

# Scientific Publication: Where to Publish?

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# Scientific Research

Scientific research is one of the three pillars of university education, namely:

- Teaching (*dissemination of knowledge*)
- Scientific Research (*advancement of knowledge*)
- Community Service (application of knowledge).

Faculty members of a university are first and foremost researchers.

Creativity in teaching is a characteristic associated with excellence in research.

On other hand, faculty members would not be promoted to a higher scientific rank unless they do and publish their research findings.

*The traditional or philosophical motivation for publishing is to share one's incremental knowledge and/or understanding with peers across the world .*



# Why do we publish?

**We publish so others may learn.**

Surely, your discovery will enrich the pool of literature on a given subject. Your findings will strengthen the arguments of others while it will refute others.

It will help shed light on issues that need resolution and it will also help build theories.

# Why do we publish?

## **Own glorification (sense of self)!!!**

- will come by the quality of work done. You may become a recognized expert in your field.
- publishing your research findings in a reputable scientific journal, gives you an inner confidence and satisfaction that indeed you have been a useful researcher.

# **Why do we publish?**

**Academic Promotion and Institution Ranking!!!**

**Both are imperative;**

**Both are not objectives!**

**Publish or Perish**

**Publish & Flourish**

# When to publish?

When all answer are known!!!

Most answers generate a new series of questions.

So, we publish when significant advances has been made in the subject and not before.

# Where to Publish?

**Journals are usually classified by:**

## **a. Topic**

General: Lancet; New England J. Med

Specialty: J. Fam. Prac.; Internal Medicine

Subspecialty: Archives of Dermatology

## **b. Types of articles:**

Original Research, Meta Analysis or Review Articles.

*The Cochrane Database of Systematic Reviews (CDSR).*

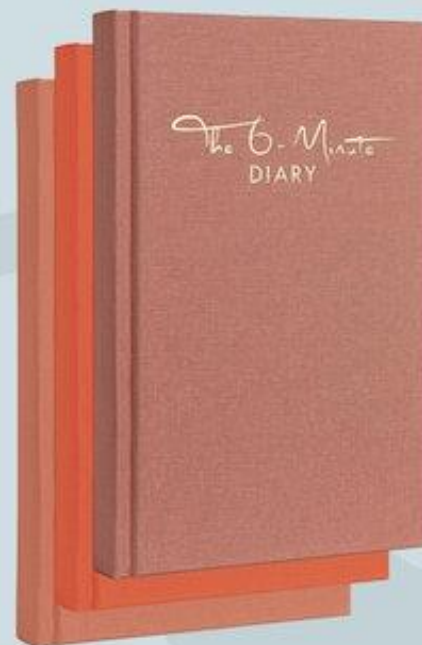
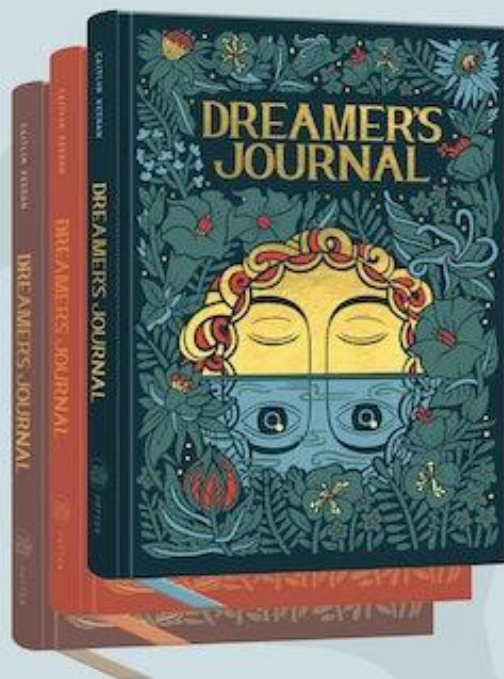
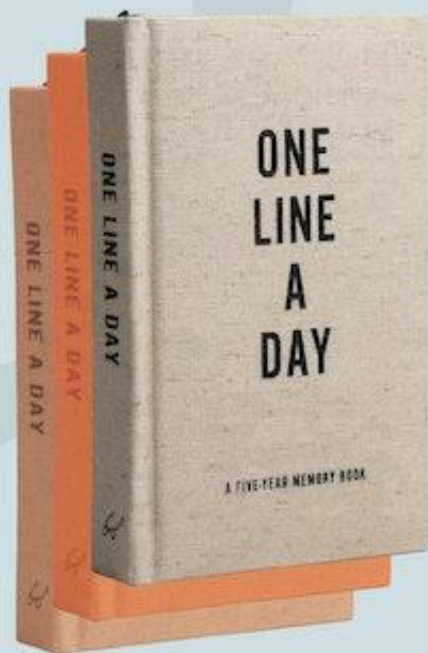
**c. Duration: (Periodically)**

