

- Becoming familiar with concepts like (sensitive) personal data and FAIR principles.
- Becoming familiar with content elements that make up a Data Management Plan
- Answering the DMP questions listed at the end of this chapter and adapting your own DMP.

Benefits of Data Management

- Useful tool to think ahead
- Allows for easy project management
- Clarifies needed budget
- Makes data FAIRer
- Shows accountability

Research Data

- Type of Data
- Formats
- Size & Complexity
- Research phase

Data in the social sciences

- Personal data
- Sensitive personal Data
- Quantitative and qualitative data
 - › General description
 - › Data attributes
 - › Data collection methods
 - › Dataset example

FAIR Data

- Steps toward FAIRer data
 - › A persistent identifier (PID) for the data object as a whole
 - › A sufficient set of metadata
 - › A clear license

Expert Tip: How FAIR are your data?

European diversity

- Data management requirements in Europe



European
Research
Council

- Open Data and Open Science policies in Europe (SPARCEurope & Digital Curation Centre, 2017)



Examples of DMP questions & answers

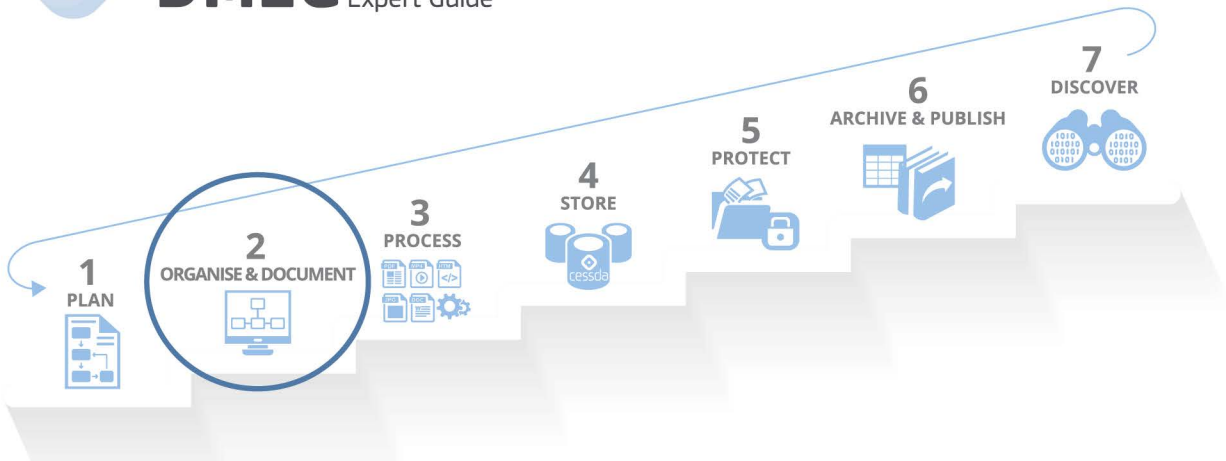
- › Qualitative data
- › Quantitative data



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- Being aware of elements important for setting up an appropriate structure for organising your data for intended research work and data sharing.
- Having an overview of best practices in file naming and organising data files in well-structured and unambiguous folder.
- Understanding how comprehensive data documentation and metadata increases the chance your data are correctly understood and discovered.
- Being aware of common metadata standards and their value.
- Answering the DMP questions listed at the end of this chapter and adapting your own DMP.

Ethics and data protection

- Archiving and publishing personal data.

Designing qualitative data files

- Qualitative coding.
- File naming and folder structure.
- Comprehensive folder structure: File naming and folder structure.

Designing quantitative data files common in social science

- Flat File plus examples.
- Hierarchical File plus examples.
- Relational Databases plus examples.

File naming and folder structure

- File naming strategy plus examples and best practices.
 - Folder structure.
- Expert Tip**
- Batch renaming of automatically generated files.

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Ethical review process

- Ethical self-assessment.
 - European diversity in ethical review.
- Expert Tip**
- Educate your Research Ethics Committees.
 - Find your REC.

