



University Policy on the Responsible use of Research Metrics

Evaluating research using quantitative data

Guidelines accepted and adopted by UHI Research & Knowledge Exchange Committee 23 August 2019



University Statement on the Responsible use of Research Metrics

The University Partnership adopts its policy on research metrics following extended, careful consideration and review of the following reports, reviews and policy from:

- **San Francisco Declaration on Research Assessment; DORA¹ (2012)**
- **The Leiden Manifesto (2015)²**
- **The Metrics Tide (2015)³** - landmark report mapping the journey of metrics to 2015 and setting out recommendations to the UK government
- **UK Progress towards the use of metrics responsibly (2018)⁴**; Three years on from The Metric Tide report, a report by The UK Forum for Responsible Research Metrics (FFRRM)
- **Plan S (2018)⁵** ; Building on the principles of DORA/Leiden, has the aim of pushing the open science agenda forwards with backing from large international agencies.
- organisations such as FFRRM, Wellcome Trust, UKRI / REF team, PRAGUK
- The policies of other universities

We have chosen to implement a hybrid set of principles, based on the principles set out within the above policy documents, without aligning with one set of principles exclusively. We have concluded that the responsible research metrics policy that is best for our university is one shaped by our situation and guided by a mix of the principles included in the above reviews, but with particular attention to the principles of The Leiden Manifesto and DORA. This works for us, for our discipline areas, our researchers and will enable us to value and measure our research and its impact in a sustainable and transparent manner aligned with our strategic mission.

It is expected that all university departments use this policy as a guide to best practice in the use of research metrics during any evaluation process that involves comparison of research areas/individuals or in research performance reporting.

We will monitor on an annual basis our chosen metrics and continue to record our progress over time using these same carefully chosen metrics. We are conscious that in the long-term we will need to adjust what we record, but the purpose of our wide-ranging review 2018/19 was to arrive at a university research metrics policy that would be robust enough to give us clear indicators of research performance over time. We will keep a close watch on the development of Plan S principles. Our policy already complies to the principles of DORA, the Leiden Manifesto and Plan S by not using journal-based metrics, highlighting article metrics, demonstrating our commitment to Open Access research by signing DORA and requiring our researchers to deposit a version of their research outputs, or metadata describing where it can be discovered openly, in our public repository.

The university research committees confirmed our principles aligned with those of DORA and, with the endorsement of the university Vice Chancellor, we became a signatory to the declaration in October 2019.

Our policy will be reviewed on a biennial basis.

¹ <https://sfdora.org/read/>

² <https://www.nature.com/news/bibliometrics-the-leiden-manifesto-for-research-metrics-1.17351>

³ https://webarchive.nationalarchives.gov.uk/20180322111254/http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/The,Metric,Tide/2015_metric_tide.pdf

⁴ <https://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/The%20Forum%20for%20Responsible%20Research%20Metrics/UK%20progress%20towards%20the%20use%20of%20metrics%20responsibly%2010072018.pdf>

⁵ <https://www.coalition-s.org/>

Our policy for evaluating research using quantitative data

1 - Definition of Research Metrics

For the purposes of the UHI Policy on the Responsible use of Research Metrics, we adopt the five principles as outlined in *'The Metric Tide Report'* (2015) and adopted by UK Forum for Responsible Research Metrics (FFRRM):

- **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.

2 – Context

The UHI policy for the responsible use of metrics, or quantitative indicators, for assessing research, describes how we intend to encourage best practice throughout the university using a broad range of indicators while reflecting on the context of the data in terms of the definition set out in section 1. Our policy complies with and extends the principles outlined in the San Francisco Declaration on Research Assessment (DORA), 2012 ; The Metric Tide, 2015; the Leiden Manifesto for Research Metrics, 2015; Plan S (following the 2019 revision).

It is important to acknowledge the scholarly publishing environment is currently going through a period of re-evaluation and change as it adapts to the technologies currently in use combined with the drive to make research results as openly available as soon as possible.

Plan S is an initiative focussed on making full and immediate Open Access to research outputs a reality and while it directs most of its principles towards publishers and funders it has implications for how researchers arrive at publishing agreements. It is very new to the mix and responses across the sector are being formed and revised (May 2019). Its aims are complementary to the principles of DORA and Leiden. Wellcome and UKRI are amongst the organisations pushing the sector towards compliance of the aims of Plan S /DORA /Leiden.

The sector is moving the focus from the narrow and limiting practice of using journal or scholarly publication data, to use of a suite of research indicators to give a broader more contextualised view with both raw data and the conditions surrounding it. It is generally accepted, both sector-wide and within this policy, that quantitative indicators are most informative in the sciences and social sciences and less so for arts and humanities disciplines.