Daily, weekly (MMWR), monthly, quarterly, biennial, annual...

**d. Prestige Factor: (Citation & Impact):**

Journals are now classified on a yearly basis by citation counts.

So a paper published in a frequently cited journal is considered more prestigious than one published in a less cited one.





# Databases & Search Engines

A database is an organized collection of structured information, or data, typically stored electronically in a computer system, controlled by a database management system (DBMS).

Databases and search engines are useful in an academic setting for finding and accessing articles in academic journals, institutional repositories, archives, or other collections of scientific and other articles.



# Databases & Search Engines

As the distinction between a database and a search engine is unclear for these complex document retrieval systems, see:

The general list of search engines for all-purpose search engines that can be used for academic purposes:

***List of academic databases and search engines***

# Citations

Citations are the formal, explicit linkages between papers that have particular points in common.

# Citation Index

*"the citation index ... may help a historian to measure the influence of an article or a journal — that, its impact"*

**Eugene Garfield**

# Citation Metrics

**Eugene Garfield** is the "father of citation indexing of academic literature (1925 - 2017). He launched the Science Citation Index (SCI), which in turn led to the Web of Science.

He is the founder of the Institute of Scientific Information (ISI) in 1955. ISI was sold to Thompson Reuters in 1992, and to Clarivate Analytics in 2007.

## ■ Citation metrics

- Total number of papers
- Total number of citations
- Average number of citations per paper
- Number of citations per author
- Number of citations per author per year
- Number of papers per author
- Average number of authors per paper
- The age-weighted citation rate
- An analysis of the number of authors per paper.

\*Please note that these metrics are only as good as their input:

- Accuracy of the results
- Reflections on the h-index
- Reflections on Google Scholar

# Citation Databases

A **citation database** is a form of bibliographic index which provides a record of **citations** between publications, enabling a user to see which publications have cited which other publications. Such a **database** will show which authors have cited a publication and how many times an author has been cited

# Citation databases

Citation databases are databases that have been developed for evaluating publications. The **citation databases** enable you to count **citations** and check, for example, which articles or journals are the most cited ones.

A citation database includes information about sources, such as author, date published, source, and other details.

Sometimes the databases would also include information such as the sources cited by another source or who has cited the source you are looking at.



Citation databases are typically focused on journal articles, but may use other sources such as books, dissertations, videos, and reports.

# Citation Index

A citation index is built on the fact that citations in science serve as linkages between similar research items, and lead to matching of related scientific literature, such as journal articles, conference proceedings, abstracts, etc.

Articles (papers) which shows the greatest impact in a particular field, or more than one field, can be easily located through a citation index.

For example, a paper's influence can be determined by linking it to all the papers that have cited it. In this way, current trends, patterns, and emerging fields of research can be identified and assessed.

# Impact Factor

The impact factor was devised by Eugene Garfield, the founder of the Institute for Scientific Information. Impact factors are calculated yearly starting from 1975 for journals listed in the Journal Citation Reports. The **impact factor** is a measure of the frequency with which the average article in a journal has been cited in a particular year/years.

