

LINKING RESEARCH INFORMATION ACROSS DATA SPACES

Impact of doctoral students' research activities on CRIS
systems



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A woman in a white top and dark pants stands on the left, pointing at a whiteboard. A man in a suit sits on the right, looking at a laptop. The background shows a modern office with large windows and indoor plants.

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INTRODUCTION

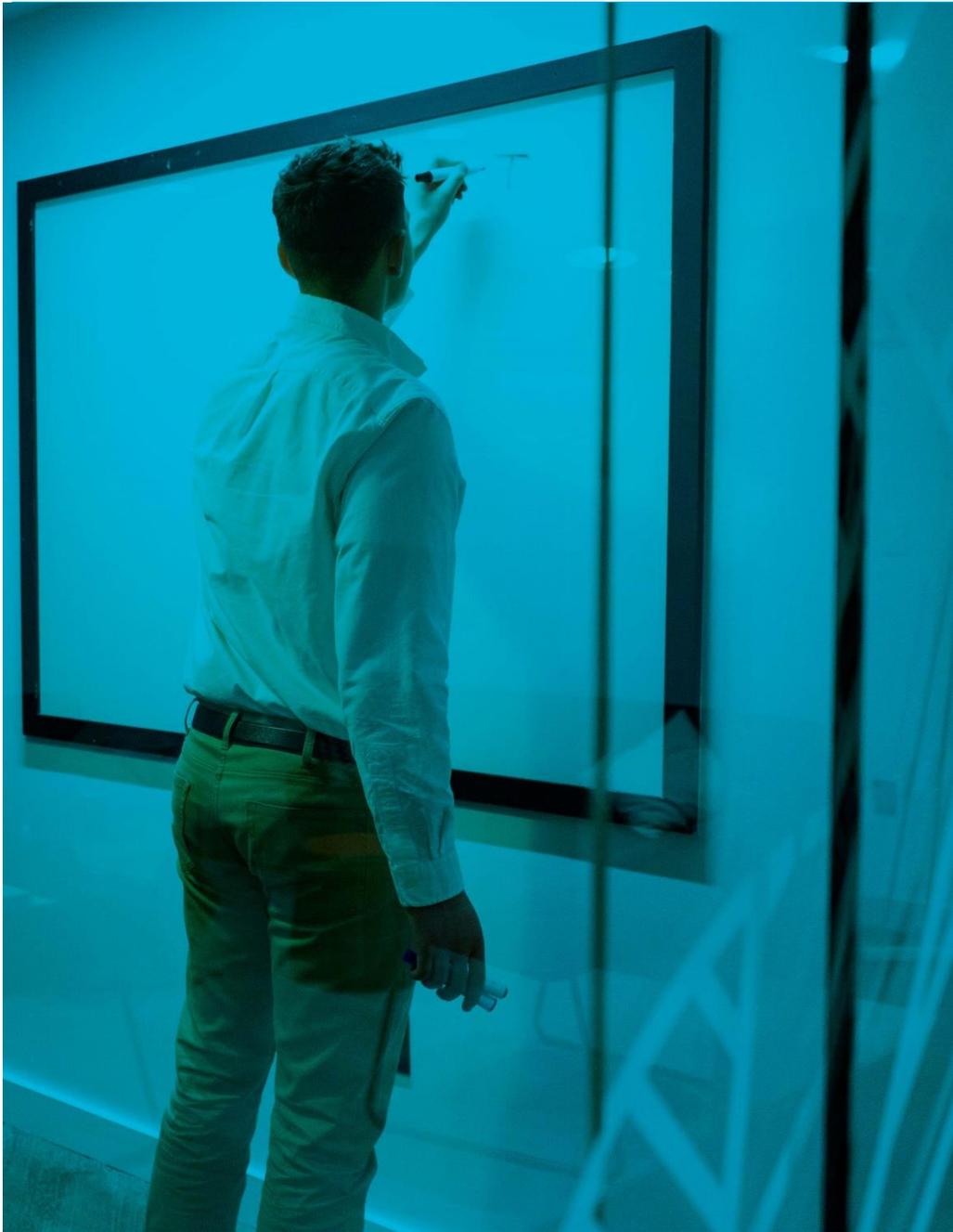
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Introduction

INTRODUCTION

SIGMA is a non-profit organization presided by 16 of the most important universities in Spain.

Our mission consists in helping higher education institutions optimizing their academic and research management using Information Technology (IT).

We provide services and technological tools for the management of the academic and research life cycle for the SIGMA group of institutions.

SIGMA offices are in Barcelona and Madrid.



INTRODUCTION

BACKGROUND

- SIGMA has a PhD management system and a CRIS system for its universities.
- We found that a series of research activities of PhD students are entered and maintained in the doctoral management systems because Spanish regulations require this information to be kept to be able to evaluate this students.

WHY?

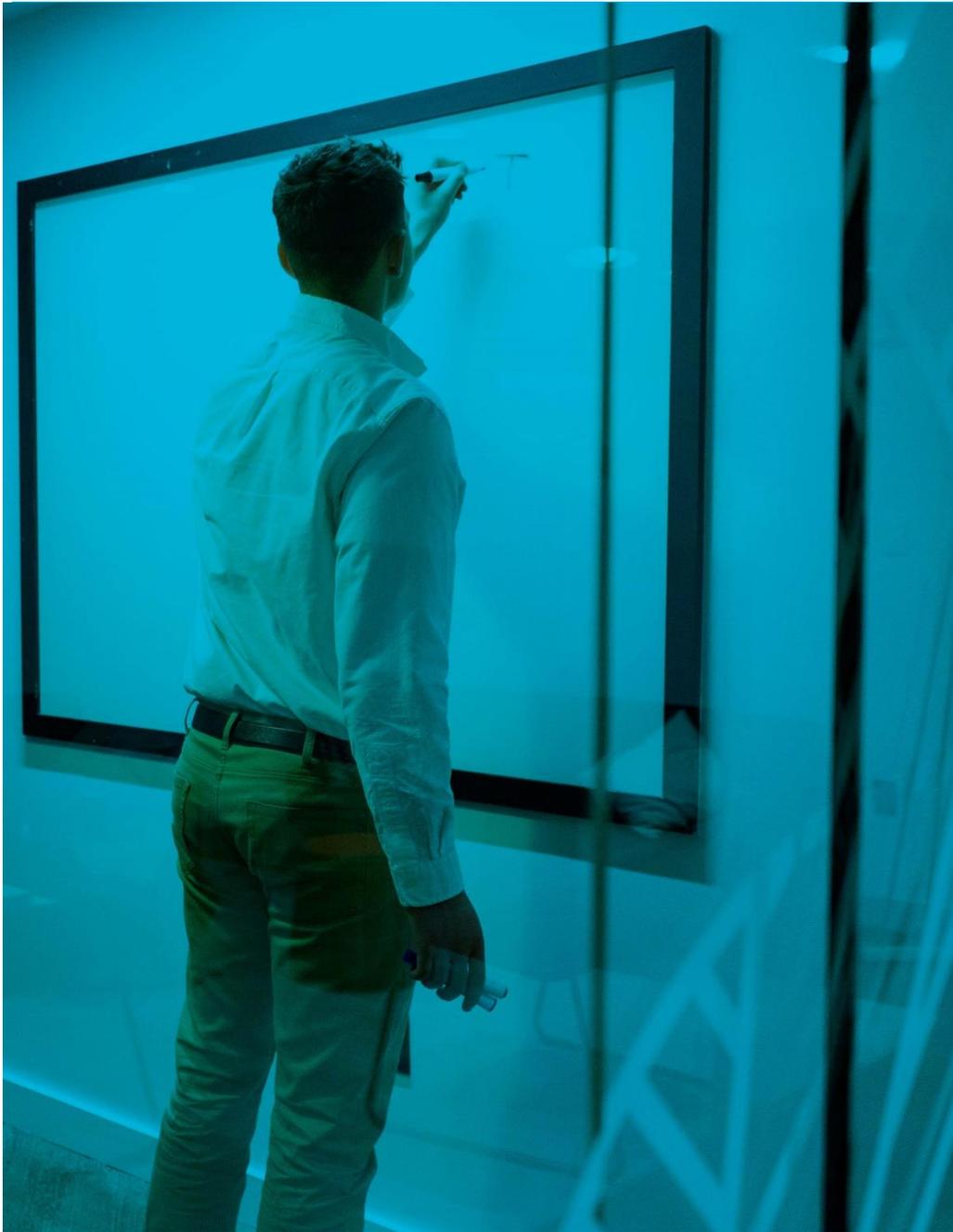
- A debate exists at national and international level regarding the doctoral activities to be considered as scientific production for the institution and that is why we decided to conduct the study we present today, on the impact that such activity have or should have on CRIS systems.

HOW?

- Survey to **18** relevant Spanish universities. **2** similar surveys (to PhD directors and managers and to research/library directors and managers).
- **18 responses from 12 universities, rate of 66%.**
- **4 interviews** to experts from SIGMA universities.

