The use of bibliometrics and other indicators in the evaluation of research – a UK perspective

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Overview

The UK context

Use of indicators in REF 2021

Forum for Responsible Research Metrics

Key messages
The UK context

- Dual support system for funding research
- Research councils fund competitive projects
- Funding Councils give block grants to universities based on submission of research every 6-7 years
  - Research Excellence Framework (REF)
  - Assessed by ‘informed peer review’
  - Outcomes presented as profiles
UKRI funding in 2018 (Total = £6Bn)
What is the REF?

Purposes:

- To provide accountability for public investment in research and produce evidence of the benefits of this investment.
- To provide benchmarking information and establish reputational yardsticks, for use within the HE sector and for public information.
- To inform the selective allocation of funding for research.

Approach:

- The REF is a process of expert review, carried out by sub-panels for each of the 34 subject-based units of assessment (UOAs), under the guidance of four main panels. Expert panels are made up of senior academics, international members, and research users.

Elements of Assessment:

- the quality of outputs (e.g. publications, performances, and exhibitions), 60%
- their impact beyond academia, 25%
- the environment that supports research, 15%
Bibliometrics
The following subject panels have indicated that they will use bibliometrics as an input:
- All medical/health and life sciences (Main Panel A)
- Earth sciences, chemistry, physics, computer science (Main Panel B) but not mathematical sciences or engineering
- Economics and econometrics (Main Panel C)

Data provided on the ‘outputs’ submitted to the REF
For each output (publication) the following data is provided:
- Citation count
- Benchmark – contextual data giving the citation counts for key percentiles using aggregated citation data from the journals within the relevant subject area and for the relevant output type – article, review or proceedings

Where a journal belongs to several different subject categories, the panel will select the most relevant for benchmarking based on the content of the paper – data for all journal categories is provided
For the Environment element

Standard data required:

- Number of research doctoral degrees awarded (by year)
- External research income (by source)
- Research income-in-kind (e.g. facility access)

In addition, as part of the narrative “Institutional-level environment statement” universities are encouraged to draw on supporting quantitative indicators where applicable and are referred to the advice and examples based on work carried out by the Forum for Responsible Research Metrics (FRRM).
The Forum for Responsible Research Metrics

established in 2016 – one of the recommendations of the independent review on the role of metrics in research assessment and management (‘The Metric Tide’) supports the responsible use of research metrics in higher education institutions and across the research community in the UK.

chaired by Professor Max Lu (Vice-Chancellor at the University of Surrey) the membership includes research funders, HEI senior managers, and metrics academics/experts.

Role of the Forum is to provide:

- Advice to the higher education funding bodies on quantitative indicators in the Research Excellence Framework (REF) 2021
- Advice on, and work to improve, the data infrastructure that underpins metric use
- Advocacy and leadership on the use of research metrics responsibly
- International engagement on the use of metrics in research and researcher assessment
Key points:

- Panels should choose whether to adopt indicators
- Data from same source should be used
- Use citation counts for each article and benchmark using field/year-specific averages and percentiles
- Explicitly rule out use of career-based metrics such as total citation counts or h-index
- May be useful as a tool for comparison with peer review assessments to double check that areas of high quality research have not been overlooked.
Principles for the inclusion of indicators:

- Primacy of narrative – data to support but not supplant environment narrative
- Indicator menu – HEIs to select suitable evidence – menu not prescriptive
- Equality and diversity – will be considered
- Transparency and robustness – based on robust, auditable data
- Burden – data which are already collected where possible
- Institutional/ disciplinary differences – reflects diversity of the sector
- Interdisciplinary research – shouldn’t disadvantage IDR
- Data contextualisation – suitable level of comparability
Key messages

- There is a role for indicators in the evaluation of research units and HEIs, but as an input to peer review, not as a replacement.
- Where indicators are used they need to be carefully contextualised in order to ensure that they are appropriately interpreted.
- To help in considering which indicators to use, it is recommended to develop principles against which the suitability of the indicators can be tested (the majority are likely to fail).
- Always consider carefully any intended consequences of the use of indicators before their introduction.
- Dialogue and discussion between the stakeholders leads to the development and implementation of effective indicators.
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