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French Open Science Monitor

frenchopensciencemonitor.esr.gouv.fr

The tool which measures the evolution of open science in France using **reliable**, **open** and **controlled data.**

2018 — *First French plan for open science 2018-2021*

Launch of the Monitor — **2019**

First local variation
by University of Lorraine

2020

New website for the Monitor
Dozens of indicators displayed

Health Monitor
Publications, clinical trials and observational studies

2021

New indicators
Research data, software and code, PhD theses

Second French plan for open science 2021-2024 — **2023**

KEY FIGURES

67%
of French publications published in 2021 are open access

74%
of PhD theses defended in 2020 are open access

[beta]
22%
of French publications published in 2021 and mentioning the production of data share a dataset

What are the objectives?

From the launch of the national plan for open science in 2018,
the **Open science Monitor was designed as:**

- A **autonomous and upgradeable** tool assessing the impact of the open science policy, under **open and therefore non proprietary licences**,
- A **strategic** tool enabling to sharpen and adjust policies promoting open science
- A **measuring** tool for open science practices and their **development** through time
- A lever for **deepening our understanding** of the production of research in France

The team behind the project

The French Ministry of Higher Education and Research (MESR), in charge of coordinating the open science policy nationwide, runsthe monitor. Three specific institutions are involved:

French Ministry of Higher Education and Research (MESR) **University of Lorraine** **Inria**

An unprecedented combination of various expertise

- Software architecture
- Data engineering
- DevOps and Cloud engineering
- Data science and machine learning
- Data analysis
- UX / UI / data design
- Front-end development
- Communication

What for? Uses and services

The monitor is used as a tool, a source of information and is used to supply new services.
It is aimed at a variety of audiences, for instance:

Decision-makers at a national level in the field of higher education and research

The monitor enables them to assess the progress of open science and pinpoint areas for improvement.

Decision-makers within higher education and research institutions

They use the national results to standardize what they do at a local level. Using their own data, they also have the opportunity, at practically zero cost, to design their own local variation of the monitor, including all areas of the analysis.

French officials amid European or International talks

Tangible data that is easily shared with counterparts enables to substantiate and reinforce the positions held by France.

Journalists, researchers, university lecturers...

Open access to the dashboard allows the use of its data and visualisation for research, articles, investigations...

What are the key assets?

As a key enabler to France's open science policy, the monitor was designed along the same **principles of public sharing and openness** so as to encourage **transparency** and **reuse**.

The most comprehensive tool available worldwide

The monitor relies on a database of French scientific production which is recognised as the most comprehensive to date. It catches **more than 90% of French scientific publications,** compared with less than 60% spotted by Clarivate Analytics's Web of Science (WoS) tool, a worldwide standard*.

* Lauranne Chaignon, Daniel Egret; Identifying scientific publications countrywide and measuring their open access: The case of the French Open Science Barometer (BSO). Quantitative Science Studies 2022; 3 (1): 18–36. doi: doi.org/10.1162/qss_a_00179

Open source code and open data

From the beginning, the monitor's code was made available on **GitHub under open license.** Its database is available under **Etalab license** on the on MESR's open data portal* as well as on Data.gouv, the open platform for French public data**.

* data.enseignementsup-recherche.gouv.fr
** data.gouv.fr

A transparent and substantiated methodology

Each significant amendment to the methodology is communicated either via a scientific conference or through a scientific publication*.

* Laetitia Bracco, Anne L'Hôte, Eric Jeangirard, Didier Torny. Extending the open monitoring of open science: A new framework for the French Open Science Monitor (BSO). 2022. hal.science/hal-03651518

Easily reproduced by universities, labs, grandes écoles...

Following the first initiative to reproduce the open science monitor by the University of Lorraine in 2020, the MESR team has drafted an easy process for stakeholders on the ground. To this date, **more than 70 research performing organisations, universities, grandes écoles and research centers** have crafted their own tailored monitor. Such dynamism is reflected in the more than 170 subscribers to the newsletter devoted to local monitors.

A website to visualize and explore the data

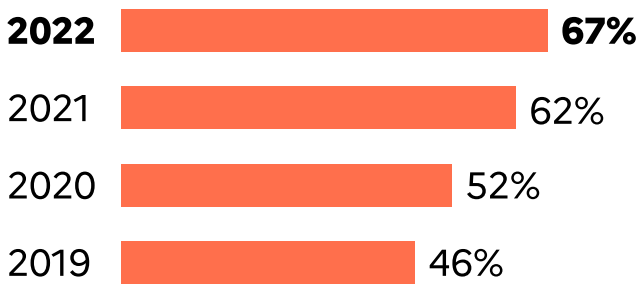
The monitor is equipped with a new website displaying dozens of indicators organized by themes. Each provides **interactive data visualizations** to ensure easy access to the information for all. Graphs can be embedded and tailored to facilitate reuse on other websites.