# Journal citation Reports (JCR)

- The **JCR** lists journals and their **impact factors** and ranking in the context of their specific field(s).
- On other hand the Scientific Journal Ranking (SJR) display journals with at least Citable Docs. (3years) Total Cites

# Web of Science (formerly Thomson Reuters & ISI)

The Web of Science (*Clarivate Analytica*) is the most important and credible network in the world of cataloging, scientific discovery and the development of results..

**Web of Science** is an online subscription-based scientific citation indexing service originally produced by the Institute for Scientific Information (ISI), now maintained by Clarivate Analytics.

It provides a comprehensive citation search. It also gives access to multiple databases that reference cross-disciplinary research, which allows for in-depth exploration of specialized sub-fields within academic or scientific disciplines.



# Web of Science

It is characterized by accurate synchronization of sources of information, which enables to evaluate and arrange the efficiency of individuals and scientific institutions through published research in scientific journals and conferences and to evaluate the extent of utilization of their results through accurate enumeration of the number of citations and the percentage of citation for their published papers.



# Web of Science Master Journal List (WoS MJL)

- The Master Journal List is an invaluable tool to help you to find the right journal for your needs across multiple indices hosted on the Web of Science platform.
- Spanning all disciplines and regions, Web of Science Core Collection is at the heart of the Science Platform. Looked after by an expert in-house team of ...

# journal-impact-factor-list (web of Science)

Example: First 4 ranking journals in the Impact Factor List of 2019 provided by the **Journal** Citation Report (JCR)

Rank )

1) CA- A CANCER J. FOR CLINICIANS

IF=223.6792

2) Nature Reviews Materials

IF=74.449

3) NEW ENGLAND J. OF MEDICINE

IF=70.6704

4) LANCET

IF=59.102

# Journal Citation Ranking and Quartile Scores (Q1-Q4)

- Based on Impact Factor (IF) data, the Journal Citation Reports published by WoS provides yearly rankings of science and social science journals, in subject categories relevant for the journal (in fact, there may be more than one category for a journal).
- Quartile rankings are therefore derived for each journal in each of its subject categories according to which quartile of the IF distribution the journal occupies for that subject category.

# Quartile Ranking (SJQ)

(For each journal in its subject categories)

- Q1 denotes the top 25% of the IF distribution,
- Q2 for middle-high position (between top 50% and top 25%),
- Q3 middle-low position (top 75% to top 50%),
- and Q4 the lowest position (bottom 25% of the IF distribution)

# Variables usually used in ranking of journals

- Total Docs(for that year)
- Total Docs.(3 Years)
- Total Refs.
- Total Cites (3years)
- Citable Docs. (3years)
- Cites / Doc. (2years)
- Ref. / Doc.

# SCOPUS

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. All journals covered in the Scopus database, regardless of who they are published under, are reviewed each year to ensure high..

# SCOPUS

**Scopus** is the largest abstract and citation **database** of peer-reviewed literature of scientific journals, books and conference proceedings. ... Delivering a comprehensive overview of the world's research output in the fields of science, technology, medicine, social sciences, and arts and ... Who uses - Scopus .



## Hirsch Index (h-Index):

It is a measure of the productivity and impact of a published work based on the number of citations attributed to the number of similar and most cited research in the world.

It is also an author-level metric that attempts to measure both the productivity and citation impact of the publications of a scientist or scholar.



The h-index correlates with obvious success indicators such as winning the Nobel Prize, being accepted for research fellowships, acquired funded grants, and holding positions at top universities or scientific institutions.

The h-index measures the impact of a particular scientist rather than a journal.

"It is defined as the highest number of publications of a scientist that received 'h' or more citations each while the other publications have not more than 'h' citations each.

The h-index is calculated by counting the number of publications for which an author has been cited by other authors at least that same number of times.

For instance, an h-index of 17 means that the scientist has published at least 17 papers that have *each* been cited *at least* 17 times. If the scientist's 18th most cited publication was cited only 10 times, the h-index would remain at 17.

