



ELEPHANT

IN THE LAB

SHORT ANALYSIS

DATA SHARING AND INFORMATION LITERACY

Short title	Data Sharing and Information Literacy
Long title	Promoting Data Sharing by Improving Data Information Literacy in German Academic Libraries
Authors	Dorothea Strecker ¹
Author affiliation	¹ FH Potsdam
Author bios	Dorothea Strecker is currently studying library management at the University of Applied Sciences in Potsdam. Her interests are mainly focussed on research data management, Open Science and the interaction of copyright law and the information society.
Author social links	Dorothea Strecker: ORCID - Twitter - ResearchGate
Date published	17 November 2017
DOI	https://doi.org/10.5281/zenodo.1052011
Cite as (APA)	Strecker, Dorothea (2017). Promoting data sharing by improving data information literacy in German academic libraries. <i>Elephant in the lab</i> . DOI: https://doi.org/10.5281/zenodo.1052011

Sharing data publicly adds value to research. The same data can potentially be used for new questions in different contexts. Furthermore, by making data publicly available, results become more transparent. This adds to the efficiency and quality of publicly funded research (Fecher, [2016](#)). Individual researchers can also benefit from making their data available: Publications are reported to receive more citations if the underlying data are published (Piwowar et al, [2013](#)).

Yet, public sharing of research data can be interpreted as social dilemma - despite the citation advantage, researchers are still reluctant to share their data. A recent survey among researchers showed that while 76% of respondents agree that research data should generally be published, only 13% of respondents have shared their data publicly before (Fecher et al, [2017](#)).

If data sharing has so many benefits, why don't all researchers share their data?

Besides missing incentives to share data, the aforementioned survey also concluded that knowledge regarding data management had a positive effect on researchers' data sharing behavior. Lack of curation skills and missing awareness of suitable repositories deter researchers from sharing data (Fecher et al, [2015](#)). This shows that knowledge regarding data management is an important factor in an individual researcher's willingness to share their data.

The knowledge and skills associated with handling research data are subsumed under the concept of "data information literacy" (Carlson und Johnston, [2015](#)). Promoting information literacy is traditionally considered an essential objective of German academic libraries (Piloiu, [2016](#)). As libraries and other information service providers are expanding the definition of their competences to include research data management, they are starting to develop services aiming at promoting data information literacy (Helbig, [2017](#)). A recent study showed that many libraries in western Europe already offer consultative research data services or plan to do so within a year. For example, 70% of the responding libraries consult or plan to consult researchers on data management plans (Tenopir, [2017](#)).

In Germany, several universities have conducted surveys among students and researchers to assess the needs for research data services. The first analysis was conducted at the Humboldt University Berlin in 2013 (Simukovic et al, [2013](#)). In the following years, other universities used and modified the questionnaire for their own purposes, eleven of which have published the results of their needs assessments.¹ Of these eleven surveys, eight (Humboldt University Berlin, University Münster, University Kiel, University Marburg, University Kassel, University Hamburg, University Hannover and University Gießen) covered multiple disciplines and asked specifically for information services (Table 1).

A systematic comparison of these eight surveys shows that only a small percentage of respondents (6.8-16%) expressed no need for information services.

¹ A curated (although currently incomplete) list of publications is available here: http://www.forschungsdaten.org/index.php/Umfragen_zum_Umgang_mit_Forschungsdaten_an_wissenschaftlichen_Institutionen

SHORT ANALYSIS

	Humboldt University Berlin	University Münster	University Kiel	University Marburg	University Kassel	University Hamburg	University Hannover	University Gießen
published	2013	2014	2015	2015	2015	2016	2016	2017
n =	499	667	218	427	207	90	247	266
General	30.66%	39%	41.28%	47.2%	56.2%	31.2%	51.4%	42%
publishing , citation	31.46%	33%	35.32%	41.3%	26%	33.2%	38.1%	41%
technical	47.47%	48%	59.17%	66.1%	69.8%	56%	64.4%	-
curation		-	44.5%					-
legal	51.3%	53%	55.5%	61.5%	66.9%	53.2%	67.2%	70%
long term preservation	-	-	-	-	-	-	-	59%
no need	9.61%	16%	9.17%	-	-	6.8%	9.7%	-

Table 1: Results on data management surveys across German universities

Across all surveys, most respondents (51.3-70%) expressed the need for information services concerning legal issues, such as copyright law, licensing and protection of privacy. Between 47.47 and 69.8% were interested in information on technical/curation aspects, including metadata, standards and digital preservation. Respondents showed little less need for information on research data management in general (30.66-56.2%) and on publishing and citing data (26-41.3%).

The systematic comparison of needs assessments points to a high demand for information services in general. It also reveals a similar pattern across all surveys. This indicates that there are common information needs among German students and researchers, especially concerning legal and technical/curation issues.

As mentioned before, knowledge gaps prevent researchers from publishing their data. Since the demand for information services covering legal and technical/curation aspects are especially high, the lack of knowledge in these areas appears to be a significant barrier to data sharing.

Measures aiming at changing researchers' data sharing behavior should take their information needs into account. Libraries and other information service providers can - and some already do - use their expertise in information literacy instruction and support researchers in overcoming these obstacles.

References:

- Carlson, J., & Johnston, L. (2015). *Data Information Literacy: Librarians, Data and the Education of a New Generation of Researchers*. Purdue University Press. Retrieved from <https://www.open.org/record/626975>
- Fecher, B., Friesike, S., & Hebing, M. (2015). What Drives Academic Data Sharing? *PLOS ONE*, *10*(2), e0118053. <https://doi.org/10.1371/journal.pone.0118053>
- Fecher, B., Friesike, S., Hebing, M., & Linek, S. (2017). A reputation economy: how individual reward considerations trump systemic arguments for open access to data. *Palgrave Communications*, *3*, 17051. <https://doi.org/10.1057/palcomms.2017.51>
- Fecher, B., & Wagner, G. G. (2016). A research symbiont. *Science*, *351*(6280), 1405–1406. <https://doi.org/10.1126/science.351.6280.1405-b>
- Helbig, K., & Aust, P. (2017). *Kein Königsweg - die Vermittlung von Forschungsdatenkompetenz auf allen universitären Ebenen* (p.). o-bib. Das offene Bibliotheksjournal / herausgegeben vom VDB. <https://doi.org/10.5282/o-bib/2017H1S108-116>
- Piloiu, R. G. (2016). Rethinking the concept of ‘information literacy’: a German perspective. *Journal of Information Literacy*, *10*(2), 78. <https://doi.org/10.11645/10.2.2126>
- Piwowar, H. A., & Vision, T. J. (2013). Data reuse and the open data citation advantage. *PeerJ*, *1*, e175. <https://doi.org/10.7717/peerj.175>
- Simukovic, E., Kindling, M., & Schirmbacher, P. (2013, October 16). Umfrage zum Umgang mit digitalen Forschungsdaten an der Humboldt-Universität zu Berlin. Humboldt-Universität zu Berlin, Zentraleinrichtung Computer- und Medienservice (Rechenzentrum). Retrieved from <https://edoc.hu-berlin.de/handle/18452/14220>
- Tenopir, C., Talja, S., Horstmann, W., Late, E., Hughes, D., Pollock, D., ... Allard, S. (2017). Research Data Services in European Academic Research Libraries. *LIBER QUARTERLY*, *27*(1), 23–44. <https://doi.org/10.18352/lq.10180>