This study has been carried out with **the aim of proposing a way to improve research cooperation through CRIS and to improve the value, impact and outcomes of universities and research institutions.**

Participant universities: UC3M, UCO, URV, UVIC-UCC, UNED, UAB, UIC, UAM, UVA, UPF, UdG, UOC



Doctoral studies in Spain



DOCTORAL STUDIES IN SPAIN

SPANISH REGULATORY FRAMEWORK (RD99/2011)

- Researcher as an integral part of higher education (researchers-in-training)
- **Requires creation of**
 - **Doctoral schools**
 - **Doctoral Activities Document (DAD)**

DOCTORAL SCHOOLS

- Organise doctoral research and related activities
- Own **strategy aligned to the university's research strategy**
- Accredited adequate management capacity for their purposes

DOCTORAL ACTIVITIES DOCUMENT (DAD)

- Individualized record
- Research activities carried out by a **researcher-in-training**
- Tool to evaluate doctoral studies

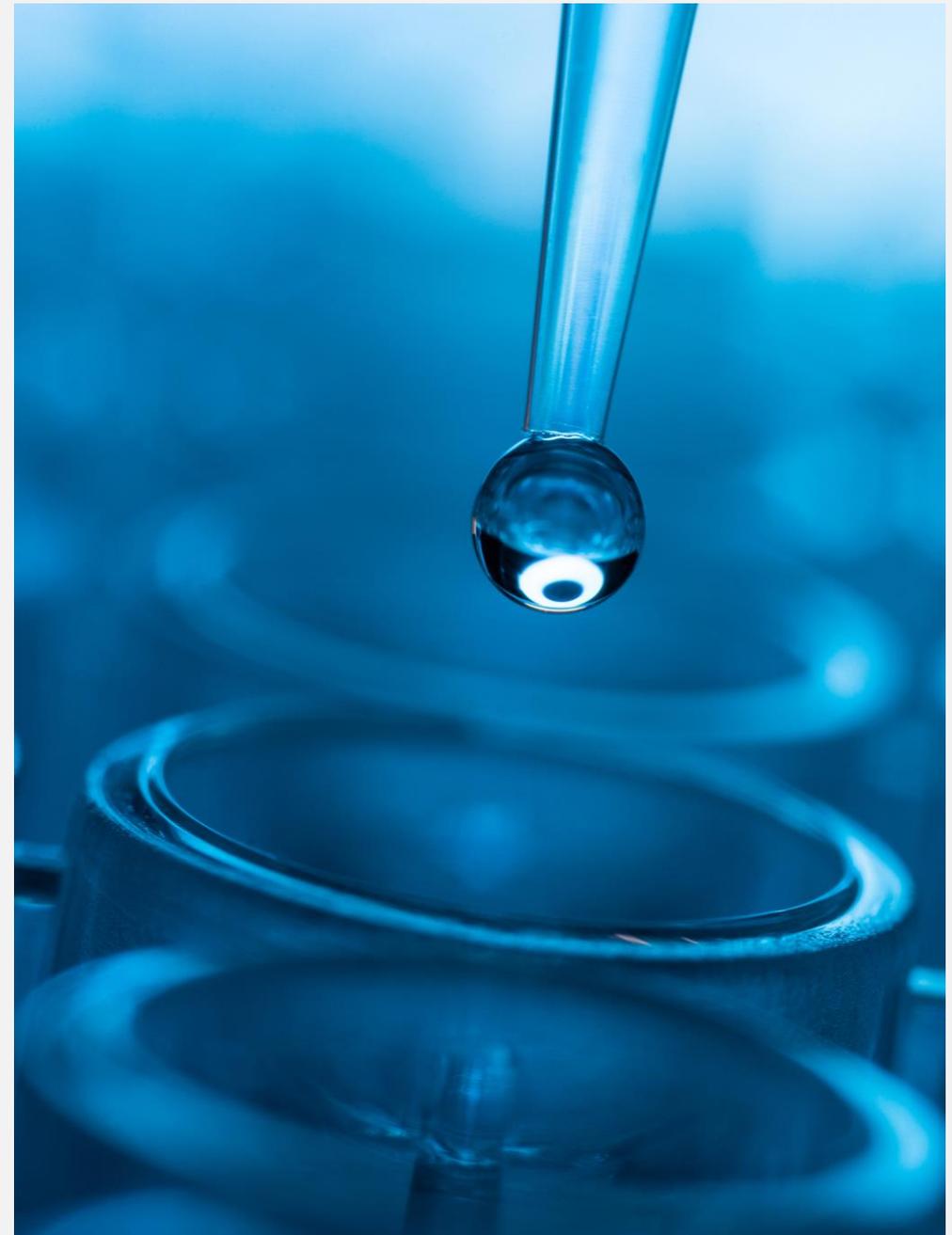




3 Scientific Production

SCIENTIFIC PRODUCTION

- The study of scientific production has been intensified and systematized over the last two decades.
- There is **no global agreement on the definition of scientific production**, mainly because it is usually analyzed from and for different perspectives.
- Some Research Portals (and CRIS systems) **focus** on Publications; others on Publications, projects and other activities.



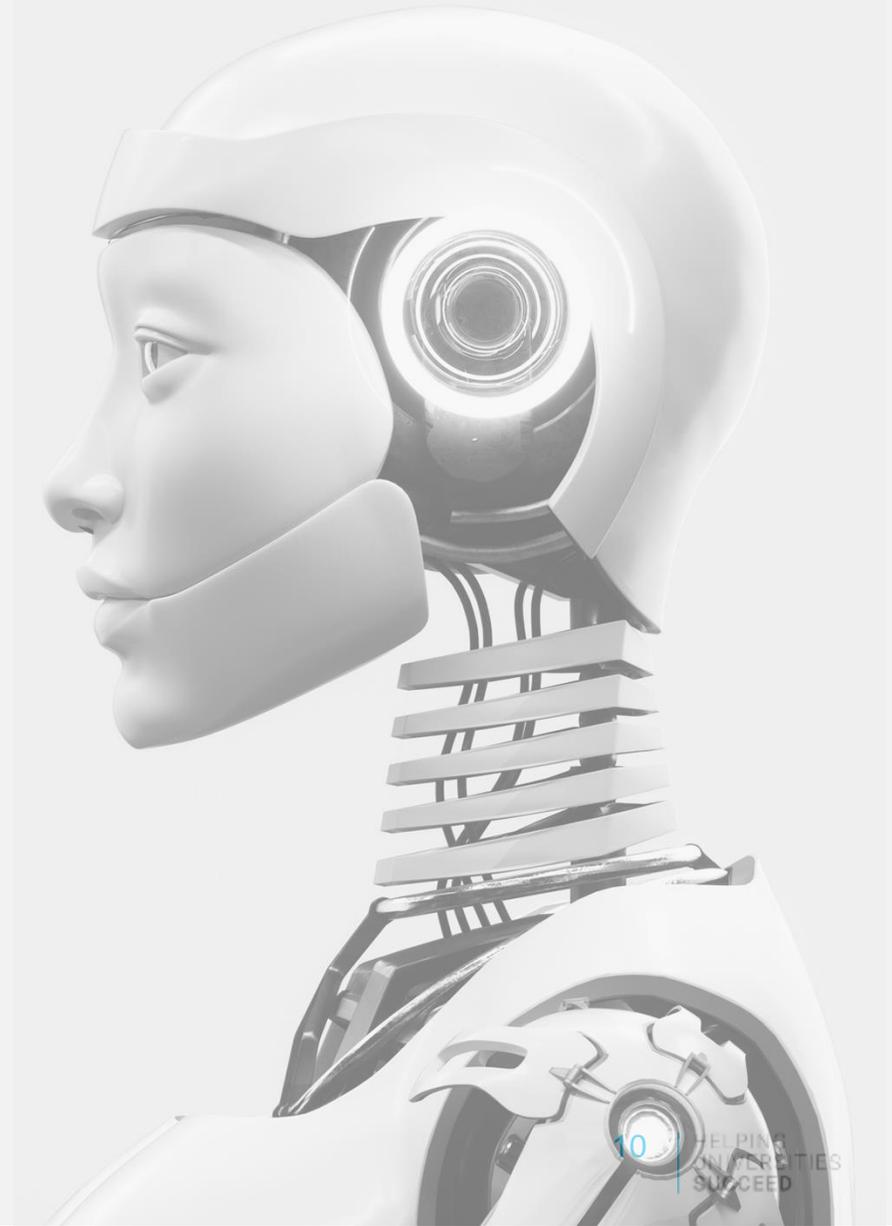
SCIENTIFIC PRODUCTION

SOME DEFINITIONS:

"The amount of research produced by scientists or quantity of publications."

"Result in the form of publications of research and innovation works in the respective disciplinary areas".

