Research Data Management (RDM) policy at the Institute for Management Research

1. Preamble

More and more often researchers are being confronted by the increase in the attention paid to privacy, integrity and transparency. This includes, among others, how research data is stored and accessed. Both international and national standards have been developed,[1] the new European wide privacy legislation (General Data Protection Regulation) has been implemented, and Radboud University has laid down a number of important principles. Moreover, funding organisations (such as the NWO and the European Commission) have set conditions for the proper management of data, as an integral part of the research proposal or/and within a set period after a grant has been obtained. Likewise, publishers provide guidelines on data management, with some requiring that data be made available for reusing prior to publishing.[2] This memorandum outlines the Research Data Management (RDM) policy at the Institute for Management Research (IMR) and defines how we plan to support researchers in implementing the RDM guidelines.

In November 2013, the Executive Board adopted a policy on research data generated at Radboud University. The policy states that researchers must store and manage their research data and make it accessible to others. The RDM policy of the IMR is in line with the policy set by Radboud University as well as that which has been set by funding organisations and publishers. Below, the general principles that apply to all research projects, irrespective of the type of data collected and stored, are explained.

Data management helps to make conscious decisions about data pertaining to a research project. It avoids the unauthorised access of research data (data leakages), including personal data, which enables an individual to be identified. It also helps to prevent the loss of research data, for example, due to a crashing/corrupted external hard disk, the physical loss of portable storage media, a hack (malware, ransomware) or a virus. Finally, it ensures that data are properly archived and documented, and it facilitates the reproducibility and reuse of data. This means that another authorised person can make sense of the data without receiving any help and the results can be published. This concerns all data pertaining to a project, from raw to published data.

In practice, it is important for all researchers to have their research data safely and securely stored, particularly if a research project involves personal data. The research conducted at the IMR varies and this has implications for how RDM is carried out. Research projects can be based on texts that have already become public, and if this is the case, the measures taken to comply with the IMR policy may be limited. In other projects, it might be important to share sources and practical guidelines to RDM can thus be relevant and prove useful. If research projects are based on data regarding or collected from human beings (personal data), researchers should be more careful and measures for proper data storage and sharing are required. Some of these data can be made public without limitations whereas some of these data should be treated carefully. Moreover, some of these data cannot be shared publicly at all due to privacy restrictions.

[1] Such as the FAIR principles: data should be findable, accessible, interoperable and reusable.
[2] At the time of writing, the guidelines by most publishers are still rather loose and undefined. The requirement to make data available varies from raw data to analysed data to only the data accompanying the tables shown in the publication.

This memorandum is a basic version that will be further developed when necessary, together with the IMR's researchers and the central RDM support unit of Radboud University. There are four general, fixed principles:

1. Writing a data management plan (DMP) is mandatory for all externally-funded research projects and it is always advised for other research projects to do this as well.
2. Necessary security and privacy measures for collecting and storing data should be taken.
3. After the closure of a research project, for reasons of scientific integrity and reproducibility, *all data generated at Radboud University* should be archived at Radboud University for the long term (minimally ten years, but if relevant longer[3]), including the documentation and metadata necessary for understanding the data. There may be exceptions to the rule, for instance when the data are not owned by Radboud University or in case of specific agreements with third parties.
4. If possible and in line with ethical and legal principles, *data intended for the purpose of future reuse, including verification and/or replication*, should be made public according to the FAIR principles for reproducibility and reuse by third parties, at the moment of publication of the corresponding book or article at the latest. The access level can be open (where possible), restricted (if necessary) or under embargo for an indicated period. There can, however, be ethical, legal and/or content-related reasons not to make (part of) the data public.

These principles have been converted to serve as practical guidelines, which explain to researchers how to deal with managing research data in their daily practices of doing research. The RDM policy should be understood in conjunction with other research policies such as ethics and privacy, particularly in the case of data regarding living human beings (personal data), which must be adhered to as well.

Ethical aspects in relation to data management arise in cases in which persons (1) have been subjected to specific treatment or rules of behaviour, (2) are asked to give personal information, (3) may suffer from any negative consequences that follow the research project, (4) have been recorded on media such as tapes or videos, (5) have to agree to an (oral or written) declaration of informed consent, and/or (6) are minors and/or are considered to be legally incompetent. As far as ethical aspects pertaining to data storage and management are concerned, the researcher has to comply with standards that have been laid down by the ethics committee. Funding organisations and journals increasingly require a formal ethics approval before research can be carried out.

