



About Journal Impact Factors

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Citation data source

- Citation data come from the Institute for Scientific Information (ISI) that collects references of articles from the world's scientific journals.
- ISI database shows how many times and by whom each publication has been cited within a certain period.
- Journal impact factors are calculated as the mean citation rate of all articles contained in the journal.
- The results are annually published in the Journal Citation Reports (JCR).



Historical notes

- The idea of impact factor was first mentioned by information scientist Eugene Garfield in 1955.
- Eugene Garfield and Irving Sher created the journal impact factor to help select journals for the Science Citation Index (SCI) in 1960.
- The aim was to create simple but powerful tool for ranking, evaluating, categorizing, and comparing journals.



Impact factor calculation

The journal impact factor is a measure of the frequency with which the "average article" in a journal has been cited in a particular period.

$$\text{Impact Factor} = \frac{C}{N}$$

C is the number of citations in the current year to any items published in journal in previous period (usually 2 years).

N is the number of articles published in the same period.

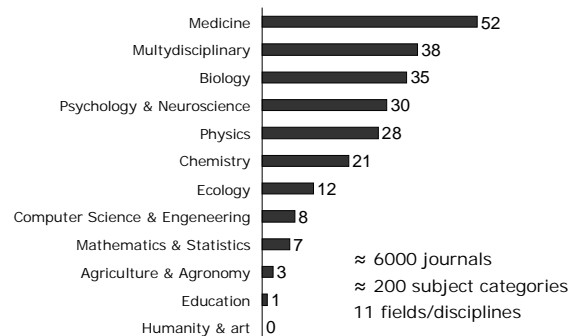


What factors affect journal impact?

- Research field
- Relations between fields
- Citation practices
- Citation dynamics
- Calculation period (i.e. 1-, 7-, 15-year impact factors)
- Publication lag and time required to review a manuscript
- Others



The highest impact factors per field, JCR'03





Shortcomings

- Field-dependent
- Calculation limitation
 - Journals publishing items that are not traditional research/review articles (editorials, news stories, letters, meeting abstracts, etc.) get higher impact than journals lack such items.
- Database limitations
 - Coverage is not complete and may vary from year to year
 - Books and conference proceedings are not included
 - Self-citations and double-citations to translated journal versions



Applications

Journal impact factor is used by:

- libraries to decide which journal to purchase,
- authors to decide where to submit their articles,
- granting and other policy agencies to evaluate individual researchers, research groups and institutions for allocation of resources and positions,
- authors to include impact factors in their lists of publications -> example



List of publications with impact factors

- Marasas WFO, Vismer HF. Food for thought about mycotoxins, organic and genetically modified foods. In: Credland PF, Armitage DM, Bell CH, Cogan PM, Highly E (eds). *Advances in Stored Product Protection. Proceedings of the 8th International Working Conference on Stored Product Protection*, York, UK, 22-26 July 2002. CABI Publishing, Oxon, UK 2003: 423-427. (Not Indexed. Book Chapter).
- Mamewick JL, Gelderblom WCA, Joseph S, Joubert E. Chemoprotective properties of South African herbal teas in a two-stage mouse skin carcinogenesis model (Abstr). *Ann Nutr Metab* 2003; 47: 624 (Indexed. Impact Factor 0.663).
- Mamewick JL, Joubert E, Swart P, Van der Westhuizen F, Gelderblom WC. Modulation of hepatic drug metabolizing enzymes and oxidative status by rooibos (*Aspalathus linearis*) and honey bush (*Cyclopia intermedia*), green and black (*Camellia sinensis*) teas in rats. *J Agric Food Chem* 2003; 51: 8113-8119 (Indexed. Impact Factor 1.732).
- Seifert KA, Aoki T, Baayen RP, Brayford D, Burgess LW, Chulze S, Gams W, Geiser D, de Gruyter J, Leslie JF, Logrieco A, Marasas WFO, Nirenberg HI, O'Donnell K, Rheeder J, Samuels GJ, Summerell BA, Thrane U, Waalwijk C. The name *Fusarium moniliforme* should no longer be used. *Mycol Res* 2003; 107: 643-644 (Indexed. Impact Factor 0.993).
- Sewram V, Shephard GS, Marasas WFO. Application of high performance liquid chromatography - mass spectrometry to mycotoxin research. In: Aggarwal SK (ed) *Proceedings of the Indian Society for Mass Spectrometry Silver Jubilee Symposium on Mass Spectrometry*, Goa, India, 27-31 January 2003; Vol 1: 335-352 (Not Indexed. Conference Proceedings).



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How do I choose where to submit a paper?

Nº	Journals on Image Processing and Computer Vision	Impact Factor (JCR) 2003
1	IEEE Trans. on Pattern Analysis and Machine Intelligence	2.923
2	IEEE Trans. on Image Processing	2.553
3	International J. of Computer Vision	2.034
4	Computer Vision and Image Understanding	1.165
5	Statistics and Computing	1.127
6	Pattern Recognition	1.038
7	Image and Vision Computing	1.029
8	Multidimensional Systems and Signal Processing	0.938
9	Signal Processing: Image Communication	0.782
10	Graphical Models and Image Processing	0.744
11	J. of Visual Communication and Image Representation	0.708
12	Pattern Analysis and Applications	0.667
13	Journal of Mathematical Imaging and Vision	0.630
14	Signal Processing	0.536
15	Pattern Recognition Letters	0.409
16	Machine Vision and Applications	0.373
17	IEE Proceedings - Vision, Image and Signal Processing	0.364
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How did I choose where to submit a paper?

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Factors to be taken into consideration when submitting an article

- Journal's subject area and its relevance to the author's specialty
- Journal prestige
- Probability of acceptance
- Fairness and rapidity of the editorial process
- Publication lag
- Publication cost

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Conclusions

- Scientific evaluation based on impact factors changes the scientists' publication behavior towards publishing in journals with high impact factor.
- Journal with high impact factor increases the possibility of a paper being read/cited.
- Impact factor is not a perfect and the only measure to evaluate a journal's quality, but there is nothing better.

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Thank you for your attention!

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