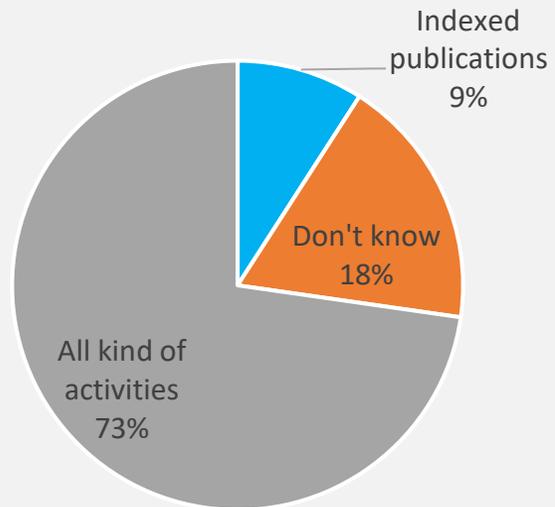
"Form through which the knowledge resulting from intellectual work is expressed by means of scientific research in a given area of knowledge, belonging or not to the academic field, published or unpublished, which contributes to the development of science as a social activity". (Piedra-Salomón et al.,)



SCIENTIFIC PRODUCTION

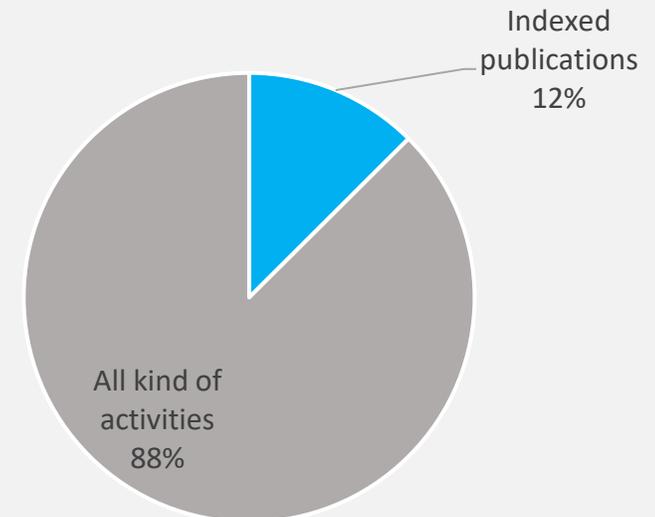
Source: survey answered by 12 Spanish universities about the question of what scientific production means to them.

Scientific Production (Doctoral Schools)



■ Indexed publications ■ Don't know ■ All kind of activities

Scientific Production (Research)

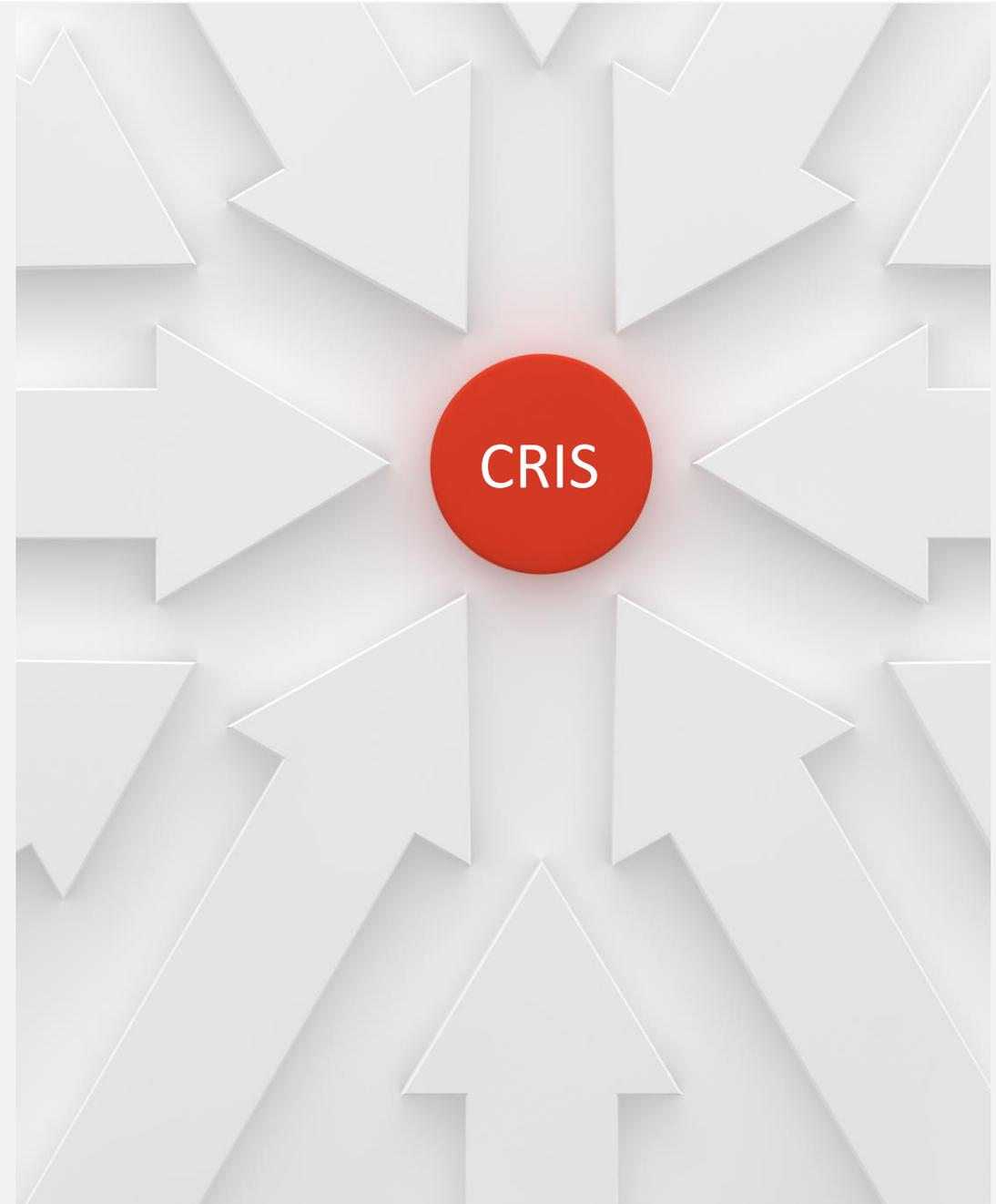


■ Indexed publications ■ All kind of activities

Most universities consider scientific production to be all types of activities and not only publications.

SCIENTIFIC PRODUCTION

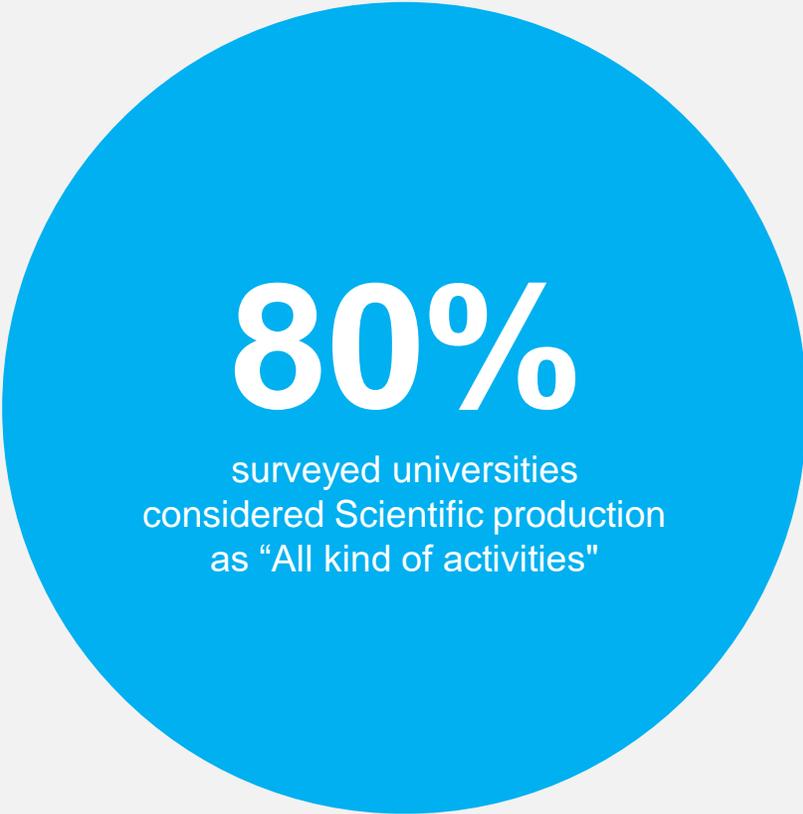
- CRIS systems **should be used for decision-making at all levels, for the management of research activities, and for the dissemination of results.** CRIS, in this respect, is key for facilitating the processes of knowledge creation and management, and hence economic growth.
- Universities considers scientific production **all kind of research activities.**
- Therefore, it is relevant to upload as much research-related information as possible to improve the processes to be provided by a CRIS.



