



# 8<sup>th</sup> World Conference on Research Integrity (Hybrid)

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## Transition to Open Science. Advances in integrity and reproducibility of research in the Spanish university system

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For the Open Science Policy Platform (OSPP) there are issues that are a priority to promote the **integrity of research** in the Open Science framework.

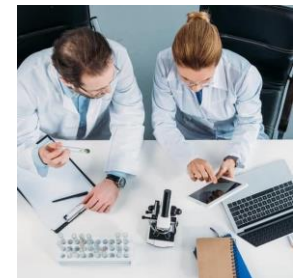
- The development of the **European Open Science Cloud (ESOC)**



- The requirement for **FAIR data**



- The **commitment to research integrity** policies by scientists



For universities, **Open FAIR data**, together with ethical codes, are instruments that facilitate the integrity and reproducibility of research.

The main aim is **to analyze the progress of the Spanish University System (SUS) to strengthen the integrity of research through the implementation of the Open Science principles**. Three objectives are proposed:

- O1.** To identify **policies and strategy** on open science, especially on **open data** access and availability of structures to make FAIR data available
- O2.** To analyze the **status of 3 pillars of open science related with integrity (research data repositories, FAIR and ethical codes)**
- O3.** To know **researchers' attitudes and practices to share data**

This information will allow us **to identify the barriers and changes necessary for the transition to an improved open science model, which enhances integrity research** in the Spanish University System.

Different sources of information were used to diagnose the situation in Spain.

- 1 Review of official sources of information: national, regional and institutional regulations, policies, and strategies
- 2 Consultation of reports and documents with results on the implementation of open science (mainly open research data)
- 3 Survey of 251 university professors and interviews with vice-rectors of Spanish (18) universities and directors of university libraries (40) (2022)

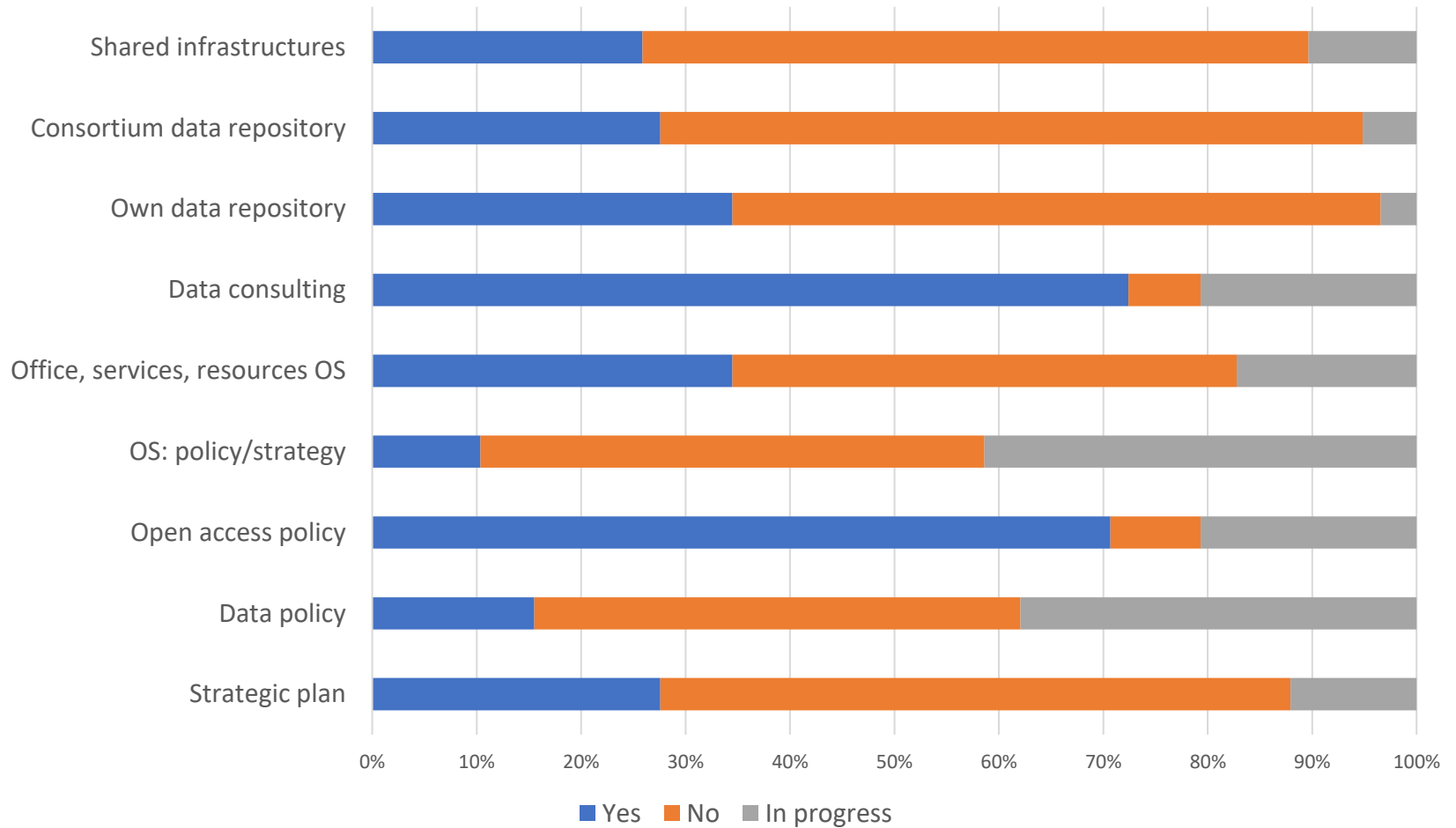
# O1. Open science policy and strategies in Spain