But if the scientist's 18th most cited publication was cited 18 or more times, the h-index would rise to 18.

# Is Google a database?

It is a search engine. And when citations mention something being from a database, we would not consider Google a database like something from EBSCO for example.

If you are citing an article from a news site or a webpage, you would site it as an online news source or website. If you are citing from an online journal, you can cite it as an online journal.

Most citation styles will ask that you use a URL (Uniform Resource Locator) or DOI (Digital Online Identifier). So, while you wouldn't use Google or Google Scholar as the database name, you would cite the item as an online source.

# How to Select a Journal

When you wish to submit your research article in a **journal**, you have to select the target **journal** for your research area as well as the **journal** must be **indexed** in any of the major abstract **indexing** databases such as ISI, **Scopus**, SCI, SCI-E, or ESCI.

However, identifying a targeted **journal** with good **journal** citation report is not that easy.

How to check for indexed journals?

Check journal indexes !

- Search for SCI journals ( full list of SCI journals)
- Search for SCIE journals ( full list of SCIE journals)
- Search for SSCI journals ( full list of SSCI journals)
- Search for ISI journals
- El compendex website  
( Note: to download the list of **El journals and proceedings in Excel format** and then click on "**Compendex source list**" )
- Check the **JCR (Journal Citation Report) ranking** of a journal and its impact factor (requires a subscription) : <https://jcr.incites.thomsonreuters.com/>
- Check **SCImago Journal Ranking (SJR)** in terms of quartile **Q1, Q2, Q3, Q4**: <http://www.scimagojr.com/>

# Science Citation Index (SCI)

Expanded (via the Web of **Science**)  
Databases The **SCI** is a multidisciplinary  
index and fully indexes over 8,500 major  
journals across 150 disciplines .



# Ei Compendex.

**Ei Compendex** is the broadest and most complete engineering literature database available in the world. It provides a truly holistic and global view of peer reviewed and indexed publications with over 20 million records from 77 countries across 190 engineering disciplines.



# The Emerging Sources Citation Index (ESCI)

ESCI was launched in late 2015 by Thomson Reuters as a new database in Web of Science. Around 3,000 journals were selected for coverage at launch, spanning the full range of subject areas.

Since 2017 the index has been produced by Clarivate Analytics. ESCI aims to **extend the scope of publications in the Web of Science to include high-quality**, peer reviewed publications. It ensures important research is visible in the Web of S...

Search:

Scopus indexed journals

Scopus Indian Journals

Scopus Journal Ranking

# Which indexing is Good ESCI or SCOPUS

SCOPUS is a well-known indexing/ranking database of Elsevier. It is reputed as the largest of all such platforms. ESCI is a "feeder" index to the SCIE/SSCI/AHCI, which in turn feed into SCI.

# Arabic Citation Impact Factor (ARCIF)

Arcif is a comprehensive **database** providing citations of peer reviewed academic journals in the Arab world. It provides reliable, integrated, and multidisciplinary data, linking the output and volume of citations to hundreds of thousands of articles published in Arabic, (or in the Arab world) in various disciplines.

Arcif is established in 2013 by e-Marefa Academic database and search engine.

*However*

Do not judge an article by the journal in which it is published.

The review and editorial policies of the said best journals do not provide protection from error or bias.

During the last decades the usage of the JIF has significantly changed. In deviating from its original purpose, it is now widely used to evaluate the quality of individual publications and the work of scientists (**Amin & Mabe, 2003; Arnold & Fowler, 2010**).

- The journal impact factor (JIF) was initially used to help librarians make decisions about journals (Garfield, 2006).
- The use of the journal impact factor (JIF) as a measure for the quality of individual manuscripts and the merits of scientists has faced significant criticism in recent years.

Since then, the measure itself has been criticized for various reasons. For example:

- It is well known that the JIF is an inaccurate estimate for the expected number of citations of an article within a specific journal (*Callaway, 2016*; *Larivière et al., 2016*) Critics of the metrics, point out the disadvantages or flaws of its calculation. Disparity in using the mean rather than the mode in calculations.