SCIENTIFIC PRODUCTION

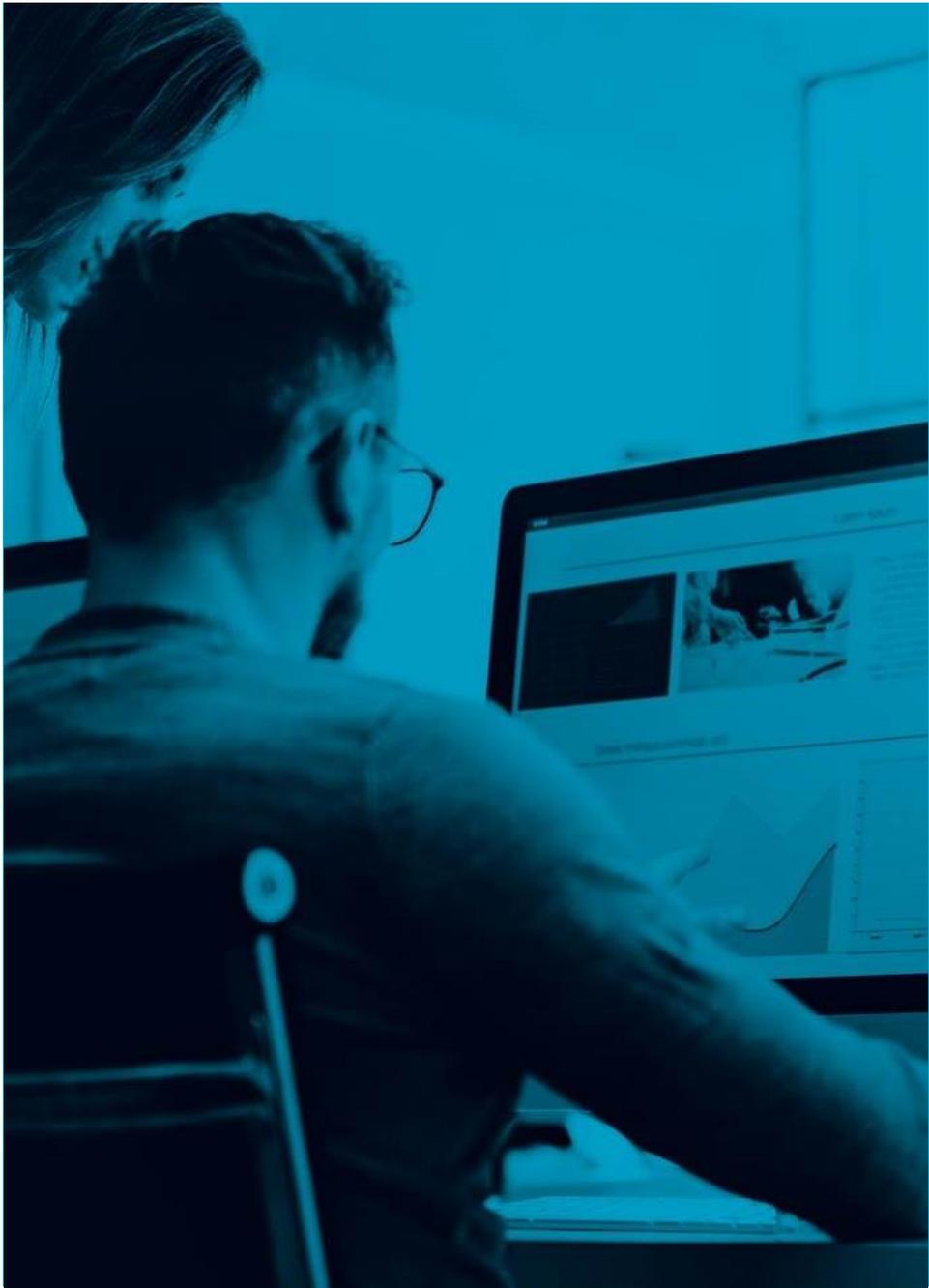
Finding 1:

There is no policy or regulation that determines what is or is not considered scientific production, but the trend is to collect more and more research activities in CRIS systems so that they can be reused, shared and/or evaluated."



80%

surveyed universities
considered Scientific production
as "All kind of activities"

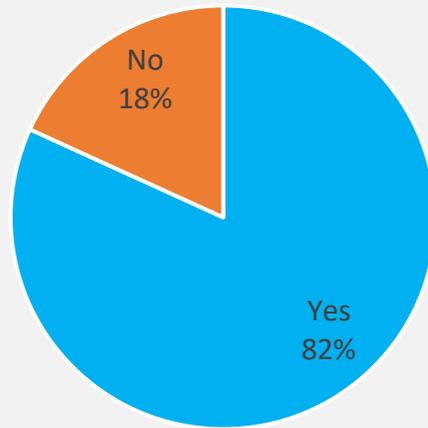


4 Doctoral scientific production

DOCTORAL SCIENTIFIC PRODUCTION

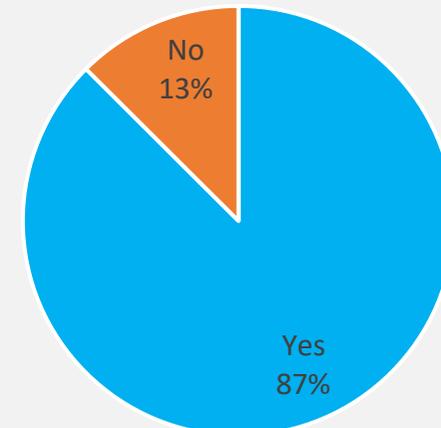
Source: survey to 12 Spanish universities answering the question if they have a CRIS and a DAD.

Do you have a DAD recording tool?
(Doctoral schools)



■ Yes ■ No

Do you have a CRIS system?
(Research)



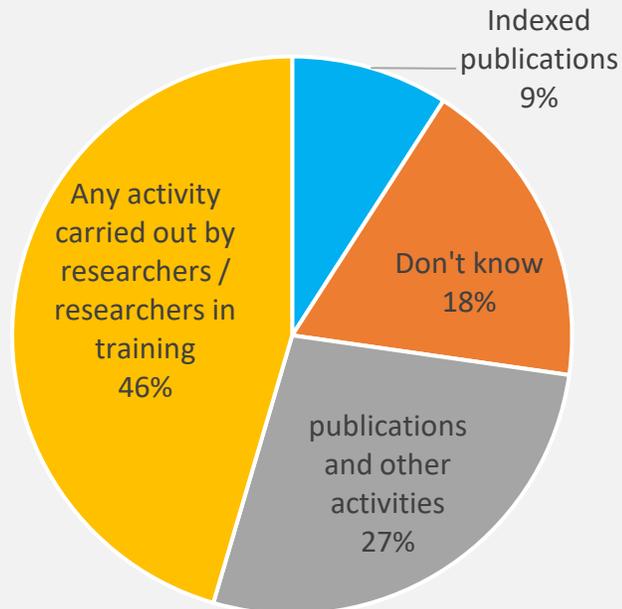
■ Yes ■ No ■

The great majority of the universities have a tool for recording the research activity of doctoral students (82%). And also have a CRIS (87%).

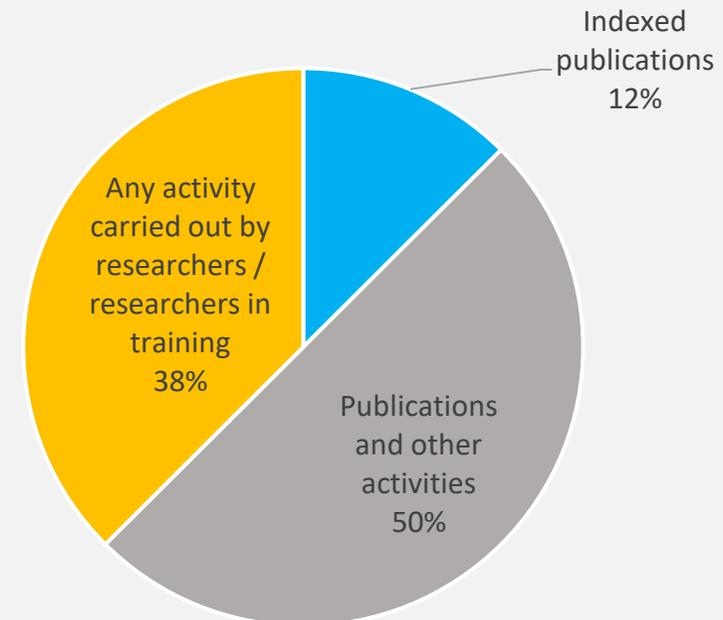
DOCTORAL SCIENTIFIC PRODUCTION

Source: survey answered by 12 Spanish universities about the question of what scientific production means to them at detail.