More recently the field of 'altmetrics' has emerged in relation to scholarly publications. Altmetrics extends the use of indicators to online communication, how the research is used more widely, and it can include download data, mentions on various social media or blogs, or citations in policy documents.

Other types of quantitative data used by different bodies include research grants, research income, industrial partnerships, knowledge-transfer partnerships (KTPs), postgraduate training, patents or spin-out data.

3 – Scope

The policy is intended to form a university-wide framework on responsible research metrics use and provide clear guidelines to research staff to follow when using research metrics as indicators of performance, to map

long-term trends, or when reporting on the effectiveness, breadth and reach of our research. This will ensure institutional or research reporting is fair, accurate, transparent, robust, curated in line with sector and discipline standards, and will meet various regulatory requirements. The scope of this policy is high-level as it is expected that particular situations will require different approaches. The policy is intended to explain how university staff should use and interpret research indicators, to carefully select quantitative indicators that are appropriate to their aims, reflect discipline context, and how the indicators support the equality and diversity goals of the university. It also sets out how we intend to imbed these principles of best practice throughout our research culture.

The policy should be applied to all reporting work or collective assessment of performance undertaken in the name of the university. Reporting at Academic Partner (AP) level is not directly governed by this policy but all Academic Partners are strongly recommended to adopt this policy. Information on an AP policy should be sought through AP websites. It is expected that if an AP does not have a specific policy on the responsible use of research metrics then the university policy principles should be applied.

It is the responsibility of all university staff to ensure all data records are kept up to date, and that all metrics are then used in a transparent manner in accordance with this policy.

4 – Design and development of research metrics reports

Possible reasons for developing metrics reports are discussed in section 5. When designing a research report we should never evaluate research output using only quantitative data. In creating research performance reports we must recognise that qualitative data, discipline norms, local conditions and overall context should always be taken together to create an accurate picture. The principles outlined in this policy should be applied consistently to all assessment reports, at local, institutional or department level. Local, more detailed reporting is invited, provided that they are consistent with the framework outlined in this document, as collectively they will help clarify the overall health of research at the university and help make our research community better informed collective research effort across the university. Metrics reports should be designed in a way that accounts for, and where necessary minimises any potential shortcomings.

Key guiding principles in designing reports:

- a) Include a descriptor of the methods used and assumptions made; be transparent with clear and reproducible methodology, so reports can be verified or reproduced. Clearly state the purpose/strategic objectives for the report.
- b) Include qualitative review comments to provide context, explicitly account for disciplinary differences or research environment/cultural factors.
- c) Use only accurate and relevant data in conjunction with qualitative review
- d) Use multiple indicators, not a single measure. Outputs can be (but are not limited to) articles, software, datasets, exhibitions, policy, patents or commercial activity. Outputs should not be category limited, and can be discipline specific.
- e) Use indicators that are appropriate for purpose, discipline, and context.
- f) Be sensitive to potential bias e.g. h-index favours seniority; does your sample data favour any particular staff group?
- g) Aggregated at an appropriate level, normally University, Partner or department.
- h) Ensure reports are developed in line with this policy to ensure compliance with national and international practice, and with reference to university equality, diversity and inclusion policy⁶.
- i) Any report should be fair, accurate, transparent, robust, and curated in line with sector and discipline standards.
- j) Be sensitive to unintended consequences.
- k) Regularly review your range of chosen indicators to ensure you are responsive to the changes in the research landscape.

⁶ [University Equality and Diversity Policy information](#)

5 – Use of metrics reports

The University recognises that quantitative indicators on research are now sufficiently well-developed that their usage is becoming more frequent. While such analysis may be established practice in some research disciplines, it is not in others. The quantitative information gained from our metrics reporting should always be considered as one part of the picture and strategic decisions should be informed, but not solely driven by, collected indicators; the role of the metric is to inform assessment within a broader context.

The assessment of individual research performance using solely quantitative indicators should not be undertaken. Article-level metrics are more appropriate than journal-level metrics; we should never reference h-index or Journal Impact Factors (JIF) to evaluate an individual's research activity. The scientific content of a paper is much more important than publication metrics or the identity of the journal in which it was published. It is recommended that paper quality should be assessed using peer review and where appropriate for the discipline, informed by normalised citation impact data.

For example; Journal-level indicators should not be used exclusively to determine the quality of papers. High-impact papers can be found in low-impact journals and vice versa. While there is likely to be a broad correlation of journal quality and paper quality it is not necessarily prescriptive. Furthermore, calculation of the Journal Impact Factor does not account for any of the following: publication type (reviews tend to be cited more frequently than articles), research field (e.g. biomedical research is published more frequently and is quicker to accumulate citations than engineering research), journal publication frequency, career stage, skewed underlying data (citation counts do not follow a normal distribution).