Organising variables

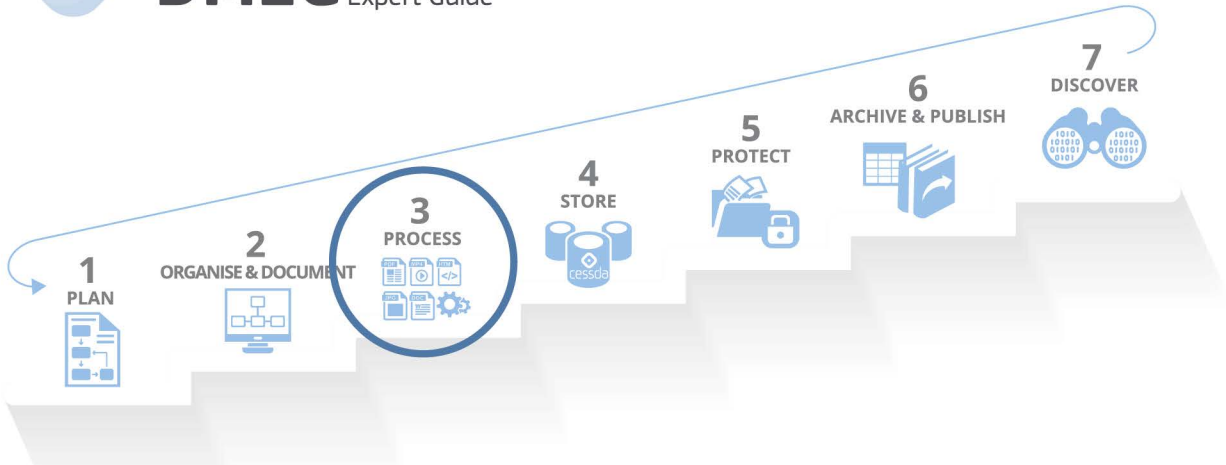
- Relations between variables.
- Links to elements of the study and data sources.
- Types of variables.
- Naming variables: Basic rules and examples.

Documentation and metadata

- Getting started.
- Project-level documentation and checklist.
- Data level documentation: Quantitative and Qualitative Data.
- Metadata: machine readable data documentation.

- Expert Tip**
- > Create machine-readable metadata.
 - > Deposit data in a data repository.
- Examples of metadata templates and standards.**
- Metadata for new data types – new standards still under development.





- Becoming familiar with strategies to minimise errors during processes of data entry and data coding.
- Understanding why the choice of file format needs careful planning.
- Managing the integrity and authenticity of your data during the research process.
- Understanding the importance of a systematic approach to data quality.
- Answering DMP questions listed at the end of this chapter and adapting your own DMP.

Data Entry and Integrity

Assurance of the accuracy, consistency, and completeness of original information contained in the data. Preserving authenticity of original research information.

- Minimising errors in survey data entry.
- Dealing with error values.
- Making high-quality transcriptions of qualitative data.

Quantitative coding

Facilitating data conversion and measurement comparisons.

- Coding recommendations.
- Standardised coding scheme with examples.
- Coding missing values with examples.
- Training coders to prevent variance.

Qualitative coding

- Indexing or categorising text to establish a framework of thematic ideas about it
- Approaches to qualitative coding with example.



Expert Tip: Much of research excellence comes from excellence of coding:

- > Document the meaning of codes.
- > Prevent coder variance.

Weights of survey data

Weighting: Statistical technique to compensate for 'sampling bias'

- Different types of weights and their different purposes.
 - > Distribution of weights.
 - > Weights constructed by others



Example: Using weights in European Social Survey Data

File formats and data conversion

Software and Data Format Compatibility: Avoiding information loss and data quality reduction.



Expert Tip: Plan ahead to simplify data publication

- Short-term data processing: file formats for operability.
- Long-term data preservation: file formats for the future.
- Data conversion and possible data loss