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- **National Open Science Strategy (ENCA) 2023-2027**
- **Organic Law of the Spanish University System (LOSU) 2023**  
ART 12. Promotion of Open Science and Citizen Science
- **CRUE Rectors Conference of Spanish Universities**  
“Commitment to Open Science” (2019)
- **Universities institutional responsibility**  
The implementation of this FAIR instrument in university repositories, which guarantee the reliability and publicity of the data, is a complicated and expensive process, which makes its implementation in universities difficult.

## O2. Implementation of 3 pillars of open science related with integrity

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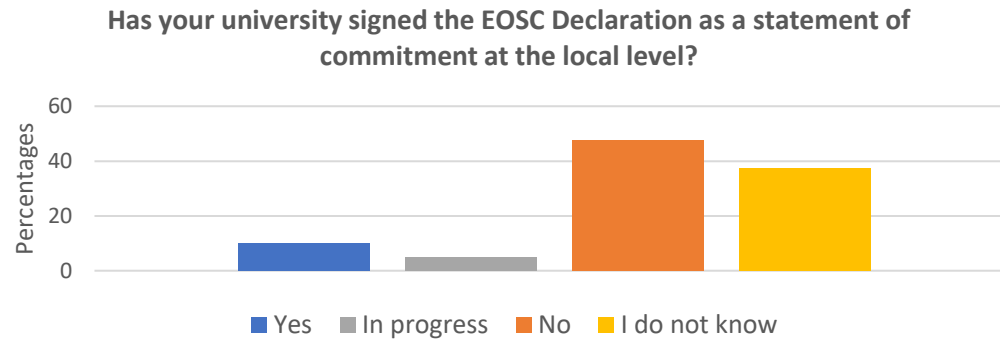


Source: CRUE (2023) "Estado de las iniciativas en torno a la ciencia abierta en las universidades españolas y el CSIC"

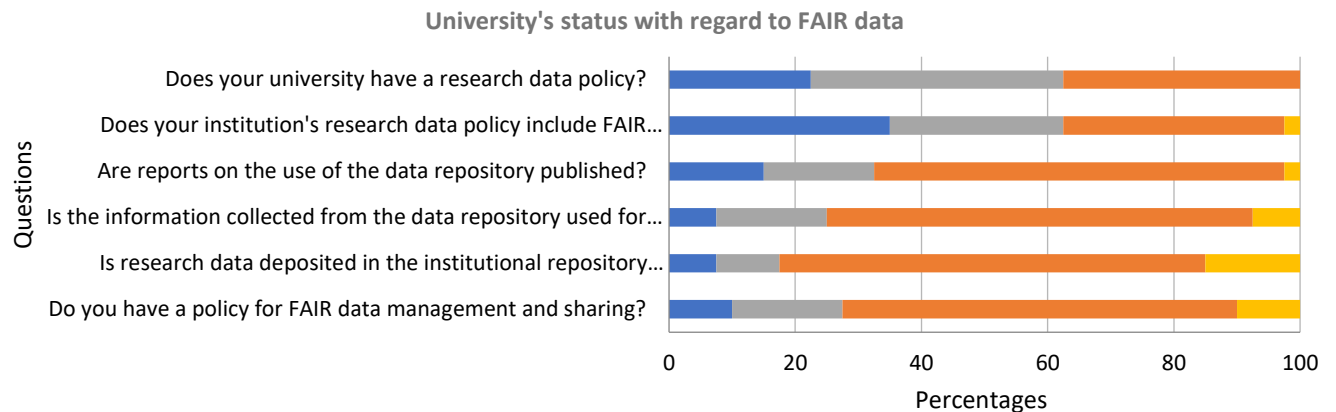
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# O2. Implementation of 3 pillars of open science related with integrity

