When research data is shared freely

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In recent years, Norwegian researchers have increasingly published their research in open access journals. Some go one step further and share their data.

When TIK researchers Lars Wenaas and Magnus Gulbrandsen were

planning to publish a new study in autumn 2022, it was clear to them that it should be published in an open access journal.

"Given that I'm writing my doctoral thesis on open access, it'd be strange if I'd decided to do anything else," says Wenaas, and is backed up by his colleague Gulbrandsen.

However, the two went even further. They had analyzed around 180 documents. From these, they had retrieved a large series of abstracts and information that provided the material on which they based their research. They chose to publish this at the same time as the study.

Stricter requirements from the Research Council of Norway

Publishing the data set behind a study was a first for Gulbrandsen, who has a long research career behind him.

"The most common thing to do is to write a long method section and use this as the grounds for why the reader should trust you. I think going a step further is cool," he says.

The Research Council has followed the global open access trend and given Norwegian researchers a little nudge: open publishing, in some form or other, is a prerequisite for project funding, unless the researchers have good reasons for not doing it.

In 2017, the Research Council also decided that researchers who received support from them must consider producing a data management plan. This should, among other things, show whether the data will be shared and, if so, how.

Allows for verifiability

In Norway, the proportion of research being published openly has increased considerably in the past ten years. While less than 40% of Norwegian research articles were published openly in 2013, in 2021 that proportion had increased to around 75%, according to the OA barometer from the service provider, Sikt.

Sharing data is not quite as common.

"For us, it's about good scientific practice. About transparency. When we share data openly, the article's readers can check whether the data supports what we are writing. Verifying research findings can be very difficult without access to the data set," says Wenaas.

Many studies have pointed out the challenges of verifying the findings of studies, which has been called the replication crisis.

The two researchers point to experiments such as the Marshmallow Experiment in which a U.S. research group studied children's self-control. Very few children managed to wait fifteen minutes for a marshmallow, despite the fact that they would get twice as many if they could. The children's capacity for self-control remained fairly stable until their teens, according to the study.

New studies have since questioned the findings of the Marshmallow Experiment.

"The findings are simple and intuitive, although they have not been easy to replicate, in part because the data set has not been available. This is true for a lot of research," says Gulbrandsen.

Not all data should be shared

Another benefit of transparency in relation to data material is that the data can, in principle, be used in other contexts, points out Wenaas.

"Not everything is suitable for reuse, but the option exists," he says.

However, the pair stress that there are circumstances in which publishing a data set is not as easy, such as interview data that you have promised to anonymize.

"What if you want to make more use of the data yourself first before sharing it?"

"It's not uncommon to want to make full use of data sets before publishing them. However, you can chose to share parts of the data, the parts that support what you are publishing in the first place. That's the minimum option," says Wenaas.

A question of culture

Wenaas and Gulbrandsen also believe that data sharing is a question of culture. It is new to many, for others it may have been the practice for a long time.

According to UiT The Arctic University of Norway's data-sharing service, which they have personally used, far more data sets have been shared in the natural sciences and health than in the social sciences. To the extent that the service is representative, it is less common to share data within the social sciences and humanities.

They also point out that sharing data also requires time and effort.

"It's a type of additional work for which you don't get merit. It has been a manageable job for us because the data set is small. If you have a larger data set, it becomes a real and expensive challenge," says Wenaas.

An open future?

The two of them are convinced that guidelines from the Research Council have been a decisive factor in the trend in recent years of increasingly publishing in open access journals.

Wenaas and Gulbrandsen believe that data sharing will continue.

"I think sharing data will eventually become the norm. It is part of the greater concept of open science. Those who fund research are increasingly requiring it, as are public stakeholders. The EU is focusing heavily on it. Journals have also started to require it, so we're now being encouraged to from several sides," says Wenaas.

The Research Council bases its guidelines on the international FAIR principles, which say that data must be: Findable, Accessible, Interoperable and Reusable.

More information: Lars Wenaas et al, Supporting Data for: The green, gold grass of home: Introducing open access in universities in Norway, *DataverseNO* (2022). DOI: 10.18710/iqgchb

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