Acta Medica Alanya

EDITORIAL

EDİTÖRYAL

Acta Medica Alanya

2020;4(1): 1-2.

DOI:10.30565/medalanya.659668

Scientificity and H-Index

Bilimsellik ve H-Endeksi

Oğuz Karahan[1*], Ahmet Aslan[2]

[1] *Department of Cardiovascular Surgery, Medical School of Alaaddin Keykubat University, Alanya/Antalya, Turkey.*

[2] *Department of Orthopedics and Traumatology, Medical School of Alaaddin Keykubat University, Alanya/Antalya, Turkey.*

ABSTRACT

Scientificity is a comprehensive expression that identifies the scientific contribution of an academician or a scientist to the literature. It is established on the basis of certain determinants, such as the h-index, which is one of the indicators used to evaluate the degree of scientificity in a contribution. This editorial explains the h-index and its necessity.

Keywords: Scientificity, indicator, h-index

ÖZ

Bilimsellik, bir akademisyenin veya bir bilim adamının literatüre bilimsel katkısını tanımlayan kapsamlı bir ifadedir. Bilimselliği saptamak için kabul edilen bazı belirleyiciler vardır. h-endeksi, katkıda bulunanların bilimsel seviyesinin tespiti için hali hazırda kullanılan göstergelerden biridir. Bu yazıda h-indeksi ve gerekliliğini açıklamaya odaklandık.

Anahtar Kelimeler; Bilimsellik, belirteç, h-indeks

Received: 26.07.2019 Accepted: 04.08.2019 Published (Online):02.03.2020

***Corresponding author:** Oguz Karahan, Assoc. Prof. Dr. Alanya Alaaddin Keykubat University, Medicine Faculty,Department of Cardiovascular Surgery, Alanya/Antalya, Turkey. Tel: 00905063929320 email: oguz.karahan@alanya.edu.tr

ORCID: 0000-0003-0044-9476

To cited: Karahan O, Aslan A. Scientificity and H-Index. Acta Med. Alanya 2020;4(1):1-2. doi:10.30565/medalanya.659668

The literature expands day by day owing to contributions and recent advancements from researchers. However, the publication of a paper does not mean that the material is a scientific contribution [1]. This issue prompted the identification of factors that determine the scientificity of a scientist's contribution or report [1]. Some of these determinants are the total number of papers published by scholars, the total citations or citation rates per article and qualified publication counts. The problem with these indicators is that they are not internationally standardised parameters, driving the development of the h-index to acquire a standardised value that combines all the aforementioned parameters in an equation [1–3].

Jorge E. Hirsch developed the h-index in 2005 to

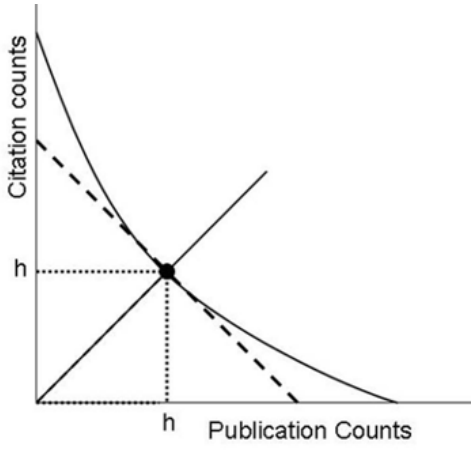
resolve the insufficiencies of previous indices [4]. This index is intended for use in the evaluation of both publication activity and citation rate per publication. It roughly indicates that an author has Np number of articles with at least h citations. For instance, a scientist with an h-index of 10 has had 10 articles published, which has been cited in at least 10 separate instances, or a scientist with an h-index of 5 has had published at least five manuscripts that have been accorded over five citations. For each point of increase in the h-index, the first five articles would require one more citation each, and one article other than the five needs more citations than that achieved by the first five articles [2].

The h-index initially elicited attention from other scientists, who positively evaluated it, commending its efficacy. Nevertheless, other reports asserted that a single index cannot reflect the full scientificity of a scientist's contributions [2,5]. Certain scholars also criticised the necessity of time in the use of the h-index, arguing that the importance of new research cannot be evaluated using this parameter. These shortcomings motivated improvement to the h-index, albeit it remains the most widely accepted and applied indicator of scientificity [5].

Hirsch explained the h-index with a diagram (Figure 1) and an equation [2,3], but recent applications reflected that it can be calculated automatically by the electronic scanning motors in the Web of Science (WoS; administered by Clarivate Analytics) database; other databases, such as Chemical Abstracts Services (Columbus, OH, USA), Google Scholar and Scopus, can automatically calculate this parameter according to the listing of articles and entire citations in the systems [6]. Each one of these databases produces a different h-index score for the same academic institution or publications because of variations in the number of citations.

The h-index can be used to identify a researcher's scientific achievement, but it can also be employed to ascertain the level of scientificity in groups or organisations. Hereby, universities, publishers, institutes and countries started using the index to determine and monitor the scientificity of their facilities and the endeavours that they pursue in their current positions. Owing to the advanced usage of the h-index, it became an approved indicator of impact factor [6]. Recently, reviewers affiliated with organisations with high impact factors have been selected to evaluate manuscripts submitted to our journal, and editors monitor the scientific achievements evident in articles published in the Journal of Acta Medica Alanya on the grounds of the h-index.

Figure 1. Calculating the h-index (source: Hirsch [4])



Conflict of interests: The authors declare that there is no conflict of interests.

Funding sources: There is no source of funding or financial interest in this study.

REFERENCES

1. Xu ZL. Science and scientificity. Genomics Proteomics Bioinformatics. 2005;3(4):197–200. doi:10.1016/s1672-0229(05)03026-3
2. Akgün M. Bilimsel Değerlendirme ölçütü olarak "H-İndeks". Toraks Bülteni Eylül 2016:47-9.
3. Oktar N, Akdal G. H-Göstergesi "H-İndex" ve Süreli Yayınlara Uygulanımı Türk Tıp Dizini Sağlık Bilimlerinde Süreli Yayıncılık 2007;132-135
4. Hirsch JE. An index to quantify an individual's scientific research output. Proc Natl Acad Sci U S A. 2005;15;102(46):16569-72. PMID: 16275915
5. Zhao W, Liu W, Zhang R. New methods to quantify an individual's scientific research output based on h-index and various factors. Qualitative and Quantitative Methods in Libraries, 2017;5(1): 221-34.
6. Bornmann L, Daniel HD. The state of h index research. Is the h index the ideal way to measure research performance? EMBO Rep. 2009;10(1):2–6. doi:10.1038/embor.2008.233