



#ACCESTOTHELABOURMAKET

2020

ACCESS TO THE LABOUR MARKET FOR DOCTORS WHO GRADUATE FROM CATALAN UNIVERSITIES





Agència
per a la Qualitat
del Sistema Universitari
de **Catalunya**

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BARCELONA, 2020

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INTRODUCTION

The aim of this study on access to the labour market is to provide a host of information and data on the quality of access to the labour market experienced by doctors who graduate from Catalan universities. The goal is to encourage reflection and improvements to the doctoral programmes delivered by Catalan universities.

This ambitious project – in its 5th edition in 2020 in the case of doctors – has been conducted thanks to the engagement of the social councils of Catalan state universities and private universities, as they envision this instrument to be a distinguishing item that fosters continual improvement in universities, aligning them closer with society's demands.

The survey asks questions on factors linked to employment (employment/unemployment, sector, place of work), **quality of employment** (suitability of work, contractual stability, earnings, etc.) and **satisfaction in relation to the study programme followed** (skills acquired, willingness to take the programme again, etc.). Over all five editions of the study on access to the labour market almost 7,000 doctors have been surveyed. This edition has covered more than 46% of the target population; namely, doctors who obtained their PhD in the 2014-15 and 2015-16 academic years. These academic years encompass doctoral programmes from various regulatory frameworks, although by and large they are governed by the Royal Decree from 2007. Current doctoral programmes are governed by the Royal Decree from 2011, setting out a new regulatory framework implementing a new structure which adheres to the guidelines of the European Higher Education Area (EHEA).¹

If we sum up the content of this report, we may draw the following primary conclusions:

- > Although almost all doctors are in employment 3 years after completing the study programme, only half perform doctoral-level functions at work.
- > The scope of companies to absorb talent in recent years has witnessed a rise. They employ more than half of all newly-qualified doctors, whereas the relative proportion of employed by universities and research centres has been declining. Nevertheless, it should be pointed out that in absolute terms the number of doctors who have joined universities and research centres has been rising over the period reviewed.
- > Companies provide the doctors they employ with employment stability, although only 1 in every 3 performs doctoral-level functions at work.
- > Overall job satisfaction is good, regardless of the specific place of work (university, research centre or company). Nevertheless, satisfaction with the link between doctoral education and work is poorer among individuals working for companies.

¹ They all refer to the structure and organisation of the PhD, the skills that should be acquired, the entry requirements and the pursuance of the research career in the initial stage, the vital role of supervision and tutorship in research training, the incorporation of this training into a research setting that encourages communication and creativity, internationalisation and mobility which are paramount in these types of study programmes, and the assessment and accreditation of quality as a benchmark for the international appeal and acknowledgment of the programmes.

Access to the labour market for doctors who graduate from Catalan universities

- > “Traditional” skills such as independent work, ability to generate new knowledge and the publication of findings are those most broadly attained by doctors. On the other hand, the attainment of skills deemed more “modern” is poorer.
- > Doctors who prepare their thesis as part of a research group experience enhanced achievement of all skills compared to the remaining doctors. Nevertheless, the percentage of those preparing their thesis as part of a research group has fallen in recent years.
- > The percentage of doctors funding their thesis by means of a scholarship has also declined.

This report is supplemented with invaluable information obtained from the UNEIX Catalan university information system, coordinated by the Secretariat for Universities and Research of the Autonomous Government of Catalonia, and with data from the National Statistics Institute (INE) in order to include points of reference in the results obtained.

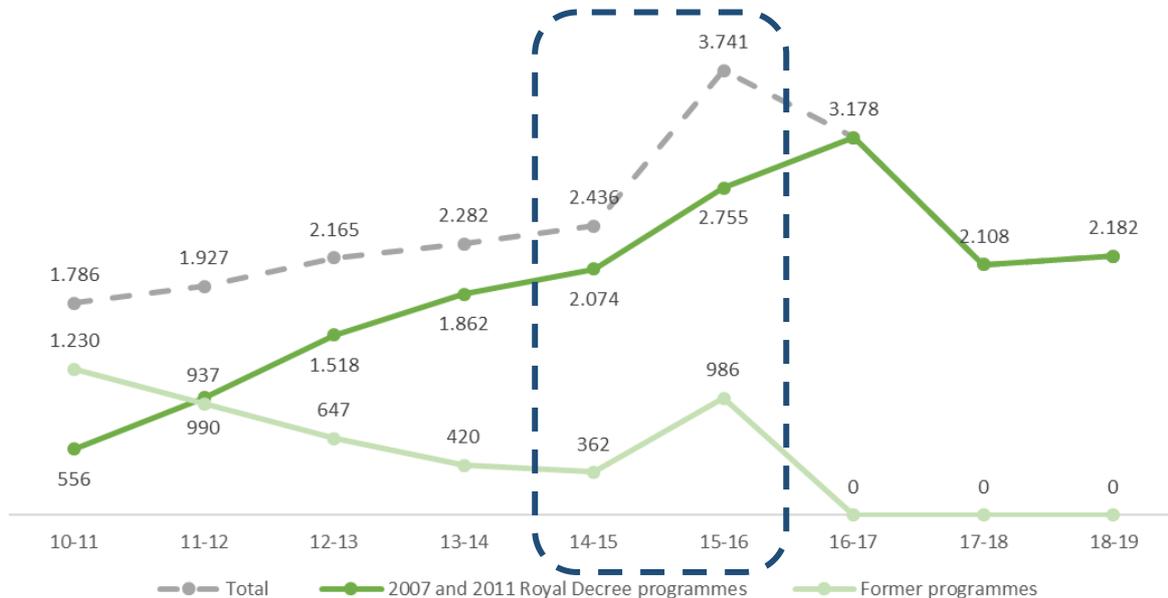
Your interest is greatly appreciated.

Martí Casadesús Fa, AQU Catalunya director

POPULATION DATA FROM CATALONIA

> Trend in the population of doctors in Catalonia

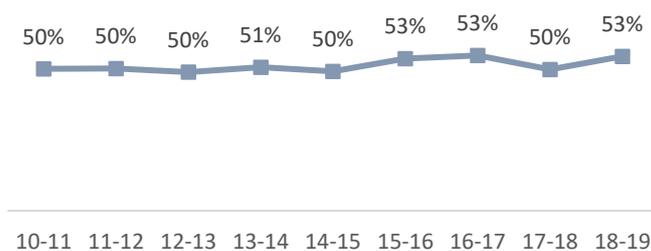
Figure 1. Trend in the number of doctors



Following an upward trend, the number of doctors in Catalonia is remaining constant.

