



**HANDOUTS FROM THE WORKING
GROUP RESEARCH DATA
MANAGEMENT
PUBLICATION, VISIBILITY, AND REUSE OF
RESEARCH DATA**

Exposée

Data supplements, data journals, data repositories | Metadata, persistent identifiers, Creative Commons licences, affiliation | Finding and citing research data

Edited

20 February 2026 (V 1.0) | Anja Richter; Michael Zweier

Contact details

forschungsdaten@uni-passau.de
[Webseite](#)

Background

When you publish your research data, you align yourself with the scientific trend toward greater openness while fulfilling key requirements such as recommendations from funding agencies or institutional archiving obligations. **Open Data** increases the visibility and citability of your research, strengthens transparency and reproducibility, and facilitates interdisciplinary collaboration. By making your materials available through **open-access publication**, you provide unrestricted access to scholarly materials, thereby establishing the foundation for their sustainable reuse.

Not all research data can or may be published in full as *Open Data*, for example due to legal or ethical constraints. Nevertheless, your data should comply with the [FAIR principles](#), regardless of the degree of openness. FAIR stands for:

- Findable* (e.g., through metadata and a DOI),
- Accessible* (e.g., usable with freely available software),
- Interoperable* (e.g., through standardized formats), and
- Reusable* (e.g., through clearly defined licenses).

By consistently applying these principles, you ensure that your data remains optimally usable for both humans and machines.

Publication Formats for Research Data

Data Supplements

These are supplementary materials accompanying scholarly articles, providing additional research data to enhance the comprehensibility and transparency of a publication.

- **Integrated Appendices:** You may deposit your data as supplement directly in the appendix of an article. However, in this case the data do not receive their own citation option, and access depends on the policies of the respective journal.
- **External Repository Submission:** Alternatively, depositing your data in an external repository allows it to be recognized as an independent research output with a persistent identifier (such as a DOI), thereby enhancing its discoverability and citability.

Data Journals

In data journals, datasets are described in detail without being analytically evaluated or interpreted. This publication format facilitates reuse by providing transparent information on the structure, provenance, and quality of the data. As a result, other researchers can more easily integrate your data into new research questions. At the same time, data journals promote good practices in research data management by strengthening methodological openness and recognizing data collection as an independent scholarly contribution.

Data Repositories

Data repositories serve as central platforms where you can securely preserve, document, and make digital research data accessible over the long term. They support sustainable archiving by providing reliable storage infrastructures, meaningful metadata, and persistent identifiers.

- *Disciplinary repositories* (such as [DARIAH-DE](#) for the humanities and cultural studies) target clearly defined research communities and adhere to the established quality standards of their respective fields. Here, you often benefit from additional services including expert quality reviews and specialized metadata standards.
- *Generic repositories* (such as [ZENODO](#)) are open to you regardless of your discipline. By relying on broadly applicable metadata standards, they enable straightforward data deposition and ensure that your data remain easily discoverable and reusable across diverse scientific contexts.
- *Institutional repositories* (such as [RADAR Passau](#)) are operated by universities or research institutions and provide direct support for the archiving and publication of your research data. By using such a repository, you actively strengthen your institution's internal research infrastructure while also contributing to the increased visibility of its scholarly output.

Components for Transparent Data Practices

Metadata

Metadata are structured additional information that explain your research data and make their context understandable ("data about data"). Without such information, many datasets would not be unambiguously interpretable. Metadata include technical, legal, administrative, and subject-specific details. They enable the discovery, referencing, and reuse of your data. A **metadata schema** specifies which of information must be recorded and in what format. By relying on established **metadata standards**, you benefit from clearly defined guidelines that ensure the documentation of key elements. This enhances the comparability and interoperability of your data, improves reproducibility, and facilitates compliance with the FAIR principles.

Persistent Identifiers

Persistent identifiers are durable labels assigned to digital objects such as publications, datasets, or organizations, enabling stable and reliable referencing. They ensure that a resource remains permanently findable, accessible, and citable, regardless of where it is stored. Common systems include the **DOI** ([Digital Object Identifier](#)) for publications, **ORCID** ([Open Researcher and Contributor ID](#)) for individual researchers, and **ROR** ([Research Organization Registry](#)) for institutions.

Creative-Commons-Lizenzen

[Creative Commons licenses](#) allow you to define clearly and transparently how your research data may be used. These open licensing models enable the free use of a work and thus offer an alternative to commercial licensing schemes. They provide legal certainty, facilitate data sharing through clear and accessible terms, and increase the visibility of your work. The [CC BY 4.0 license](#) is particularly recommended. It permits the use of your data as long as proper attribution is given to you as the creator.

Affiliation

A standardized [affiliation](#) ensures that your institutional association is clearly identifiable and that your scholarly work can be unambiguously attributed to a specific institution. By providing your affiliation consistently, you facilitate the traceability and correct citation of your research.

Reusing Research Data

Finding Research Data

When you search for already published datasets, disciplinary repositories and data centers offer you an excellent starting point. These infrastructures are often operated by scholarly communities or funding organizations and follow quality criteria such as comprehensive documentation, open formats, mandatory metadata, anonymized content, and data from completed projects ("Cold Data"). Additionally, you can use data portals, indexing services, or materials from journal articles. Directories such as [re3data](#), [RISources](#), [FAIRsharing](#), [OpenDOAR](#), or DataCite's [Repository Finder](#) help you identify suitable repositories.

Citing Research Data

Correctly citing research data is a key component of good scientific practice. It strengthens the integrity of your research and facilitates the reuse of datasets. The [Data Citation Principles](#) established by FORCE11 provide guidance, emphasizing that citations should be both human-readable and machine-actionable. Since no universal standards exist, requirements vary by discipline, publisher, or repository. A complete data citation typically includes **authorship**, **year of publication**, **title**, the **publishing agent**, and a **persistent identifier**. Optionally, you may add information on the version, resource type, or other relevant details.

Example of a standardized citation according to the recommendation of [DataCite](#) and [da|ra](#)

Creator (Publication Year): Title. Version. Publisher. General resource type. Persistent identifier.

- Luca Example (2025): How to cite research data. Version 1.0. RADAR Passau. Text. <https://doi.org/10.2224/example-persistent-identifier>.

Additional Hints

- Consider funder requirements and potential publication obligations during proposal preparation
- Plan the costs for publishing data at the very beginning of your research process
- Clarify any legal questions as early as possible
- Remove or anonymize personal data
- Create accompanying documentation (e.g., a README file or method description)
- Use open and widely adopted file formats such as .pdf, .xml, or .csv
- Ensure high-quality metadata, for instance by relying on established standards such as Dublin Core or DataCite
- Select an appropriate repository for publication
- Use an ORCID identifier for unique authorship
- Always ensure compliance with the FAIR principles



Links

- With the [DataCite Metadata Generator](#), you can easily create metadata that follow the DataCite standard.
- You can find an overview of existing metadata standards in the [Metadata Standards Catalog](#) of the Research Data Alliance, on the website of the [RDA Metadata Standards Directory Working Group](#), as well as on [FairSharing.org](#) or the [Digital Curation Centre \(DCC\)](#).
- With the [DOI Citation Formatters](#), you can automatically generate citations in more than 5,000 styles.
- You can find suggestions for data journals on the information pages of [forschungsdaten.org](#).
- [OstData](#) has published numerous [guidelines](#), including on preparing research data for publication, assessing the content quality of datasets, and citing research data.
- See also the handouts and information sheets from the Working Group Research Data Management