

RCUK statement on the responsible use of metrics in research assessment

- The research councils seek the most effective mechanisms to support research and to better understand its performance, progress and quality. This includes the use of appropriate metrics to monitor, evaluate and communicate research.
- Information provided to peer reviewers and other decision makers to support their assessments should clearly set out the source of all data and calculation methods. metrics should account appropriately for variations and availability of information by field, and the application of these metrics should be kept under review. Processes should be transparent and accessible to those being evaluated.
- Research councils will take account of this statement in designing their evaluations and commissioning external evaluation and analysis work.
- Research councils consider the journal impact factor and metrics such as the H-index are not appropriate measures for assessing the quality of publications or the contribution of individual researchers, and so will not use these measures in our peer review processes.
- The research councils will take opportunities to highlight best practice and discourage the use of inappropriate metrics, including work the research councils engage in with other research organisations.
- The research councils will regularly review and update the guidance they provide to reviewers and policies relevant to research assessment and management, including this statement.

Research council actions

- The research councils will highlight to reviewers, panel members, recruitment and promotion panels that they should not place undue emphasis on the journal in which papers are published, but assess the content of specific papers, when considering the impact of an individual researcher's contribution¹. This will follow a review of and revisions to, the guidance used by research councils for peer reviewers and panel assessors, and result in standard wording to be used by all councils.

¹ This is consistent with the position taken by the Higher Education Funding Bodies in relation to the Research Excellence Framework, where sub-panels do not make use of journal impact factors, rankings or lists, or the perceived standing of the publisher, in assessing the quality of research outputs (para 53, http://www.ref.ac.uk/2014/media/ref/content/pub/panelcriteriaandworkingmethods/01_12_1.pdf).

- All research council evaluations will include a short statement setting out how the approach used is consistent with the research council statement on responsible metrics.
- The Research Councils will sign DORA as a public indication of their support for these principles.
- The Research Councils will regularly review this position statement and actions and, if appropriate, revise them.

Background

Research Councils UK

Research Councils UK (RCUK)ⁱ is the strategic partnership of the UK's seven Research Councils. Our collective ambition is to ensure the UK remains the best place in the world to do research, innovate and grow business. The Research Councils are central to delivering research and innovation for economic growth and societal impact. Together, we invest £3 billion in research each year, covering all disciplines and sectors, to meet tomorrow's challenges today. Our investments create new knowledge through: funding research excellence; responding to society's challenges; developing skills, leadership and infrastructure; and leading the UK's research direction. We drive innovation through: creating environments and brokering partnerships; co-delivering research and innovation with over 2,500 businesses, 1,000 of which are SMEs; and providing intelligence for policy making.

The seven UK Research Councils are:

- Arts & Humanities Research Council (AHRC) - www.ahrc.ac.uk
- Biotechnology & Biological Sciences Research Council (BBSRC) - www.bbsrc.ac.uk
- Economic & Social Research Council (ESRC) - www.esrc.ac.uk
- Engineering & Physical Sciences Research Council (EPSRC) - www.epsrc.ac.uk
- Medical Research Council (MRC) - www.mrc.ac.uk
- Natural Environment Research Council (NERC) - www.nerc.ac.uk
- Science & Technology Facilities Council (STFC) - www.stfc.ac.uk

The San Francisco Declaration on Research Assessment (DORA)

DORAⁱⁱ was initiated by The American Society for Cell Biology (ASCB) together with a group of editors and publishers of scholarly journals and published in 2013. As of August 2016 DORA was signed by 825 research organisations and over 12,000 individual researchers.

DORA highlights that "There is a pressing need to improve the ways in which the output of scientific research is evaluated by funding agencies, academic institutions, and other parties". DORA notes that the outputs from research are many and varied, not only research articles reporting new

knowledge, but research datasets, reagents and other works. Funding agencies, research organisations that employ researchers and researchers themselves have an interest and a need to assess the output from research to track progress, productivity and quality. While DORA recognised that the importance of outputs outside of research articles would grow in future, DORA focusses on peer reviewed research papers and specifically questions the use of the journal impact factor as a metric.

A general recommendation made by DORA was to stop the use of journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles. It promotes evaluation of publications by research content rather than the journal in which it is published when assessing an individual scientist's contributions, or in hiring, promotion, or funding decisions.

The Leiden Manifesto

The Leiden Manifestoⁱⁱⁱ proposes ten principles for sound use of bibliometrics in evaluation. These principles are also applicable to other data about research.

- 1 Quantitative evaluation should support qualitative, expert assessment
- 2 Measure performance against the research missions of the institution, group or researcher.
- 3 Metrics should not disadvantage research that is locally/nationally relevant, due to the dominance of international, English language literature in the large bibliographic databases.
- 4 Keep data collection and analytical processes open, transparent and simple.
- 5 Allow those evaluated to verify data and analysis.
- 6 Account for variation by field in publication and citation practices.
- 7 Base assessment of individual researchers on a qualitative judgement of their portfolio.
- 8 Avoid misplaced concreteness and false precision.
- 9 Recognize the systemic effects of assessment and indicators.
- 10 Scrutinize indicators regularly and update them.

The Metric Tide report

The Metric Tide^{iv} report was commissioned by HEFCE to examine the use of metrics in research assessment following the 2014 REF exercise. The extensive report published in 2015 emphasised the potential for metrics to support openness, accountability and a better understanding of the research system, but cautioned that narrow, poorly designed research metrics and misuse of metrics could have significantly negative consequences. While setting out recommendations for research organisations, research funders and researchers, and specifically addressing issues relevant to the REF exercise, the report also set out five principles for the responsible use of metrics. These principles emphasise the key Leiden Manifesto points:

- *Robustness*: basing metrics on the best possible data in terms of accuracy and scope;
- *Humility*: recognising that quantitative evaluation should support – but not supplant – qualitative, expert assessment;
- *Transparency*: keeping data collection and analytical processes open and transparent, so that those being evaluated can test and verify the results;
- *Diversity*: accounting for variation by field, and using a range of indicators to reflect and support a plurality of research and researcher career paths across the system;
- *Reflexivity*: recognising and anticipating the systemic and potential effects of indicators, and updating them in response.

ⁱ www.rcuk.ac.uk

ⁱⁱ <https://sfdora.org/>

ⁱⁱⁱ <http://www.leidenmanifesto.org/>

^{iv} <http://www.hefce.ac.uk/pubs/rereports/year/2015/metrictide/>