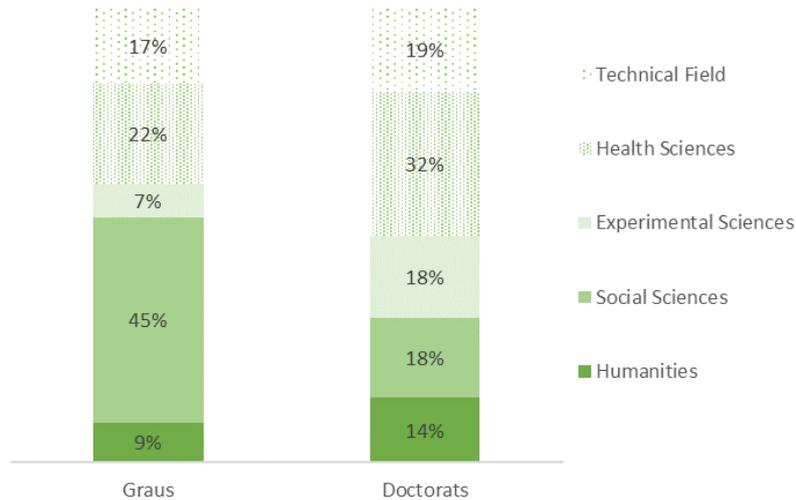
- > The phasing out of the former doctoral programmes (prior to the 2007 Royal Decree) in the 2015-16 academic year led to a spike in doctors in that year. In subsequent years, the number of doctors qualifying has witnessed a steady decline to the point where over the past two academic years it has remained constant at around 2100.
- > The percentage of women obtaining a PhD has been around 50% of the total over the entire period analysed.

Figure 2. Trend in the percentage of women doctors



> Doctoral theses and educational fields

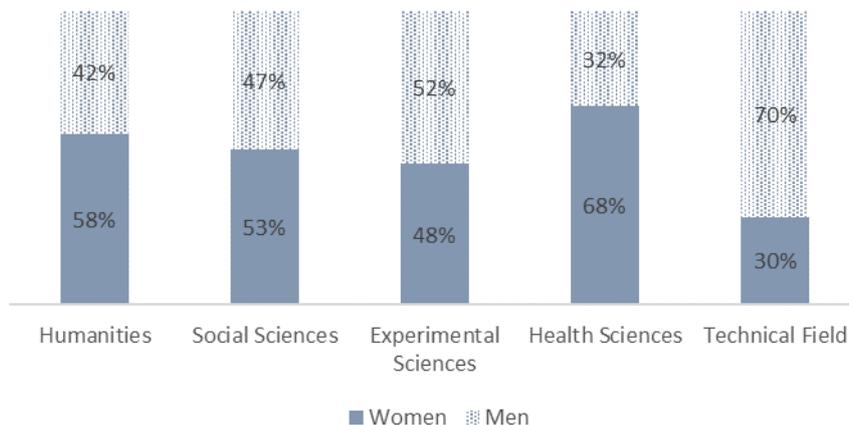
Figure 3. Difference in the distribution of educational fields between Bachelor's degrees and PhDs (2018-19 academic year)



Almost half of Bachelor's level graduates followed Social Sciences, although this field accounts for only 18% of doctors qualifying

- > Graduates in the fields of Humanities and Experimental Sciences at Bachelor's level account for fewer than 10% (9% and 7%, respectively). On the other hand, at PhD level, huge changes are observed in the distribution of educational fields: Social Sciences no longer constitutes the largest field while Humanities and Experimental Sciences (the more academic fields) account for a substantially larger proportion.
- > Women represent a majority in all fields with the exception of Engineering and Experimental Sciences where they account for 30% and 48%, respectively.

Figure 4. Doctoral theses defended according to educational field and gender (2018-19 academic year)



> Where the talent comes from

Figure 5. Trend in the percentage of foreign doctors as a proportion of the total

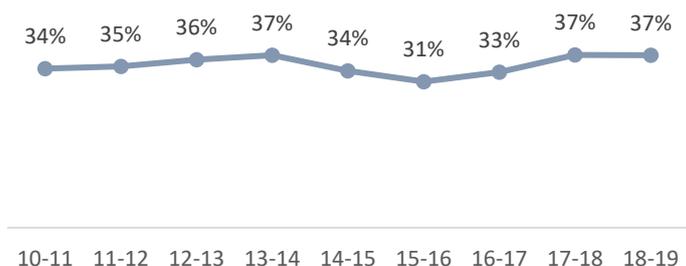


Figure 6. Place of origin of foreign doctors (2018-19 academic year)



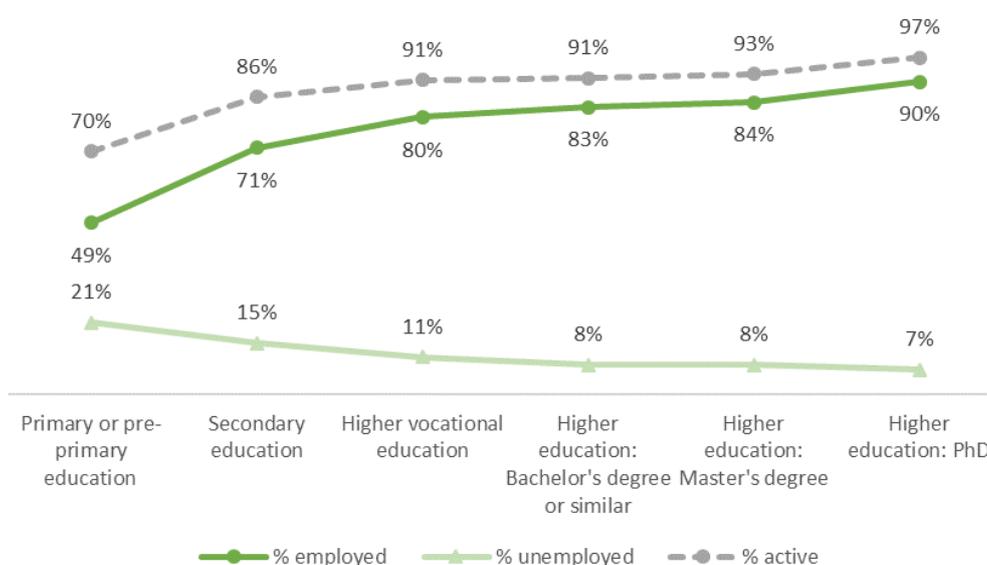
37% of doctors in Catalonia are foreign

- > Around half of these come from Latin America and the Caribbean, 24% come from Europe (the UE-15) and 20% from Asia and Oceania.

THE SURVEY ON THE ACTIVE POPULATION IN SPAIN (APS)²

> Access to the labour market according to education level

Figure 7. Percentage of the population who are employed and unemployed³ according to education level (people aged 25-44 years – APS, 1st quarter 2020)



The higher the education level, the better the access to the labour market

- > Pursuing a higher (vocational or university) education clearly enhances access to the labour market and employment while saving individuals from unemployment.
- > According to the OECD, Spain is one of the OECD countries where the distinction in the percentage of the employed population⁴ according to education level is below the average, i.e., the benefits afforded by pursuing a higher education in terms of access to the Spanish labour market fall below other countries. Indeed, the difference in employment exhibited among those reaching the highest and the lowest education level in Spain is 24 percentage points (pp), while the overall OECD average stands at 27 pp (OECD, 2019).

² Source: National Statistics Institute (INE). These results do not reflect the impact of COVID-19 on the Spanish labour market because the interviews from the first quarter of the study are conducted over the first 13 weeks of the year and the impact of COVID was only established in the interviews held in weeks 11 to 13.

³ Each indicator is calculated with regard to the overall population in each education level.

⁴ People aged 25-64 years in 2018.

