

Data sharing is the practice of making data used for scholarly research available to other investigators. Many funding agencies, institutions, and publication venues have policies regarding data sharing because transparency and openness are considered by many to be part of the scientific method.

A number of funding agencies and science journals require authors of peer-reviewed papers to share any supplemental information (raw data, statistical methods or source code) necessary to understand, develop or reproduce published research. A great deal of scientific research is not subject to data sharing requirements, and many of these policies have liberal exceptions. In the absence of any binding requirement, data sharing is at the discretion of the scientists themselves. In addition, in certain situations governments and institutions prohibit or severely limit data sharing to protect proprietary interests, national security, and subject/patient/victim confidentiality. Data sharing may also be restricted to protect institutions and scientists from use of data for political purposes.

Data and methods may be requested from an author years after publication. In order to encourage data sharing and prevent the loss or corruption of data, a number of funding agencies and journals established policies on data archiving. Access to publicly archived data is a recent development in the history of science made possible by technological advances in communications and information technology. To take full advantage of modern rapid communication may require consensual agreement on the criteria underlying mutual recognition of respective contributions. Models recognized for improving the timely sharing of data for more effective response to emergent infectious disease threats include the data sharing mechanism introduced by the GISAID Initiative.

Despite policies on data sharing and archiving, data withholding still happens. Authors may fail to archive data or they only archive a portion of the data. Failure to archive data alone is not data withholding. When a researcher requests additional information, an author sometimes refuses to provide it. When authors withhold data like this, they run the risk of losing the trust of the science community. A 2022 study identified about 3500 research papers which contained statements that the data was available, but upon request and further seeking the data, found that it was unavailable for 94% of papers.

Data sharing may also indicate the sharing of personal information on a social media platform.

In the present book, fifteen typical literatures about Data sharing published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on Data sharing. We hope this book can demonstrate advances in Data sharing as well as give references to the researchers, students and other related people.¹

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¹ https://en.wikipedia.org/wiki/Data_sharing