Data authenticity

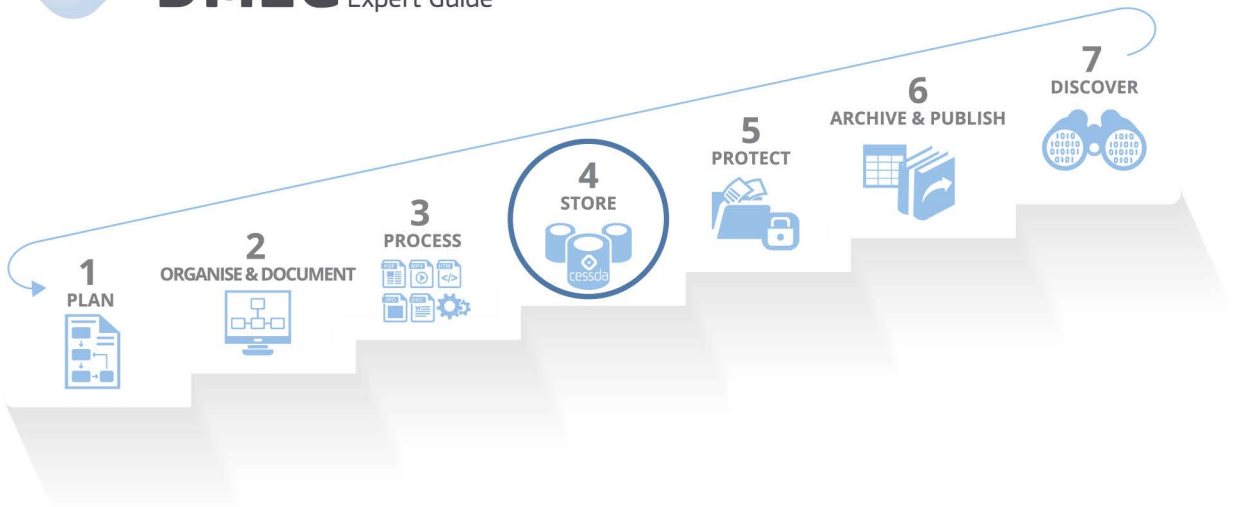
Preserving research information authenticity throughout the whole data lifecycle.

- Best practices for quality assurance, version control and authenticity.
- Version control.
- Versioning new data types.



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- Knowing different storage solutions, their pros and cons.
- Planning a storage strategy fitting project needs.
- Planning a back-up and disaster recovery strategy.
- Protecting data against unauthorised access.
- Answering DMP questions listed at the end of this chapter and adapting your own DMP.

Storage

Defining storage and project needs

- Possible storage solutions: Portable devices, cloud storage, local storage, networked drives.
 - › Examples, advantages, disadvantages.
- Types of storage media: Optical, magnetic, flash (portable), flash (built-in).
 - › Examples, advantages, disadvantages.

Expert Tip for your data storage.

- Video tutorial: Checking file integrity

Back-up

Protecting against data loss

- Creating a backup strategy in 10 steps.
- Case studies.
 - › Lost backpack.
 - › Overwritten master copies.

Security

Preventing unauthorised access

- Measures with video guide:
 - › Passwords.
 - › Encryption.
 - › Physical, network and computer security.
 - › Secure disposal.
 - › Organisational aspects.



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- Being aware of legal and ethical obligations and EU Member State legal requirements.
- Understanding the importance of protection against violation of laws and promises to participants.
- Understanding the impact of the General Data Protection Regulation.
- Enabling creation of shareable personal data by knowing how to combine informed consent, anonymisation and access controls.
- Defining what elements need integrating into a consent form.
- Applying anonymisation techniques to your data.
- Answering DMP questions listed at the end of this chapter and adapting your own DMP.

Ethics and data protection

- Archiving and publishing personal data.

Ethical review process

- Ethical self-assessment.
- **European diversity** in ethical review.
- **Expert Tip:**
 - Educate your Research Ethics Committees.
 - Find your REC.

Processing personal data

- GDPR.
- Research exemption.

Informed consent

- Information sheets
- Gaining informed consent for data archiving and sharing
 - › Granular consent
 - › Approaches to informed consent
- **Expert Tip:** Documenting consent; delivering informed consent in best possible way; consent for surveys; research without consent
- **European diversity** in informed consent

Anonymisation

- Possible approach. Direct and indirect identifiers.
- Anonymisation methods: Quantitative and qualitative data
- **Expert Tip:** Data access controls | Irreversible anonymisation | Anonymisation tools | Reading Tip
 - › Case study
 - › A practice in anonymising qualitative data

Copyright

- Key copyright considerations for researcher
- Case study
 - › Archived data | Data in the public domain | Survey questions | Interviews



European diversity in copyright



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- Understanding the difference between data archiving and data publishing.
- Being aware of the benefits of data publishing.
- Being able to differentiate between different data publication services.
- Being able to select a data repository that fits your research data's needs.
- Being aware of ways to promote your research data publication.
- Answering DMP questions listed at the end of this chapter and adapting your own DMP.

