

Journal impact factor: An essential primary quality indicator

The Journal Impact Factor (JIF), a product of Thomson ISI (Institute for Scientific Information), represents a quantified quality measure which enjoys wide acceptability¹⁻⁵. To quote Garfield: 'A journal's impact factor is based on two elements: the numerator, which is the number of citations in the current year to any items published in a journal in the previous two years, and the denominator, which is the number of substantive articles (source items) published in the same two years'². While developing the JIF, most of the criteria representing the quality of publication, including how current is the area of publication get taken care of. As a result, JIF serves as the strongest primary indicator of quality of work an individual, department, institution or university is doing.

While premier institutions (which are few) in India accept this criterion, there is a vast majority of science task force who are ignorant of JIF, or others who find fault with it under the alibi of the so called 'Indian conditions', and resist or try to dilute it and negate the whole purpose for which it has been done and is updated every year. Publication in a journal with high reputation or high JIF provides greater respect among the peers. The institutions which have 'impact factor culture' derive an immense advantage by providing motivation and impetus to researchers of all sections, young and not-so-young, to improve the quality of work, publish complete stories (as against splitting the work into many small papers in order to increase the number) and enhance the international visibility of their work. This demands more careful thought in choosing the area of research and overall bench-work strategy, use of internationally acceptable protocols and substantive inputs in manuscript preparation. By looking for the alibis or some local substitutes for JIF which some organizations have opted for, we would simply defeat the basic purpose, live in a make-believe world and delay our integration into the international scenario of doing and publishing science.

Integration into JIF culture for publishing and appraisals is all the more important due to the following reasons as well:

(a) There is a mushrooming of local or university-level journals whose circulation and visibility is not beyond the four walls of the campus. These fora are the dumping grounds for the work done by semi-skilled or ill-skilled people to earn a publication which 'unfortunately' finds a place on the CV of many senior scientists as well. A decision to accept only peer-reviewed publications listed in *Journal Citation Report (JCR)* would arrest the metastasis of these ills.

(b) Some universities have made it mandatory to have 2-3 publications for the award of a Ph D degree. This is a great step to give a fillip to the quality of work. However, in the absence of any primary indicators in force for the quality of publication, this purpose gets defeated. It is not rare that in order to complete the mandatory number of publications the examinee with the tacit support of the supervisor gives a list of communications to journals which only the so-called editorial board might have heard of. These unhealthy conventions are in force in a fairly good number of the universities. Hence, the only way to take care of these ills is to make it mandatory that only publications in *JCR*-listed journals would be counted. Individual institutions can further set their own standards for JIF in individual fields of specialization according to the reputation the institution aspires for.

Here it is germane to refer to the note of Balam⁶. In addition to the editors of the journals (which I would say has been said in a lighter vein), it is the professionally unsound, mediocre, and those lacking skills in doing and pushing science who are afraid of and resist the use of JIF. Another comment has been made by Gowrishankar⁷. The points raised are pretty genuine in the sense that the journal impact numbers may not be stretched too far and the individuals or science managers who might be worried about the figures beyond decimal, as Gowrishankar points out, may not be aware of the fact that these numbers provide a broader perspective rather than the measure of winners or losers in a close sprint. Citation analysis and JIF are supplementary to, and not a substitute for, peer review and other forms of expert evaluation. Especially, at the level of an individual re-

searcher's publication and citation record, many factors may influence whether a paper is cited much or little. These numbers are best used to obtain an overview of a researcher's output and impact. They should be interpreted by person's knowledge of the work of the individual. Splitting hairs over small differences is not recommended, whereas obtaining some broad view of an individual's output and impact is⁸.

Another concern expressed in many sections is that journals in some areas (say applied sciences) have low impact factor, while those in other areas like basic sciences have high impact factor. These fears are absolutely unfounded and emanate from utter ignorance. The 'golden rule' is to compare like with like⁸. Individuals are compared within a specialization only and there is certainly a level playing field. Thus, to conclude, JIF is a gift to scientists to help in self-appraisals and raise the level of their work; to science managers in evaluating the individuals, departments and institutions without stretching the numbers too far, and of course, to the funding agencies to get an idea of the strength of the applicant and working group in the area they seek grants. The earlier we integrate ourselves into the overall scientific culture of the nations which are much ahead of us, the better it is.

1. Garfield, E., *JAMA*, 2006, **295**, 90-93.
2. Garfield, E., *Can. Med. Assoc. J.*, 1999, **161**, 979-980; <http://www.cmaj.ca/cgi/content/full/161/8/979>
3. Garfield, E., 2005; www.garfield.library.upenn.edu/papers/jifchicago2005.pdf
4. The ISI impact factor; <http://scientific.thomson.com/free/essays/journalcitationreports/impactfactor/>
5. Essential science indicators; <http://scientific.thomson.com/products/esi/>
6. Balam, P., *Curr. Sci.*, 1999, **76**, 1519-1520.
7. Gowrishankar, J., *Curr. Sci.*, 1999, **76**, 1424-1425.
8. Personal citation report; <http://in-cites.com/rsg/pcr/index.html>

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