web Articles
- ✓ Policy briefs
- ✓ Opinion pieces
- ✓ Short communications
- ✓ Review articles and many more.....

9 differences between a thesis and a journal article



	Thesis	Journal Article
Purpose 	1 Education - To demonstrate how much you know	Advancement - To establish credibility in and contribute to your field
Potential Audience 	2 Educational committee or professors - Individuals who evaluate whether you are worthy of a degree	Busy scientists or researchers - Individuals looking for practical ideas backed with evidence
Length 	3 Longer - Can run up to around 50 pages and contain around 20,000 words	Shorter - Can range between 3 to 6,000 words depending on the field & journal Tip: Avoid copying, rewrite or paraphrase
Abstract 	4 Relatively longer - Around 350 words	Relatively shorter - Around 150 to 250 words
Introduction 	5 More detailed - Should demonstrate familiarity with existing literature and develop background more extensively	More concise - Should only include information that is absolutely required to understand the gap in research that led to the study
Materials & Methods 	6 Extensive presentation - Thoroughly describes and present each research approach and methodology	Controlled presentation - Describes details only of specific methodology used and experiments conducted
Discussion 	7 Detailed interpretation of results - Demonstrate complete understanding of the obtained data, and indicate interest in future directions for research	Clear and concise interpretation of results - Discuss only the main findings and directly address research objectives
References 	8 Exhaustive list - Some include a bibliography, and some might even include a 'definitions' section	Selective list - Includes only works that have been cited within the article (some journals specify maximum limit)
Appendices 	9 Inclusion mandatory - Due to the need for complete documentation	Inclusion optional - Space & content requirements may limit the use of these

Image credit: Icons made by Freepik from www.flaticon.com

For more useful advice and tips on academic writing and publishing, visit www.editage.com/insights

ed!tage Insights™



www.facebook.com/editage



www.linkedin.com/company/editage



www.twitter.com/editage

How to Choose a Journal?

<https://thinkchecksubmit.org>



<https://vimeo.com/151882443>

How to Choose a Journal?

- ✓ Refer to [UGC-CARE List of Journals](#)
- ✓ Journals indexed in 'Scopus' and 'Web of Science' (Group-A)
- ✓ Journals approved by CARE (Group B to D)



If published in other than these journals, then such publications will not be considered for academic accreditation or API in India

How to Choose a Journal? – Journal Metrics

- ✓ [ABDC Journal Rankings](#)
- ✓ [Eigenfactor](#)
- ✓ [Google Scholar Metrics](#)
- ✓ [Journal Citation Reports](#) (Impact Factor) – Subscription based
- ✓ [Scimago Journal Rankings](#)

How to choose a journal?

Search DOAJ



journals articles

[\[Advanced Search\]](#)

13,884 Journals
10,965 searchable at Article level
130 Countries
4,384,163 Articles

DOAJ (Directory of Open Access Journals)

DOAJ is a community-curated online directory that indexes and provides access to high quality, open access, peer-reviewed journals. DOAJ is independent. All funding is via donations, 40% of which comes from [sponsors](#) and 60% from [members and publisher members](#). All DOAJ services are free of charge including being indexed in DOAJ. All data is freely available.

DOAJ operates an education and outreach program across the globe, focussing on improving the quality of applications submitted.

[Why index your journal in DOAJ?](#)

 Select Language ▼

[FAQs](#)

[OAI-PMH, XML, Widgets](#)

[Open Access Resources](#)

[Transparency & Best Practice](#)

[Download metadata](#)

[Journals Added/Removed](#)

What is open access? <https://youtu.be/o2HMouOV-Lg>

How to avoid predatory journals?

- ✓ Mostly these are online open access journals
- ✓ Invite you to publish papers by sending email invitations
- ✓ Indicate fake Impact Factor
- ✓ No editorial process or peer review of submitted papers
- ✓ Use General email address
- ✓ No contact person/s name
- ✓ Add Eminent names in editorial board without their consent
- ✓ Charge for publication (APC)

How to avoid predatory journals?

BEALL'S LIST OF PREDATORY JOURNALS AND PUBLISHERS

<https://beallslist.weebly.com>

[PUBLISHERS](#)

[STANDALONE JOURNALS](#)

[VANITY PRESS](#)

[CONTACT](#)

[OTHER](#)

Potential predatory scholarly open-access publishers

Instructions: first, find the journal's publisher – it is usually written at the bottom of journal's webpage or in the "About" section. Then simply enter the publisher's name or its URL in the search box above. If the journal does not have a publisher use the [Standalone Journals](#) list.

All journals published by a predatory publisher are predatory, unless stated otherwise.

Original list

[GO TO UPDATE](#)

This is an archived version of the Beall's list – a list of potential predatory publishers created by a librarian Jeffrey Beall. We will only update links and add notes to this list.