The principles included within this policy have been designed to discourage the application of specific quantitative measures. Peer review remains the method of choice for assessment of research quality. By providing guidance on good practice, however, the principles outlined herein support those who wish to use quantitative evaluation measures as a complement to qualitative review.

6 – Application of Quantitative Indicators in Research Assessment

Annual institutional research report

The university will annually compile a report, primarily to the university Research and Knowledge Exchange Committee (RKEC) and research cluster steering groups. The latest annual data will appear alongside all previous years data to provide context and sight of developing trends. The report will be used to help inform planning and strategy for development, staff training/support and discipline development, show past trends, while being used alongside other data available to the committees to plan our future direction and priorities.

The report will be publically available alongside this policy document on the university website.

For an institutional report it would be preferable to split the figures by research cluster/ faculty/ school/ division. However, our current structure is the subject of a major review so the final decision on how we present our data will have to be deferred. For initial years we will have to report by Academic Partner, and by REF unit (which are relatively stable for each 6-year cycle).

Staff recruitment, performance management, committee work.

The use of metrics in any process should be declared in advance of the process commencing, and their use indication should be considered alongside other metrics and other more qualitative assessments. Any quantitative indicator that is used will be based upon published formulae and will rely on openly available data, such that other experts in the field can reproduce the quantification of the metric.

The following principles from DORA (points 15-18) should be applied ⁷;

⁷ https://sfdora.org/read/points_15-18

- a) When involved in committees making decisions about funding, hiring [staff recruitment], tenure, or promotion, make assessments based on scientific content rather than publication metrics.
- b) Wherever appropriate, cite primary literature in which observations are first reported rather than reviews in order to give credit where credit is due.
- c) Use a range of article metrics and indicators on personal/supporting statements, as evidence of the impact of individual published articles and other research outputs.
- d) Challenge research assessment practices that rely inappropriately on Journal Impact Factors and promote and teach best practice that focuses on the value and influence of specific research outputs.

7 – Use of alternative metrics (altmetrics)

Altmetrics are a measure of the attention and interaction attracted by a piece of research via news, social media and scholarly networks. This may include ‘likes’, ‘tweets’, downloads, mentions and connections within reference managers. Elsevier provide altmetrics indicators through PlumX Analytics, which draws on data held within Scopus. Altmetrics are part of the new breed of indicators developed to record and monitor the new data streams and interactions with published research. It is a developing area but has increasing importance as more interactions take place outside of the ‘standard’ journal system. The university will engage with these new altmetrics as part of its responsible monitoring of research indicators; our CRIS has altmetrics imbedded in the reporting on our public portal and we will be able to draw on these indicators in our own reporting.

8 – Comparators, Caveats and Limitations

Comparators and caveats are hugely important elements that help calibrate and balance any set of metrics, bringing perspective and drawing out any possible ‘wayward’ statistics or conclusions. Any set of metrics should always be preceded by a descriptor of the methods used and the assumptions made.

9 – Governance

The Research Metrics Policy and this guide document will be reviewed on a biannual basis by a panel of representatives from across the university comprising the SLWG membership detailed in Appendix 3, or representatives nominated by out-going members, and the research cluster steering group members. Any updates recommended by the panel members will be presented for approval to the university Research and Knowledge Exchange Committee (RKEC), which will have ultimate responsibility for this policy.

Partners, Institutes and, as appropriate, departments are responsible for the selection, design and application of discipline-specific metrics, ensuring that they remain in line with the university policy and statement and taking advantage of the professional guidance and support provided by the university.

The university will procure professional training in the development and use of research metrics, aiming particularly at members of the policy team and university research cluster steering group members.

Any questions on this policy or use of research metrics in reports should be directed to:

RO@uhi.ac.uk

APPENDIX 1 – Institutional research indicators to be recorded annually, reported to committees and posted on the University Hub (SharePoint intranet)

Wider research output usage indicators (from Pure/Scopus/WoS)

1. Research outputs published – all types, 2 sets of data; totals by Partner and by REF unit.
2. Downloads of papers – 2 sets of data; totals by Partner and by REF unit.
3. Views of outputs - 2 sets of data; totals by Partner and by REF unit.
4. Citation counts from Scopus and from Web of Science.

Financial indicators (data already collected for REF purposes, we should monitor annually)

5. Total research income across all HESA research data columns, this includes figures for income from UK research councils, charities, government, commerce and EU funding streams. Reported by REF Unit of Assessment (UoA) and includes KE income data.