> Trend in the employment and unemployment rates

Figure 8. Trend in the employment rate according to education level (people aged 25-44 years – APS, 1st quarter 2020)

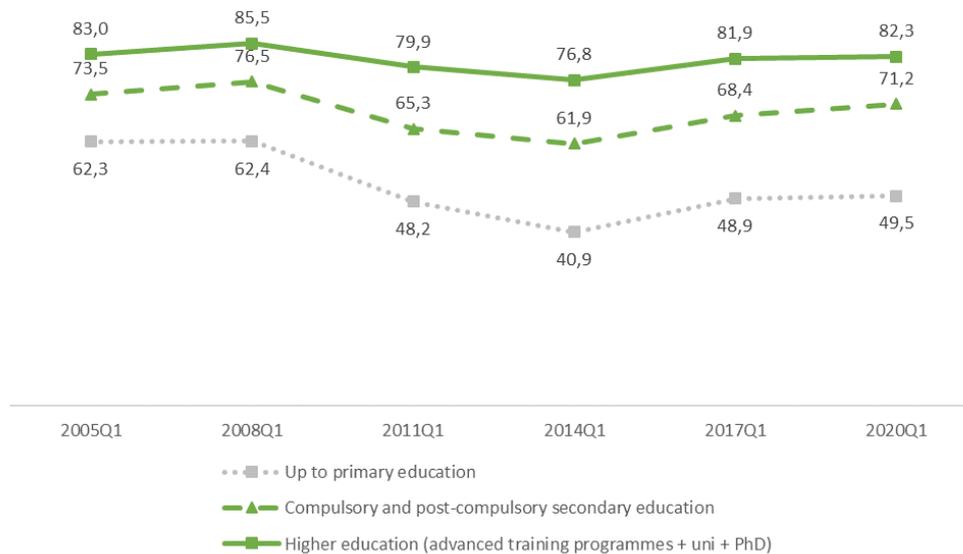


Figure 9. Trend in the unemployment rate⁵ according to education level (people aged 25-44 years – APS, 1st quarter 2020)



The unemployment rate is down substantially across all education levels while the employment rate witnesses an increase, albeit smaller

- > The employment rate among individuals with a higher education stands at 82.3% (0.4 pp higher than in 2017) while the unemployment rate stands at 9.8% (1.7 pp below 2017).
- > The divergence between the employment and unemployment rates according to education level has narrowed since 2017, although it is still far from the levels witnessed before the recession.

⁵ Unemployment rate measured by determining the unemployed population as a proportion of the active population.

THE SURVEY ON ACCESS TO THE LABOUR MARKET FOR DOCTORS

> Population and sample

Table 1. Population and sample of doctors in the 2020 access to the labour market study

2014-15 and 2015-16 academic years	Total people
Population of doctors (according to UNEIX)	6,177
Population of doctors for the 2020 access to the labour market study ⁶	5,916
Spanish	4,198
International	1,718
2020 access to the labour market study sample	2,203
Spanish	1,945
International	258

Figure 10. Trend in the sample of doctors according to nationality (number of people)

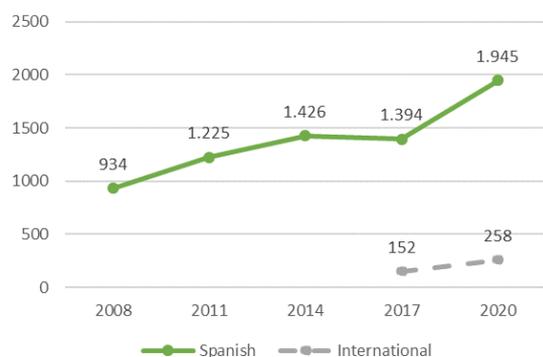


Figure 11. Trend in the response rate according to nationality (%)



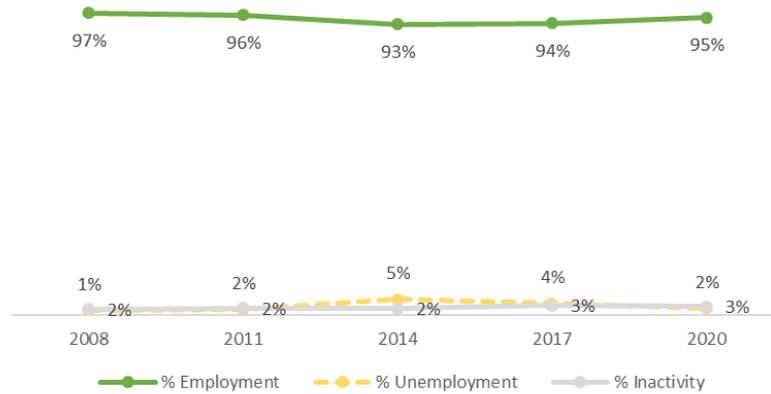
⁶ Target population (with valid contact telephone number) from the universities.

The sample secured increased in this latest edition of the survey

- > Nevertheless, it is necessary to consider that the target population in the study also rose substantially in this edition since the number of doctors from the 2014-15 and 2015-16 academic years was far higher than the previous years (see annexed table).
- > In order to be able to compare the results from 2020 to previous editions, the results provided throughout the report focus on Spanish doctors.
- > The end of the report incorporates a section comparing certain indicators between Spanish and international doctors.

> Employment

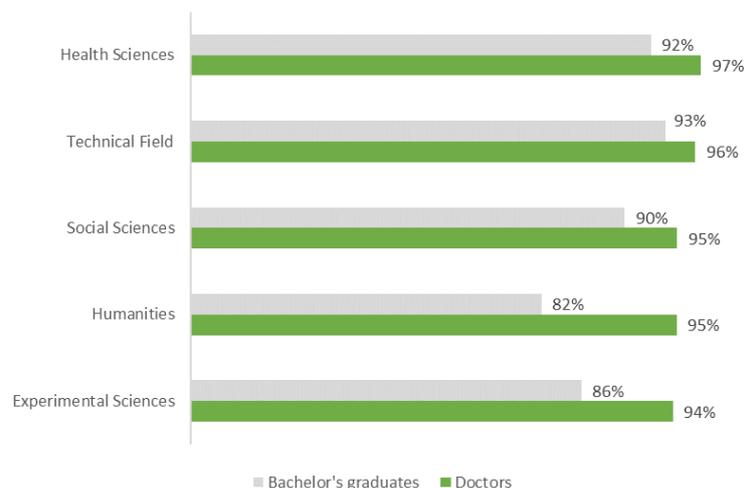
Figure 12. Trend in the percentages of employment, unemployment and inactivity for doctors



95% of doctors are in employment 3 years after completing the study programme

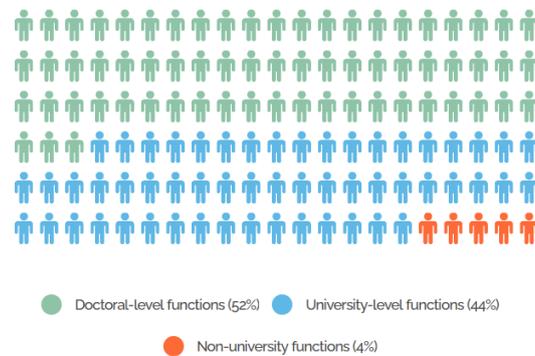
- > Although levels of employment have always been very high among doctors, a constant upward trend has been witnessed since 2014.
- > Very few differences are seen in terms of employment levels when broken down by educational fields: values range from 94% for Experimental Sciences to 97% for Health Sciences.
- > Furthermore, in the case of the results of the survey on access to the labour market for Bachelor's graduates, lower employment percentages are reported compared to doctors and the differences between educational fields are greater (in this case varying between 83% for Humanities and 93% for the Technical Field).