- The JIF is prone to manipulate (*McVeigh & Mann, 2009; Tort, Targino, & Amaral, 2012*).

Coercive citation is a practice in which an editor of a scientific journal forces an author to add spurious citations to an article before the journal will agree to publish it. This is done to inflate the journal's impact factor.

➤ The number of citations is found to be related to the number of scientists in the field, which in turn affects the number of publications in that field. (fewer scientists = fewer publications = fewer citations.)

Physics, space, clinical medicine have high number of scientists and high number of publications compared to environment, ecology and social sciences.

- Based on the Impact Factor of the journals they are publishing their manuscripts in, scientists get jobs, tenure, grants, bonuses and promotions. Such consequences were critically discussed in many previous reviews, comments and editorials.
- (Brembs, Button, & Munafò, 2013; Casadevall & Fang, 2014; Della Sala & Crawford, 2007; DePellegrin & Johnston, 2015; Lehmann, Jackson, & Lautrup, 2006; Reich, 2013; Seglen, 1997; Simons, 2008; Werner, 2015).

Addressing the wave of doubt toward the metric, the European Association of Science Editors restated its purpose:

“JIF should be an indicator to assess the entire journal's influence, not single publications or researchers separately”

- Other measures have been suggested to better approximate the quality of a scientist's work or of a specific study (e.g. the h-index, Hirsch, 2005 and the Relative Citation Ratio (RCR), Hutchins, Yuan, Anderson, & Santangelo, 2015).

During 2017, the Journal Citation Reports (JCR) database tracked all impact factors for 12,298 journals. The table below shows the number and percentage of journals that were assigned impact factors ranging from 0 to 10+.

- The interpretation of the metrics revealed that only 1.5% of the journals had IF 10+; 71% had  $IF < 2$  and that the mean  $IF = 0.9$ .



Impact Factor	Number of Journals	Ranking (Top % of Journals)
10+	239	1.9%
9+	290	2.4%
8+	356	2.9%
7+	447	3.6%
6+	610	4.9%
5+	871	7.1%
4+	1,399	11.4%
3+	2,575	21%
2+	4,840	39.4%
1+	8,757	71.2%
0+	12,298	100%



- Impact Factors are useful, but they should not be the only consideration when judging quality.
- Not all journals are tracked in the JCR database and, as a result, do not have impact factors. New journals must wait until they have a record of citations before even being considered for inclusion.
- The scientific worth of an individual article has nothing to do with the impact factor of a journal.

Critics say JIF can't be an accurate predictive measure of where to publish your works. A certain article can achieve few citations even if published in a frequently cited journal.

# Types of Publications

- **Review paper**
- **Conference report**
- **Meeting abstract**
- **Case report**
- **Letter to the editor**
- **Scientific paper**

# Review Paper

- Designed to summarize, analyze or synthesize information that has already been published

# Conference Paper

- Paper published in a book or journal as part of the proceedings of a symposium or national or international congress.

# Meeting Abstract

- **Conceptually similar to conference reports in that they can and often do contain original information.**

# Case Report

Reporting of unusual finding or a rare symptom or disease.

It includes:

- The history
- Clinical findings
- Special investigations
- Result of management

In exactly the same order as in patient's notes.



## The Discussion Should answers:

- Why the patient had the symptoms?
- Why things happened as they did?
- Why the management (treatment) turned out as it did?

# Letter to the Editor

- To comment on a recently published article in the same Journal. You must state supporting evidence for your views.
- To publish preliminary results of importance which may not warrant a full length of an article in order to achieve priority in the field. The complete paper should follow within a reasonable time.
- To broach a subject which can not be raised in any other way (embarrassing; unpleasant or cause an argument)

# Letter to the Editor

It includes:

- One sentence to explain why you are writing.
- One or two sentences to support own argument.
- The main message.
- Brief conclusion.