Interactions with social media (from PlumX/Pure)

6. Twitter, blogs, facebook, news; by AP
7. Mendeley interactions; by AP

Graduate School indicators (from Gradschool and UHI Finance)

8. Number of PhDs completed
9. Average time to completion
10. Number of Full/part time students
11. Total amount of funding for PhDs
12. Self-funded study income

Research Staff indicators (from Pure and annual staff survey developed by Stuart Hall, high-level anonymised)

13. Full/part time staff, perm/fixed term contract (gathered from REF related data on Pure)
14. Early Career Researchers (ECR's) (gathered from REF related data on Pure)
15. Gender profile
16. Ethnicity profile
17. Disability profile

Notes:

1. These indicators, closely linked to HESA data and also REF relevant, will be gathered, recorded and included in the annual research indicators report. The total research income figures (items 5 above) are already produced by Finance as a requirement for REF so it makes sense that we re-use these figures which already match indicators we are expected to report externally. We can also expect the Ref UoA's to remain stable for at least 6 year cycles, with only small changes at each cycle revision, so the run of metrics should be sustainable over time. Splitting the figure this way will also provide a proxy cluster/faculty/school/division comparison figure.

2. The annual report will be circulated to university Research and Knowledge Exchange Committee (RKEC), partner Research Committees, cluster steering members and any other interested parties. The Research Information Systems Officer will be responsible for creation of the annual institutional report.
3. The proposed REF survey of research staff (initiated and compiled by the university Equality and Diversity Officer) will capture the staff profile information (items 13-17 of the report), and to accommodate this the privacy statement for that survey will need to explicitly state that the data would also be used to feed annual metrics reporting. This data is being used because we cannot use our HESA data. Ideally, we could build-in data we already gather for the HESA return (staff mix; full/part time, gender, ethnicity, perm/fixed term contract, ECR) to the annual research report but we only currently have a complete HESA return for EO, which is nowhere near good enough for gathering data on our whole research community make-up.

APPENDIX 2 – basis for this policy document

This document is principally based on:

- A. *Leiden Manifesto* <https://www.nature.com/news/bibliometrics-the-leiden-manifesto-for-research-metrics-1.17351>
- B. *San Francisco Declaration on Research Assessment (DORA)* <https://sfdora.org/read/>
- C. *Plan S* <https://www.coalition-s.org/>

And influenced by other university policies:

- A. *University of York's 'Policy for research evaluation using quantitative data'* <https://www.york.ac.uk/staff/research/governance/research-policies/policy-for-research-evaluation-using-quantitative/>
- B. *Durham University* <https://www.dur.ac.uk/resources/research.innovation/policy/Metricspolicy1.0.pdf> and <https://www.dur.ac.uk/resources/research/Appendixtwo20180904MetricsStatementv4.pdf>
- C. *University of Bristol* - <https://www.bristol.ac.uk/research/environment/responsible-metrics/>
- D. *University of Kent statement on fair assessment of research* - <https://blogs.kent.ac.uk/osc/2018/04/04/responsible-metrics-at-kent-so-what/>
- E. *University of Birmingham guidelines and working group on responsible metrics* - <https://intranet.birmingham.ac.uk/planning/rpt/research-metrics/goodmetric.aspx>
- F. *University of Bath's 'Principles of research assessment and management'* - <https://www.bath.ac.uk/corporate-information/principles-of-research-assessment-and-management/>
- G. *Loughborough University policy on 'Using Metrics Responsibly'* - <https://www.lboro.ac.uk/research/support/publishing/responsible-use-of-metrics/>
- H. *University of Glasgow* - <https://www.gla.ac.uk/myglasgow/research/managingyourpublications/publicationsandresearchreputation/indicators/responsiblemetrics/>

APPENDIX 3 – Working group who formed this policy

Group chaired by Professor Neil Simco, Vice Principal Research and Impact (EO)

Stuart Knight, Research Information Systems Officer (EO)

Dr Joe Irvine, Director of Knowledge Exchange (EO)

Dr Mairi Cowan, Research Development Facilitator (Inverness College)

Ruth Priest, University Librarian (EO)

Professor Ben Wilson, PI in Mammalogy and Marine Renewables/ Associate Director for Science and Research (SAMS)

Dr Alexandra Sanmark, Reader in Medieval Archaeology (Orkney College)

Pàdruig Moireach, Lecturer/ Research Cluster Administrator for HARC and SILK (Perth College)

Professor Phil Whitfield, Head of Lipidomic Research (Division of Biomedical Sciences)