Figure 13. Percentage of employment at Bachelor's and PhD level according to educational field in 2020 based on the surveys on Bachelor's degree graduates and doctors



> Suitability of functions at work

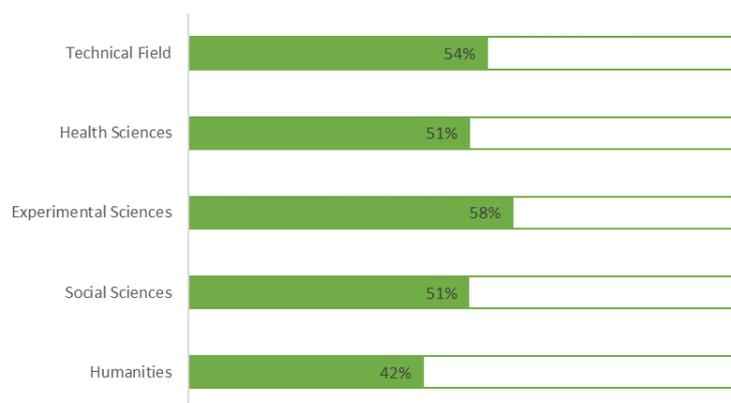
Figure 14. Suitability of functions at work (2020)



52% of doctors perform doctoral-level functions at work

- > The remaining 48% are over-qualified doctors, i.e., the functions they perform are below doctoral-level. Even so, the majority of this group are performing university-level functions (44%) and only a minority (4%) are performing non-university functions.

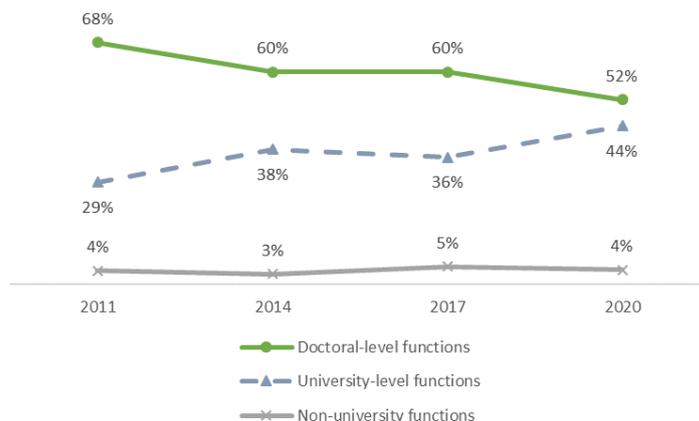
Figure 15. Suitability of doctoral-level functions at work according to educational field (2020)



Alignment between the performance of doctoral-level functions at work and education level is higher among doctors of Experimental Sciences

- > In this group, 58% of doctors perform research-related functions at work, whereas among Humanities this is true only of 42%.

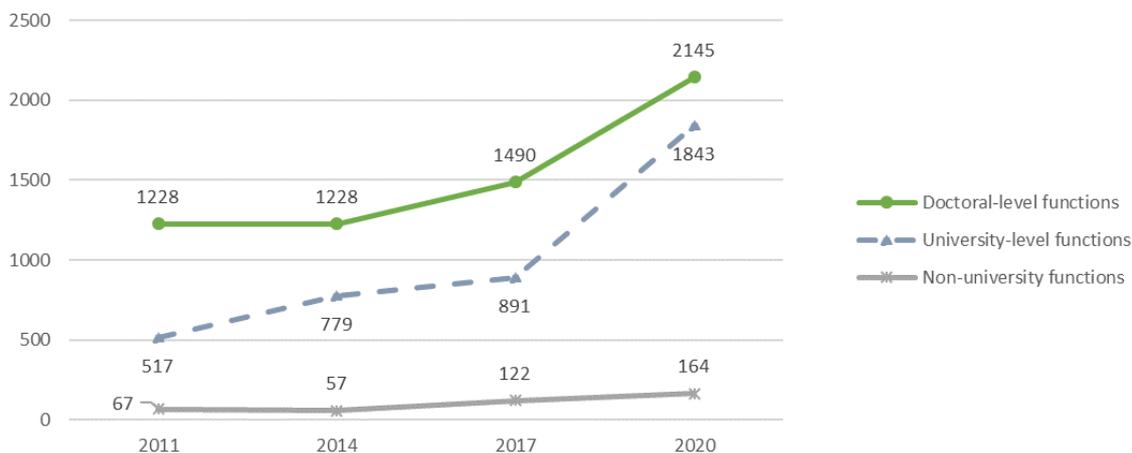
Figure 16. Trend in the suitability of functions at work (%)



The percentage of suitability of functions at work has declined in recent years

- > Although the number of doctors performing functions according to their education level has increased substantially over the period analysed (indeed, in all categories an increase is witnessed), this is not the case in relative terms: the percentage of doctors performing functions pertaining to their education level has declined in recent years (by 16 percentage points since 2011).

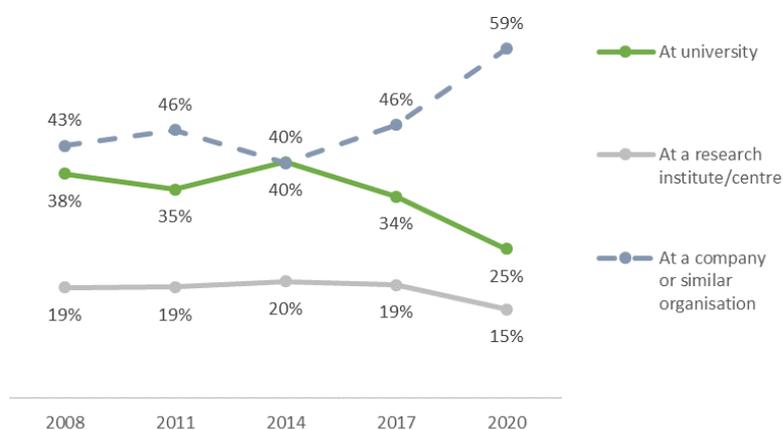
Figure 17. Trend in the suitability of functions at work (absolute value according to raising factor)



Note: the raising factor has been calculated based on the proportion of the total population comprised by the total sample.

