

Guiding principles for the responsible use of indicators in research assessment and management

The University of Exeter is a signatory of the Declaration on Research Assessment (DORA)¹ highlighting our public commitment to the responsible use of indicators in research assessment and management, including how quantitative indicators are used to judge the performance or contribution of individual researchers. Within our individual roles at the University, we act as representatives of the institution, but we may also act as assessors, reviewers, an organisation that supplies metrics or indicators, and researchers, thus it is important to read and understand the terms DORA sets out for those roles.

Quality, influence, and impact of research are typically abstract and multi-dimensional concepts that prohibit direct measurement. There is no simple way to measure research quality, and quantitative approaches can only be interpreted as indirect proxies for quality. Whilst we recognise that expert or peer judgement can also be subject to bias – positive or negative – we encourage the use of expert judgement complemented by appropriate qualitative or quantitative evidence.

Not all indicators are useful, informative, or will suit all needs; and indicators that are meaningful in some contexts can be misleading or meaningless in others. This includes significant implications for equality, diversity and inclusivity. Where metrics are used irresponsibly they can reinforce systematic inequalities – for example, gender and ethnicity bias.² We recommend that quantitative metrics should not be used as the sole form of evidence to avoid misplaced concreteness and false precision. Research and impact indicators come in different forms, shapes and sizes. The following is a non-exhaustive list of some of the types of indicators that might be used:

- Institutional or discipline-level indicators: e.g., institutional rankings; discipline rankings; Field-weighted citation impact (FWCI) indices from Scopus/Scival; Field Citation Ratio (FCR) or Relative Citation Ratio (RCR) from Digital Science; Category Normalised Citation Impact (CNCI) from Web of Science *see also the items listed under research activity indicators which can be presented at institutional or discipline-level.*
- Output or output-medium (e.g. journal) type indicators: e.g., citation count; altmetrics or PlumX attention scores; journal impact factor (JIF); journal ranking lists (e.g. FT50 Research Rank list of 50 journals across Business, Management, Economics and Finance).
- Research activity indicators: e.g., count or value of research grant applications and awards, count and value of research income, count of research active FTE, PGR students per staff FTE.
- Individual-focused indicators: H-Index (different calculations dependent on source: Scopus, Web of Science, Google Scholar), count or value of research grant applications, awards or income, highly-cited rankings from Clarivate Analytics or Google scholar.

¹ <https://sfdora.org/>

² Examples of studies highlighting such issues: L. McCullough et al. "Gender bias in physics: An international forum", *AIP Conference Proceedings* 2109 (2019) <https://doi.org/10.1063/1.5110069>; P. Chakravartty, et al. "# CommunicationSoWhite.", *Journal of Communication*, 68(2), (2018) 254-266 <https://doi.org/10.1093/joc/jqy003>; M. Dion et al. "Gendered citation patterns across political science and social science methodology fields", *Political Analysis*, 26(3), (2018) 312-327; K. Phull, "Gender and bias in the international relations curriculum: insights from reading lists", *European Journal of International Relations* (2018) [10.1177/1354066118791690](https://doi.org/10.1177/1354066118791690)

1. Quantitative indicators should not be used where they are not appropriate

Both quantitative and qualitative forms of research assessment have their benefits and limitations. Depending on the context, the value of different approaches must be considered and balanced. This is particularly important for output-based metrics when dealing with a range of disciplines with different publication practices and citation norms. For example, in some fields or subfields, citation counts can estimate elements of usage, but in others they are not useful at all. This can be due to significant variation in output types, coverage in bibliographic and other research databases, language of publication, and disciplinary differences in citation practices.³

Bibliometrics are available from a variety of services, with differing levels of coverage, quality and accuracy, and these aspects should be considered when selecting a source for data. Therefore, where they are used, choose a source that allows records to be verified and curated to ensure records are comprehensive and accurate.

Avoid mixing and matching the 'same' metric from different products/platforms in the same document or analysis e.g., don't use article metrics from Scopus for one set of researchers and article metrics from Web of Science for another set of researchers.