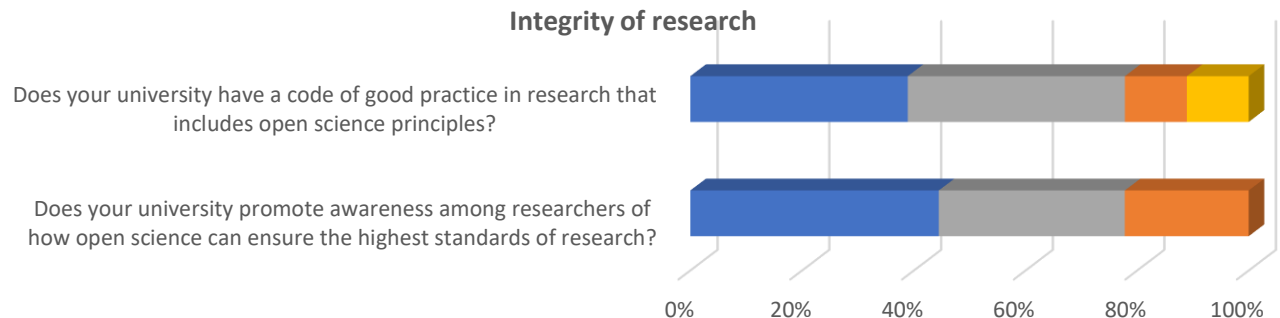
## Pillar 4. EOSC



## Pillar 5. FAIR DATA



## Pillar 6. Research integrity

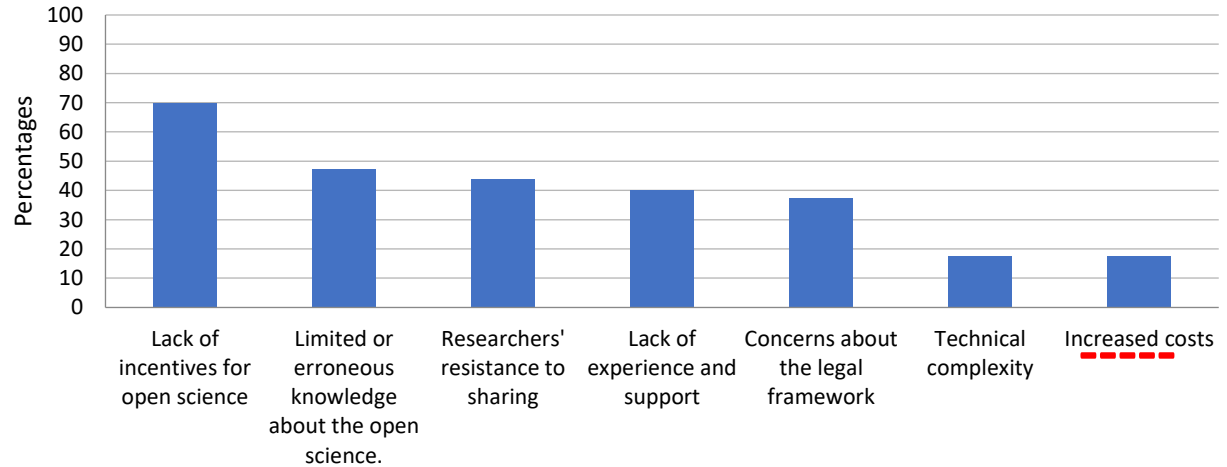


## O2. Implementation of 3 pillars of open science related with integrity

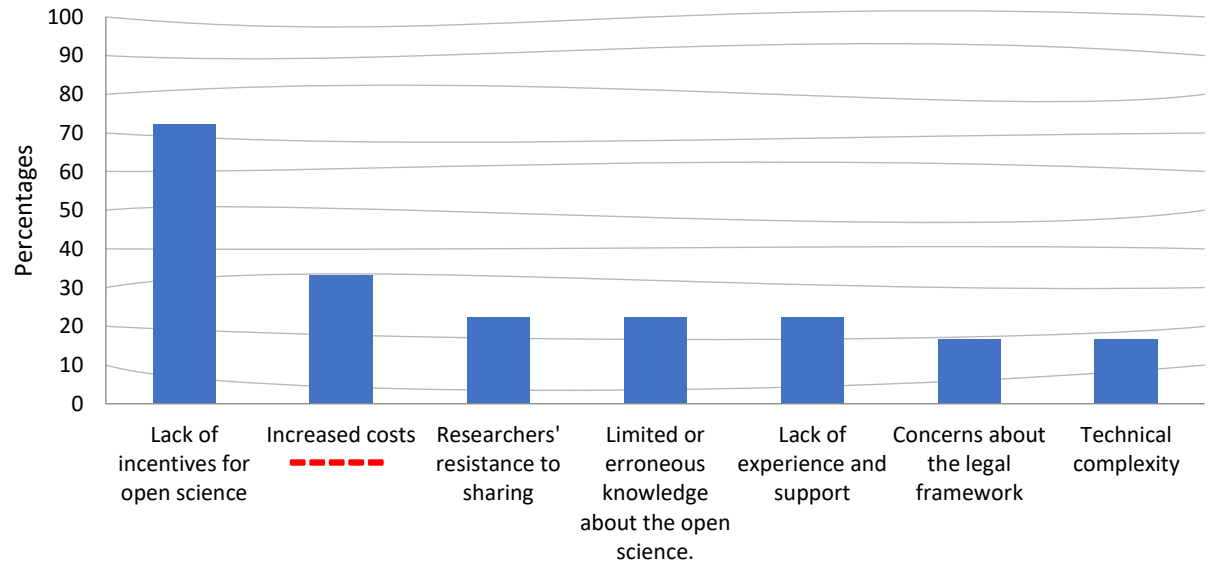
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### Library directors

Barriers to the implementation of open science



### Vice-rectors





### O3. Researchers' attitudes and practices to share data

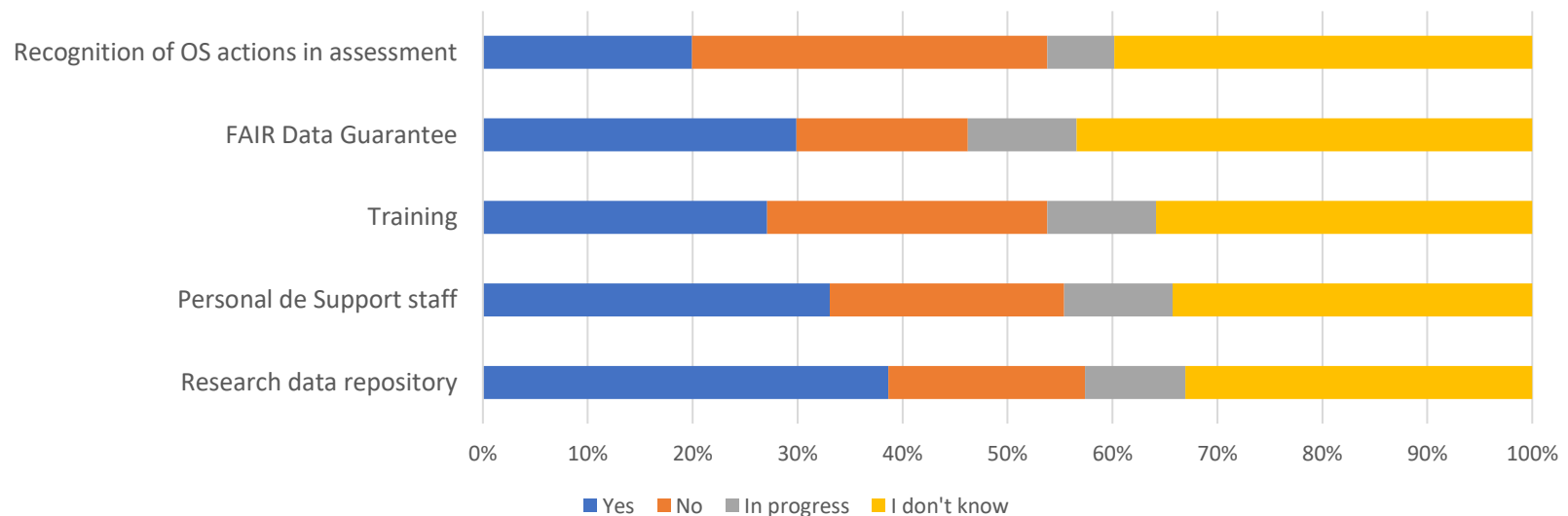
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Researchers have little knowledge about open science (75% feel poorly informed), although they value it well (70% have a positive opinion about open science).

Considering open access, only 22% of researchers have published with any regularity in open access journals, although 60.6% plan to publish in the future.

In relation to **research data**, the majority of the PDI are unaware of the policies being developed by their institution. The existence of institutional repositories with data deposit possibilities is the best known area.