2022

Key results of open science in France

Publications

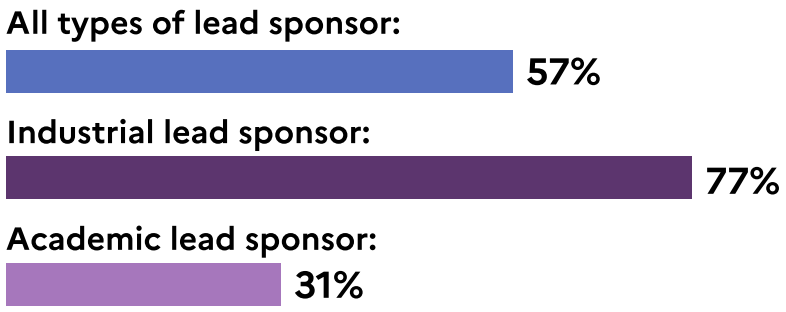
Open access rate of scientific publications in France, with a Crossref DOI, published during the previous year, by observation year



67% of the 160,000 publications published in France in 2021 are in open access. This increase, for the fourth consecutive year, reflects the evolution of researchers' publication practices and the efficiency of public policies promoting open science.

Clinical trials

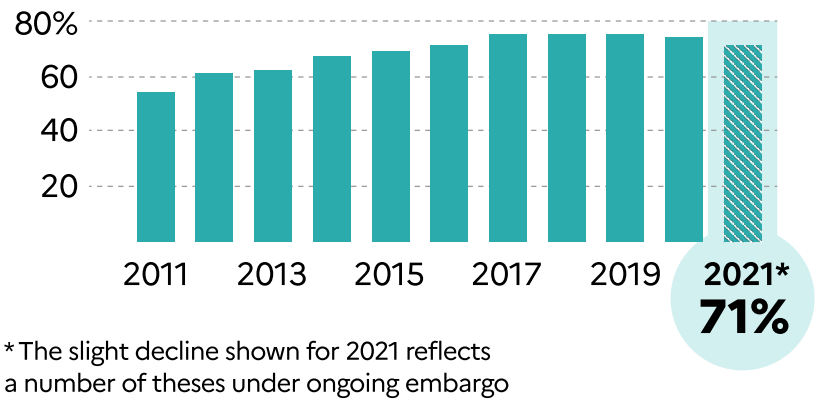
Share of clinical trials registered and completed in France in the past 10 years that have posted or published results



The openness of results of clinical trials has not progressed since the later edition, with a sharing ratio of 57%. Yet publishing the results of trials is key to efficient decision making in public health. The significant variation between industrial and academic sponsors should be noticed.

PhD theses

Opening rate of doctoral theses in France by year of defense (observational year 2022)



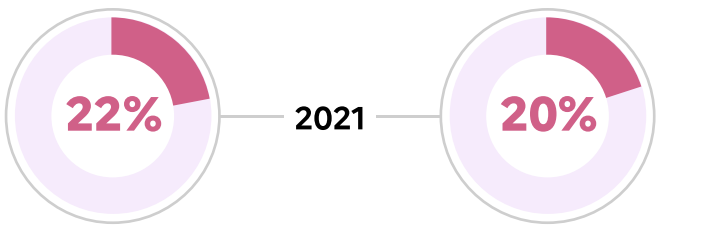
* The slight decline shown for 2021 reflects a number of theses under ongoing embargo

74% of doctoral theses defended in 2020 are in open access, showing a stable ratio since 2017. As with publications, sharing ratios vary significantly between fields.

Research data and software

[beta]

Proportion of publications sharing:



Amongst publications published in France in 2021 mentioning the production of data, 22% are referring to sharing a dataset. The sharing ratio for software and code is 20% in 2021.

What are these results based upon?

Our sources

The Ministry has decided not to rely on proprietary bibliometric databases as they conflict with the principles of open science: their proprietary data cannot be shared and do not encompass the full extent of scientific production in France. To mitigate the lack of open metadata, the monitor's team relies on R&D centred around machine learning.

frenchopensciencemonitor.esr.gouv.fr/about/methodology