- [1088 Email Press](#)
- [2425 Publishers](#)
- [The 5th Publisher](#)
- [ABC Journals](#)
- [A M Publishers](#)
- [Abhinav](#)
- [Academe Research Journals](#)
- [Academia Publishing](#)
- [Academia Research](#)
- [Academia Scholarly Journals \(ASJ\)](#)

Useful pages

[List of journals falsely claiming to be indexed by DOAJ](#)

[DOAJ: Journals added and removed](#)

[Nonrecommended medical periodicals](#)

[Retraction Watch](#)

[Flaky Academic Journals Blog](#)

[List of scholarly publishing stings](#)

Conferences

[Questionable conferences](#)

[How to avoid predatory conferences](#)

[Flaky Academic Conferences Blog](#)

Things to take care before publication?

- ✓ Give appropriate title to your paper
- ✓ Maintain consistency in rendering your name and affiliation, also include e-mail address
- ✓ Assign Keywords and JEL Codes using '[JEL Classification](#)'
- ✓ Write Abstract
- ✓ Cite and give references to the literature and data referred by you in your paper as per [author guidelines](#)
- ✓ Register for [ORCID](#) ID to distinguish yourself from other researchers



ORCID

Connecting Research
and Researchers

After Publication What?



Promote your research publication

- ✓ Let other researchers/peers in your field know about your paper
- ✓ Disseminate over social media – Facebook, Twitter, WhatsApp, etc.
- ✓ Create a your Profile on academic networking sites such as 'Researchgate' and add details of your publications and if you have a copyright upload the paper/s
 - ✓ It depends on publishers policy
 - ✓ Open access papers are allowed to host ([Creative Commons License](#))
 - ✓ Some publishers do not allow hosting
 - ✓ In some cases you are not allowed to host the publishers version
 - ✓ Sometime, there could be embargo to host the full-text

To know about publishers policy regarding hosting, you may check at:

<http://sherpa.ac.uk/romeo/index.php>

- ✓ Create a Google Scholar Profile

Queries, which haunt the minds of Professors, Students and Scholars !

- ✓ Who have cited my paper?
- ✓ How many citations I have received for this paper?
- ✓ To which journal, I should submit my paper for high readability?
- ✓ Which are the best journals available in my discipline!
- ✓ What is 'Impact Factor'?
- ✓ Who are the others working in this area?
- ✓ What is 'h-index' he was mentioning?



What are scholarly metrics?

- ✓ These are the 'Indicators' used to measure research and its impact
- ✓ It's a quantitative study of quality of research
- ✓ Analyses the structure and dynamics of a discipline
- ✓ Provides fair understanding of subject patterns



Source: Nature.com

Why Scholarly Metrics?

- ✓ To undertake research assessment of graduate and post graduate schools/universities
- ✓ Measure impact of individual's research – who's work is getting more attention
- ✓ Evaluate promotion, grant and job applications
- ✓ To assess the quality of scholarly journals
- ✓ Identify seminal research for building possible collaborations

Types of scholarly metrics

Article Metrics

Citation counts, citation maps, uses-page views, downloads and reviews offer ways to evaluate individual articles

Author Metrics

Focus on an author and can sometimes be expanded to treat a group as an author

Book Metrics

Citation counts and reviews for chapters and books

Journal Metrics

Impact, use, and rankings to measure journal quality and reputation

Altmetrics (New)

Attempts to use social media and Open Access sites to gauge interest in and importance of articles and authors

Key terms and definitions

- ✓ **Citation** - Is a reference to a published or unpublished source
- ✓ **Self citation** – Is a reference to authors own works
- ✓ **Citation Index** - Is a kind of bibliographic database , an index of citations between publications, allowing the user to identify which later/newer documents cite which earlier documents in a specified period.
- ✓ **Impact factor** – It is a measure of the frequency with which the "average article" in a journal has been cited in a particular year or period
- ✓ **h-index** - an estimate of the importance, significance, and broad impact of a scientist's cumulative research contributions
- ✓ **CiteScore** – Measure to find out the frequency with which the 'average article' in a journal has been cited in a particular year or period
- ✓ **Altmetrics** – Measure to find out the frequency with which articles are discussed/mentioned in social media

