

# The current methods to assess scientific performance and Academia in Turkey

Emre Bora<sup>1,2</sup>

<sup>1</sup>Prof., Dokuz Eylul University School of Medicine, Department of Psychiatry, Izmir, Turkey <https://orcid.org/0000-0002-1598-6832>

<sup>2</sup>Dokuz Eylul University, Institute of Health Sciences, Department of Neurosciences, Izmir, Turkey

Measuring the scientific productivity, quality and impact of academics, scientific institutions and countries, and how these characteristics change over time, is important in many ways. In developed and many developing countries, monitoring the performance of scientific institutions with objective methods is important in decision-making processes regarding the distribution of central support budgets. In our country, some competency analysis and research university evaluations published periodically by the Council of Higher Education (YÖK) are within this scope. Lists such as ARWU, USNEWS, QS published every year give an idea about the general and field-based performance of universities. Programs such as InCites Benchmarking & Analytics (InCites) are used to evaluate institutions. In recent years, institutions such as ScholarGPS and Expertscape use algorithm-based automatic methods to classify institutions based on general and field. Such methods are also useful in evaluating the temporal change in the scientific performance of countries (1). However, this article focuses on the evaluation of the individual performance of academics, not institutions. Demonstrating and monitoring the scientific performance of academics is important for decisions on recruitment, promotion and retention in developed countries. However, the value given to academic performance in our country is still limited. This topic will be discussed under the headings of successful scientists and evaluation of individual academic performance.

## Lists of successful scientists

In our country, they come to the agenda mostly

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through occasional newspaper news, social media and posts in professional correspondence groups. We witness that some universities share the number of scientists from those universities who have been included in such lists on their websites and social media. However, there are serious differences between these lists in terms of the degree of rigor of the inclusion criteria, methodological soundness and seriousness. In our country, scientists and institutions make misleading posts without taking these differences into account.

For many years, Clarivate has been publishing a list called “The Highly Cited Researchers™ list”, which has very strict criteria and includes only scientists who have had a serious impact on their field. In previous years it was also known as the ‘World’s Most Influential Scientists’ list. It is the most prestigious list and misleading news and posts can be made in our country as if scientists who have made other lists have made this list. This list aims to include scientists who have contributed in the top 1 percentile in their field. It uses a method based on the impact of publications in the last 10 years on the field and how many articles the individual has published that have such an impact on the field. The version of this list for 2024 includes only 6,636 scientists from all over the world. Only two of these scientists are from Turkey. In the field of psychiatry and psychology, 184 people made the list this year. This year, there are no scientists from Turkey in the fields of medicine, neuroscience-behavior and psychiatry-psychology. In the past, one person from Turkey has been included in the list in the field of psychiatry-psychology. Scientists selected to this list, due to the rigidity of the criteria, usually fall off



the list after a while, even if they are Nobel prize winners (for example, Aziz Sancar). The number of scientists included in this list is of practical importance as it is a criterion for universities' ARWU rankings. In universities with low scores, such as in Turkey, one scientist on the list can move a university's ARWU ranking several hundred places forward. For this reason, in the past, countries such as Taiwan and Saudi Arabia have taken initiatives to publish the addresses of scientists working in Turkey and some other countries.

The “Stanford Elsevier Top Scientists List” is another list that has come to the fore in recent years. Compared to the aforementioned list, “The Highly Cited Researchers™ list”, the inclusion criteria are much less strict and include scientists in the top 2 percent of their field (2). In 2024, the number of scientists from Turkey included in this list of tens of thousands of scientists is 1181, but only 32 of these scientists are among the top 20 thousand scientists. Three of the 1793 scientists included in the list in the field of psychiatry are from Turkey. Apart from the main list based on career-long performance, there is a list based on the impact of the scientist on the field in the last 1 year. Comparing these two lists can provide information about the direction in which the scientist's performance is going.

ScholarGPS, which has recently emerged and gained importance, stands out with its comprehensive structure. It provides information on 177 disciplines and many specializations other than the main fields. In addition to providing individual reports to individuals through algorithmic analysis among millions of scientists, it also produces a list of successful scientists. It provides 2 types of classification for successful scientists. The “Highly cited scholar” list with stricter inclusion criteria is based on the top 0.05%. In addition to the list for all fields, it can create separate lists for main fields, disciplines and specialties. Of the 14585 scientists from around the world included in the “Highly cited scholar” list for all fields, 18 are from Turkey. Among the fields related to psychiatry, cognitive impairment and meta-analysis, there are scientists from Turkey on the “highly cited scholar” list. ScholarGPS' “Top Scholars by expertise” list, based on less stringent criteria, measures the top 0.5%.

One of the 1468 Top scholars in psychiatry is from Turkey. Some of the more specific specialties (schizophrenia, bipolar disorder, cognitive impairment, childhood trauma, psychopharmacology, clinical neuroscience) have a small number of scholars from Turkey.