> Place of work: university, research centre or company

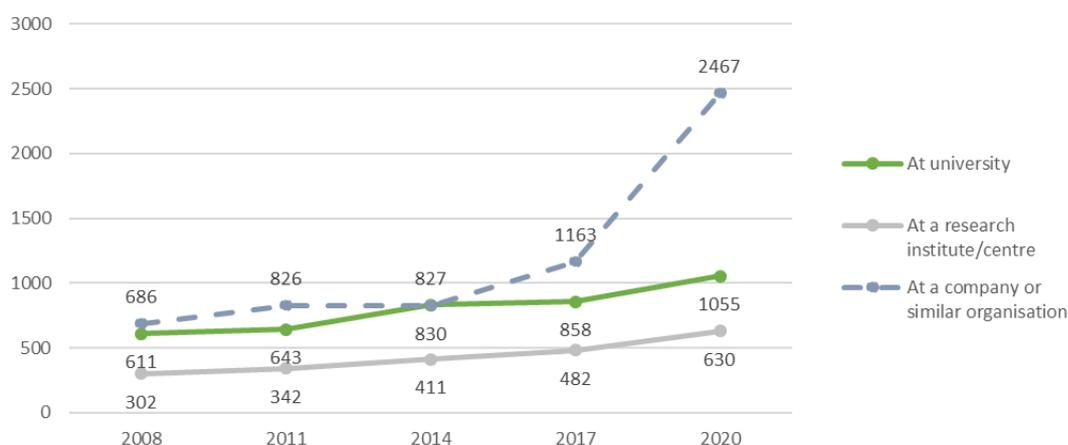
Figure 18. Trend in the place of work (%)



Most recently-qualified doctors work in private companies

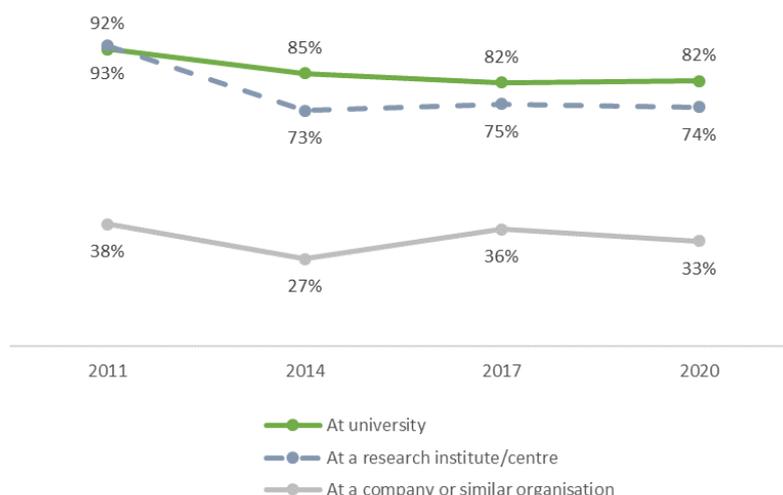
- > According to data from 2020, 59% of doctors work at a company or similar organisation, 25% work at university and the remaining 15% at a research institute or centre. Since 2014 an increasing percentage of doctors have been working in companies while there has been a decline in the proportion working at universities and at research centres.
- > In absolute terms, the number of doctors joining companies has doubled over the past 3 years and although there has also been an increase in the number of individuals recruited at universities and research centres, the rise has been more gradual compared to the change seen at companies.

Figure 19. Trend in the place of work (absolute value according to raising factor)



Note: the raising factor has been calculated based on the proportion of the total population comprised by the total sample.

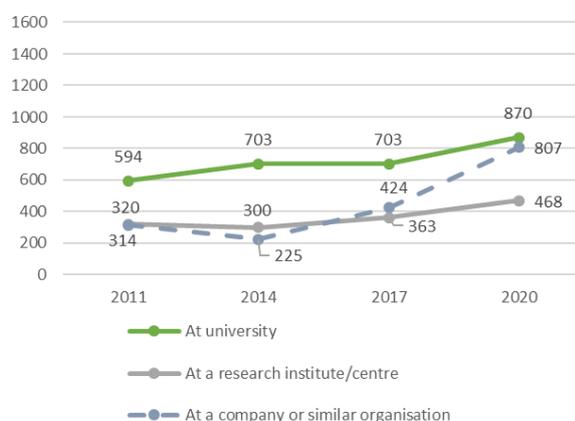
Figure 20. Trend in doctoral-level functions according to the place of work



Only 1 in every 3 working in private companies performs doctoral-level functions

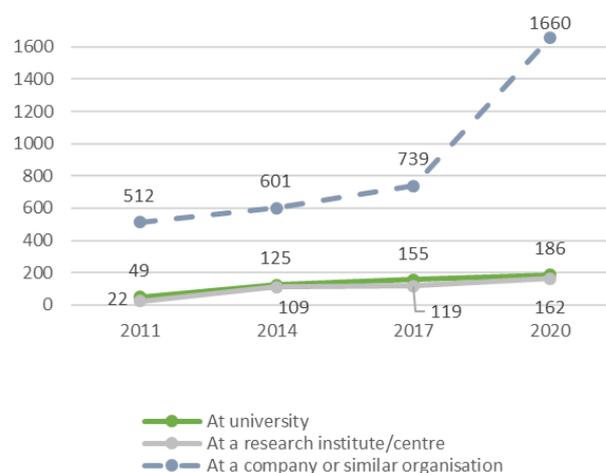
- > Most doctors working at university or at research centres are performing doctoral-level functions (82% at university and 74% at research centres).
- > In private companies only 33% perform doctoral-level functions, a figure that is 3 pp lower than the one reported in 2017.
- > Moreover, in absolute terms the results suggest that although more doctors have been performing doctoral-level functions at all places of work over the past 3 years (with the most heightened increase seen in companies), the increase in the number of doctors that have joined companies in order to perform functions below doctoral-level has been exponential.

Figure 21. Trend in the number of doctors performing DOCTORAL-LEVEL functions according to the place of work (absolute value according to raising factor)



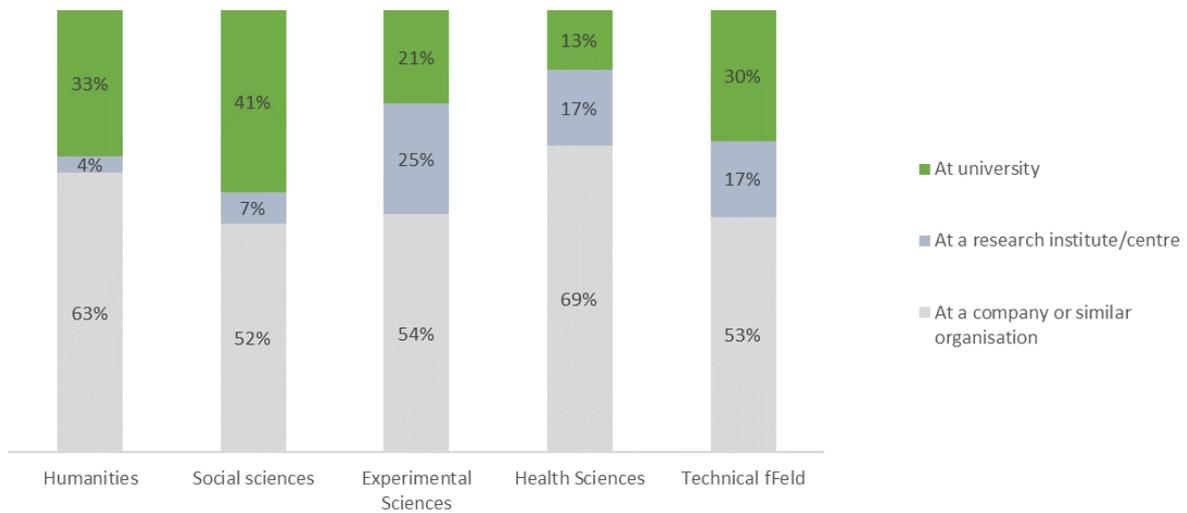
Note: the raising factor has been calculated based on the proportion of the total population comprised by the total sample.

