Journal of Applied Economics. Vol XIII, No. 1 (May 2010), 1-38

DO RANKINGS REFLECT RESEARCH QUALITY?

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Submitted June 2009; accepted August 2009

Publication and citation rankings have become major indicators of the scientific worth of universities and determine to a large extent the career of individual scholars. Such rankings do not effectively measure research quality, which should be the essence of any evaluation. These quantity rankings are not objective; two citation rankings, based on different samples, produce entirely different results. For that reason, an alternative ranking is developed as a quality indicator, based on membership on academic editorial boards of professional journals. It turns out that the ranking of individual scholars based on that measure is far from objective. Furthermore, the results differ markedly, depending on whether research quantity or quality is considered. Thus, career decisions based on rankings are dominated by chance and do not reflect research quality. We suggest that evaluations should rely on multiple criteria. Public management should return to approved methods such as engaging independent experts who in turn provide measurements of research quality for their research communities.

JEL classification codes: H43, L15, O38
Key words: rankings, evaluations, universities, scholars, research quality

I. Introduction

The past decades have witnessed major advances in the methodology and practice of evaluation and policy research supported by the government as well as by private foundations (Metcalf 2008; Reingold 2008). Today, these evaluations mostly use quantitative techniques in order to test the effectiveness of ongoing programs. These techniques are also applied to the evaluation of scientific research. Citation and

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publication analysis—the analysis of data derived from scholarly publications and the references cited in scholarly publications—is a particularly popular method of examining and mapping the intellectual impact of scientists, projects, journals, disciplines, faculties, universities, and nations (Borgman 1990; Cronin and Meho 2008; Garfield 1979; Meho 2007; Moed 2005). This method has been used increasingly by academic, research, and public institutions worldwide for policymaking, to monitor scientific developments, and as a basis for promotions, tenure, hiring, salary, and grant decisions (Borgman and Furner 2002; Warner 2000; Weingart 2005). Several governments have been using or are considering using citation analysis and other bibliometric measures to make decisions regarding research quality assessment and the allocation of research funds in higher education (Adam 2002; Butler 2007; Moed 2008; Weingart 2005). The most popular rankings are those that use publications and citations as indicators of scientific worth (e.g. Groot and Garcia-Valderrama 2006; Moed et al. 1985; Nederhof and van Raan 1993; Tijssen and van Wijk 1999; Ventura and Mombru 2006).

Such rankings are quantitative; they indicate the position or rather the significance of a scholar, university, or country relative to others. On the other hand, quality should be considered the essence of scientific research (e.g. Johnes 1988): from the perspective of society, it should not matter how many publications have been authored or how many citations have been accumulated, but rather what new insights have been produced and how valuable these are; that is, whether the research is useful, satisfies stated or implied needs, is free of deficiencies, and meets more general social requirements (see, e.g., Nightingale and Scott 2007; Reedijk 1998). An effort has been made to include quality aspects in rankings. Most importantly, only those publications and citations are counted that appear in scientific journals of "acceptable" quality, and publications in books or for policy purposes are excluded even though they may well contain important scientific information (as an exception, e.g., Sivertsen 2006). A further step is to consider "impact" factors that take into account how highly ranked a journal is in which a publication or citation appears. Nevertheless, the resulting rankings take the quality aspects of research activity into account to a limited extent only. For simplicity, in the following discussion, a ranking based on publications and citations is considered a quantitative ranking. It is compared to what we call a qualitative ranking, which is based on membership on the scientific boards of academic journals that consider the reputation and recognition of scholars among their peers. Scholarly reputation depends on a great many factors, but the qualitative aspect is certainly central.[1]

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[1] Quantitative and qualitative rankings are not strictly separable as both contain elements of the other. The distinction is solely made for reasons of simplicity.