Journal Impact Factor and Scholarly Publishing

PUB 800 – Text and Context: Essay #1
Patricia Mangahis
October 1, 2018
The journal impact factor was designed by Garfield with the following premise, “[that] the more frequently a journal’s articles are cited, the more the world’s scientific community implies that it finds the journal to be a carrier of useful information\(^1\) and “to provide objective indicators for the use of journals so that librarians could make timely and informed decisions on collection management\(^2\).” Simply put, the journal impact factor determines a journal impact in the academic community by calculating the number of citations a journal has in a year divided by the number of citable documents prior to the year of calculation. Since then other measures have been developed that include “Eigenfactor Metrics, Source Normalized Impact per Paper (SNIP), CiteScore, and SCImago Journal Rank (SJR)\(^3\).”

It is widely used by academic journals since it had been developed by Garfield in the 1950/1960s\(^4\). In the 2018 Journal Citation Reports which outlines journal standings, it lists that impact factor is being utilized by 11,655 journals spanning over 80 countries in over 200 discipline\(^5\). Yearly, Clarivate, a data analytics company (previously known as Thomson Reuters) will review over 2,000 and only a small portion of which are accepted\(^6\). Journals must meet a specific set of criteria in order to be accepted and journals must wait 2-3 before they are able to re-apply\(^7\). For many journals establishing and/or improving their impact factor is important and the process of acquiring one is competitive. Since its introduction, the use has greatly expanded

---


2 Lariviere and Sugimoto, "The Journal Impact Factor: A Brief History, Critique, and Discussion of Adverse Effects"

3 Ibid.


7 Mizera, "How To Get Impact Factor"
and its use have not been without criticism. I would argue that the misuse of the journal impact factor negatively impacts the scholarly community on a social level in its ability to determine advancement and opportunities for researchers, it also has inherent effect on research, and has negative impact on the industrial level.

One of the criticisms of the journal impact factor is that it holds “constitutive values, identities and shape livelihoods” of researchers and institutions in academia. In researching the correlation of impact factor and academic promotion criteria, researchers, Azer et al., found that some universities use the following criteria to determine promotion: the number of papers published in a peer review journal and the number of papers in top-ranking journals are often considered by universities. The journal impact factor has become an indicator of institutional hiring practices in places such as Stanford University, despite the fact that this was not its intended use. In the United States, being published in a high-ranking journal results in a greater likelihood of academic success leading to jobs, grants, and visibility. In countries such as China and India, funding in the form of bonuses and salary increase has at times been tied to their manuscripts being published in journals such as Science or Nature which carry a certain level of prestige. With such a criterion tied to their academic and career promotion as well as the perceived prestige that is placed on being accepted in a high impact factor journal, this can lead

12 Eugenie Samuel Reich, “Publishing in the most prestigious journals can open doors, but their cachet is under attack,” Nature 502 (October 2013): doi:10.1038/502291a.
to scholars feeling the pressure to meet these criteria\textsuperscript{14,15}. Such incentives would be important to general livelihood and research that is driven by funding.

Another criticism of the journal impact factor as cited in various research and editorials is the distorted focus on the impact factor, where there is greater importance being placed on where work is published over what is being published. Researchers such as Jose de Leon have found that in their 30-year experience in research, “you better quote articles from that journal, and if you want to survive egotistical reviewers, you better quote their most quoted articles and in the process increase their impact factor\textsuperscript{16}” in order to be considered into these high impact factor journals. It would appear that researchers are structuring their research to fit these journals in a similar fashion as “teaching to the test” in education. More importantly, Casadevalla and Fang have found that authors tendency to market their research for these high impact factor journals have resulted in delays in communicating science finding\textsuperscript{17}. Authors may manipulate their work by adding additional experiments that are both time and resource consuming in order to be considered into these journals. These can have a huge impact when these manuscripts contain information that can advance other research in the field or society as a whole. The importance placed on journal impact factors have also resulted in its misuse where authors would make inappropriate submissions to high impact factor journals rather than where their manuscript is best suited. This results in wasted resources for both journal reviewers and authors ultimately, delaying the time in which their manuscript becomes part of academic discourse.

\textsuperscript{14}Azer et al., “Impact Factor of Medical Education Journals and Recently Developed Indices.”
\textsuperscript{15}Lariviere and Sugimoto, “The Journal Impact Factor.”
\textsuperscript{17}Casadevall and Fang, “Causes for the Persistence of Impact Factor Mania.”
Lastly, journal impact factors have resulted in various distortions in the world of scholarly publishing that are perpetuated. Journal impact factors have been placed greater importance on certain types of subjects. In his editorial, Alberts stated that “inviting a gaming of the metric that can bias journals against publishing important papers in fields (such as social sciences and ecology) that are much less cited than others (such as biomedicine)”\(^{18}\). “This has also true in the field of such as psychiatry and psychopharmacology, which are considered to be in their infancy are not as widely published as they have the “heavy cost of a lower impact factor for the journal.”\(^{19}\) The importance placed on journal impact factors also “encourages the branding of science and scientists with journals in which work is published”\(^{20}\). Impact factors have been used by publishers as a marketing tool for their journals. In my own experience working with scholarly journals, I can attest to the importance editors have placed in establishing and improving their journals impact factor. These impact factors are mentioned in every newsletter being sent to the reader and are often placed throughout the journal’s website. The use of such marketing tactics, especially for the high impact journal contributes to the cycle in which more researchers are compelled to submit to these particular journals giving more power to the editors and publishers of these journals to be more and more selective.

While the journal impact factor intended have functions such as provide critical information on scholarly publishing and assist librarians in collection management, its use has greatly exceeded this. The journal impact factor received several criticisms that include the negative impact it has on scholarly publishing on a social and industrial level, as well as its influence on what is being published. Other criticisms include the lack of transparency in its

\(^{19}\) de Leon, “Young Researchers and Young Clinicians Should Not Pay Much Attention to the Journal Impact Factor When Selecting a Journal for Publishing Articles.”
\(^{20}\) Casadevall and Fang, “Causes for the Persistence of Impact Factor Mania.”
calculation\textsuperscript{21} and the publishers/journals ability to manipulate the journal impact factor \textsuperscript{22}. Although, it has been widely criticized by various researches, its perceived prestige will most likely be an attributing factor to its continued use.

\textsuperscript{21} Magnus, “Overthrowing the Tyranny of the Journal Impact Factor.”
\textsuperscript{22} Lariviere and Sugimoto, “The Journal Impact Factor.”


Reich, Eugenie Samuel. "Publishing in the most prestigious journals can open doors, but their cachet is under attack." *Nature* 502 (October 2013), 291-293. doi:10.1038/502291a.
