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Cyberspace

Journal Rankings: U.K. Perspective

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Every six years or so United Kingdom universities take stock of their research publications in quality journals in response to the U.K. government-led "research assessment exercise" (RAE, www.rae.ac.uk). Universities submit the publication record of each discipline in the hope of getting a rating for each that eventually determines government money and bragging rights. While all this may sound strange to non-U.K. readers, preparing for this at my school involves journal rankings that might interest all.

To give you a bit more background, the process for the exercise this time involves taking the top four publications of each faculty member in the group published since the last exercise and giving each publication a rating on a scale of 1 to 4. The total ratings across all the submitted publications divided by the number of faculty members in the group is the rating for that group. The rating for each article is:

4* = quality that is world-leading in terms of originality, significance and rigor,

3* = quality that is internationally excellent,

2* = quality that is recognized internationally,

1* = quality that is recognized nationally, and

unclassified (if below the standard of nationally recognized work, or if the work does not meet the published definition of research for the purposes of the RAE).

Rating each article is hard, so the effort is really on rating the journals and using the same rating for each article in the same journal. No group or university may be able to second-guess how the RAE panels will rate journals this year, but to have an objective yardstick, our school is using the *Journal Citation Reports*, and in particular, the "journal impact factor." The *Citation Reports* (www.isinet.com/products/evaltools/jcr/) is a resource for journal evaluation based on citation data drawn from more than 8,400 scholarly and technical journals from more than 3,000 publishers in 60 nations.

Statistics in a report include total cites (citations) and the impact factor. "Total cites" is the number of total citations to articles in the journal for the current *JCR* year. The "journal impact factor" is a measure of the frequency with which the average article in a journal has been cited in a particular year. The impact factor can help evaluate a journal's relative importance to others in the same field. It is calculated by dividing the number of current citations to articles published in the two previous years by the total number of articles published in the two previous years.

At our school, we are using the following categorization for journals and hence publications by our faculty members in these journals:

4* = journal impact factor >1.2

3* = journal impact factor 0.6-1.2

2* = journal impact factor 0.4-0.6

1* = journal impact factor 0.1-0.4.

unclassified = < 0.1

You can think of the above as A, B, C, D, etc. as well. It is only our school's definition and is useful in the aggregate to help the school figure out its level of research rather than to say that one journal is better than some other. Still, I include some statistics from a report on some OR/MS journals (Table 1). It may be worth browsing the impact factors of various journals as some of the numbers may surprise you.

Abbreviated Journal Title	2003 Total Cited	Impact Factor	2003 Articles
Manage Sci	7053	1.468	107
Eur J Oper Res	4904	0.605	374
Oper Res	3848	0.672	75
Int J Prod Res	2781	0.557	228
Math Program	2702	1.290	107
Syst Control Lett	2551	1.248	101
J Optimiz Theory App	1878	0.583	131
J Oper Res Soc	1550	0.416	133
Math Oper Res	1495	1.146	43
IIE Trans	1274	0.541	92
Ann Oper Res	1142	0.331	82
Nav Res Log	964	0.368	48
Comput Oper Res	960	0.486	134
Networks	953	0.649	43

J Oper Manag	852	1.795	28
J Qual Technol	846	0.766	37
Reliab Eng Syst Safe	813	0.741	119
Transport Res B-Meth	788	1.158	47
Int J Syst Sci	770	0.370	76
Queueing Syst	768	0.560	41
Decis Support Syst	765	1.316	64
Interfaces	759	0.712	43
Oper Res Lett	756	0.449	73
Transport Sci	737	0.491	26
List has been abbreviated for space.			

Table 1: Statistics from a Journal Citation Report for some OR/MS journals.

Predictably, *Management Science* is in the "A" list with impact factor more than 1.2 along with *Mathematical Programming* and *System Control Letters*. But the highest rating among these journals is that of the *Journal of Operations Management (JOM)*. I remember reading an article that essentially said that more researchers from "top" U.S. universities published in *Production and Operations Management and Manufacturing and Service Operations Management* than in *JOM*. But *JOM* has much more impact than any other OR/MS journal. One reason could be that *JOM* requires articles to be about companies or industries.

This reasoning should apply to *Interfaces*, which does have a slightly higher impact than *Operations Research* and the *European Journal of Operational Research*. The other surprise for me at least was *Operations Research*: apparently its impact factor has dropped from 1.27 in 1999 to 0.672 now, although it continues to have a high number of citations.

But the apparent success of *Management Science* by the metric of impact factor and the lesser success for *Operations Research* are both symptoms of the same problem: natural drift [Corbett and Wassenhove 1993, *Operations Research*, Vol. 41, No. 4, pgs. 625-640). *Management Science* opening its doors to all fields of management and *Operations Research* further narrowing to mathematical development means we are left struggling with figuring out the boundaries of operations research. But even as we attempt to figure these out, we still need to publish in these journals playing by their rules because we get promoted and recognized based on their impact factors. There is no escape whether it is the United States or the United Kingdom.

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