

Description

As an academic researcher, the quality of your research publications has traditionally been measured by the prestige of the journals in which your work has been published. The prestige or *impact* of those journals is usually measured by tracking the average number of citations that articles published in those journals receive over a two-year period.

The [impact factor](#), or rating of that journal thus has a commonly accepted metric to substantiate a broader industry acknowledgment that the journal qualifies as being “prestigious.”

Indicates Personal Contribution in a Research

For a researcher looking to substantiate the quality or impact of his or her individual research output, a different metric is called for. The *h-index*, created by J.E. Hirsch, a physicist at the University of California, in 2005, was first proposed as a measure of scientific output of any research entity, including research institutions and even entire countries. But it has found broader acceptance as a measure of individual research contribution.

The [h-index](#) measures both the number of papers you have published and the number of citations those papers have received. As such, it discounts any publications in less-prestigious journals with the inherent assumption that they will receive fewer citations.

Simple Math

The calculation of the h-index requires an accurate count of the number of articles published and the number of citations received. Access to a subscription-based service such as Scopus makes the calculation much easier, but there are other freely available tools out there.

As an example, if a researcher has an h-index of 7, it means that he or she can lay claim to 7 or more published papers, and that at least 7 of those papers have been cited 7 times.

The higher the number, the larger the number of papers and citations. The results are comparable within academic disciplines, but since some fields publish more frequently than others, the data is not comparable across disciplines.

Overcoming Limitations

Since the index is based on the volume of papers and citations, it skews in favor of researchers with academic careers of a decade or more. If you're just starting out in your academic career and you're presenting your work to a grant committee for research funding, a low index score won't count against you, but it won't look impressive against a competing researcher with a longer track record.

In that instance, you might be better served to present a combination of the [journal impact factor](#) score as well as your h-index score to at least show that what papers you have published were at least

published in (hopefully) prestigious journals.

In 2013, *Nature* published a paper from three Chicago-based researchers who proposed an algorithm that would help new researchers with relatively short publication track records. By examining the total number of publications, the length of time since the first publication, the number of different journals, and the number of top-ranking journals, the proposed algorithm would predict the researcher's h-index five years into the future. It remains to be seen as to whether grant or tenure committees will give any credence to such predictions.

Category

1. Reference Management
2. Reporting Research

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