**To the best of your knowledge, does your university have any of these elements related to open research data?**

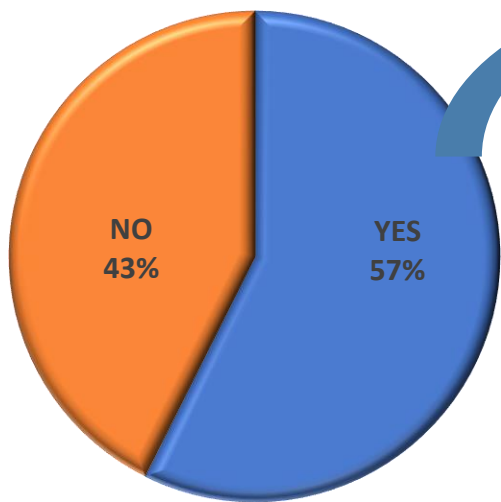


Source: Survey of 251 university professors (2022)

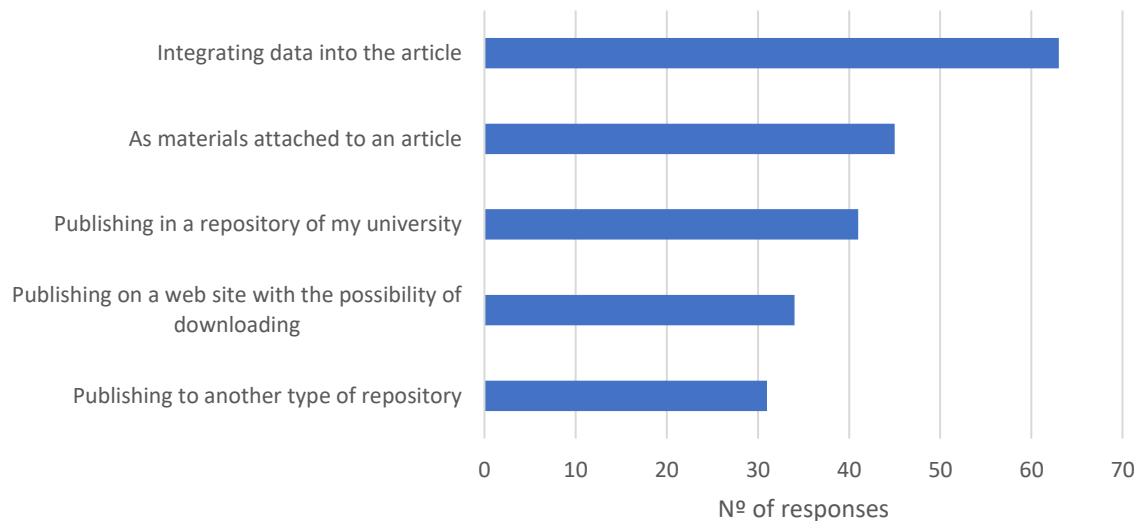
### 03. Researchers' attitudes and practices to share data

Regarding data sharing (essential to ensure the integrity and reproducibility of research), 57% of researchers share data.

Do you make research data public?



How?



# O3. Researchers' attitudes and practices to share data

### Reasons for data sharing



### Reasons for NOT data sharing



- **Strong institutional impulse** (government and universities) for the development of open science in Spain.
- **Great difficulties in the university** environment for its implementation.
- **The three fundamental pillars of the OS related to research integrity** (EOSC, FAIR data repositories and ethical codes) have specific implementation difficulties, derived from the cost and the time and technological effort they require.
- **Universities are creating their own data repositories or through consortia**, but they are still far from integrating them into the EOSC, and they are little used by researchers.
- **Research ethical codes are in the process of including OS principles** to improve research integrity.
- Library directors (responsible for repositories) and vice-rectors (responsible for policies) **agree in their assessments of the barriers** to the development of open data.
- They attribute this **more to the lack of incentives for researchers and less to the legal framework or technological complexity.**

- **University researchers recognize a great lack of knowledge** on the subject of open data.
- **Among the main reasons for sharing the data**, cited by researchers, are the increase in credibility, the reusability of the data and the reproducibility of the research. All aspects **that favor integrity in research**.
- **As a fundamental reason for not sharing data**, they highlight the high investment in time and work it entails.

As a final conclusion, it can be said that there is a strong institutional drive towards **open science, open data and research integrity**, but there are still strong barriers to its majority implementation. Especially awareness-raising of researchers and development of incentives, on the one hand, and technological development and the legal framework, on the other.



**IFS** Instituto de FiloSofía 

# Thank you for your attention!

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