Computation of scholarly metrics

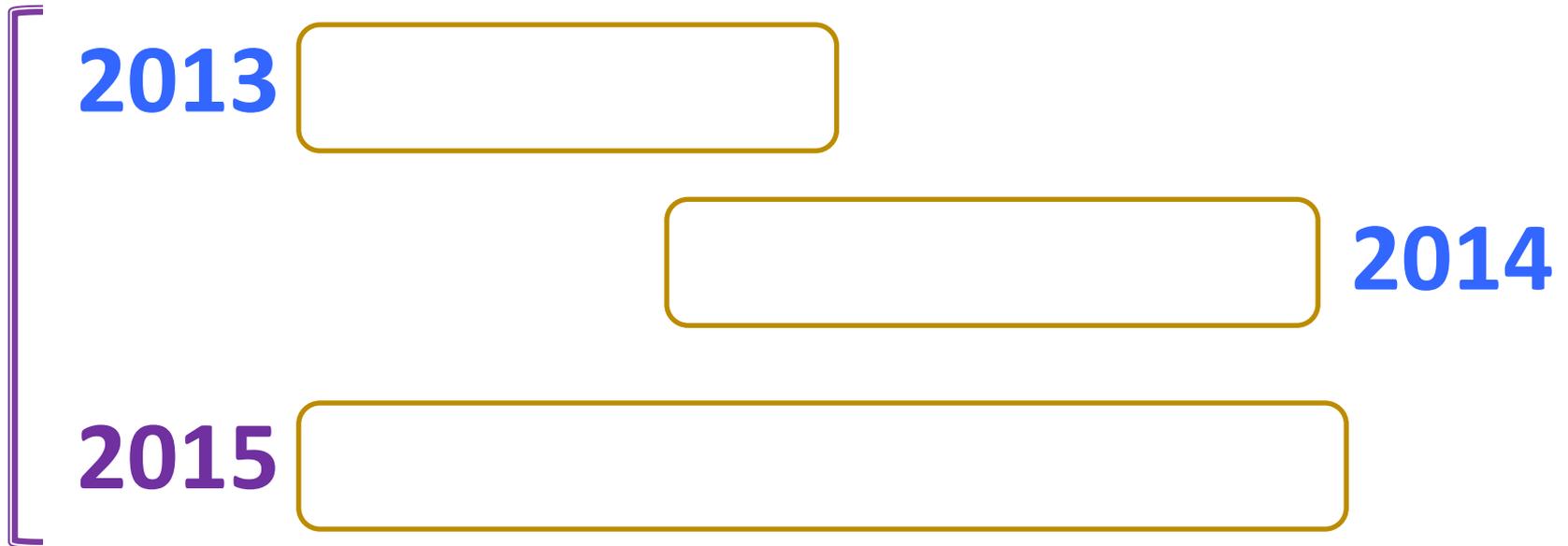


● Impact factor (IF)

- Invented by Eugene Garfield in 1955
- It is a measure of the frequency with which the "average article" in a journal has been cited in a particular year or period
- Helps to measure the impact of journals
- Helps in devising library collection development policy
- Assist authors to identify high impact journals in their area of research to publish articles
- Impact factor for a journal is calculated based on (It is 3 years window):
 - **A**= total cites in **2015**
 - **B**= **2016** cites to articles published in **2013-2014** (this is a subset of A)
 - **C**= number of articles published in **2013-14**
 - **D**= $B/C = \mathbf{2015}$ impact factor

Continued.....

