

EDITORIAL

THE IMPACT FACTOR

BY

M. Adel Shalaby

The **impact factor (IF)** or **journal impact factor (JIF)** of an academic journal is a measure reflecting the yearly average number of citations to recent articles published in that journal. It is frequently used as a proxy for the relative importance of a journal within its field; journals with higher impact factors are often deemed to be more important than those with lower ones. 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 those journals that are listed in the **Journal Citation Reports**.

In any given year, the impact factor of a journal is the number of citations received in that year by articles published in that journal during the two preceding years, divided by the total number of articles published in that journal during the two preceding years.

New journals, which are indexed from their first published issue, will receive an impact factor after two years of indexing; in this case, the citations to the year prior to Volume 1, and the number of articles published in the year prior to Volume 1 are known zero values. Journals that are indexed starting with a volume other than the first volume will not get an impact factor until they have been indexed for three years. The impact factor relates to a specific time period; it is possible to calculate it for any desired period, and the **Journal Citation Reports (JCR)** also includes a five-year impact factor.

The impact factor is used to compare different journals within a certain field. It is possible to examine the impact factor of the journals in which a particular person has published articles. This use is widespread, but controversial. Garfield warns about the "misuse in evaluating individuals" because there is "a wide variation from article to article within a single journal". Impact factors have a large, but controversial, influence on the way published scientific research is perceived and evaluated.

Some companies are producing false impact factors.

Numerous criticisms have been made regarding the use of impact factors. For one thing, the impact factor might not be consistently reproduced in an independent audit. There is also a more general debate on the validity of the impact factor as a measure of journal importance and the effect of policies that editors may adopt to boost their impact factor (perhaps to the detriment of readers and writers). Other criticism focuses on the effect of the impact factor on behavior of scholars, editors and other stakeholders. Others have criticized the impact factor more generally on the institutional background of the neoliberal academia, claiming that what is needed is not just its replacement with more

sophisticated metrics but a democratic discussion on the social value of research assessment and the growing precariousness of scientific careers.

It has been stated that impact factors and citation analysis in general are affected by field-dependent factors which may invalidate comparisons not only across disciplines but even within different fields of research of one discipline. Thus, impact factors cannot be used to compare journals across disciplines.

Because citation counts have highly skewed distributions. The mean number of citations is potentially misleading if used to gauge the typical impact of articles in the journal rather than the overall impact of the journal itself. Furthermore, the strength of the relationship between impact factors of journals and the citation rates of the papers therein has been steadily decreasing since articles began to be available digitally.

A journal can adopt editorial policies to increase its impact factor. For example, journals may publish a larger percentage of **review articles** which generally are cited more than research reports. Thus, review articles can raise the impact factor of the journal and review journals will therefore often have the highest impact factors in their respective fields. Some journal editors set their submissions policy to "by invitation only" to invite exclusively senior scientists to publish "citable" papers to increase the journal impact factor.

Because **the impact factor is not always a reliable instrument**, journal impact factors are used only—and cautiously—for measuring and comparing the influence of entire journals, but not for the assessment of single papers, and certainly not for the assessment of researchers or research programmes.

Associate Editor
Prof. Dr. Mohamed Adel Shalaby