

Towards the sustainable use of
psychological research data

Newsletter PsyCuraDat

Edition 1 | PsyCuraDat: First results

Announcement

In the context of the Open Science Movement, it is more important than ever that we develop common standards ensuring the long-term interpretability of psychological research data by considering the discipline- and method-specific requirements.

The project PsyCuraDat aims at the development of a user-oriented documentation standard considering the different requirements of researchers in their role as contributors and users of research data. Here we present first results stemming from ten expert interviews and an online survey.

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Metadata in Psychology: What researchers really need

One central element, if one wants to develop user-oriented curation criteria for psychological research data, is the exploration of researchers' needs. In particular, the development of a documentation standard for psychological research data that is oriented towards discipline-specific methods for the reuse of these data requires, among other things, interviewing experts for these methods. Therefore, ten semi-structured interviews were conducted with experts in different psychological methods (e.g. meta-analysis, simulation studies, re-analyses). The experts, coming from Asia, Europe, and the USA, were interviewed on twelve topics, eight addressing secondary data use from the perspective of a data user and four from the perspective of a data provider. On the one hand, these were topics like: frequent reuse purposes or metadata needed for optimized reuse and on the other hand: metadata provided for upload or metadata that researchers think should be included in a documentation standard for psychological research data.

„...the first and maybe most important thing, I think, would be a detailed codebook.”

Perhaps the most important finding drawn from these interviews, which at the same time underlines the significance of our methodological approach, is that researchers do not need more bibliographical metadata, but method-specific metadata. In particular, the majority of the interviewees stated that they would need a codebook, analyses and data preparation scripts, as well as something like a study protocol (for a complete overview see Figure 1).

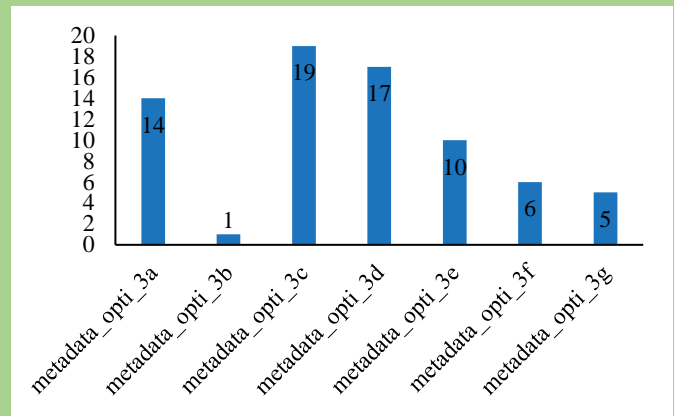


Figure 1. Absolute frequencies of metadata relevant to an optimized reuse of psychological research data. Response categories: metadata_opti_3a (codebook), metadata_opti_3b (information on study quality/reliability), metadata_opti_3c (study-protocol), metadata_opti_3d (scripts), metadata_opti_3e (statistical characteristics), metadata_opti_3f (machine-readable/standardized metadata), and metadata_opti_3g (links).

If you want to read the entire publication, you can find it in the disciplinary repository PsychArchives under the following doi: <http://dx.doi.org/10.23668/psycharchives.2750>

Metadata in Psychology 2.0: What researchers really need

The contextual specification of a user-oriented documentation standard for psychological research data is critically dependent on representing researchers' needs in the most objective way possible. To get an impression of researchers' needs in their role as contributors and users of research data, an online survey addressing these topics was conducted. Accordingly, the online survey was aimed at two objectives. The first goal was to test for the reliability of the conclusions derived from the expert interviews, which addressed the same topics. The second and final goal was to get a more precise picture of researchers' documentation needs by explicitly asking them about the perceived usefulness of metadata that are representative of psychological research methods.

In order to explore which metadata are most valuable for psychologists when reusing data for different purposes, we asked researchers which out of 12 method-specific metadata they would need to optimize their work in four pre-defined reuse scenarios (meta-analysis, systematic review, re-analysis, illustrations). Researchers could also name three further reuse purposes and indicate the corresponding metadata for them. The absolute frequencies for the selected metadata dependent on the corresponding reuse purpose are presented in Table 1. In virtue of the relatively small number of other reuse purposes mentioned by the researchers, the absolute frequencies of the metadata selected for these purposes are summarized. Not surprisingly, the descriptive analysis and the binary logistic regressions, used to explore the possible different documentation needs, indicate that researchers need more method-specific metadata for a statistical reuse of psychological research data compared to a mere presentation purpose (e.g. illustrations in a lecture or at a conference).

Table 1

Metadata needed for different reuse purposes

Metadata	Meta-analysis	Systematic review	Re-analysis	Illustrations	Others
Hypotheses	23	25	25	3	6
Sample size	38	33	38	4	5
Inclusion/exclusion criteria	35	35	33	5	4
Setting	30	34	29	5	3
Sampling method	32	32	30	6	4
Kind of research design (e.g. correlational, experimental)	36	37	33	8	4
Included variables (e.g. dependent/independent variables)	36	36	37	9	5
Random/Non-random assignment	33	32	30	4	2
Primary outcome analyses	36	32	27	5	5
Additional outcome analyses	32	30	25	5	2
Mediation analyses	26	27	19	5	2
Material	25	25	32	7	3

Note. The cells include the absolute frequencies for the different metadata selected in the context of a specific reuse purpose

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