



PERGAMON

Omega 28 (2000) 237–239

omega

The International Journal
of Management Science

www.elsevier.com/locate/orms

Short Communication

Measuring research quality: peer review 1, citation indices 0

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Abstract

This short note adds to the debate on the most effective way in which to measure research quality. A survey of UK accounting academics shows that peer reviews are perceived to be more important than citation indices. This result is also true when the respondents were partitioned by seniority, institution and research activity. © 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Citation indices; Peer review; Research quality

Publications in research journals are generally acknowledged as a fundamental criterion by which research quality can be measured. However, research quality is a slippery and elusive concept. In practice, peer reviews and citation indices are commonly used as 'surrogate' indicators of research quality. However, the efficacy of these methods in capturing the research quality of published articles has been much debated. In particular, there is a lack of consensus about which method is the best surrogate.

In peer review studies, academics evaluate research quality directly on the basis of their expert and specialised knowledge. By contrast, citation studies use bibliometric methods to determine a particular article's impact. Although the results for top journals often closely equate, lower ranking journals

are often rated differently by the two methods. The two methods have been both praised and criticised. Peer reviews have been praised for being comprehensive and for being based on informed judgement, but criticised for being subjective. Citation indices have won plaudits for being objective, but attacked for being inconsistent, for being bedevilled by technical problems and for lacking comprehensiveness. However, the purpose of this article is not once more to discuss in detail the strengths and weaknesses of the peer review and citation indices methodologies. These have been well-rehearsed in this journal in the last couple of years (see, for example, [1–3]). Rather, we discuss here some recent and unpublished evidence which throws new light onto the debate.

To date, the debate on the relative merits and demerits of the two methods, although informative, has omitted one key aspect: academic opinion. In order to remedy this omission we included, as part of a much larger survey of the views of UK accounting

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academics on a wide range of research related issues,¹ a question which asked respondents to rate the relative importance of citation indices and peer review as a method of measuring research journal quality. Their views are summarised in Table 1.

Using a five point scale (where 1 = not very important and 5 = very important) accounting academics rate peer review as being significantly (at 0.01 level) more important (mean response of 3.8) than citation scores (mean response of 3.3) as a means of assessing research journal quality.

It is, of course, quite possible that different views might be held by different sectors of the overall population of accounting academics. We, therefore, partitioned our respondents in three ways by seniority (senior staff vs lecturer grades), by university type ('old' vs 'new') and by the respondents' self ranking of their research activity ('active' vs 'less active').² This partitioning did not radically affect the basic conclusions. Irrespective of the ways in which the respondents are grouped, peer reviews are universally regarded as being significantly more important than citation scores.

Some interesting differences, however, do arise from the partitioned data. First, senior and non-senior staff have significantly different attitudes to peer reviews; senior staff view them as significantly more important than non-senior staff. Perhaps senior staff are more familiar with the journals being ranked and with the strengths and weaknesses of the two methods. Alternatively being, on average, more extensively networked, they may have more trust in the judgement of their peers.

Second, staff from new universities regard both citation indices and peer review as being significantly more important than staff from old universities. This may

¹ A questionnaire survey was undertaken in November 1997. The sample frame consisted of 569 academics listed in the 1996 *British Accounting Research Register* with one or more publications in a refereed journal plus a further 144 academics drawn from 'old' and 'new' universities (i.e., a total sample frame of 713). A total of 182 usable responses were received (a usable response rate of 25.5%) of whom 173 responded to the question on the relative importance of citation indices and peer reviews.

² We partitioned our data in three ways to reflect the different traditions and/or environmental influences on our respondents that we believed might impact upon individuals' perceptions. For example, senior staff, 'old' university faculty and active research staff are all likely to be more research aware than their counterparts. Respondents self-ranked their level of research activity on a scale of 1–5. We classed scale points 1 (not at all active) and 2 (quite inactive) as less active, but points 3 (moderately active), 4 (quite active) and 5 (very active) as active.

Table 1
Importance of citation scores and peer reviews as methods of measuring research journal quality^a

	Overall sample						Seniority			Institution			Research activity						
	Not important		Neutral		Important		Senior		Non senior		'Old'		'New'		Active researcher		Less active researcher		
	n	%	n	%	n	%	n	mean	n	mean	n	mean	n	mean	n	mean	n	mean	
Citation scores	49	28	31	18	93	54	3.3 ⁺⁺⁺	102	3.3 ⁺⁺⁺	66	3.2 ⁺⁺	119	3.2 ^{+++*}	48	3.5 ⁺⁺	108	3.1 ^{+++*}	61	3.6 ⁺⁺
Peer review	23	13	18	10	131	77	3.8	101	3.9 [*]	66	3.6	118	3.7 [*]	48	4.0	107	3.7	61	3.9

^a The respondents were asked to use a five-point Likert scale: 1 (not very important), 2 (of slight importance), 3 (neutral), 4 (moderately important), 5 (very important). For presentational purposes, scale points 1 and 2 have been combined as 'Not important' and scale points 4 and 5 have been combined as 'Important'. The means and the Mann-Whitney-Wilcoxon tests for significant differences were calculated from the full range of responses. The significant differences between the responses on citation scores vs peer reviews using the Mann-Whitney-Wilcoxon test are ⁺⁺⁺significant at the 0.01 level and ⁺⁺significant at the 0.05 level. *Indicates (at the 0.1 level) a significant difference (using the Mann-Whitney-Wilcoxon test) between the responses of the particular sub-groups on either peer reviews or citation scores.

result from lack of research culture which is generally more prevalent in the old university sector. New university staff overall thus seem to be more in favour of any measure of research journal quality. This need for overall guidance may well dominate any views of the relative merits of the type of guidance.

Third, less active researchers (as measured by their own self-ranking) regard citation scores as being significantly more important than staff who are more research active. Again, like new university staff, this may stem from a desire for guidance. Both groups, however, share virtually identical views on peer reviews. Indeed, active researchers place relatively little value on citation indices preferring to use the judgements of their peers.

In conclusion, these results support the view that peer reviews are regarded as a better absolute measure of research journal quality than citation scores. This view holds true irrespective of the seniority, institutional affiliation or research involvement of our respondents. The differences between sub-groups only

reflect relative differences in perceptions of the two methods.

Acknowledgements

We would like to extend our grateful thanks to the UK accounting academics who responded to our questionnaire.

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