Expertscape can rank the performance of scientists in the world, country or institution for a given field. Research.com lists the top scientists in different fields using the discipline H index as a benchmark. In the newly published 2025 list, there are 9 people from Turkey in neuroscience and 4 in psychology. It is less methodologically sound than the examples above. In addition, many other lists, including some from Turkey, publish lists using invalid and misleading methods such as simply ranking scientists according to the google scholar h-index without examining their profiles.

### **Evaluating individual academic performance**

Lists of successful scientists can motivate the most competitive researchers in the field, but in our country they are mostly of tabloid value and of direct interest to a small number of people. In fact, evaluating the performance of scientists is important for every academic. Factors such as the academic success of scientists, their areas of strength and their position among the world's scientists in these areas, the pattern of performance change over time, and their success according to the length of time in the field are evaluated. Variables such as the number of citations and articles are the source of many measurements. Sites such as Web of Science and Google scholar provide metrics such as the number of citations and the h-index. These types of assessments are often used in environments such as CVs and job applications. InCites is a program that can create a more detailed report on one's individual performance. It is used more in evaluations, especially in Western countries. Unfortunately, in our country, scientists have a low level of awareness and knowledge in using tools such as InCites.

ScholarGPS, mentioned in the section on successful scientists, has recently become the most prominent program for automatic evaluation of individu-

al performance. It aims to evaluate the performance of most scientists. This environment currently has the information of nearly 30 million individuals. The productivity of the scientist in different fields, his/her impact on the field and the quality of his/her products are calculated according to his/her publications, and his/her rank and percentile in sub-fields are determined. When the scientist's profile is uploaded, in addition to variables such as the number of articles and citations, h-index, rank and percentage information is provided for the main fields and specialties among scientists in all fields. When the scientist looks at his/her ScholarGPS profile, he/she can see in which field he/she has contributed relatively the most. How this contribution has changed in terms of quality, productivity and impact is reported.

Comparing lifetime performance with the performance of the last five years can provide information about the trend of change in a scientist's academic performance. For example, a scientist with much better performance over the last 5 years may be predicted to continue to grow in importance in the field. A significant decline in the performance of an experienced scientist in the last 5 years may require him/her to consider decisions such as retirement.

Academic experience and age are important factors when evaluating academic performance outcomes. For example, an experienced academic can be expected to contribute at least 5% to the field in a field in which he/she has expertise and is known in the national academia. A young academic's performance in the last 5 years may be more important than his/her performance in terms of lifelong contribution.

### **Problematic points in assessing academic performance**

Assessing a scientist's performance is difficult. Existing methods increase objectivity but are not ideal measures. Apart from this general problem, although algorithm-based measurements make the process easier for academics and institutions, they are prone to errors. For example, the country of the scientist may be assigned incorrectly due to address

and other information. Lists that are not diligent and do not check the profile may include articles that do not belong to the person and make incorrect assessments. Approaches that work well in medicine, engineering and basic sciences may not be appropriate in some social sciences. Factors such as how keywords are used in the search are important. Problems arise when they are not used in a hierarchical way. For example, in Expertscape, the word schizophrenia generates more articles than the word psychiatry. The main field search in this program is a meaningless evaluation that does not include the results of many sub-field searches. Better examples, such as ScholarGPS, do not have this problem, but may have problems with sub-fields. Subfield searches that are too specialized and exclude alternative fields may lose their meaning and fall into a category that no longer has any meaning (e.g. Clinical Neuroscience or relatives in ScholarGPS). In countries where merit is already sufficiently valued and internalized, methods based solely on metric evaluation of academic performance can be misleading by trivializing difficult-to-measure micro-level variables, trigger unrealistic performance expectations in institutions, and lead to some negative consequences such as excessive efforts for self-promotion (3-4). However, in countries like Turkey, where the culture of meritocracy is not developed, establishing a system and developing a tradition that emphasizes academic performance is critical for progress in science.

### **Conclusion**

In recent years, computational approaches have come to the forefront in evaluating academic performance. Today, it is important for scientists to be aware of the importance of evaluating academic performance with objective methods, to be aware of the advantages and shortcomings of modern methods in this field, and to know how to use these methods and interpret their results. The internalization of the necessity of objective evaluation of academic performance by the Turkish academia, despite the limitations of the existing methods, is a necessity for the establishment of a culture of scientific productivity in Turkey. Our hope for the necessary mental transformation in Turkey and the establishment of a modern university culture in our country lies in the younger generations. Therefore,

our journals and experienced scientists have an important role to play in convincing a new generation to adopt the methods of evaluating scientific performance.

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Correspondence address: Prof., Emre Bora, Dokuz Eylul University School of Medicine, Department of Psychiatry, Izmir, Turkey boreme@gmail.com

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