In fields where quantitative indicators are not appropriate nor meaningful, the University of Exeter will not impose their use for assessment in that area.

2. Respect disciplinary diversity: do not use identical indicators to compare different subjects

Different fields have different perspectives of what characterises research quality, and different approaches for determining what constitutes a significant research output (for example, the relative importance of book chapters vs journal articles vs datasets). All research outputs must be considered on their own merits, in an appropriate context that reflects the needs and diversity of research fields and outcomes. For research outputs, given the variation of practices in publications and citation highlighted above, some indicators are not appropriate to be used to compare the performance of different subjects or to impose discipline-based norms of assessment for research at the intersection of disciplinary boundaries. Similarly, beyond publications and research outputs, caution must be used and context understood when using grant and income capture or other research-related indicators for the comparison of different research fields.

3. Uphold the principles of [DORA & the broader responsible metrics agenda](#): avoid using inappropriate indicators when evaluating researchers or research; recognise the wider value, outcomes and impacts of research

When making qualitative assessments, we ask our research community to make judgements based solely on the merits of the work itself and to avoid making judgements based on proxy factors such as the reputation of authors, or of the journal or publisher of the work. We encourage a pluralistic assessment of researchers, research and research impact and ask our colleagues to consider other quantitative and qualitative indicators of the value and impacts of research, beyond publication and dissemination of findings. This may include influence on policy, practice and communities in addition to the wider benefits to society and the economy. The value of research may also arise from the process of participating in the research, for research participants or other stakeholders (e.g. community engagement and trust), as

³ See the 2017 Joint Statement by HEFCE (now Research England), AHRC and ESRC [\[ARCHIVED CONTENT\]](#) [Interdisciplinarity - Higher Education Funding Council for England \(nationalarchives.gov.uk\)](#)

much as from the knowledge and insights generated by the research.

4. Avoid using indicators to compare individual researchers which do not account for individual circumstances

Avoid using metrics to assess individual researchers, particularly metrics which do not account for individual variation or circumstances. For example, the H-index should not be used to directly compare individuals, because the number of papers and citations differs dramatically among fields and sub-fields and at different points in a career, e.g. for those working part-time with caring responsibilities. A holistic approach which includes quantitative and qualitative evidence, including expert testimony or personal statements, should be considered when assessing an individual.

5. Ensure that indicators are applied at the correct scale of the subject of investigation

Do not apply aggregate-level indicators as a proxy to individual assessment, or vice versa. For example, do not assess the quality of an individual paper based on the impact factor of the journal in which it was published or the quality of a monograph based on the reputation of the publishing press.

6. Apply the use of quantitative goals or benchmarks appropriately

Ensure that any quantitative goals or benchmarks proposed are open to scrutiny, based on accurate data and that those using such goals or benchmarks they highlight, where possible, any shortcomings of those indicators to fields, sub-fields or groups of individuals to demonstrate awareness.

7. Use quantitative indicators which are widely used and understood

Select quantitative indicators from those which are widely used and easily understood. Within processes using quantitative indicators it is also important to ensure that the methodology and guidance of use is transparent.

8. Avoid indicators becoming the target of research activity at the expense of research quality

If goals or benchmarks are expressed quantitatively, care should be taken to avoid the indicator itself becoming the target of research activity at the expense of research quality. Such goals or benchmarks should be revisited if it is evident that they are negatively impacting on research practice and developing perverse incentives.

9. Adoption of new indicators must be used in keeping with these principles

New and alternative indicators are continuously being developed to inform the reception, usage, and value of all types of research output and activity. Any new or non-standard metric or indicator must be used and interpreted in keeping with the other principles listed here for more traditional indicators. Additionally, consider the sources and methods behind such indicators and whether they are vulnerable to being gamed, manipulated, or fabricated.

Responsible Metrics Champions Group, April 2022

With grateful thanks to the [UCL Principles for the responsible use of bibliometrics](#) which was used as our starting point.