Scientific Production (Doctoral Schools)



Scientific Production (Research)



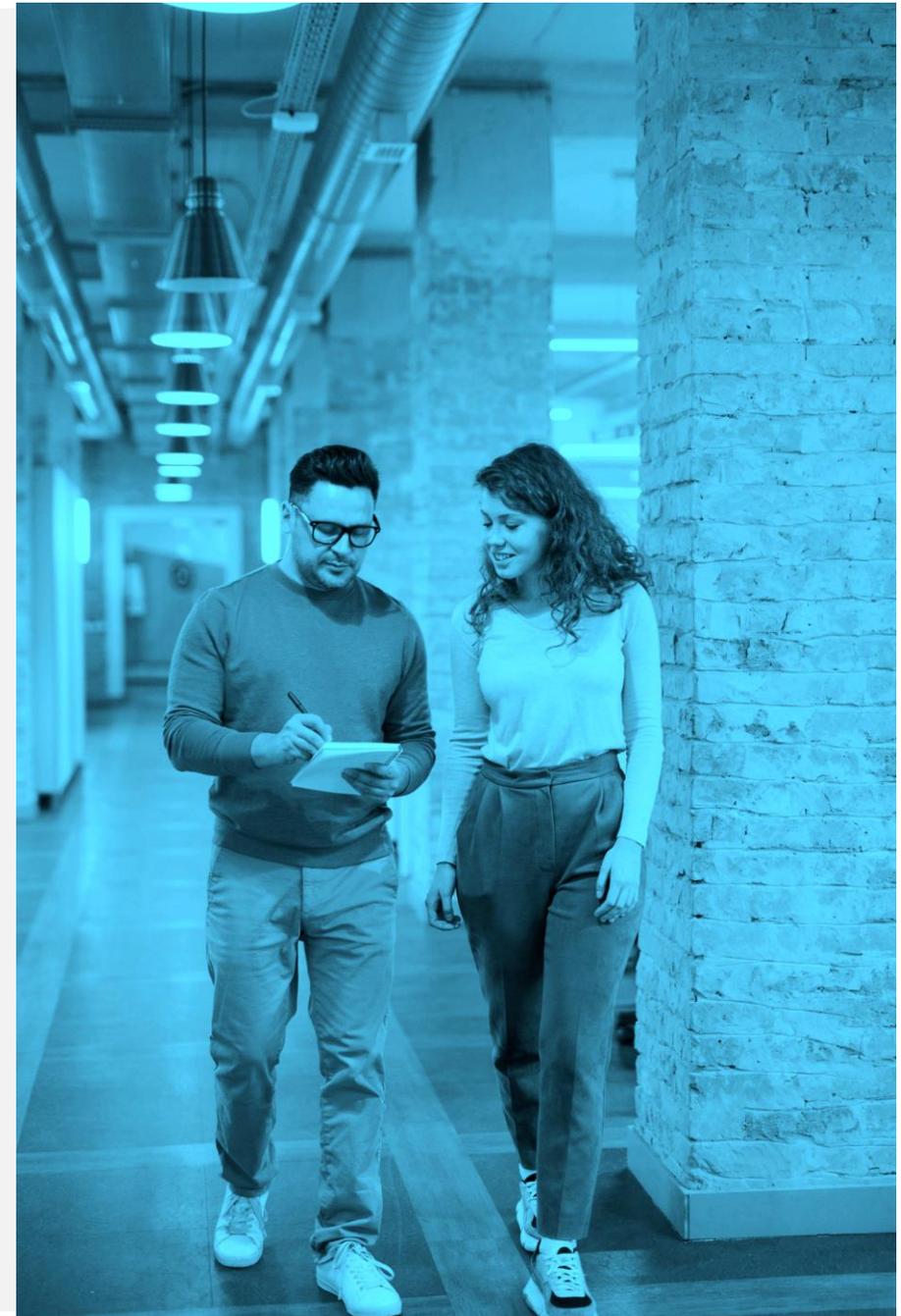
Almost half of the universities surveyed already consider the activities of researchers-in-training as part of their scientific production.

DOCTORAL SCIENTIFIC PRODUCTION

In the survey, we asked universities which types of activities they store in the doctoral activities document, DAD and in their CRIS systems.

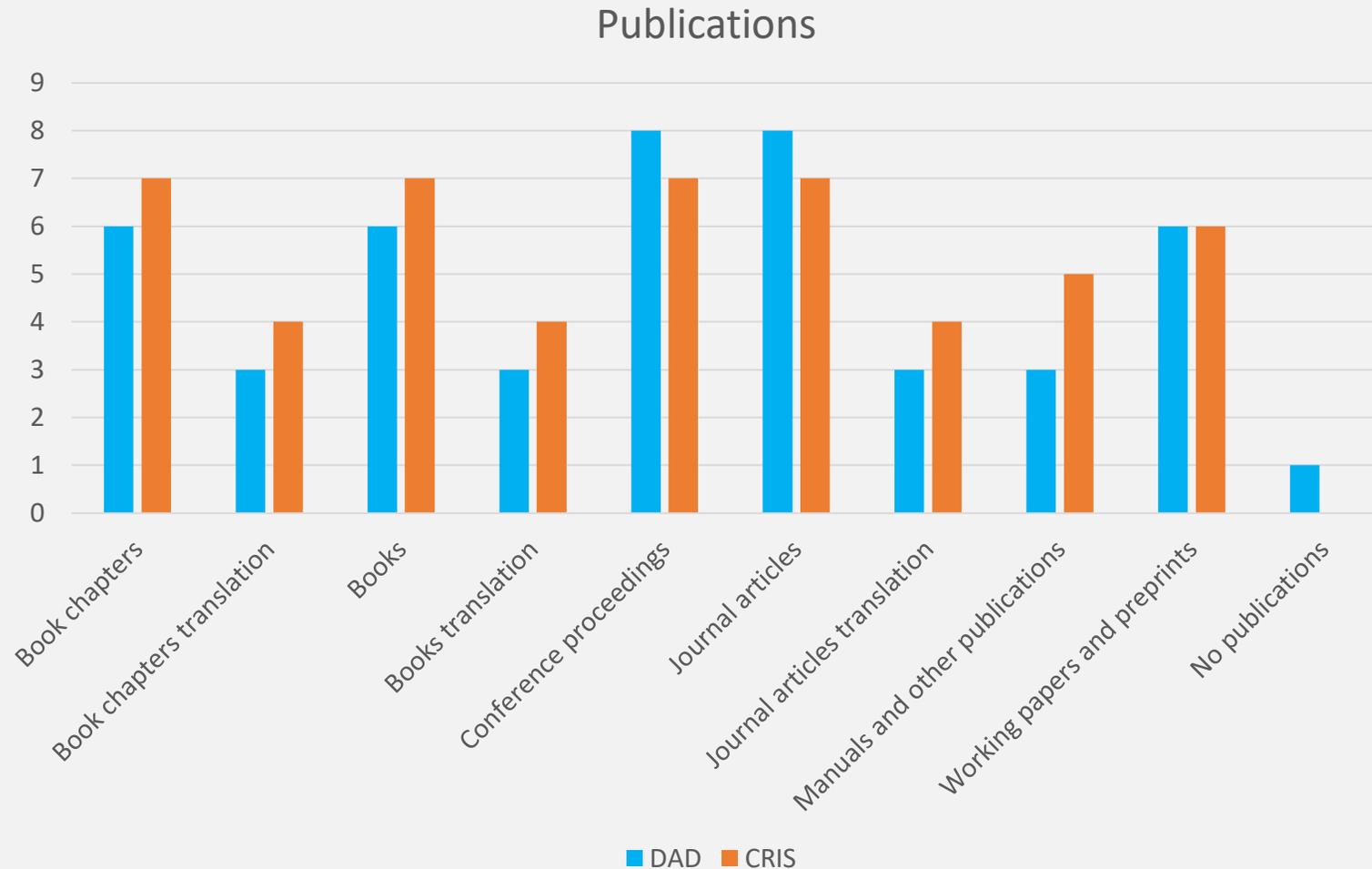
We grouped the activities in 3 blocks:

- Publications
- Grants and contracts
- Other activities



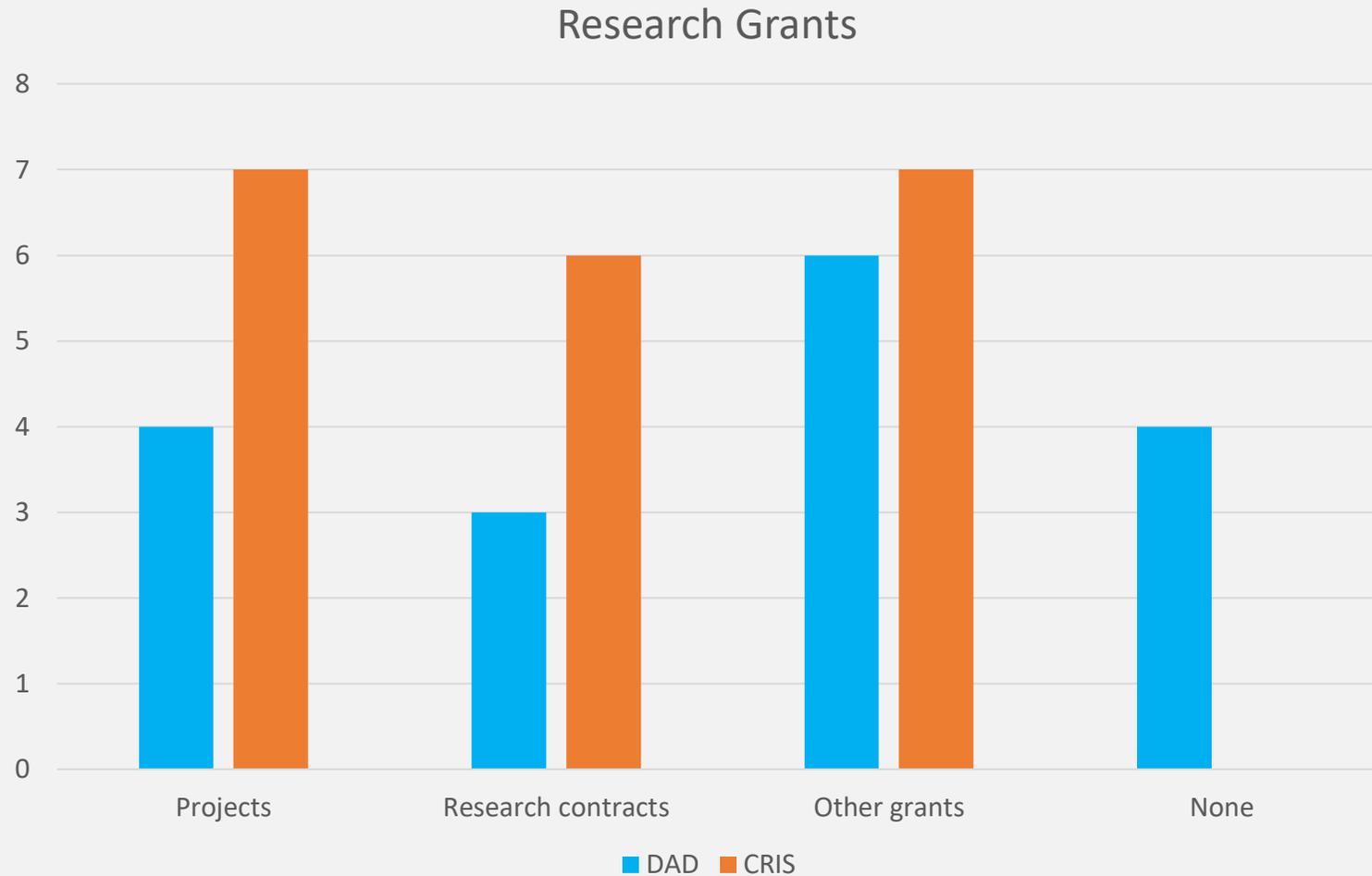
DOCTORAL SCIENTIFIC PRODUCTION

Source: survey to 12 Spanish universities answering the question of what kind of publications stores the DAD and the CRIS.



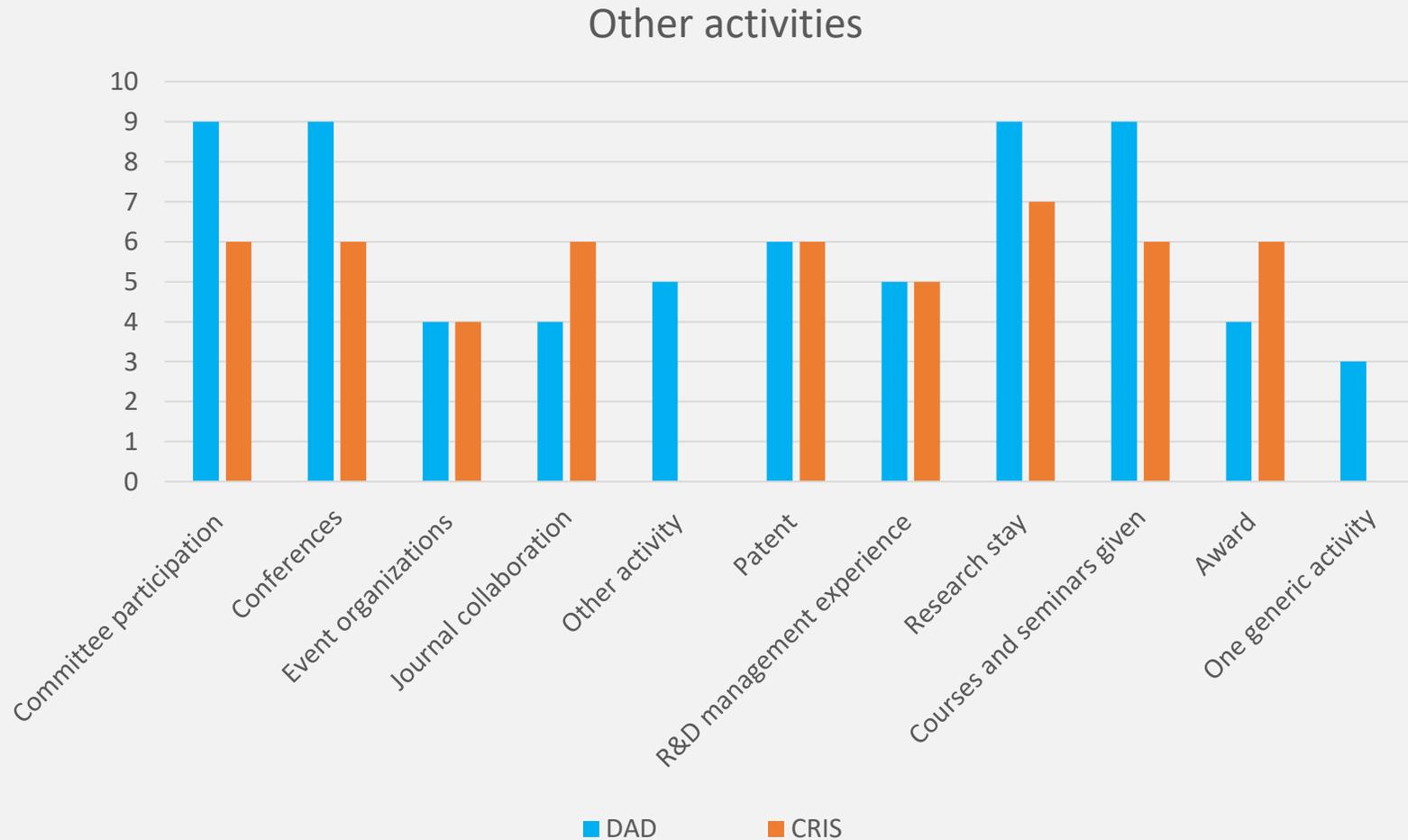
DOCTORAL SCIENTIFIC PRODUCTION

Source: survey to 12 Spanish universities answering the question of what kind of Project and grants stores the DAD and the CRIS.



DOCTORAL SCIENTIFIC PRODUCTION

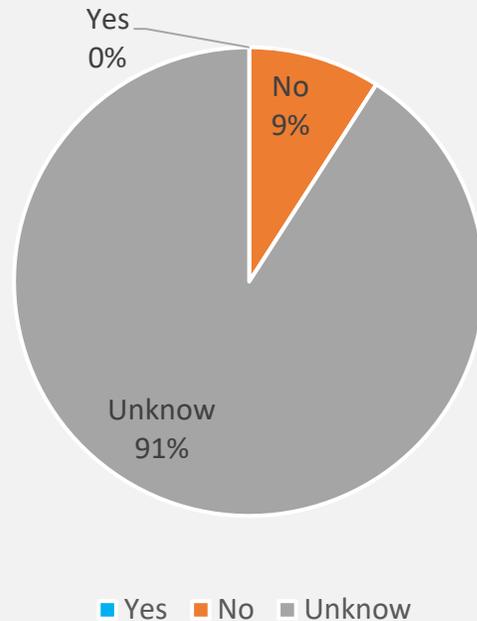
Source: survey to 12 Spanish universities answering the question of what other kind of activities stores the DAD and the CRIS.



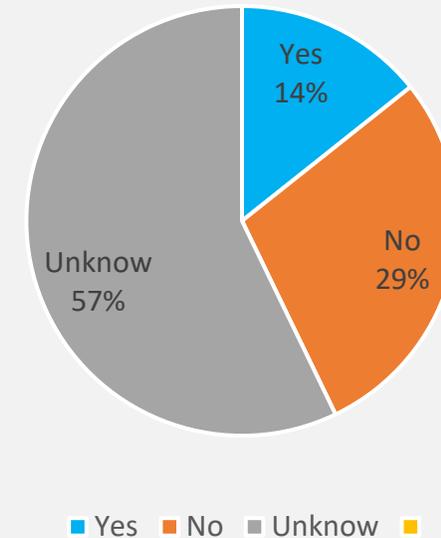
DOCTORAL SCIENTIFIC PRODUCTION

Source: survey to 12 Spanish universities answering the question the activities stored in the DAD are the same that in the CRIS?

