

A survey on the current status of Research Data Management in Mecklenburg-Vorpommern

Preliminary results for a questionnaire study among researchers

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Abstract: High quality research data management (RDM) is essential to support state of the art comprehensible and reproducible research processes and, thus, foster the sustainable production of novel and trustworthy research findings. While there are lots of national and international initiatives supporting researchers in all respects of RDM, the local infrastructures provide the foundation for these concepts. In this contribution, we present preliminary results of a study that collects the requirements of researchers on these local infrastructures in all seven higher education research institutions in Mecklenburg-Vorpommern (MV).

Keywords: Research Data Management, Mecklenburg-Vorpommern, Mecklenburg-Western Pomerania, Higher Education Research, Online Survey

The initial development of the study was driven by the goal of measuring the needs of the federated state MV in terms of RDM. For this purpose, an online questionnaire was developed that aims at collecting information about

1. What is the current state of RDM in MV?
2. Which aspects influence the implementation of RDM?

Table 1. The number of survey participants for each institution.

Institution	# Participants
University of Greifswald	40
University of Rostock	161
University Medical Center Greifswald	48
University Medical Center Rostock	41
Neubrandenburg University of Applied Sciences	3
Stralsund University of Applied Sciences	12
Wismar University of Applied Sciences	23
Sum	328

3. Are there discipline-specific differences, and what role does the experience and the position of researchers play in the implementation of RDM?
4. How much effort do researchers put into specific aspects of RDM and how do they rate their significance?

By conducting this study, we aim at deriving future directions of institutional support in MV. Thus, this study can provide the foundation for a strategy of the federated state MV with respect to RDM.

Similar studies have been conducted at institutional level, e.g. Arndt, Glatz, Hummel, *et al.* have investigated how researchers deal with their data at the University of Applied Sciences Potsdam [1], and also discipline-specific level, e.g. Senft, Stahl, and Svoboda have surveyed RDM in the agricultural sciences [2]. While we considered these studies during the development of the questionnaire, the focus of our study is different so that most questions are not comparable to the other investigations. However, some questions that fit into the focus have been integrated from [1], [2].

To obtain information for our goal, the questionnaire contained eight content sections with an additional section at the beginning in order to ask for the participants' informed consent. In order to ease answering, the questionnaire was conducted in German language. The eight content sections are oriented to the research data life cycle [3]:

1. **General questions** that ask for the three most important aspects of RDM in the participants' research activity, as well as several summary questions on participants' RDM practice such as: "Have you ever published research data?". While aiming at introducing participants into the spectrum of topics in RDM, further sections, that do not apply for the participant, will be hidden based on selections.
2. **Research data management in the working group** contains questions about participants' basic RDM practice such as the methods they typically use to collect their research data, the most important data formats, and the amount of data they handle.
3. **Concepts, methods, technologies and tools for research data management** contains questions about the usage frequency of several state-of-the-art RDM concepts etc., e.g. data management plans, minimal information standards, ORCID, or electronic lab notebooks (ELN).
4. **Data storage and sharing** asks participants about the frequency of different storage systems and sharing methods, e.g. mobile storage media, institutional and external repositories, and institutional and external cloud systems. Furthermore, questions regarding the effort and the significance of sharing with different stake-

holders, e.g. the working group and the project partners, other researchers, or reviewers, are asked.

5. **Archiving and publishing** concerns different media and platforms for archival and publication, e.g. institutional and external repositories, as well as questions regarding the kind of publication, e.g. as supplement material or in a data repository, and the type of data, e.g. raw data or cleaned data. Furthermore, this section also contains questions regarding the effort and significance for the participants' research.
6. **Re-use** collects information about sources used to search for existing data and from which data has actually been re-used, as well as the source of data availability inquiries towards the participants. Again, the effort and significance of these aspects has been surveyed in advance.
7. **Standards and processes** asks participants about several aspects regarding their research processes, e.g. which standards they use as well as the source of these standards. In addition, the significance of several technical aspects for the participants' research is requested, e.g. the storage of data within the institution, the availability of a graphical user interface (GUI) and the availability of an application programming interface (API) for tools and services. Participants are also asked to rate the effort and significance of some standard research tasks, e.g. textual documentation of research investigations independent of a publication.
8. **Academic background** contains questions regarding the highest academic degree, the research discipline according to the DFG, the role of the person in the working group, how the participants rate their knowledge, the probability of attending a training, and the importance of RDM for their research.

After a pretest, the revised questionnaire was employed to collect answers from all higher education research institutions in MV using the evasys¹ survey platform at the University of Rostock. The institutions that have been surveyed are:

1. University of Greifswald,
2. University of Rostock,
3. University Medical Center Greifswald,
4. University Medical Center Rostock,
5. Neubrandenburg University of Applied Sciences,
6. Stralsund University of Applied Sciences, and
7. Wismar University of Applied Sciences.