IF - Imagine block of 3 years



2013



Journal **A** publishes 5 papers

2014



2015



2013



Journal **A** publishes 5 papers

Journal **A** publishes 6 papers



2014

2015



2013



Journal **A** publishes 5 papers

Journal **A** publishes 6 papers



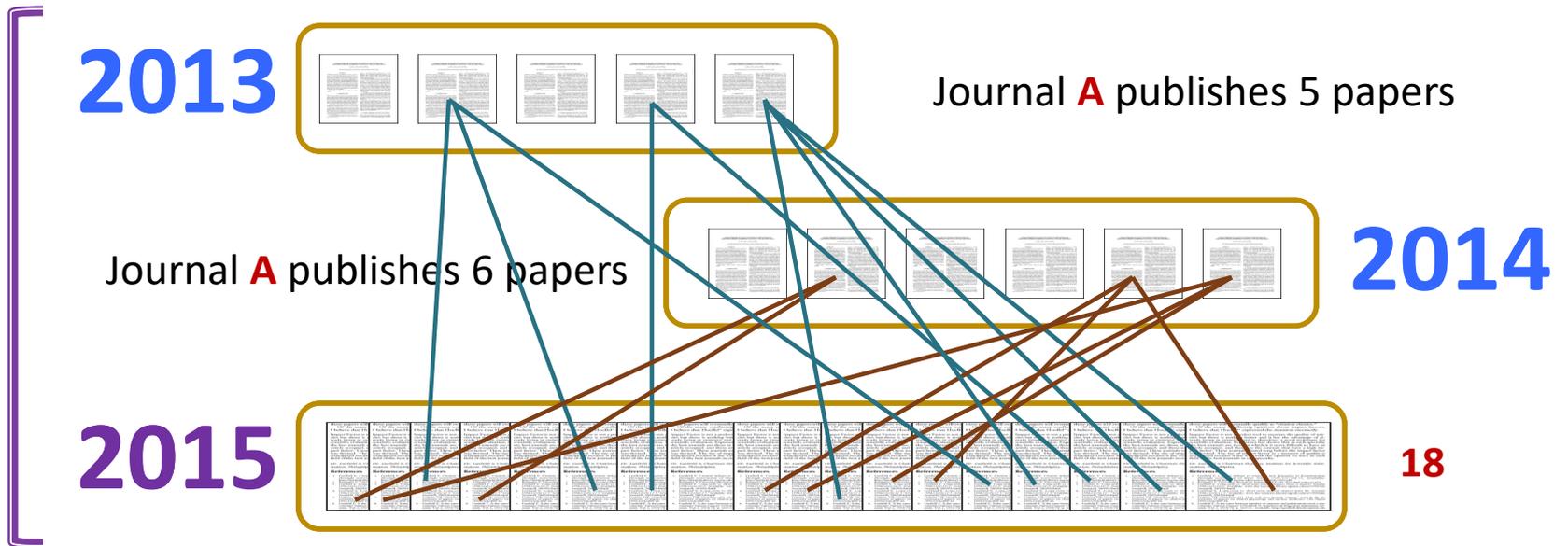
2014

2015

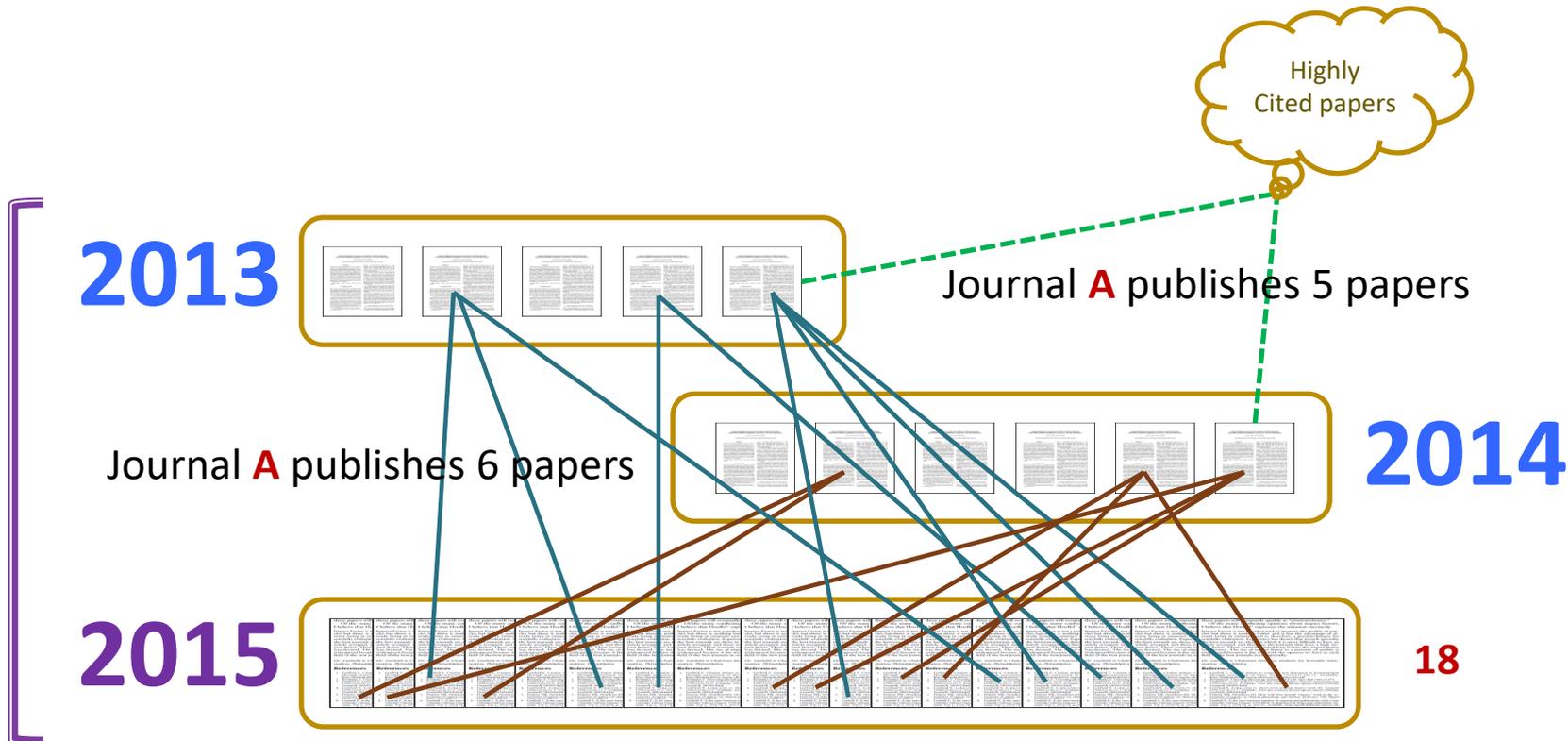


18

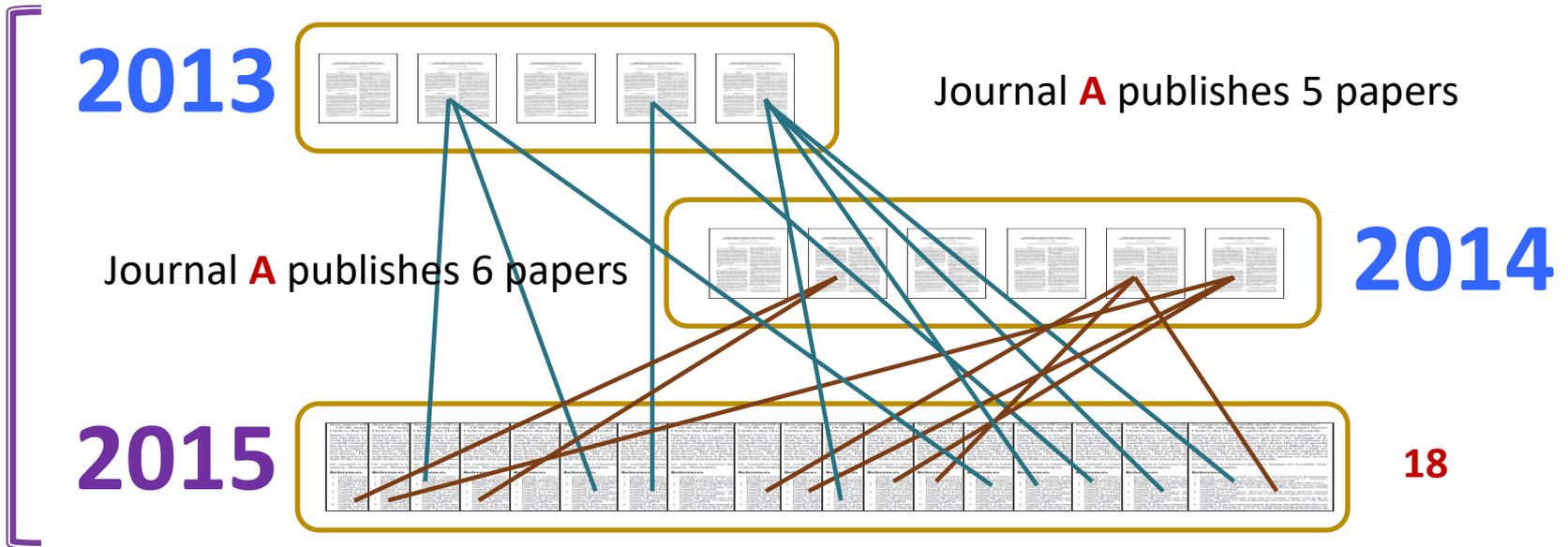
Few papers in different disciplines cite (**18**) papers of A 2013 and A 2014



Few papers in different disciplines cite (**18**) papers of A 2013 and A 2014



Few papers in different disciplines cite (**18**) papers of A 2013 and A 2014



Impact Factor of Journal A

$$\frac{\text{Total citations in 2015 for papers published in 2013 and 2014}}{\text{Total citable papers published in 2013 and 2014}} = \frac{18}{11} = 1.636$$

● Impact factor (IF)

- ✓ Since **IF** is retrospect, the **IF** for 2015 will only be available in 2016 (after all the citations for 2015 have been made)
- ✓ IFs are available in Journal Citation Reports (published by [Clarivate Analytics](#)) once a year
- ✓ **IF** is usually mentioned in print copy of a journal or on journal's homepages
- ✓ New journals do not have **IF** owing to 3 years data required to calculate
- ✓ **IF** varies between disciplines or within the same academic discipline (time span, citation frequency etc)
- ✓ **IF** of a journal does not reflect the quality of papers published by a particular author



ISSN: 0305-750X

World Development

The Multi-Disciplinary International Journal Devoted to the Study and Promotion of World Development