Same Activities on CRIS systems and DAD (Doctoral schools)



Same Activities on CRIS systems and DAD (CRIS systems)



Mainly the answer is that they don't know from each other, seems that in general some activities are different, mainly more general, less details in the DAD. There is no standardized way to define the activities of researchers in training in DAD.

SCIENTIFIC PRODUCTION

Finding 2:

Regarding activities, DAD tends to record less information and more generic than CRIS, so there is no homogeneity in the activities between DAD and CRIS.

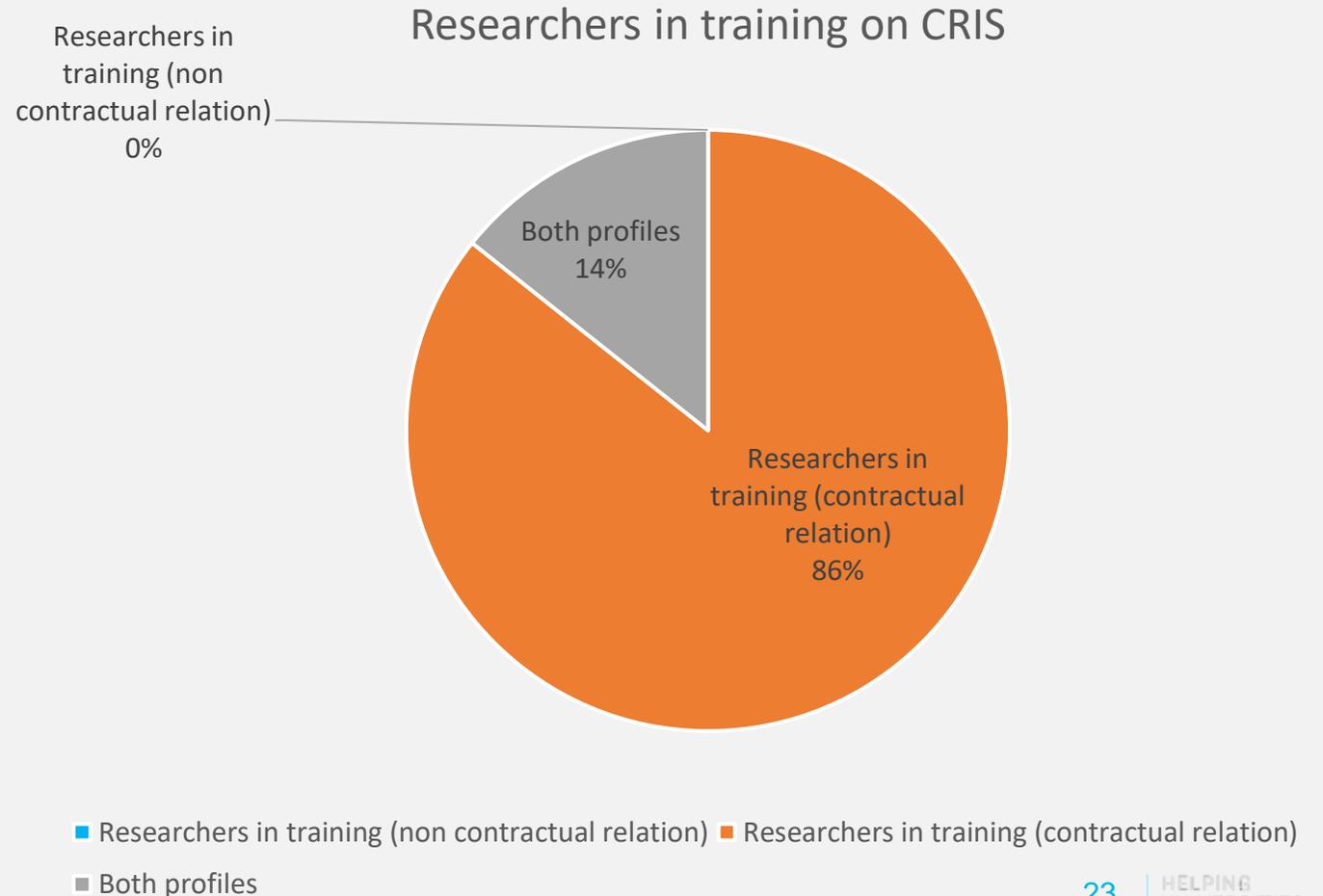
It seems that there is no agreement between doctorate and research to define the same typology of activities.

DOCTORAL SCIENTIFIC PRODUCTION

Source: survey to 12 Spanish universities answering the question of what kind of researchers-in-training profiles are stored in the CRIS.

We asked universities which types of researchers they already store in the CRIS.

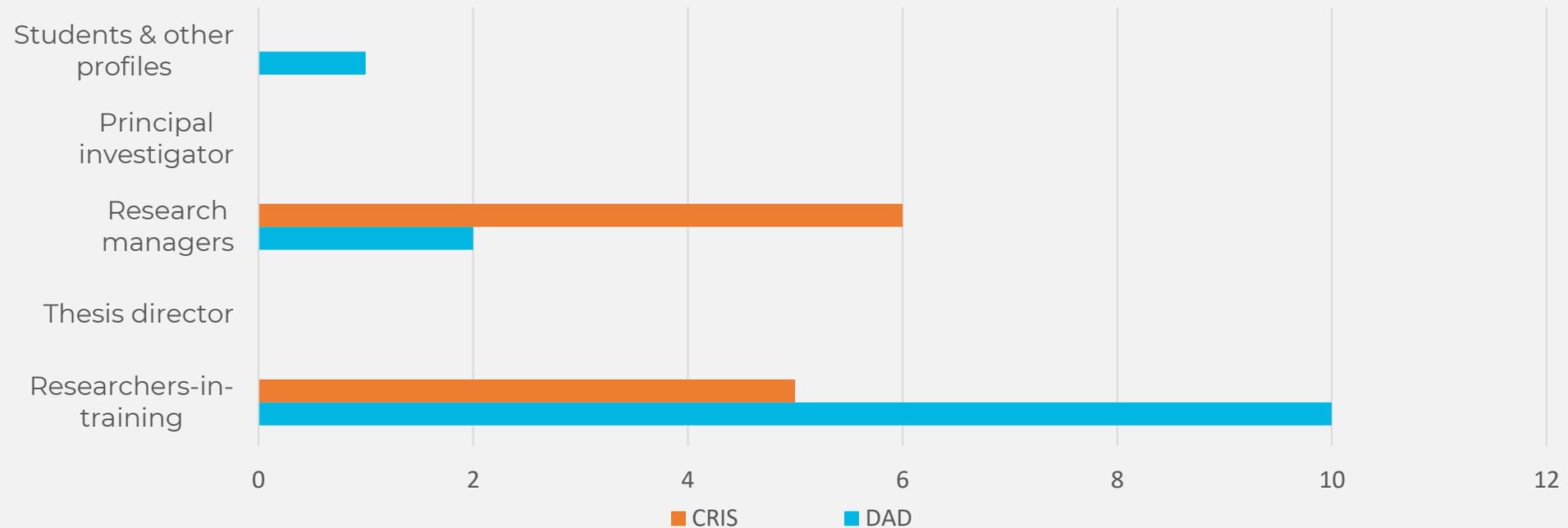
- Researchers-in-training with university contract, for example with a research group contract.
- Researchers-in-training without contract, only Doctoral students.



DOCTORAL SCIENTIFIC PRODUCTION

Source: survey to 12 Spanish universities answering the question of who introduces researcher-in-training activities.

Who introduces doctoral activities



Mainly the researcher-in-training for the DAD and in the CRIS, then generally research managers like libraries (generally to validate data).