Figure 22. Trend in the number of doctors performing functions BELOW doctoral-level according to the place of work (absolute value according to raising factor)



Note: the raising factor has been calculated based on the proportion of the total population comprised by the total sample.

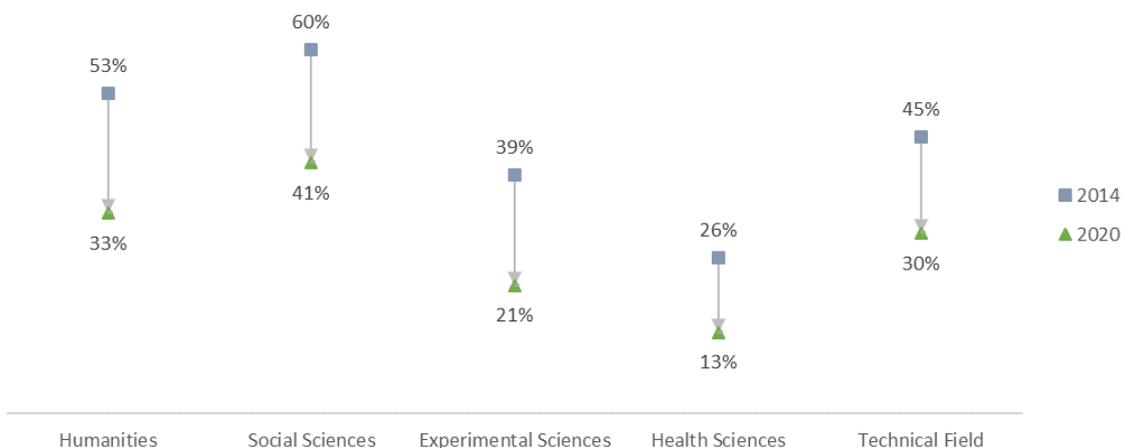
Figure 23. Place of work according to educational field (2020)



Private companies are the primary destination for newly-recruited doctors, particularly those qualifying in the fields of Health Sciences and Humanities

- > The fields of Health Sciences and Humanities account for the largest percentage of doctors working at a company or similar organisation (69% and 63%, respectively). In the case of Health Sciences, most of these doctors are employed in the healthcare sector (health centres) and, in the case of Humanities, they are primarily employed in the education sector (not shown on the graph).

Figure 24. Change in the % working at university (2014-2020)

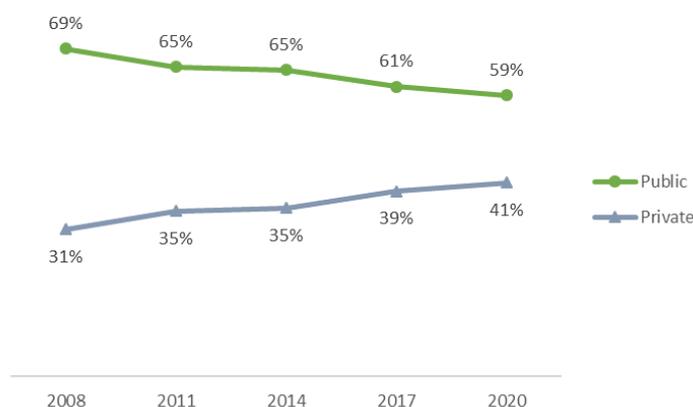


University accounts for a declining relative proportion of the recruitment of newly-qualified doctors in all educational fields

- > Since 2014, university has accounted for a declining relative proportion (falling by between 12 and 20 pp according to educational field) of the recruitment of national doctors 3 years after qualifying.

> Sector of employment: public or private

Figure 25. Trend in terms of employment of doctors in the public or private sector



59% of doctors are employed in the public sector, in particular at university and research institutions or centres

- > The trend in terms of the relative significance of the public sector has been one of decline, falling by a total of 10 pp since the first edition of the study was published.
- > This downward trend has also been witnessed at state university falling from 91% in 2008 to 75% in 2020.

Figure 26. Trend in terms of public sector employment according to place of work

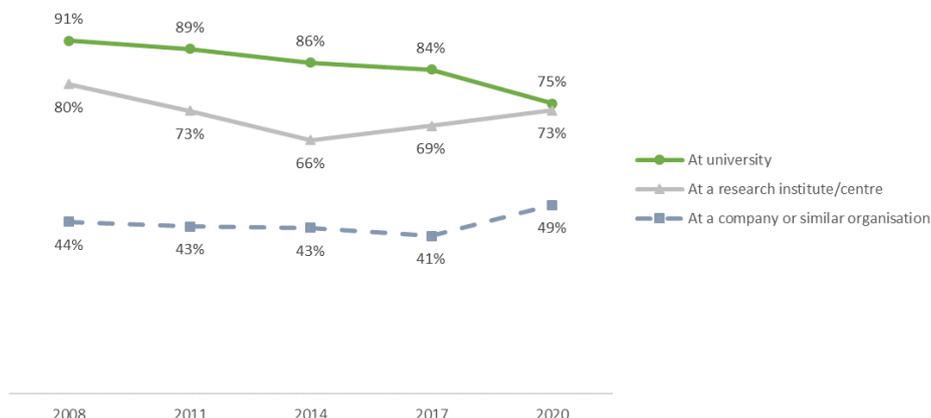
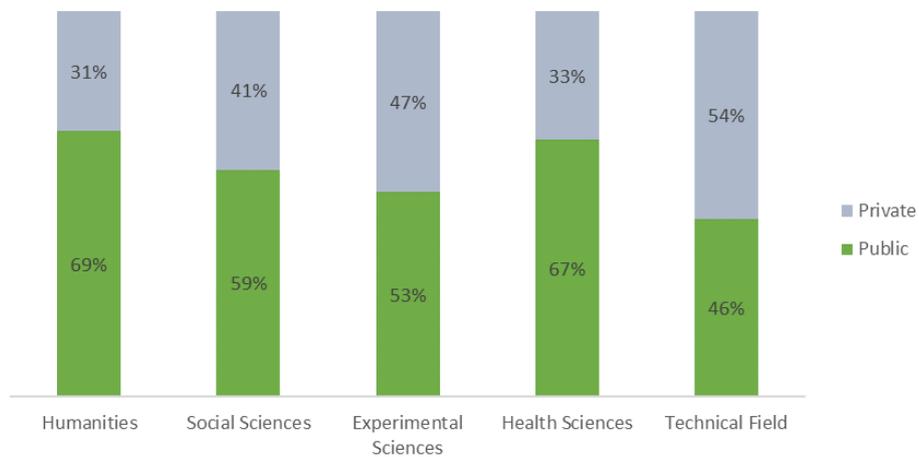


Figure 27. Public or private sector employment of doctors according to educational field (2020)

