

PITCH: Measuring the adoption of FAIR data practice

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Goal (problem, definition, solution direction and demarcation of the subject) Deliverables for RDM community in the Netherlands

A 'FAIR Enabling Research Organization' (FERO) is a research organization with a dedicated staff of data professionals, which has implemented policies on technical, infrastructural and organizational facilities and services to enable the researchers to create and publish FAIR data as a result of their research.

Most Dutch universities and research institutions consider becoming a 'FAIR enabling organization' an important goal. Whilst many institutions have begun implementing data policies, services, infrastructure and stewardship to enable researchers to create and publish FAIR research data, some are closer to the goal than others.

The LCRDM task group 'FAIR enabling organization' delivered a self-assessment tool, '[Do I-PASS for FAIR](#)', to evaluate the FAIRness level of a research institution (beginner, intermediate or advanced) based on five characteristics; policy, services, skills, incentives and adoption. Twenty institutions have used the tool and the results revealed that most perform at the intermediate level for policy, and are seriously engaged in developing services and skills. All institutions, however, perform below the beginner level for incentives and adoption.

The present task group will, therefore, focus on adoption by monitoring the publication of data in repositories. A growing number of research institutions, funding bodies (e.g. the European Commission, NWO) and publishers (e.g. Nature, PLOS) require that researchers make their data FAIR and many also ask researchers to write data management plans. It follows that data management plans and repository uploads might serve as a readily available metric to assess the adoption of FAIR data practice.

Raising awareness of such metrics will help research institutions to accurately monitor adoption following policy implementation, and could be used to incentivise researchers to share data. For example, reporting figures about open access publishing has a significant positive impact on the incentivisation of good practice among researchers with respect to publishing papers. In a similar vein, reporting figures about FAIR data sharing practice could provide a comparable incentive for researchers to publish their research data.

Why is this of cross-institutional importance?

As demonstrated by the '[Do I-PASS for FAIR](#)' tool results, the rates of adoption of FAIR data practice are poor in most research institutions. Evaluating and improving the FAIRness level of an institution based on adoption presents a significant cross-institutional challenge.

Results showed that for most institutions (~84%), less than 20% of scientific publications contain a DOI (or other PID) reference to the data underlying the publication (see Question 18 of the report). In addition, for most institutions (70%), their Digital Competence Centre (DCC) has no idea about the amount of data (i.e. number of datasets) produced by their researchers, and assume that they have an overview of less than 20% of datasets produced (see Question 19 of the report). Hence, these metrics are based on estimation and assumption rather than accurate measurement.

Institutional management are typically unaware of how to monitor adoption within their institution, let alone how to improve it. By using metrics about data management plans and data repository uploads we hope to establish the first framework of its kind to measure data sharing practice among researchers at a national (and international) level.

Deliverable / output, what will you deliver? (the "product") + rough outline.

This task group will deliver output to raise awareness about the adoption of data sharing practice among researchers in Dutch universities and research institutions. In the long-run, the task group aims to develop a reproducible, step-by-step methodology to monitor the publication of data in repositories and compare the number of DMPS in relation to datasets generated by the adoption of FAIR data practice among researchers in

Dutch universities and research institutions. This task group will start with universities, but could be extended to include Universities of Applied Sciences and the University Medical Centers (UMCs).

This initial deliverable will comprise a 'proof-of-concept' framework to measure adoption of data sharing practice across at least three Dutch universities (e.g. WUR, TUD, VU) for one or two research disciplines or departments. This framework will serve as a 'baseline' assessment that considers the following metrics:

- Research projects
 - Number of researchers per discipline/department (as to have an indication of the number of datasets to be expected in a time period)
 - Number of research initiated projects (since January 2020)
 - Number of research completed projects (since January 2020)
- Research Data Management Support
 - Number of RDM staff
 - Type of RDM staff
 - Embedded or general?
 - Full-time or part-time?
- Data management plans
 - Numbers of DMPs (since January 2020)
 - Institutional or funder recommendation?
- Repository uploads and CRIS/RIMS registrations
 - Number of datasets supporting publications (since January 2020)

The project outcomes will be summarised in a 'cheat sheet' to reflect on the current state of adoption of FAIR data sharing practice among researchers. The results of this task group will serve as a foundation to undertake a gap analysis and devise future recommendations for institutions and funders to improve adoption. The [CWTS en kwaliteitszorg](#) will also be invited to reflect on the results.

Demarcation; What is the task force not going to do

This task group will not address incentivization of FAIR data practice, however, a follow-up project could focus on this characteristic once 'adoption' has been suitably evaluated. The outcomes of this task group, therefore, will help to direct and drive appropriate incentives to improve adoption in the future.

Whilst this task group aims to evaluate the adoption of FAIR data sharing practice, it will not evaluate each FAIR metric individually, but will focus on the findability and accessibility of research data. The initial scope is on ways to assess the number of data published in repositories, and of the number of data expected per year.

Estimated lead time and desired schedule

This task group will start in April 2021 and will run for approximately 3 months. As discussed above, a follow-up task group could use the results to undertake a gap analysis and devise future recommendations for institutions and funders. The task group will determine which scientific domains will be addressed first.

The task group will meet for 1.5 hours each month and additional sub group meetings will be organised to conduct work as necessary.

What expertise / competences is / are needed to form this task group?

Task group members should have at least one of the following competencies:

- Data management support
- Policy implementation
- FAIR data in the research cycle
- Data analysis and reporting
- Research intelligence/Faculty information coordination (e.g. CWTS)

- Communication and community skills

What resources do you think you need?

Required resources include time, insight into the local DMPonline and CRIS instance.

<https://www.narcis.nl/search/coll/dataset/Language/nl>

<https://drive.google.com/file/d/14mkyKsmICs4UfTN3MEM-W3Z5WX83haDa/view>

What has already been known / done and why is that information not sufficient?

This is an unknown field yet to be explored. The provision of tools and methodologies to systematically measure the adoption of FAIR data practice has not been achieved at the national level. Therefore, an agreed process to monitor such practice is necessary to benefit different stakeholders within the Netherlands.