Reviewer’s report

Title: Reliability of journal impact factor rankings

Version: 1 Date: 27 July 2007

Reviewer: Andy Weale

Reviewer’s report:

General

The manuscript is generally well written and the subject worthy of attention.

-------------------------------------------------------------------------------

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The author is very keen to emphasise the importance of accurate statistical reporting which journals require in manuscripts, but happily ignore when using the impact factor to rank themselves without any uncertainty value. Whilst I agree that this is important, the author has not discussed what I consider to be the statistical gaff that embodies the impact factor itself.

The impact factor is calculated as a simple MEAN of the number of citations divided by the number of articles. However it is well recognised that the distribution of citations of articles within an individual journal is non-parametric, with just over 15% of articles gaining over half the number of citations that journal obtains. Using a mean is just wrong - this non-parametric data and as such should be reported as a median with the uncertainty associated. Does the author argue that it is acceptable then, given the distribution of citations, to quote the mean (i.e the impact factor) with the uncertainty associated? Does the author feel that assuming the in the model that citations follow a Poisson distribution overcomes this criticism? Furthermore in the modelling the author has used the "mean" citation rate.

I would prefer to see an explicit hypothesis stated in the introduction.

How does the author think his suggestion would affect the use of impact factors for ranking performance of individuals or institutions. What are the real alternatives?

-------------------------------------------------------------------------------

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

-------------------------------------------------------------------------------

Discretionary Revisions (which the author can choose to ignore)
The figures are difficult to read, but I appreciate that is not easy to improve. Has the author considered using a log scale for figure 1?

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'