

3 Scientific Metrics: How Useful Are They?

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According to the scientific method, the final product should be the publication of the results and findings after testing a hypothesis. Therefore, several scientific metrics are based on the quality or quantity of these scientific products. While the pressure for results is common within the academic community, early career researchers are constantly worried about their metrics and publications for their job application. However, it is not clear how the hiring committee will judge the quality of the researcher and the respective work. For example, it is common to see positions in which the evaluation will be based solely on the number of publications. This system of evaluation promotes the academic culture of “publish or perish”, which unfortunately affects the quality of the research.

In Brazil, the scientific production is evaluated based on the journal in which it was published. To do that, a national classification of scientific journals is used to evaluate the quality of the journal and, consequently, the manuscript. However, this classification has been criticized among scientists [1] and in the mainstream media [2]. The main critique is that the system is based solely on the impact factor of the journals, which may not represent the quality of the work, since a manuscript published in a low impact factor journal can be more influential than a manuscript published in a higher impact factor journal. Internationally, a similar criticism made the Research Gate Platform change the way that the RG Score was computed, since it was mostly based on the sum of the impact factor of all publications registered in the researcher’s profile [3].

Another two important indices are the H-index and the H10-index, which have been used in several online academic platforms. They are based on the personal number of citations from one specific researcher and are not exempt of criticisms. For early career researchers, these indices are not so attractive, as due to the low number of publications and lower citation (since they are just starting to publish), they will have a lower score. Another problem of using these indices is related to the insertion of authors who did not collaborate with the manuscript. Therefore, it is an important initiative of some journals to now publish the division of labor at the end of the manuscript.

There is no perfect metric to evaluate a researcher or a study, so why do we care about them?

For early career researchers, we care about them because they are used for evaluating our work. However, as with any index, these scientific metrics are not the best alternative to describe the quality of the researcher or the research. Nevertheless, I understand that it is not possible to deeply investigate all candidates for a position which may have hundreds of applicants. Therefore, these metrics could be used as an initial screening, however, it is important to select an index (or a set of indices) that can provide real information about the researcher. Unfortunately, it seems that early career researchers will have to worry about these metrics for a while, however, researchers (especially those that are part of a hiring committee) should focus on the indices that evaluate the individual manuscript and/or the individual researcher since those are the indices that will provide a better overview of the individual capacities. Additionally, it would be important to evaluate the contribution of the researcher in each manuscript, listed in the curriculum, which may be easier to quantify in the future since more and more journals are adding the contribution division of each author in the manuscript. Maybe in the future, with the integration of different platforms like Google Scholar, Mendeley, ORCID, Publons, Research Gate and Research ID, it will be possible to fairly evaluate the scientific work of a researcher. Until then, we will have to learn how to deal with the current scientific metrics and try to make the best of it.

References

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