Review of: "Measuring researchers' success more fairly: going beyond the H-index"

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Potential competing interests: No potential competing interests to declare.

The authors suggest that the performance of individual researchers in publishing should be measured by the scientific impact of their publications and the authors' position in the list of authors of an article.

They establish equations to calculate a new measure of impact for each article and also integrate the impact factor of papers citing the article and weighting the position of the authors based on a linear scale.

This is much appreciated and an important contribution. However, there are some shortcomings and more work might be needed.

I recommend at least giving an outline how to implement the calculation of the new index in practice. In addition, I have the feeling that the authors should better compare to more similar metrics such as the article influence score or SNIP. Isn't it just an extension of the SNIP metrics by weighting authors according to their position in the author list? So must the study not better compare the SNIP (and similar indices) with their new suggestion.

There is some further points:

1. Other indices than the H-index are not discussed, but they are already used in practice. This involves the i10 index from Google Scholar, the number of citations of an article, ... And there are currently more under discussion, e.g. the Web of Science (WoS) article influence score, etc. I recommend a new section to discuss their meaning.

2. The H-index is still very useful, but one should argue that this is one measure, which should never be used in isolation without also looking at other measures such as the total number of citations, i10-index, eigenfactor score, article influence score, g-index, m-quotient, SNIP, SJR, ... Each index is measuring different aspects of research impact and should be used in combination with other metrics to provide a more complete picture of an author's performance. So, likely, there will never be one measure to capture all, and personally, I like to have a set of (diverging, quite different) measures to get a clearer picture about the research publication impact of an author. Since, e.g. the SNIP is much closer related to the new measure, I recommend to compare to SNIP and almost leave out the discussion about the H-index.

3. There is one more deficit of the H-index: It always grows independently of the author's current research output. Researchers that are long in the business have a higher H-index than young authors even though they might be less productive. Google Scholar therefore also supports the H-index of the last 5 years, and the i10-index.

4. The authors suggest using the position in the list of authors for those disciplines where authors are not listed alphabetical. How can one judge all disciplines according to this matter? And - as also mentioned in this article - for some disciplines, the place of the list is more vulnerable than the place between second and second-last. Mustn't then there be an institution or consortia that regularly proves this matter? I can't see how this will work in practice.

5. How can one subtract self-citations practically? Not even Google Scholar is able to do this, if I am right. I also miss some concrete suggestions on how to apply this in practice.

6. Which impact factor do you refer to? I guess the WoS IF is based on JCR listings / SCI journals? Then you have impact 0 for many articles even if they appear in ESCI or well-known journals that are not in SCI. E.g.

Doing so, will force the authors to publish only in SCI-Journals, where a private company (Clarivate) decides on which journal will be included in SCI. Journals that are not in SCI are then punished and will never make it to SCI, regardless of how well the editors are working. I think this goes in the wrong direction if based on WoS IF. Can you image using, e.g. the impact estimated by Scimago? I miss a discussion about impact factors of journals, because it really matters which "impact factor" one chooses and how it can be accessed.

There is more discussion here in Templ (2020).

Templ, M. (2020). Modeling and Prediction of the Impact Factor of Journals Using Open-Access Databases: With an Application to the Austrian Journal of Statistics. Austrian Journal of Statistics, 49(5), 35–58. https://doi.org/10.17713/ajs.v49i5.1186

7. If you can scrap the IF of other articles citing an author's work, why not also (additionally) integrate the IF of the journal where the authors work is published? (like the arctile influence score metrics). It is at least as important where the article is published compared to the citing articles being published (as the SNIP metrics does).

8. A linear reduction of the score for authors is as arbitrarily chosen model as a non-linear (e.g. quadratic, logarithmic, etc.) reduction. I rather tend to model a Poisson distribution instead with rate according to IF1+...+IFn, but will also have an arbitrarily chosen model. To get some light into this choice, also a data analysis with real data from citation databases would help.

9. The real challenge is the implementation. The authors miss to discuss the possibilities and problems for the calculation of the new index. I am rather sceptical if (4) can be done in practice, but also (5) is not easy to do.

10. I miss some data analysis. With publish or perish you may extract real data from CrossRef, Google Scholar, and others and you can play around, showing figures from your index compared to other indices like the H-index (e.g. a scatterplot), or better with the SNIP metrics. There have been studies that compare the SNIP metric and the H-index, for example. One study, published in the Journal of the American Society for Information Science and Technology, compared the H-index and the SNIP metric for a group of authors in the field of library and information science. The study found that the H-index and SNIP were positively correlated, but the correlation was not strong. Naturally, SNIP tended to favor

authors whose publications were cited more evenly across a range of journals. I guess this will be also the case with your suggested index.

Another study, published in the Journal of Informetrics, compared the H-index and SNIP for a group of researchers in the field of neuroscience, and the findings were similar.

11. Can you rely only on Google Scholar data to calculate your new index?