Universities of public administration or labour studies and private institutions are not included in the study in order to reflect the target group: researchers in higher education research institutions of the federated state MV. The invitations for the questionnaire were sent to professors, scientific staff, and doctoral candidates in every institution via e-mail utilizing corresponding mailing lists. Two weeks after the initial invitation, in most institutions, a reminder was sent. The questionnaire was open for four weeks at each institution and the data collection was performed between March 13th, 2023 and April 30th, 2023.

In total, 328 participants filled the survey. To the best of our knowledge, this is the largest survey on RDM in Germany and MV in particular. The participants' distribution across the institutions is presented in Table 1. Figure 1 presents the answers of the participants regarding their role (top) and their primary research discipline according to the DFG subject classification (bottom). Interestingly, all 14 disciplines are represented

¹<https://evasys.de/evasys/>

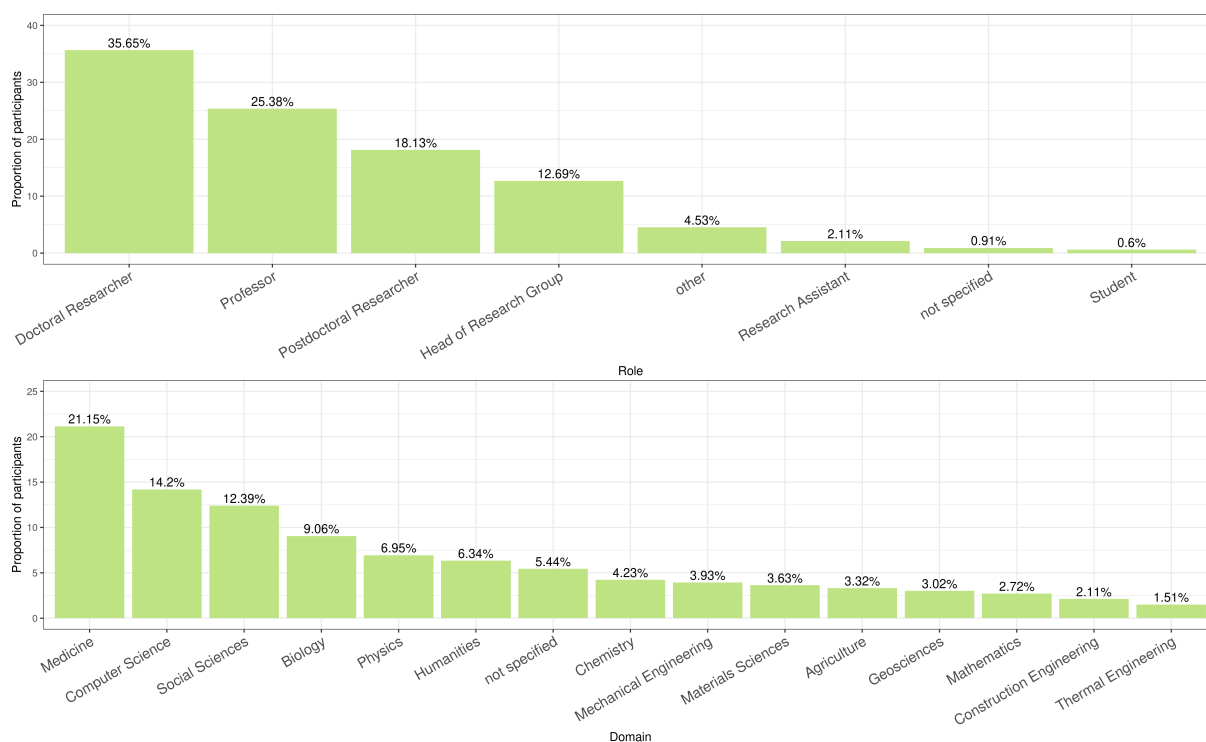


Figure 1. Distribution of participants' disciplines and roles aggregated for all participating institutions. Please note that discipline names are shortened to improve the visualization.

within the participants though the amount is different between the disciplines. In this contribution we will present preliminary results of this study.

Data availability statement

This article reports on the preliminary results of a survey regarding research data management across Mecklenburg-Vorpommern. The questionnaire is published at Zenodo: [4]. All data will be published together with a detailed analysis of the results of the survey.

Author contributions

MS: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Validation, Writing – original draft; **SG:** Writing – original draft; **RK:** Resources; **SSc:** Resources; **RS:** Resources; **SSp:** Funding acquisition, Supervision; **GS:** Resources; **DW:** Resources; **FK:** Conceptualization, Formal Analysis, Funding acquisition, Supervision, Visualization, Writing – original draft

Competing interests

The authors declare that they have no competing interests.

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