Editor-in-Chief: [Arun Agrawal](#)

> [View Editorial Board](#)

Journal Metrics

> CiteScore: **3.92** ⓘ

Impact Factor: **3.166** ⓘ

5-Year Impact Factor: **3.940** ⓘ

Source Normalized Impact per Paper (SNIP): **2.542** ⓘ

SCImago Journal Rank (SJR): **2.122** ⓘ

> [View More on Journal Insights](#)

Computation of scholarly metrics

● CiteScore [<https://www.scopus.com/sources>]

- ✓ Introduced in 'Scopus' database from 2016, as of now available FREE
- ✓ It is a measure of the frequency with which the "average article" in a journal has been cited in a particular year or period
- ✓ Helps to measure the impact of journals
- ✓ Helps in devising library collection development policy
- ✓ Assist authors to identify high impact journals in their area of research to publish articles
- ✓ Cite Score for a journal is calculated based on (**It is 4 years window**):



Computation of scholarly metrics



- **h-index**

- ✓ Devised by J.E. Hirsch in 2005 (Author metrics)
- ✓ Quantifies scientific output of individual researcher as single number (e.g. h-index 20 means researcher has published 20 papers those have at least 20 or more citations)
- ✓ It never decreases, always increases as and when new papers of a researcher gets cited or existing papers receive more citations, even if author is inactive
- ✓ It tries to find balance between productivity and citation impact
- ✓ Applicable to authors and institutions
- ✓ Found in certain databases such as Web of Science, SCOPUS, Google Scholar, RePEc etc

How to find h-index ?