Towards archiving & publication

- Archiving data for future reference
- Publishing data for reuse
 - › Video on first steps for data curation
 - › Career benefits | Scientific progress | Norms | External drivers

Selecting data for publication

- Does your dataset have reuse potential?
- Is your dataset reusable?

Data publishing routes

- Five routes
- Choosing a data repository
- Expert Tip:** Timing is everything | Publish a data paper | Choose between self-archiving and expert help

Publishing with CESSDA archives

- CESSDA archives per country
- Video: CESSDA data archivist
- Added benefits of a CESSDA repository
- Deep dives: data licensing | data citation | access categories

Promoting your data

- Promoting reuse of your data
- Tracking data publications
 - › Citation-based metrics
 - › Almetrics-based metrics
- Licensing your data
 - › Make data available to the widest audience possible
 - › Make the widest range of uses possible
- About Creative Commons licences
- Considerations in choosing a licence

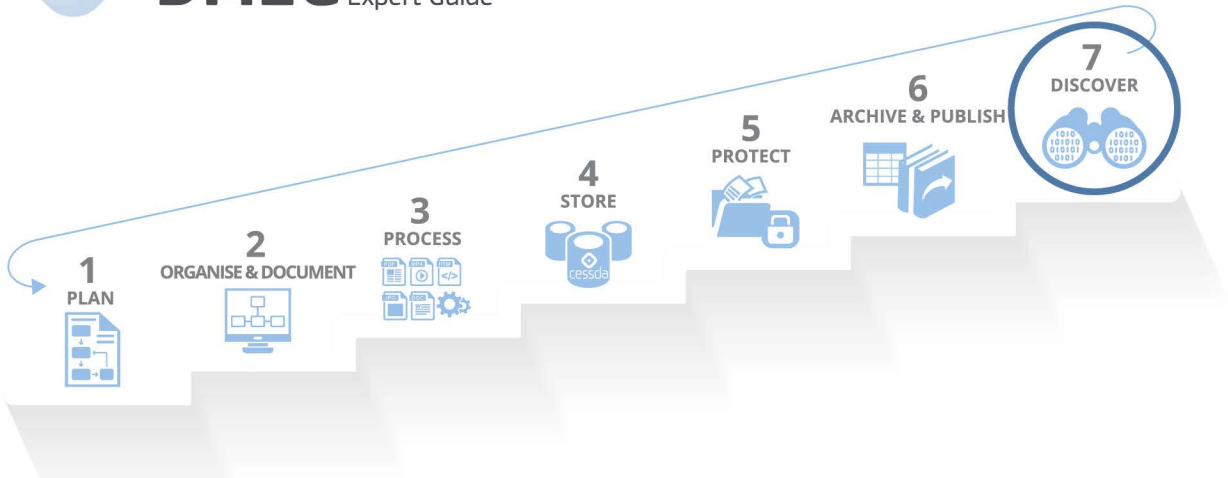


Expert Tip: Be sure who owns the data | Use the licence selector



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- Being able to set up and adjust a search strategy to find suitable data for your research purposes.
- Understanding that social science data repositories are important sources for discovering social science data.
- Being aware of data sources that CESSDA experts recommend for selected research topics.
- Being aware of steps in evaluating the quality and usefulness of data for secondary analysis.
- Understanding different types and modes of access to data.
- Answering DMP questions listed at the end of this chapter and adapting your own DMP.

The process of data discovery

- A fictive data discovery story with roots in reality
 - › Reuse data and save costs and time
 - › Compare results or make replication studies
 - › Reuse verified elements of research design
 - › Enhance data quality and foster innovation
- Steps in data discovery

Expert Tip: Prevent filter bubbles

Data repositories as data resources

- A case study: Data resources for researching wellbeing
 - Important social science data archives
- European diversity**
- Expert selections of data resources: Data resources for ageing | International comparisons | Other curated resources

Resources for social media data

- Platforms as social media data | social media data in EU data archives | general repositories | field specific and thematic social media data sources

Access, use and cite data

- Challenges in using data
- Case study: Data for a replication study
- Citing data

Expert Tip: Use a persistent identifier



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