

RESEARCH ASSESSMENT: CRITERIA AND INDICATORS

The San Francisco Declaration on Research Assessment (DORA), published in 2012, and the Leiden Manifesto of 2015 both set out to improve evaluation practices, particularly by drawing attention to the misuse of certain bibliometric indicators in the processes of recruitment, promotion and individual evaluation of researchers.

Both texts reveal that a number of stakeholders in research systems continue to make use of two indicators which have been roundly criticised by the scientometric community. DORA draws particular attention to the *journal impact factor*, or JIF. The method used to calculate this indicator makes it innately biased towards certain publications, and it is not immune to manipulation. Furthermore, it fails to take into account the differences in research practices which exist between different disciplines and sub-disciplines, at the risk of introducing a further source of bias to comparisons between researchers and research units.

The Leiden Manifesto is more concerned with the H index, launched in 2005 by physicist Jorge Hirsch and spreading rapidly thereafter. The aim of this composite indicator was to take into account both the number of works published by researchers and their scientific impact. In reality, the seductive simplicity of this indicator owes much to the fact that it makes the number of publications the dominant variable, failing to surmount the difficulties inherent to measuring two variables with a single indicator.

DORA and the Leiden Manifesto do more than simply criticise the existing indicators. Both documents contain recommendations regarding the use of scientometric indicators, particularly for assessment purposes. Although we at Hcéres specialise in the evaluation of research institutions, not individuals, we see a clear affinity between our work and the principles contained in these texts. They are the same principles which guide our research evaluation activities.

1. *Peer review* is a fundamental principle of the evaluation practices and processes which underpin academic publishing. In using peer reviews, Hcéres abides by international standards and complies with the requirements of transparency, collegiality and equality of treatment. Our research assessment process includes a response phase allowing the subjects of the evaluation to express their opinion on their evaluation.
2. Hcéres has also chosen a policy of *multi-criteria evaluation*. This goes far beyond the use of a few indicators or metrics based on just one facet of scientific output (journal articles). Instead, we take a much more comprehensive approach to evaluating the results obtained by research entities in the accomplishment of their various missions.
3. The Hcéres methodology places particular importance on the *qualitative dimension* of the evaluation of research entities. For research units, our method prioritises self-evaluation in the early phases of the evaluation process. In their self-evaluation files, researchers are asked to look at their whole bibliography of articles, books, chapters and conference addresses, to select the 20% which they feel to be most significant and to explain this choice. They are also asked to pinpoint a number of important milestones in their work and explain the (epistemological, theoretical, methodological, economic, societal, organisational etc.) reasons which make these the most significant highlights of their work during the period in question. The file also includes a SWOT analysis, focusing on their five-year plans.

4. A key underlying tenet of this methodology is the commensurability of the activities and results of the research entities we evaluate, in so far as the great majority of such institutions share comparable objectives (generating knowledge, spin-off and transfer activities, support to the academic community, involvement in training through research etc.). It nonetheless takes into account the *disciplinary specificity* of each academic field or sub-field evaluated. Hence Hcéres' decision to work with the corresponding academic communities to compile and publish, for each individual field, a guide to research output and activities. These guides define the scope of the objects to be evaluated and, where relevant, establishes a hierarchy between them and the quality indicators used to evaluate them.
5. When it comes to evaluating research units, Hcéres recommends *prioritising the scope of the results achieved*, without necessarily and exclusively relying upon bibliometric indicators. Experts who feel it is useful to refer to these indicators must apply them in a *measured and non-exclusive* manner. They may be used as working tools to complement qualitative evaluations, taking into account the context in which the work was conducted (specificities of different scientific fields, properties of the research unit in question etc.). Hcéres strongly advises that anybody choosing to use publication impact indicators (JIF or similar) for the purposes of evaluating the scientific output of research entities should at all times take into account the inherent limitations of these indicators.
6. The Hcéres Science and Technology Observatory publishes bibliometric indicator reports, used in the process of assessing territorial coordinations and research bodies. These reports are shared with the subjects of evaluations and include a methodological appendix. Indicators are calculated in terms of articles published, then standardised to account for disciplinary specificities. Some indicators are used to produce summary reports on research evaluations, and national summaries on a discipline-by-discipline basis.
7. Finally, Hcéres evaluations are part of a dynamic process. Conscious of the importance of adapting to the ecosystem under assessment, this process requires *regular re-evaluation* of the assessment tools we use (criteria, observable facts etc.).

RESOURCES

- ↘ **The San Francisco Declaration on Research Assessment, DORA**
<https://sfдора.org/read/>
- ↘ **The Leiden Manifesto for Research Metrics**
<http://www.leidenmanifesto.org/>
- ↘ **The Hcéres website**
 - Standards for external evaluation of research units
<http://www.hceres.com/PUBLICATIONS/Methodological-documentation/Standards-for-external-evaluation>
 - Guides to research output and activities
<http://www.hceres.com/Modalites-d-evaluation/Guides-to-research-output-and-activities>