

# Responsible Metrics for The Assessment of Research Organizations

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## Abstract

While the more recent initiatives for responsible research assessment, such as CoARA, primarily focus on two evaluation contexts, the assessment of researchers in their careers and of their proposals for project funding, *organizational-level assessment* is not as much discussed as it was ten years ago in relation to the Leiden Manifesto and the Metric Tide report. Organizational-level research assessment is traditionally where professional and science-based evaluative bibliometrics has contributed the most. This paper argues for a more systematic engagement with organizational research assessment within the ongoing reform of research assessment. Other factors are creating the opportunity to move in this direction: There is a general shift towards organizational evaluation in research assessment. There is also increasing availability of new diverse data on research activities produced by the global scientific publishing system. A third factor is an ongoing project organized the international RoRI institute in London which aims to create a global overview of national systems for assessment and funding of research organizations. Finally, we think it is time to appreciate that bibliometrics is not only involved in research assessment but also contributes to the science of science, thereby in turn laying the foundation for a proper understanding and assessment of institutionalized science.

## Introduction

The Agreement on Reforming Research Assessment (CoARA, 2022) says that it addresses three contexts of evaluation, but it is focused mainly on the first two of them (Sivertsen & Rushforth, 2025):

1. Individual researchers as they apply for positions, promotions, or internal resources
2. Individual research proposals in applications for external funding
3. Research performing organisations and units

The engagement with primarily the first two contexts is understandable since the Agreement was developed in collaboration between the European University

Association and Science Europe with support from the European Commission. While the members of the EUA are directly responsible for assessments in the first context, members of Science Europe are directly responsible for assessments in the second context.

The third context of organizational assessment is addressed in the fourth of the Agreement's "Core commitments": "Avoid the use of rankings of research organisations in research assessment". The reference is to rankings provided by "external commercial companies" such as the *QS World University Rankings* and the *THE World University Rankings*. However, such rankings do not serve the purposes of the more widespread organizational assessments in research, which may be initiated by the research organizations themselves or by the funding governments as recurring national research assessment exercises. In our view, organizational research assessments across all countries also deserve attention from the perspective of responsible research assessment.

Bibliometric information at *aggregate levels* may be involved in organizational research assessment with motivations and indicators that differ from individual level assessments. Such use of bibliometrics did receive attention in earlier phases of the movement towards improved practices in research assessment, e.g., in the *Leiden Manifesto* (Hicks et al., 2015) and the *Metric Tide* report (Wilsdon et al., 2016), but it is so far overlooked by CoARA.

The third "Core commitment" of the Agreement does not provide much help in contexts of organizational research assessment: "Abandon inappropriate uses in research assessment of journal- and publication-based metrics, in particular inappropriate uses of Journal Impact Factor (JIF) and h-index". Both professional scientometricians and research assessment reform initiatives like CoARA agree the two named indicators are inappropriate for assessment researchers' CVs and proposals of their colleagues, or at an organizational level – and both share a concern about their widespread application in these very contexts. But beyond H-index, JIF, and commercial university rankings, the role of advanced bibliometrics in organizational assessments is ambiguous in ARRA. ARRA writes critically of "journal- and publication-based metrics", but seems to be unaware that this term comes close to a definition of *bibliometrics*<sup>1</sup>, a term never used in the document. A blog more recently published by the CoARA steering board appears to acknowledge that bibliometrics can play a role at the organizational level, but currently, this issue remains an underdeveloped part of the CoARA project.

In our view, a set of appropriate (for the type and profile of the institution and the purpose of the evaluation) advanced science-based bibliometric indicators can be helpful, implying that "publication-based metrics" (=bibliometrics) should not be abandoned. There is a long tradition in science-based bibliometrics for serving organizational level assessments and statistics with advanced indicators while at the same time discussing their limitations, particularly at the individual level. Newcomers to the field are trained to understand the importance of the level of

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<sup>1</sup> "Bibliometrics denotes the quantitative study of publications, citations, and related surrogate measures in scholarly communication." (Broadus, 1987)

analysis, as shown in the illustration<sup>2</sup> which was developed by Wolfgang Glänzel for use at the *European Summer School for Scientometrics (ESSS)*.

In our view, there is a need to develop a shared understanding with CoARA of the strengths and limitations of bibliometrics in research assessment. We suggest that one way forward could be to focus more on systems, practices, and indicators for organizational level research assessment. Our contribution in this paper is to discuss *four reasons* for giving organizational research assessment more attention in dialogue with CoARA.

