



Guidelines for Research Data Management at Karlstad University

Purpose

The purpose of the guidelines is to describe Karlstad University's aims and principles for research data management and open access to research data. The guidelines shall promote efficient and appropriate handling of research data by providing general information, support and instruction to researchers, heads and other staff responsible for research data management. This document was drawn up to meet the requirements of current legislation regarding handling and preserving research data, while also promoting open and accessible research. These guidelines supplement Karlstad University's policy on research data management.

The policy and the guidelines need supplementary documents and instructions guiding the procedures for implementing principles and procedures in the organisation.

The policy does not cover publishing and utilisation of results or conclusions of research, but applies to the handling of research data collected or created for the purpose of analysis in a research context and serves as the basis for the results and conclusions generated in research. Instructions on publishing and utilisation, as well as detailed information on certain issues briefly described in the guidelines are available in the related document listed under section 9.

The policy was primarily produced by the research data group at Karlstad University in consultation with faculty representatives. The document was circulated to the faculties, central support services, employee unions and the student union for comments.

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Guidelines for Research Data Management at Karlstad University

1. Introduction

Karlstad University is responsible for ensuring that all research data are reliable and managed in a legal, appropriate and secure manner in conformity with standard research practice. The university advocates the implementation of a clear structure in how data, material and documents are organised through the research process, in order to avoid time-consuming work in connection with archiving, sharing and reusing the vast amount of data generated by research.

Karlstad University takes active measures to ensure that research data and related meta data are findable, accessible and re-usable for further research purposes in accordance with the recommendations of the EU commission¹ and the Swedish government.²³

2. Definitions

According to the ethics review act,⁴ *research* refers to ”scientific experimental or theoretical work designed to obtain new knowledge and research-based development projects, excluding projects carried out as part of undergraduate or master level studies”.

The term *principal research institution* refers, according to the ethics review act, to ”a public authority or physical or legal body in whose organisation the research is carried out.”

According to the National Archives’ general directives on deletion of research-related documents in public authorities,⁵ a *research project* is defined as ”a research activity delimited in time and purpose related to a certain assignment and/or certain persons.” A research project can comprise several sub projects and can be externally or internally funded.

In terms of these guidelines, *research data* can refer to all forms of stored data collected or created to be analysed for research purposes and on which results and conclusions generated through the research are based. Some examples of research data are statistics and measuring data, transcribed interviews and questionnaire answers, results of experiments, field study

¹ EU Commission Recommendations 2018/790 dated 25 April 2018 on the access to and preservation of scientific information. <https://eur-lex.europa.eu/legal-content/SV/TXT/PDF/?uri=CELEX:32018H0790&from=EN>

² Knowledge in collaboration: for societal challenges and reinforced competitiveness (Prop. 2016/17:50)

<https://www.regeringen.se/rattsliga-dokument/proposition/2016/11/prop.-20161750/>

³ For a sustainable and digitalised Sweden: a digitalisation strategy, N2017/03643/D.

<https://www.regeringen.se/informationsmaterial/2017/05/for-ett-hallbart-digitaliserat-sverige---en-digitaliseringsstrategi/>

⁴ Act (2003:460) on ethics review of research on humans https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2003460-om-etikprovning-av-forskning-som_sfs-2003-460

⁵ National Archives Regulations and General Advice (1999:1 revised 2002:1) on deletion of documents in public authorities’ research activities <https://riksarkivet.se/rafs?pdf=rafs/RA-FS%201999-01.pdf>

observations, audio-video recorded interviews and visual images/art.

The term *meta data* refers in these guidelines to a structured description of research data, i.e. “data about data”. Meta data can consist of a descriptive or contextual information on the provenance of data, such as how variables are defined, how data are structured, how various data sets are related, information on how and by whom the data were collected or if a special software was used to read or analyse the data.

The term *data citation* refers, in these guidelines, to the practice of referring to research data in the same way that researchers provide references to journal articles, reports, conference contribution and other publications.