# Scientific Paper

- It is a “valid” publication so abstracts, theses, conferences reports, etc... are not valid publication.
- It is a written and published report describing original research results.
- Written in certain way and published in a certain way.
- It contains sufficient information to enable peers to:
  1. Assess the observations
  2. Repeat the experiments and
  3. Evaluate the intellectual process

Moreover, it must be susceptible to sensory perception (i.e. available to the scientific community without restriction)

# Scientific Paper

**A simple definition would be:**

- 1. The first publication of original research results.**
- 2. In a form where by peers of the author can repeat the experiments and judge the conclusions.**
- 3. In a journal (or other document source) which is readily available within the scientific community.**

# Organization of a Scientific Paper

A scientific paper is primary an exercise in ORGANIZATION.

A good organization is the key to good writing

Each scientific paper should have:

Introduction → What was the problem?

Materials and methods → How did you study  
the problem?

Results → what did you find?

Discussion → What do these findings mean?

# Organization of a Scientific Paper

**A scientific paper has almost nothing to do with writing per se. It is a question of organization.**

**A scientific paper is not “Literature”.**

**However, in addition to organization the second principal ingredient should be appropriate language within that organization**

# Authorship Entitlement

The listing of authors should include those, and only those, who actively contributed to the overall design and execution of experiments.

According to the International Committee of Medical Editors substantial contribution include:

1. Conception and Design or  
Acquisition of data or  
Analysis and interpretation of data
2. Intellectual content
3. Final approval of the version to be published

(authors should meet conditions 1, 2 and 3)



# Authorship Entitlement

- Acquisition of funding, collection of data or general supervision of the research group, alone, does not justify authorship.

? Avoid listing host authors!!!

# Order of Authors

- The authors should be listed in order of importance to the experiments.
- Resolution of this issue is not always easy!
- Alphabetical?
- Head of Laboratory, first or last or not at all!!!
- Primary progenitor of the work
- Single author is a query!!!

**If you submit your manuscript to the wrong journal one of three things can happen:**

1. It is returned as not suitable for the journal.
2. It receives an unfair review.
3. It is published in a journal your peers do not read.

# How to write?

**Writing is not easy. It requires effort, concentration and peace.**

**Much research is written up too quickly. A work which has taken a year to complete can not be written in 2 weeks. So writing should match the quality of research.**

**A well written paper is read more quickly and its meaning is grasped more easily.**

# Editing and proof reading

**Editing:** is the process of continually revising and improving your written work. It is often an activity that forms a major part of the writing process.

**Proof reading:** is the final check before submission. It is a process that helps remove errors to improve the manuscript.

# Reviewer Queries

plagiarism:( Software)

- To pretend and pass off the words of another as one's own.
- To use another's production without crediting the source.
- To present as new and original an idea or a product derived from an existing source.

# Reviewer Queries

- Soundness of organization of the paper
- Adherence to journal and authors guidelines
- Appropriateness of figures and tables
- Length of article
- Correct nomenclature
- Appropriate literature citation and bibliography

# Reviewer Queries

- Significance of research questions
- Originality of work
- Appropriateness of experimental design and techniques
- Outcome of data analysis
- Relevance of discussion
- Soundness of conclusion



*However*

Do not judge an article by the journal in which it is published.

The review and editorial policies of the said best journals do not provide protection from error or bias.

# Scientific Writing

# Statistics

- Describe statistical methods with enough detail to enable a knowledgeable reader to verify the reported results.
- Quantify your findings and present them with appropriate indicators of error or uncertainty (e.g. C.I.).
- Relying solely on P-values may jeopardize your conclusions.

# Data Analysis

**Descriptive statistics:** Frequency; tables; number; percentages; means

**Analytical statistics:**

**Tests of significance:** Chi-square; t –test; ANOVA for means

**Tests of association:** *Relative risk (RR)* the strength of association between 2 or more variables.  
*Odds Ratio (OR)* test of the likelihood of occurrence of an event.  
*Correlation coefficient (R)*

**Test of prediction:** ANOVA and covariance  
Multiple regression  
Logistic regression