### **1) A trend towards organizational assessment**

There is an increasing interest worldwide in research performance, not just as a sum of individual achievements, but as an *institutional responsibility*. CoARA is an expression of – and has a role in – a historical shift of evaluation paradigms during three decades from 1) research assessment among experts within disciplines via 2) excellence-orientation (to favour the best in competition across disciplines) towards responsible research assessment, which is more focused on assessing the conditions for performing good research by broadening the empirical basis for the assessment and including societal relevance and challenges. The historical shifts are observable in the Research Excellence Framework (REF) in the UK, particularly in the revised purposes and requirements of the next REF 2029 (<https://2029.ref.ac.uk/>). Compared to the two recent rounds in 2014 and 2021 and the earlier rounds of the preceding RAE since 1986, one main trait is evident: The research assessment in the UK is downscaling the role of 1) quality assessment of individual outputs of research, and, on the other hand, extending the role of 2) the assessment of the research performing organization as such, which will now be named People, Culture and Environment (PCE). In addition, 3) the societal impact of research has been included in the UK since 2014.

### **2) A new global overview of national research assessment and funding systems**

The trend described above has become observable within the framework of the AGORRA project (A Global Observatory of Responsible Research Assessment), from which the international Research on Research Institute (RoRI) in London is currently publishing a report titled *A New Typology of National Research Assessment and Funding Systems: Continuity, Change, and Contestation Across Thirteen Countries* (RoRI Working Paper No. 15). We are involved in this project. The report aims to establish an online global monitor of national research assessment and funding systems, and to expand the coverage to more countries. Currently, the study includes expert contributions from thirteen countries: Argentina, Australia, Brazil, Chile, China, Colombia, India, Italy, Mexico, the Netherlands, Norway, Poland, and the United Kingdom. One of the key aspects examined is the use of bibliometric

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<sup>2</sup> Illustration *The weight of qualitative (peer evaluation) and quantitative (bibliometrics) methods as function of the aggregation level* by Wolfgang Glänzel, from the presentation *Thoughts and Facts on Bibliometric Indicators in the Light of New Challenges in Their Applications* at the European Summer School for Scientometrics (ESSS).

indicators within each system, as some countries employ multiple frameworks. The project also highlights that organizational-level research assessment is widely practiced across all countries and provides a typology of the systems that provides for cross-national comparisons. Despite the significant variability in research assessment and funding systems, shaped by unique historical, cultural, and policy contexts, few countries rely solely on indicators for organizational-level assessment. A comprehensive understanding of these diverse frameworks is crucial for developing responsible and effective evaluation practices. Observing the national differences underscore the need to contextualize research assessment within national priorities and institutional missions while at the same time fostering a global dialogue on responsible research assessment and opening up for mutual learning. Engaging with such projects can enhance the development of fair and effective evaluation frameworks that respect the distinctive characteristics of different research environments. Furthermore, collaboration with this type of projects could strengthen the dialogue between CoARA and the international bibliometrics community, promoting a more inclusive and informed approach to research evaluation.

### **3) New sources of data are emerging in the scientific publishing system**

Parallel to the trend and the new opportunity described above, the digital universe of scientific publishing has developed quickly towards creating new types of data that may extend the range of indicators for organizational assessment. The CoARA Agreement lists several items that should be assessed in addition to publications: data, software, models, methods, theories, algorithms, protocols, and exhibitions. All of them are now publishable within a publication, in an appendix, or in linked documents. In fact, all indicators of responsible research practices published with the *Hong Kong Principles for assessing researchers* (Moher et al. 2020) may now be represented in a scientific publication or by indicators derived from it. The Agreement also says: “Value a range of other contributions to responsible research and scholarly activity, such as peer review for grants and publications, mentoring, outreach, and knowledge exchange”. Again, data sources and indicators for such activities are being developed within the scientific publishing system. Examples are those mentioned in the Annex of ARRA: Open science badges; Publons, ORCID, open peer review; CRediT; reporting guidelines (e.g. EQUATOR Network); and altmetrics (Altmetrics, PlumX). Most of these data sources have already been introduced in studies published by the main international journals for bibliometrics. The scientific attention thereby given to the new types of data may in turn be helpful for the reform of research assessment.

### **4) The science of science is needed**

Finally, to mention not only recent trends, but an important long tradition as well: Bibliometrics is not only there to serve research assessment, and it is not a recent invention by commercial suppliers. Bibliometrics represents hundred years of contributions to the science of science. These contributions provide insights that are necessary to understand science as an organized activity in society and thereby a

foundation for responsible assessments of research that are appropriate for the different profiles and purposes of its organizations.

## Conclusions

The responsible use of bibliometric indicators in research assessment should not be limited to individual researchers and project-level evaluations. The increasing institutional responsibility for research performance, the growing availability of diverse research output data, and global trends in assessment frameworks underscore the need for bibliometric approaches at the organizational level. Dialogues with CoARA and similar initiatives can help bridge the gap between bibliometric expertise and policy discussions, ensuring that assessments align with principles of responsible research evaluation while maintaining methodological rigor. Future efforts should focus on refining indicators, improving transparency, and fostering collaboration between the bibliometric community and research policy stakeholders.

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