H-index

The h-index (Hirsch index) is a metric that quantifies both the productivity and impact of a researcher's scientific work. It was proposed by physicist Jorge E. Hirsch in 2005 as a tool for evaluating the cumulative impact of a researcher's publications. The h-index is widely used in academia and research institutions for assessing the significance and influence of a researcher's contributions.

Here's how the h-index is calculated:

Arrange a researcher's publications in descending order based on the number of citations each publication has received.

The h-index is the highest number *h* h for which *h* h publications have at least *h* h citations each. In simpler terms, if a researcher has an h-index of 20, it means they have published 20 papers, each of which has been cited at least 20 times.

For example, if a researcher has an h-index of 20, it implies that they have 20 papers, each of which has been cited at least 20 times.

The h-index is intended to provide a more comprehensive measure of a researcher's impact than simple citation counts or other metrics. It considers both the quantity (number of publications) and quality (citation impact) of a researcher's work.

Limitations

While the h-index is widely used, it is not without limitations. It may not be a perfect measure of a researcher's overall impact, as it does not consider the context of the field or the differences in citation practices among disciplines. Additionally, it may not be as informative for early-career researchers or those in rapidly evolving fields.

Coauthors receiving equal credit in an article; not taking into consideration journal impact factors and document types; and difficulty in distinguishing research achievements within and between groups due to the use of an integer value

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Variations

Other variations of the h-index exist, such as the g-index and the i10-index, each with its own methodology for evaluating the impact of researchers. Despite its limitations, the h-index remains a commonly used tool for assessing and comparing the scholarly impact of researchers within and across disciplines.

Publication metrics such as the Hirsch index (h-index) are often used to evaluate and compare research productivity in academia. The h-index is not a field-normalized statistic and can, therefore, be dependent on overall rates of publication and citation within specific fields. Thus, a metric that adjusts for this while measuring individual contributions would be preferable.

The National Institutes of Health (NIH) developed a field-normalized, article-level metric called the "relative citation ratio" (RCR) that can be used to more accurately compare author productivity between fields. The mean RCR is calculated as the total number of citations per year of a publication divided by the average field-specific citations per year, whereas the weighted RCR is the sum of all article-level RCR scores over an author's career [1].

Daniels et al. found that publication count and h-index during residency correlated to an academic career, but not publication count prior to residency [2].

The h-index is an index that attempts to measure both the productivity and impact of the published work of a scientist or scholar.

The index is based on the set of the scientist's most cited papers and the number of citations that they have received in other publications. The index can also be applied to the productivity and impact of a group of scientists, such as a department or university or country, as well as a scholarly journal. The index was suggested in 2005 by Jorge E. Hirsch, a physicist at UCSD, as a tool for determining theoretical physicists' relative quality and is sometimes called the Hirsch index or Hirsch number.

Various Bibliometric indices based on the citations accumulated by scholarly articles, including the h-index...

Application of the h-index to Kingdom of Saudi Arabia (KSA) neurosurgeons revealed a significant correlation with the duration after certification and with certain centers. Evaluation of the h-index should be included in the consideration for academic positions in KSA. Saudi neurosurgeons should be encouraged to publish in journals with high impact factor [3].

H5-Index

see H5-Index

References

1)
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