3. Foundational principles for research data management

Karlstad University is the principal research institution for the research carried out by staff or affiliated staff at the university. Research data collected by researchers or doctoral students belong as a rule to Karlstad University. This means that the university has ownership⁶ to research data, and also responsibility for managing research data in a legal, appropriate and secure manner.

An important principle regarding research data is that it shall be preserved and accessible so that primary material and data analysed can be used without problem to support and verify the methods and results of the research.

All research projects at Karlstad University shall undergo ethical review and be registered in the university registry, according to the review process decided by the vice-chancellor.

3.1 Public documents

Karlstad University is a public authority under the government. This means that research data management must comply with the basic principles applying to all public authorities’ handling of public documents.

Research data collected outside of Karlstad University become public documents when submitted to the university. Research data created at the university as a rule are to be seen as drawn up public documents when the data are finalised in the research process.⁷

⁶ Ownership refers to research data in the capacity of information resource in the organisation. Rules on handling information resources at the university is provided in, for example, freedom of the press act, archive legislation, public access to information and secrecy, as well as GDPR and regulations on information security. Also rules on Intellectual Property Rights should be considered. Research data can, in some cases, fall under copyrights, which can entail restrictions in the university’s rights to produce and disseminate copies of the work without the approval of the copyright holder.

⁷ National Archives report 1997:2, Public right of access and secrecy in authorities’ research
https://riksarkivet.se/Media/pdf-filer/offentlighet-sekretess-1997_2.pdf

Research data shall be stored in an easily accessible way as long as they are deemed valuable for further research and also be prepared for long-term storage and archiving in accordance with the regulations of the National Archives and the university's guidelines. Research data can only be disposed of if there is a rule allowing it. Disposal must follow the local rules on procedures at Karlstad University.

3.2 The principle of public access to information

The principle of public access means that the public and the media have the right to insight into governmental authorities' operations. In principle, this means that Swedish as well as foreign citizens have the right to request reading the documents held by Swedish authorities. Generally speaking, this also applies to research data collected or created at Karlstad University.

The right to request documents is, however, restricted in two ways. First, not all documents held by an authority are public documents; second, certain information in public documents can be confidential (secrecy marked). Before research data are provided under the public access principle, a secrecy assessment must be made in each individual case.

3.3 Data protection management and ethical review

The General Data Protection Regulation⁸ (GDPR), in brief, means that personal data may only be collected for certain justified reasons, that no more data than necessary may be treated, that data may not be stored for longer than necessary, and that treatment should be justified and reasonable in relation to the individual's basic rights and freedoms. It is also important to ensure that personal data are handled in a secure way and that no more people than those authorised have access to the data.

If sensitive personal data (article 9 GDPR) or information of criminal offences (article 10 GDPR) are treated for research purposes, also the rules stipulated in legislation pertaining to ethical review of research on humans must be considered. When these types of personal data are treated, the approval of the Ethical Review Authority is always required. Applicants are first to be submitted to the local ethics board at Karlstad University.

3.4 Information security

Information security involves protecting information against various forms of threat by adapting the technical, physical and administrative environments in which the information is

⁸ Regulations of the European Parliament and council (EU) 2016/679 dated 27 April 2016 on protection of physical persons regarding treatment of personal data and on the free flow of such information and on the repeal of directive 95/46/EG (general data protection regulations) <https://www.datainspektionen.se/lagar--regler/dataskyddsfordringen/dataskyddsfordringen---fulltext/>

handled. With regard to the delicacy of information and the risks involved in the handling, Karlstad University has a general responsibility for implementing appropriate technical and organisational protective measures to ensure and be able to demonstrate that the information is handled appropriately and in compliance with current legislation.

Research data must therefore be handled to ensure that information is protected against unauthorised access (confidentiality), erroneous changes (accuracy), and that the information is accessible when needed (accessibility). It is also important to make sure that the information cannot be changed, requested by or provided to any unauthorised persons (traceability).