- ✓ List the publications of an individual / Institute
- ✓ List citations received against each publication
- ✓ Rearrange the list in descending order of citations (i.e. highly cited paper in first place)
- ✓ Draw a line that matches the serial number and citations received. That's the **h-index !!!**

Hirsch's threshold values

- ▶ Successful scientist: $h=20$ after 20 years
- ▶ Outstanding scientist: $h=40$ after 20 years
- ▶ Truly unique individual: $h=60$ after 20 years, or 90 after 30 years

Source: <http://www.slideshare.net/hsls/what-do-we-know-about-the-h-index-4858000>

Computation of scholarly metrics

Calculating h-index

<https://scholar.google.co.in/citations?user=ceUD3IIAAAAJ&hl=en>



Sudha Narayanan

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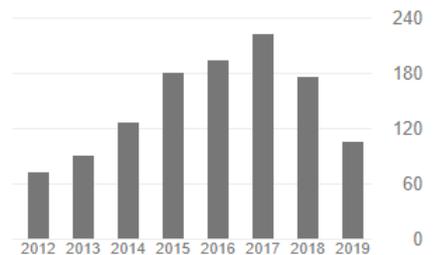
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Citations	1694	1014
h-index	16	13
i10-index	25	18



Co-authors

- Christopher B. Barrett
SB&JG Ashley Prof. of Applied E... >
- Upasak Das
University of Pennsylvania >

TITLE	CITED BY	YEAR
Smallholder Participation in Contract Farming: Comparative Evidence from Five Countries CB Barrett, ME Bachke, MF Bellemare, HC Michelson, S Narayanan, ... World Development	447	2011
The Subsidy Syndrome in Indian Agriculture G Ashok, S Narayanan Oxford University Press, New Delhi	342 *	2003
Globalization and the smallholders S Narayanan, A Gulati MTID discussion papers	160 *	2002
Employment guarantee, women's work and childcare S Narayanan Economic and political weekly, 10-13	98	2008
Profits from participation in high value agriculture: Evidence of heterogeneous benefits in contract farming schemes in Southern India S Narayanan Food Policy 44, 142-157	79	2014
Rice trade liberalisation and poverty A Gulati, S Narayanan Economic and Political Weekly, 45-51	79	2003

Computation of scholarly metrics

● **Altmetrics**

- ✓ **Altmetrics** is the creation and study of new metrics based on the Social Web for analyzing, and informing scholarship (Breakaway from traditional metrics)
- ✓ It is often referred as 'Alternative to Metrics'
- ✓ Here references made to articles in blogs, Twitter, policy documents, media and online reference management tools by anyone are taken in to consideration for measuring the impact of research
- ✓ Altmetrics will be essential to sift these new forms, since they're outside the scope of traditional metrics
- ✓ Altmetrics is still evolving and there are many questions need to be answered and standards need to be formed
- ✓ However, one can explore this new form of metrics using the available tools

(For more information about altmetrics and tools, please go through:
<http://altmetrics.org/manifesto/>)

Where to look for metrics?

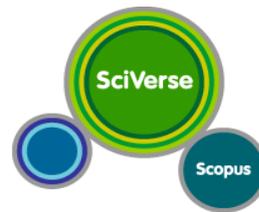
Article/Author Metrics:

- ✓ [Web of Science](#) (Old and Established)
- ✓ [Scopus](#) (Elsevier)
- ✓ [Indian Citation Index](#)
- ✓ [Google Scholar](#) and [Publish or Perish](#)
- ✓ [Microsoft Academic](#)
- ✓ [ResearchID](#) (On Registered researchers)
- ✓ [RePEc](#) (Economics)
- ✓ [Dimensions](#) [New]



[Scite](#)

Microsoft Academic



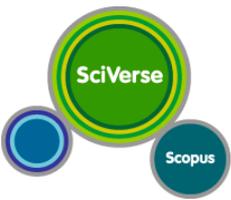
Where to look for metrics?

Journal Metrics:

- ✓ [Journal Citation Reports](#) [JCR – Thomson Reuters]
- ✓ [SJR/SciMago](#)(Including Country metrics)
- ✓ [Eigenfactor](#)
- ✓ [Google Scholar Metrics](#)

Which tool one should use?

The answer to this question is to never rely on **one tool** alone. The number of citations retrieved for a particular individual or group of individuals or institution will vary depending on the tool used. The content (sources) covered by each tool varies as does the depth of coverage and discipline coverage [MyRI].