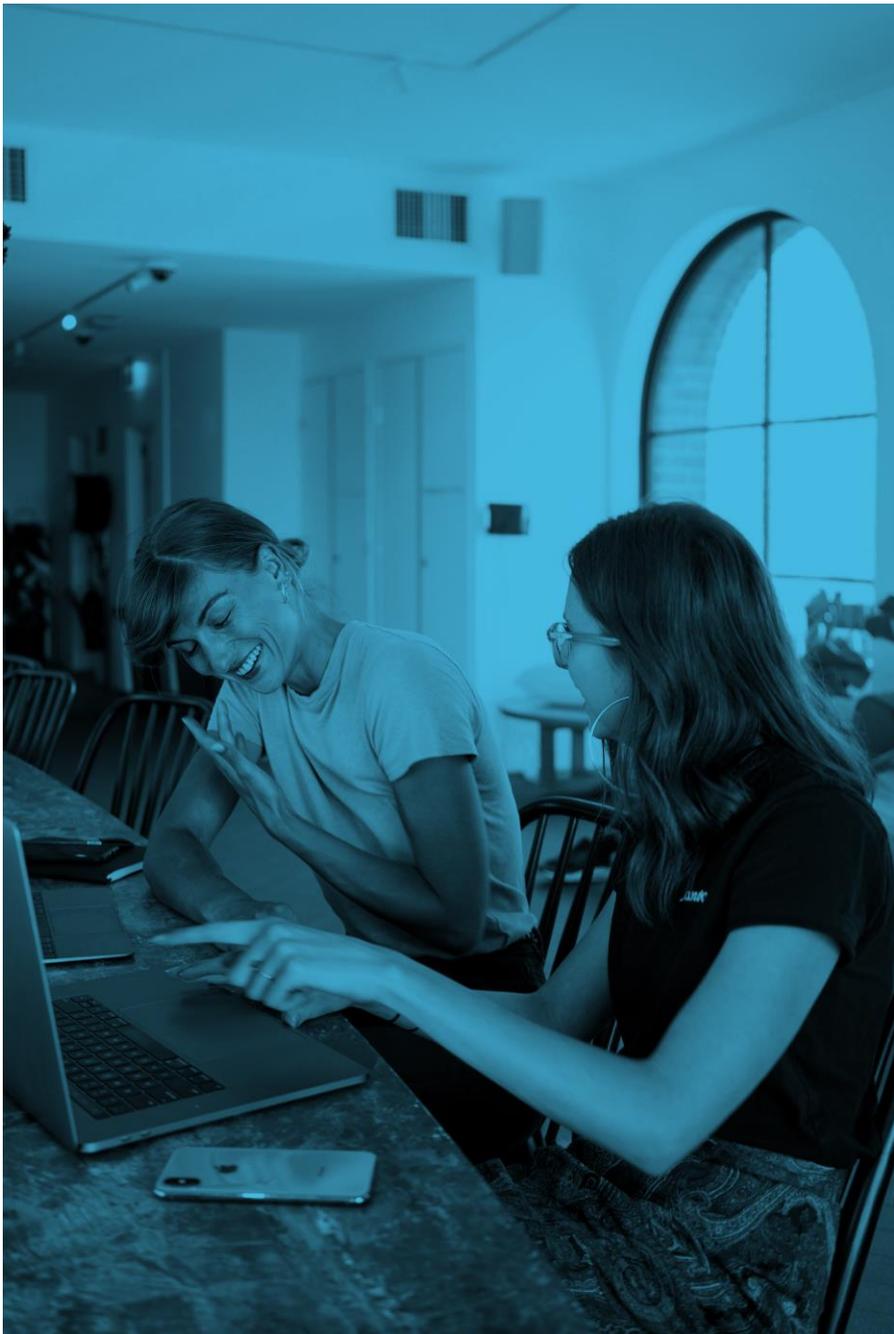
DOCTORAL SCIENTIFIC PRODUCTION

Finding 3:

There are in general two profiles for researchers-in-training, with contractual relationship with the university or without contractual relationship.

The great majority already stores researchers-in-training with contractual relationship in the CRIS, in some way (86%). But fewer register both profiles (14%).

In most cases, it is the researcher-in-training (PhD student) who introduces the activities, which can make it easier to decide where or how to record these activities or to make it more standardised.

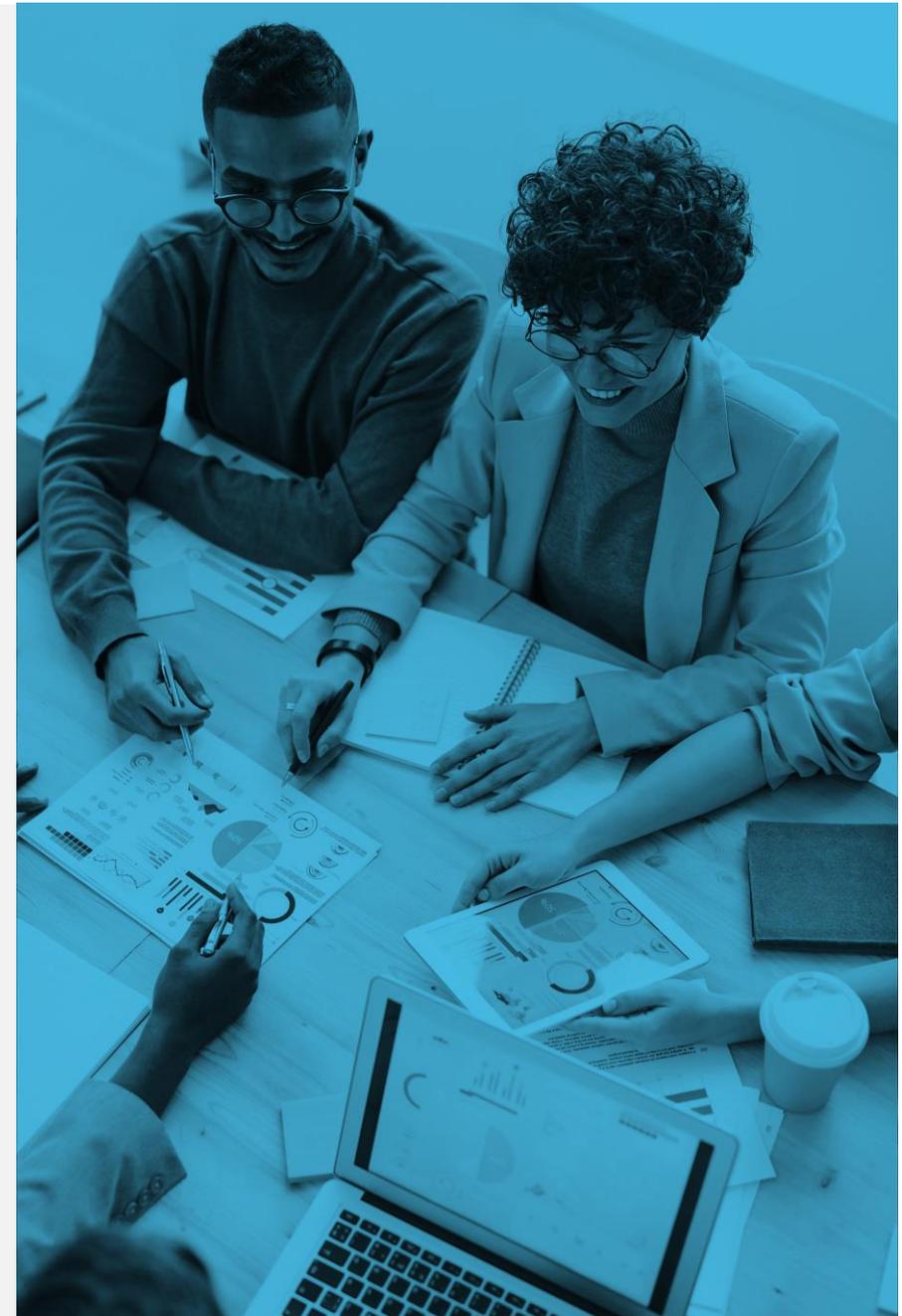


Conclusions and insights

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CONCLUSIONS AND INSIGHTS

- The trend is to consider scientific production as any kind of research activity. Doctoral students should be considered as researchers (researchers-in-training) and their activities should be registered in a system called Doctoral Activity Document (DAD) --> we have demonstrated that the activities of these doctoral students, can or should be registered in CRIS systems.
- Different activities between DAD (more generic, less details) and CRIS. No common criteria.
- Two types of researchers-in-training profiles: with contractual relationship and without contractual relationship
- Most universities have information of researchers-in-training with contractual relationship (86%), in the CRIS system. But already few have information of the rest of the researchers-in-training (14%). This information is entered mainly by the researchers-in-training in the DAD, also in the CRIS but validated by research managers, typically libraries.
- The information is usually upload to the CRIS through periodic and massive data uploads.
- Doctoral schools and research areas in general don't share information regarding the scientific production each system stores (74%).





Value proposal

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VALUE PROPOSAL

This study can be a **starting point for initiatives** for the creation of Research portals at institutional, national or international level that includes the searching and browsing of PhD students' activities to boost the institutional research impact and the cooperation between PhD students (researchers-in-training profiles).

To do that, we propose :

1. Unify types of activities between DAD and CRIS. Or with any repository in which the institution records doctoral activities.
2. Unify the metadata
3. Create specific profiles for researchers-in-training (with and without contractual relationship) in CRIS systems
4. Determine the best strategy for entering this information into CRIS.
 1. Register all doctoral activities in CRIS manually (duplicating data between DAD and CRIS). This would not be strongly recommended.
 2. Consider DAD as an external repository, source of information for CRIS, and upload the information of researchers-in-training and their activities periodically into the CRIS system (data synchronization).
 3. Consider CRIS as the source of activities to be used for the academic evaluation of the researcher-in-training, creating a profile for each student and using CRIS information to generate the DAD.

The results can be:

- For a medium university 28.000 students (*), we could add about 75.000 activities into CRIS system.
- For a small university 13.047 students (*), we could add about 33.000 activities into CRIS system.

THANK YOU FOR YOUR ATTENTION

Questions?