The two most important measures for achieving appropriate information security for research data is either to classification of information to be treated (i.e. completely insignificant information, sensitive information, personal data, sensitive personal data or confidential information), or to use the IT resources available for the purpose at Karlstad University. As a rule, research data shall only be handled in the IT systems and cloud services provided by Karlstad University with the appropriate and adapted technical and organisational protection measures.

3.5 Research projects with several principal research institutions

Karlstad University is principal research institution and responsible for research data generated by various researchers and research groups at the university. However, the situation is more complex when it comes to collaboration projects with four principal research institutions. For such projects, agreements regulating the collaboration should as a rule be drawn up, including how research data will be handled in the project. How to handle research data can also be documented by drawing up a data management plan for the project.

Research data collected and created at Karlstad University normally belong to the university. If there are plans to move a research project, or parts of it, to or from Karlstad University, the possibilities to transfer, copy or borrow research data should be investigated.⁹ If research data will be transferred from Karlstad University the National archives must be notified. A researcher who moves from Karlstad University needs to investigate the conditions for transferring data in consultation with Karlstad University and the receiving university before the transfer.

3.6 Data management plans

The process of handling research data continues through the whole life cycle of a research project. The process includes collecting, documenting, processing, storing, sharing, archiving and deleting documents. Proceeding in a structured way and making data accessible will ensure a future reuse of the material.

⁹ The National Archives report on public administration 2019:1, Transferring documents to another authority https://riksarkivet.se/Media/pdf-filer/doi-t/Att_overlamna_handlingar_till_en_annan_myndighet_2019-01-28.pdf

Some funders require a data management plan for the research projects receiving funding. The plan shall describe how the data used in the course of research are collected and/or created will be handled after the project completion. Karlstad University recommends that a plan be drawn up for all projects generating research data, also if not required by the funder.

4. Open access to research data

Open access to research data means that electronic research data and related meta data shall be easily accessible via the internet with as few restrictions as possible. In July 2012, the EU commission recommended the member state to contribute to increased access to research information. As part of Horizon 2020, further recommendations were issued for open science comprising publications as well as research data. The recommendations were updated in the spring of 2018 and describe how member states should promote sharing research data via national action plans and joint storage solutions, as well as incentive programmes, reward systems and, instruction for researchers.¹⁰

In its research strategic proposition, "Knowledge in collaboration: for societal challenges and reinforced competitiveness" the Swedish government states that "research results, such as research data and research publications generated through publicly funded research should be open and accessible as far as possible. Certain types of data, however, require restricted access to protect personal integrity, national security, for example. Openness for research with an innovation potential may need to be restricted for reasons of intellectual property rights. However, it is an important position that open access is the norm and that restrictions in this regard are exceptions".¹¹

Karlstad University actively works towards promoting open access to research data according to the EU commission's and the government's recommendations. Research data which are the result of partly or wholly public funding should without charge make data accessible to further research on condition that there is no legal (e.g. secrecy or rules on personal data handling), ethical, technical or commercial reasons. Access to research data shall, at Karlstad University, follow the principle "as open as possible and as restricted as necessary."

Certain types of data, however, may not be made accessible, not even with restrictions. For obvious reasons, it is not, for example, permitted to publish confidential information openly on the internet, which means revealing secrets, which is a crime. This prohibition also applies to research data containing personal data. There are many occasions on which research data may not be made open and accessible, and an assessment must be made in every individual

¹⁰ Commission recommendations (EU) 2018/790 dated 25 April 2018 on access to and preservation of scientific information. <https://eur-lex.europa.eu/legal-content/SV/TXT/PDF/?uri=CELEX:32018H0790&from=EN>

¹¹ Knowledge in collaboration: for societal challenges and reinforced competitiveness (Prop. 2016/17:50), p. 107 <https://www.regeringen.se/rattsliga-dokument/proposition/2016/11/prop.-20161750/>
<https://www.regeringen.se/4adado/contentassets/72faaf7629a845af9b30fde1ef6b5067/kunskap-i-samverkan--for-samhallets-utmaningar-och-starkt-konkurrenskraft-prop.-20161750.pdf>

case.

