

The grip of bibliometrics – A student perspective

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The grip of bibliometrics – A student perspective

With the growing numbers of researchers and the increasing pressure on these researchers to publish their findings, the volume of available scientific literature has reached incomprehensible levels. This is not only due to increased publishing in peer-reviewed journals, but also due to the advent of new publishing channels such as conference proceedings, open archives, e-papers and homepages. This vast amount of literature makes it impossible for an individual to read all publications, which automatically creates a demand for tools evaluating the quality of individual scientific contributions. Bibliometrics is an attempt to assess the quality of research articles based on measurable parameters such as the number of citations of an individual publication. When talking about bibliometrics, it is often forgotten that not only researchers, publishers and universities are affected by them, but also students. In the following it is highlighted how students are affected by bibliometrics, and whether this influence has a positive or negative impact on students.

Students are affected by research metrics even before they enter university, most of the time without even knowing it. University rankings such as the Times Higher Education Ranking (THE) or the Quacquarelli Symonds university ranking (QS) take into account parameters such as the total number of publications or the number of citations. Many students use the aforementioned rankings as an aid for choosing the university they want to study at, without considering which parameters are used to construct these rankings. This fact alone illustrates how powerful bibliometrics really is. Obviously a higher-ranking university will attract more students as well as

more ambitious students, who are likely to produce more publications once they start their academic careers, which in turn improves the university's score in the rankings.

The downside to this is quite obvious. Universities which do not optimise their research output against measurable parameters will fall back in the rankings, even though the quality of teaching has not changed at these universities. Nevertheless, a worse position in a ranking might come hand in hand with a dropping number of applications and, possibly, decreased funding for research. To prevent getting caught in such a vicious circle, universities nowadays often try to optimise their bibliometric scores. However, it is not granted that research which ranks higher in terms of bibliometric indices such as impact factor or *h*-index is of higher quality. These parameters are strongly dependent on the field of research. For example, researchers who work in large fields generally have higher *h*-indices and publish in journals with higher impact factors compared to researchers who work in fields with a smaller research community. As a result, universities have an interest in funding researchers who produce many articles in an area of research with a large community, and tend to cancel funds for research with small communities. This is very problematic as it renders some research more important than other research, and could potentially – following the Matthew effect – lead to the complete eradication of some branches of research.

University rankings are not the only instance when students are affected by bibliometrics. Other examples are semesters abroad or the appli-

cation for a PhD position. Usually (at least in the D-CHAB) students chose to do research projects during their semesters abroad, as the credits acquired for research projects are easier to transfer than those obtained for lectures. Therefore, one has to find a research group abroad. Obviously, this choice is mainly based on the compatibility of one's research interests with the research interests of the research group. However, if multiple options are available, one prefers to work in the group which has the highest quality of research. In order to determine which group's quality of research is higher, the easiest option is to look at the publication list of the groups, and search for the journals in which the most recent publications have appeared. Obviously, one assumes that the research is of higher quality if it was published in "high impact journals". Very often, this assumption is made without actually reading the publications, which should be an integral part of evaluating the quality of science. However, science which does get published in high-impact journals very often actually is good science. The peer-reviewing process ensures that only well proven facts are published, and editors should ensure that all articles are treated equally, *i.e.* that no advantages are granted to research done at more prestigious universities. With these mechanisms in place, the quality of research should be secured. Bibliometrics is therefore a somewhat valid tool for measuring the quality of research, but should not be trusted blindly. One limitation, for example, is the age of a professor. Very often, it is more difficult for a professor to get his articles published in journals with a high impact factor, because he has not previously

published in journals with a high impact factor.

Altogether, students are greatly influenced by bibliometrics, especially in terms of their career choices. Despite all the flaws of bibliometrics, which need not be discussed in great depth at this point, bibliometrics is necessary for students to evaluate the quality of research carried out at other universities without having to spend hours reading papers. Completely rejecting bibliometrics would be unintelligent, as using bibliometrics to assess the quality of the research is a trend that has come to stay. From a student point of view, it would be interesting to refine methods which produce bibliometrics in such a way that parameters like the *h*-index and the impact factor become less dependent on the field of research. Such an adjustment could be made by calculating different impact factors for different research disciplines, and explicitly stating the number of papers which were published by a scientist. As a last personal comment, I think that students should not primarily base their decisions on university rankings, impact factors and other similar indices as they have evident flaws. Personal judgement should be more important than bibliometrics in individual life-changing decisions.



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