	Strengths	Weaknesses
<p>Web of Science (part of the Web of Knowledge, WoK, suite of resources)</p> 	<ul style="list-style-type: none"> -Advanced citation searching and analysis features -Citation data available from 1900 to date -Broad coverage of high impact journals -Additional citation data is available in WoK by searching All Databases 	<ul style="list-style-type: none"> -Conference papers, books, book chapters, dissertations excluded* -Limited coverage of non-English language titles <p><i>*conference proceedings are available but may not currently be part of your library's subscription</i></p>
<p>Scopus</p> 	<ul style="list-style-type: none"> -Advanced citation searching and analysis features -Better coverage of Social Science titles -Includes conference proceedings 	<ul style="list-style-type: none"> -Books, book chapters, dissertations excluded -Citation data for papers published from 1996 onwards only
<p>Google Scholar (Publish or Perish)</p> 	<ul style="list-style-type: none"> -Free -Covers non-English language titles -Covers all types of publications including books and conference papers 	<ul style="list-style-type: none"> -No quality control, lots of errors in data -Does not cover all journals -Covers non-scholarly content -Coverage un-even across disciplines -Difficult to deal with name variants

Scopus – Author Search

Scopus Preview

Author search

Sources

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Scopus is the world's largest abstract and citation database of peer-reviewed research literature. With over 22,000 titles from more than 5,000 international publishers.

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Register for your unique ORCID and use Scopus to [import your records](#).



Author last name

e.g. Smith

Author first name

e.g. J.L.

Affiliation

e.g. University of Toronto

Show exact matches only

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<https://www.scopus.com/freelookup/form/author.uri>

Publish or Perish Software

Harzing's Publish or Perish (Windows GUI Edition) 7.14.2627.7247

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Search terms	Source	Papers	Cites	Cites/y...	h	g	hl,no...	hl,ann...	acc...	Search date	Cache date	Las...
nagaraj, r, indira gandhi institut...	Google Sc...	40	674	25.92	10	25	10	0.38	1	15-10-2019	15-10-2019	0

No search selected

About the available data sources

Select an existing search to inspect or modify it, or click one of these buttons to create a new search.

Crossref* Microsoft Academic** Import External Data...
Google Scholar* Scopus** ** Free registration required
Google Scholar Profile* Web of Science*** *** External subscription required

*Free data source

Results Help

Cites	Per year	Rank	Authors	Title	Year	Publication	Publisher
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Publication years:
Citation years:
Papers:
Citations:
Cites/year:
Cites/paper:
Authors/paper:
h-index:
g-index:
hI,norm:
hI,annual:
Papers with ACC >= 1,2,5,10,20:

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Save Results

<https://harzing.com/resources/publish-or-perish>



My searches

- Trash

Search terms	Source	Papers	Cites	Cites/y...	h	g	h _i ,no...	h _i ,ann...	acc...	Search date	Cache date	Las...
nagaraj, r, indira gandhi institut...	Google Sc...	40	674	25.92	10	25	10	0.38	1	15-10-2019	15-10-2019	0

Google Scholar search

[How to search with Google Scholar](#)

Authors: Years: -

Publication name: ISSN:

Title words:

Keywords:

Results [Help](#)

Publication years: 1993-2019
 Citation years: 26 (1993-2019)
 Papers: 40
 Citations: 674
 Cites/year: 25.92
 Cites/paper: 16.85
 Authors/paper: 1.60
 h-index: 10
 g-index: 25
 h_i,norm: 10
 h_i,annual: 0.38
 Papers with ACC >= 1,2,5,10,20:
 18, 11, 4, 1, 0

Cites	Per year	Rank	Authors	Title	Year	Publication	Publisher
<input checked="" type="checkbox"/> h 14	2.00	1	R Nagaraj	Growth, Inequality and Social Development in India: Is Inclusive ...	2012		books.google.com
<input checked="" type="checkbox"/> 4	2.00	2	R Nagaraj, S Motiram	Political economy of contemporary India	2017		books.google.com
<input checked="" type="checkbox"/> h 276	14.53	3	R Nagaraj, A Varoudakis, ...	Long-run growth trends and convergence across Indian States	2000	... Development: The ...	Wiley Online Library
<input checked="" type="checkbox"/> 6	0.23	4	R Nagaraj	Employment and Wages in Manufacturing Industries in India: Tr...	1993		... Institute of Develo
<input checked="" type="checkbox"/> 10	0.83	5	R Nagaraj	Labour market in India: current concerns and policy responses	2007	... : Indira Gandhi Institute of ...	
<input checked="" type="checkbox"/> h 23	2.88	6	R Nagaraj	Growth in organised manufacturing employment: A comment	2011	Economic and political weekly	JSTOR
<input checked="" type="checkbox"/> h 17	1.89	7	R Nagaraj, A Rahman	Booming Bihar: Fact or Fiction?	2010	Economic and Political Weekly	JSTOR
<input checked="" type="checkbox"/> h 119	9.15	8	TCA Anant, R Hasan, P Mohapatra, R Nagaraj, ...	Labor markets in India: issues and perspectives	2006	Labor Markets in ...	Springer
<input checked="" type="checkbox"/> h 58	9.67	9	R Nagaraj	India's dream run, 2003-08: Understanding the boom and its aft...	2013	Economic and Political Weekly	JSTOR
<input checked="" type="checkbox"/> h 31	3.10	10	R Nagaraj	Is services sector output overestimated? An inquiry	2009	Economic and political weekly	igidr.ac.in
<input checked="" type="checkbox"/> 2	0.08	11	R Nagaraj	Employment and Wages in Manufacturing Industries in India	1993		... Institute of Develo
<input checked="" type="checkbox"/> 2	0.08	12	R Nagaraj	Employment and Wages in Manufacturing Industries in India: Tr...	1993	... ', Indira Gandhi Institute of ...	
<input checked="" type="checkbox"/> h 16	2.00	13	R Nagaraj	Industrial Performance, 1991-2008: A Review	2011	India development report	igidr.ac.in
<input checked="" type="checkbox"/> 3	0.60	14	R Nagaraj	Public Sector Employment: What has Changed?	2014	... India, Indira Gandhi Institut...	
<input checked="" type="checkbox"/> h 12	6.00	15	R Nagaraj	Economic Reforms and Manufacturing Sector Growth	2017	Economic & Political Weekly	igidr.ac.in
<input checked="" type="checkbox"/> h 28	2.15	16	R Nagaraj	Aspects of India's economic growth and reforms	2006		books.google.com