RDM must be in line with Radboud University's privacy and security guidelines concerning data protection. In cases where data include personal information (this could lead to an individual being identified), additional attention should be paid to storing and managing data.

2. Definitions

In the context of this memorandum, a research project can be defined as a '(funded) research activity which has defined start and end dates' (source: CASRAI dictionary). As such, a research project includes clear research aims and questions, posed by scientific theories and hypotheses, and guided by scientific methods. It usually results in research output, such as publications and/or datasets.

[3] For data that by their very nature cannot be remeasured, however, effort should be made to retain them `in perpetuity'. Data archived via RIS/DANS are in principle retained 'in perpetuity'.

If research conducted at the IMR does not match this definition, it is still advisable to minimally integrate those aspects of data management that serve towards achieving safety and security of data, such as preventing data leakages and data loss; as well as making data public for reuse by third parties if data are perceived to be relevant or valuable for future use.

In this memorandum, various terms related to data, data storage and management are used. For an explanation and definitions of terminology, the following website can be visited.

3. Responsibilities and duties

The RDM policy of the IMR is mandatory for all researchers who conduct a research project which falls under the institute's responsibility. This policy's main focus is on research projects that were recently started and those in the future from 2018 onwards. However, for scientific integrity (including verification and/or replication) and the safe and secure storage of data (such as preventing data leakages and data loss), guidelines for data management can be applied retrospectively as well, as required by (inter)national regulations. It should be considered to make data public retrospectively when data are perceived to be relevant or valuable for reproducibility and/or future use.

The vice-dean of research at the Nijmegen School of Management is accountable for all data management at the IMR. The principal investigator of a project carries the first and primary responsibility for correct and accurate data management, together with the participating researchers. PhD candidates are responsible for the data they collect for their dissertation, together with their supervisors. If responsibilities are explicitly divided, in cases such as (international) collaboration or working with third parties, this should be documented in the DMP, for example, or in a legal agreement.
The RDM policy of the IMR includes data collected by students (Bachelor's, Master's and Research Master's), which falls under the responsibility of the supervisor and the vice-dean of education at the Nijmegen School of Management.

In cases where the IMR is a subscribing partner to an external organisation or collaboration, it will seek to ensure in a formal document (such as a collaboration agreement) that such organisations guarantee safe and secure management of data for the project concerned.

The institute has appointed a data steward who guides, monitors[4], and supports the storage and management of data by researchers. The data steward gives advice regarding the consequences the RDM policy has for research projects. The data steward offers tailor-made solutions and answers questions. Additionally, support and training are offered by Radboud University's central RDM support unit (www.ru.nl/rdm). In order to monitor the management of data, research projects should be registered at an early stage by the IMR Research Services.

4. Intellectual property rights

Formally speaking, Radboud University is entitled to store, manage, and grant access to the research data generated by its researchers. In practice, on a daily basis, data are managed by the researcher, and therefore both the research institute (director) and the researcher are accountable for proper data management. In cases where cooperation takes place among students, interns, visiting researchers and/or other institutions, and in cases of contracts and subsidised research, the Radboud University's directive should be consulted in regard to the control of research data.

[4] Including checks of DMPs and/or datasets.

Following from the guidelines on the control of research data, from a legal point of view, not all data may be archived and made public for reuse by third parties. This is particularly true in those cases in which secondary data is not owned by Radboud University. Often, the use of secondary data in a research project is accompanied by a data use agreement between the data (re)user (for instance, a researcher at Radboud University) and the data owner (such as an organisation for statistical data). Another situation that complicates archiving and making data public is (international) collaboration. Clear agreements (for instance, via a DMP) have to be made to prevent loss of data and/or data leakages and/or to coordinate making data public. Contact the data steward for procedures on archiving and making data available in the case of secondary data and (international) collaboration.

Regarding the reuse of data, specific terms of use and additional licences can be developed, with the support of the data steward and the legal department, or through an open data or creative commons licence.

In those cases in which agreements with other institutions, funding organisations and journals deviate from the requirements of this RDM memorandum, the vice-dean of research should be consulted.

5. Practical guidelines

Detailed information and practical guidelines on RDM can be found on the IMR's intranet. For further information and an outline of the research infrastructure that is available at Radboud University, the University's central RDM website (www.ru.nl/rdm) is useful as well. Costs for data management are to be included in a research project's budget and a DMP.