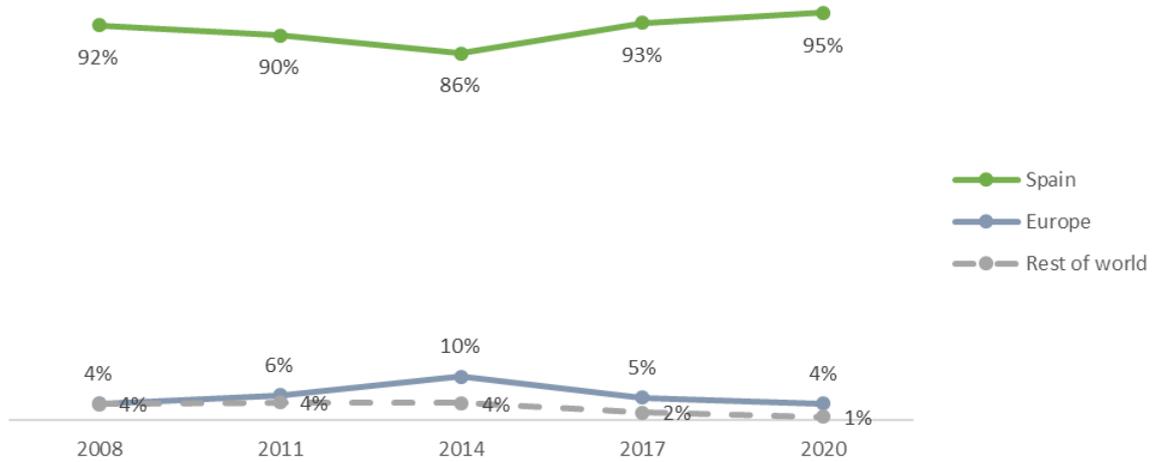


Humanities and Health Sciences: the fields in which public sector recruitment accounts for the largest share

- > When broken down according to educational field, the Humanities and Health Sciences account for the largest proportion of public sector employment of doctors (at 69% and 67%, respectively). As mentioned above, doctors qualifying in the Humanities and Health Sciences fields carry a significant presence in the education and healthcare sectors, respectively. Indeed, by and large, these two sectors comprise mainly public services.

> Mobility

Figure 28. Trend in the percentage of doctors working in different locations



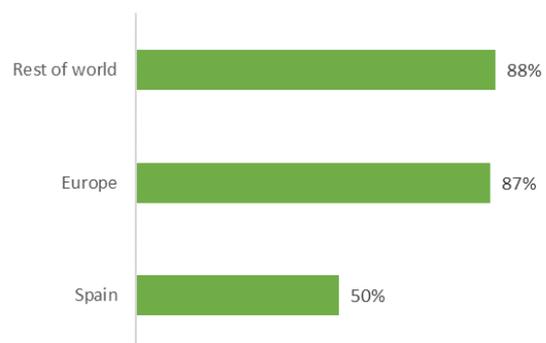
Foreign employment mobility of national doctors is very low

- > According to the data from 2020, only 5% of Spanish doctors are working outside Spain. In addition, there has been a downward trend in terms of foreign employment mobility in recent years.
- > Even so, unlike those that stay in Spain, most doctors working abroad are employed by a university and are successful in performing doctoral-level functions at work.

Table 2. Work location according to whether the employer is a university, research centre or company (2020)

	Spain	Europe	Rest of world
At university	25%	39%	47%
At a research institute/centre	14%	36%	24%
At a company or similar organisation	61%	25%	29%
Total	100%	100%	100%

Figure 29. Percentage performing doctoral-level functions according to the location of work (2020)



> Contract type

Figure 30. Trend in terms of contract type



Increasing employment stability for doctors

- > According to the data from 2020, 56% of doctors are on a permanent contract 3 years after completing their study programme. This percentage has risen by 10 pp since 2014 (when the lowest percentage of employment stability was reported). In addition, the proportion of temporary recruitment has fallen to 29% (10 pp lower since 2014).
- > The percentage of individuals who are self-employed stands at 8% in 2020, also undergoing an upward trend over the entire period analysed.
- > Employment stability is particularly high among those who qualify in Health Sciences when compared to the other fields.

Figure 31. Contract type according to educational field in 2020

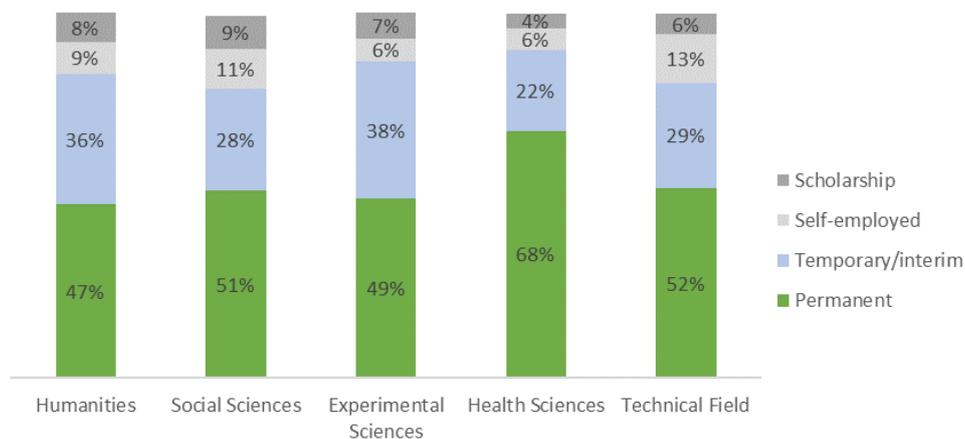
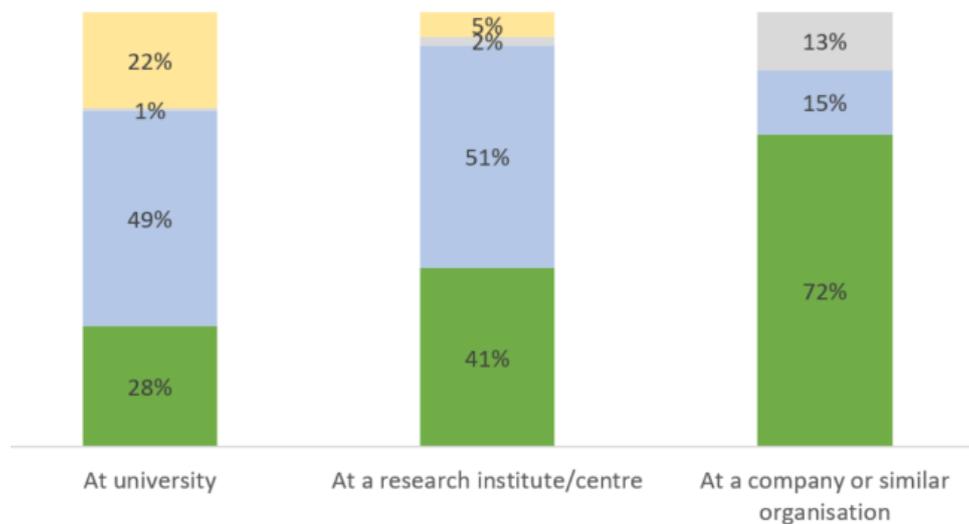


Figure 32. Contract type according to place of work in 2020



Most doctors working at companies or similar organisations benefit from employment stability despite not performing doctoral-level functions

- > 72% of doctors working in private companies are on a permanent contract while the percentages reporting this to be the case at research centres and universities stand at 41% and 28%, respectively.