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<p>Few-Shot Adversarial Learning of Realistic Neural Talking Head Models Article, May 2019</p>	<p>Scientists rise up against statistical significance News story in Nature, March 2019</p>	<p>How Diversity Works Article in Scientific American, September 2014</p>
<p>Republican lawmaker: Rocks tumbling into ocean causing sea level rise News story in Science, May 2018</p>	<p>Mortality in Puerto Rico after Hurricane Maria Article in New England Journal of Medicine, July 2018</p>	<p>The spread of true and false news online Article in Science, March 2018</p>
<p>Measles, Mumps, Rubella Vaccination and Autism Article in Annals of Internal Medicine, March 2019</p>	<p>Trump White House quietly cancels NASA research verifying greenhouse gas cuts News story in Science, May 2018</p>	<p>World Scientists' Warning to Humanity: A Second Notice Article in BioScience, November 2017</p>
<p>Sex redefined News story in Nature, February 2015</p>	<p>Earth's magnetic field is acting up and geologists don't know why News story in Nature, January 2019</p>	<p>United States Health Care Reform Article in JAMA: Journal of the American Medical Association, August 2016</p>
<p>The Russian "Firehose of Falsehood" Propaganda Model Book in www.rand.org, July 2016</p>	<p>Alcohol use and burden for 195 countries and territories, 1990–2016: a... Article in The Lancet, September 2018</p>	<p>When Facts Backfire Article in Scientific American, December 2016</p>
<p>Associations of fats and carbohydrate intake with cardiovascular disease and... Article in The Lancet, November 2017</p>	<p>A Style-Based Generator Architecture for Generative Adversarial Networks Article, December 2018</p>	<p>The irreversible momentum of clean energy Article in Science, January 2017</p>

Research metrics guide

Metrics illuminate the impact of your research outputs. Promotion and tenure committees, funders, advisors, research team leaders and potential collaborators are all interested in information about impact.

But where to start?

Your library can advise you on metrics that can help you to:

Decide where to publish

- CiteScore
- SJR: SCImago Journal Rank
- SNIP: Source Normalized Impact per Paper
- Journal Impact Factor

Add to online profile

- *h*-index
- Percentile benchmark
- Usage
- Captures
- Mentions
- Social Media

Enrich promotion & tenure portfolio

- *h*-Index
- Percentile benchmark
- Usage
- Captures
- Mentions
- Social Media
- Citations

Apply/Report to Funders[†]

- Percentile benchmark
- Journal metrics (e.g., CiteScore)
- Usage
- Captures
- Mentions
- Social Media
- Citations

Benchmark a collection of research outputs *(for team leaders)*

- Percentile benchmark
- Field-Weighted Citation Impact
- *h*-Index (if in the same field)
- Field-Weighted Download Impact_z



Document*



Author



Journal



Snowball Metrics**



PlumX metrics

Source: https://www.elsevier.com/data/assets/pdf_file/0004/880357/ACAD_LIB_POS_ResearchMetricsCards_WEB.pdf

Limitations of Research Metrics

- ✓ No one database is comprehensive
- ✓ No one database covers all journals
- ✓ No one database includes all publication formats
- ✓ Publication dates affect your results.
- ✓ Results can be misleading
- ✓ All impact measures are controversial!

[Source: <http://researchguides.library.wisc.edu/content.php?pid=103674&sid=779716>]

‘There is no single “best” indicator that could accommodate all facets of the new reality of scholarly metrics’

Resources to follow..

- ✓ [EconBuzz](#) Newsletter (IGIDR Library)
- ✓ [EPW Engage](#)
- ✓ [Ideas for India](#)
- ✓ [IGIDR Library](#) on Twitter @igidrlib
- ✓ [LSE Impact Blog](#) (Social Sciences)
- ✓ [Richard Poynder](#) on Twitter @RickyPo
- ✓ [Scholarly Kitchen](#)
- ✓ [The India Forum](#)

References

- Metrics. <http://www.nature.com/news/specials/metrics/index.html>

THANK
Thank YOU thank
YOU Thanks

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