Researchers at Karlstad University are responsible for making research data accessible in an appropriate way. There is no requirement that the data should be made accessible before the researchers have published their results. Karlstad University recommends that researchers as a rule make data accessible in an established data repository — completely open or with restrictions based on assessment of appropriateness — with data citation requirements.

5. FAIR principles

The FAIR principles¹² (F - Findable, A - Accessible, I - Interoperable, R - Reusable) play an important part in efforts towards open science. They describe some of the most central guidelines for sound data management and open access to electronic research data. Research data do not need be in digital form originally, but efficient accessibility and FAIR implementation require data in digital form. The FAIR principles were published for the first time in 2016 and since then the EU and a number of research funders, universities and research infrastructures have endorsed them. In Sweden, the Research Council and the Royal Library have the government's mandate to develop criteria for assessing the extent to which research data and scholarly publications meet the FAIR principles.¹³ Altogether, FAIR comprises 15 principles which can be applied to research in all disciplines.

Handling digital research data at Karlstad University should follow the international FAIR principles to the extent it is practicable. Karlstad University strives to make research data with related meta data findable, accessible and reusable for new research purposes long-term, which generally means several generations of the hard and software required for the processing.

However, it is important to note that the FAIR principles do not entail that digital research data should always be open and accessible to everyone. Research ethical assessments, information provided to research participants, personal data protection legislation, and secrecy are factors that always warrant attention before research data can be made accessible beyond the research group, as described under section 5 above.

6. Responsibility for research data management

Karlstad University is principal research institution for the research carried out at the university. This means that the university is responsible for ensuring that all research data are reliable and managed in a legal, appropriate and secure manner in conformity with standard research practice.

As head of the authority, the vice-chancellor has the main responsibility to ensure that

¹² FAIR principles. <https://www.go-fair.org/fair-principles/>

¹³ Criteria for FAIR research data, Research Council 2018, [https://www.vr.se/download-
load/18.ad27632166e0b1efab1cdc/1555322024158/Kriterier-FAIR-forskningsdata_VR_2018.pdf](https://www.vr.se/download/18.ad27632166e0b1efab1cdc/1555322024158/Kriterier-FAIR-forskningsdata_VR_2018.pdf)

operations are carried out according to legislation and efficiently. The vice-chancellor decides on all overarching regulatory documents at Karlstad University.

At faculty level, the dean is responsible for faculty adherence to current legislation and approved regulatory documents regarding research data management. The dean may delegate the responsibility to department heads. Heads of departments are responsible for ensuring that departmental research data are archived and disposed of in compliance with the law.

However, researchers always have the main responsibility for their research and must comply with standard research practice, current legislation and procedures. This also applies to sound and appropriate handling of research data.

Research projects with several researchers from Karlstad University the main responsible researchers should normally be responsible for the research data management. If the main responsible researchers should leave Karlstad University or for some other reason should be unable to perform the task, the responsibility is transferred to the head of department hosting the research project. until a new project leader has been appointed. If research data are transferred to another part of Karlstad University, so is the responsibility for the data.

7. Research data management support

At Karlstad University there is a research data group for issues relating to research data management, data management plans and open access to research data.

The research data group's duty is to inform about research data issues at the university and to ensure that concerned target groups are updated and have the opportunity to get instruction regularly. The research data group also has a supportive and consultative function in terms of advice and recommendations on research data management, data management plans and open access to research data.

The research data group consists of representatives from the central service functions. There is also a reference group with researchers from the faculties. The research data group can be reached at the following address: forskningsdata@kau.se

6. Related documents

Karlstad University's policy and guidelines for handling research data are related to several other regulatory documents. The most important of these are listed below.

- Policy for utilisation
- Publishing policy
- Policy on public access to information and secrecy: Guidelines on handling official documents etc
- Preservation and disposal plan for research data
- Strategy for protecting electronic documents
- Policy for information security

- Model for information classification and information security
- Policy for personal data management
- General regulations for personal data management in research
- Research ethical review procedures at Karlstad University