> Salaries

Figure 33. Trend in the percentage in full-time employment

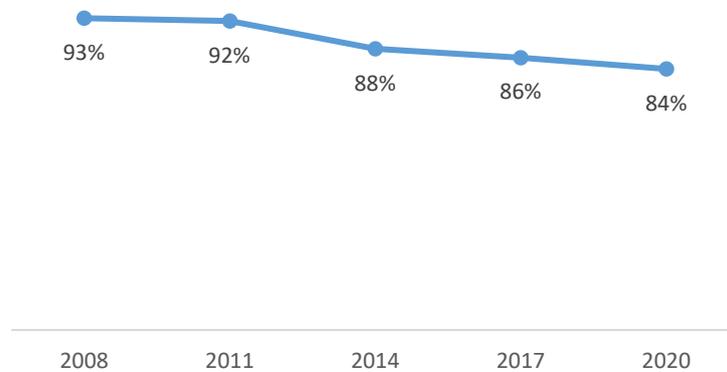
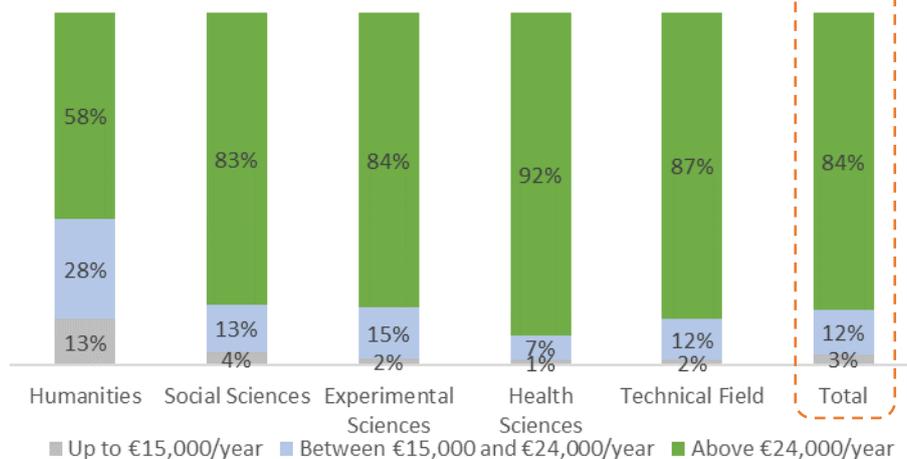


Figure 34. Gross earnings according to educational field in 2020 (only individuals in full-time employment)

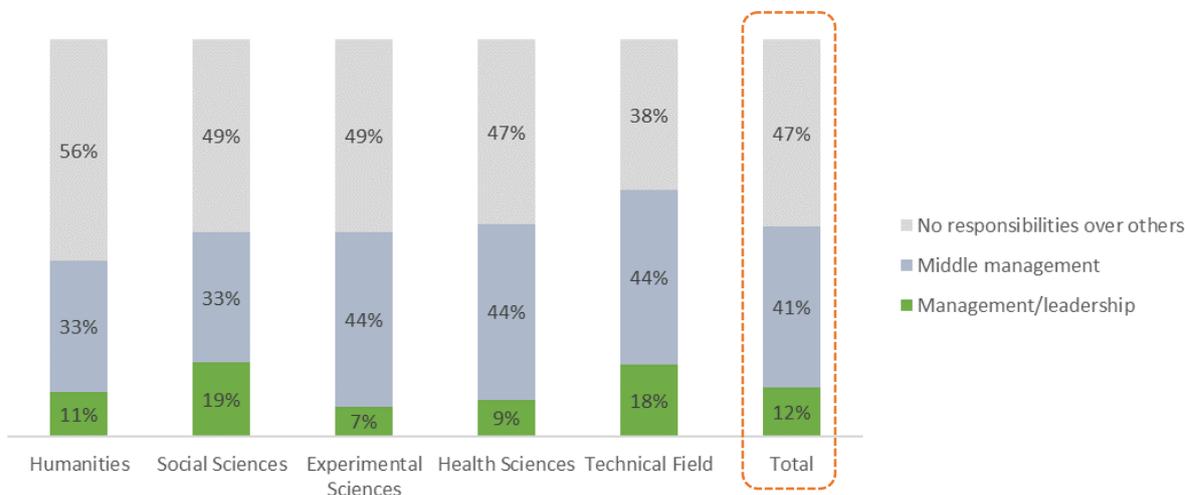


84% earn a gross annual salary of in excess of €24,000

- > Of the 84% of doctors working full-time, 84% are on a salary of in excess of €24,000/year, 12% earn between €15,000 and €24,000/year and the remaining 3% earn less than €15,000/year.
- > In the case of those who qualify in Humanities, salaries are substantially below those of individuals who qualify in the other fields: only 58% earn above €24,000/year, while the percentage in this category is at least 20 pp higher in the remaining fields.

> Level of responsibility

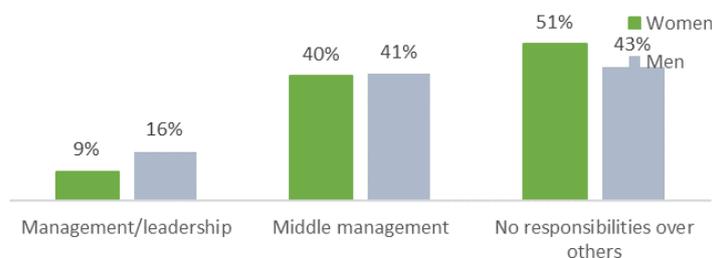
Figure 35. Level of responsibility according to educational field (2020)



Around half of doctors exercise responsibility over other individuals

- > 12% hold management or leadership positions, 41% are in middle management while the remainder exercise no management responsibility over other individuals.
- > According to educational fields, the highest proportion of leaders or managers is found among those qualifying in the Social Sciences and the Technical Field (at 19% and 18%, respectively). There is a noteworthy share of middle managers among those qualifying in the Health Sciences, Experimental Sciences and Technical fields (44%). On the other hand, the lowest proportion of doctors exercising responsibility over others is exhibited by individuals qualifying in Humanities.
- > In terms of gender, at management/leadership level men account for a larger proportion of those with this responsibility, while there are no differences for middle managers.⁷

Figure 36. Level of responsibility according to gender (2020)



⁷ The results of hypothesis testing between men and women for each group (management/leadership and middle management) point to statistically significant differences in the case of management/leadership at a confidence level of 95%.

> Job satisfaction

Table 3. Job satisfaction according to educational field of the PhD in 2020 (from 0 to 10)

	Humanities	Social Sciences	Experimental Sciences	Health Sciences	Technical Field	Total
Job content	8.3	8.5	8.4	8.5	8.5	8.5
Potential for promotion and enhancement	5.8	6.5	6.7	6.7	6.6	6.5
Remuneration level	6.2	6.5	6.7	6.3	6.6	6.4
Link between PhD education and work	6.1	7.1	7.0	6.7	6.8	6.8
Overall job satisfaction	7.7	8.0	8.0	8.0	8.0	7.9

General satisfaction of doctors with work is very good, even among those working in private companies (where most are not performing doctoral-level functions but do benefit from employment stability)

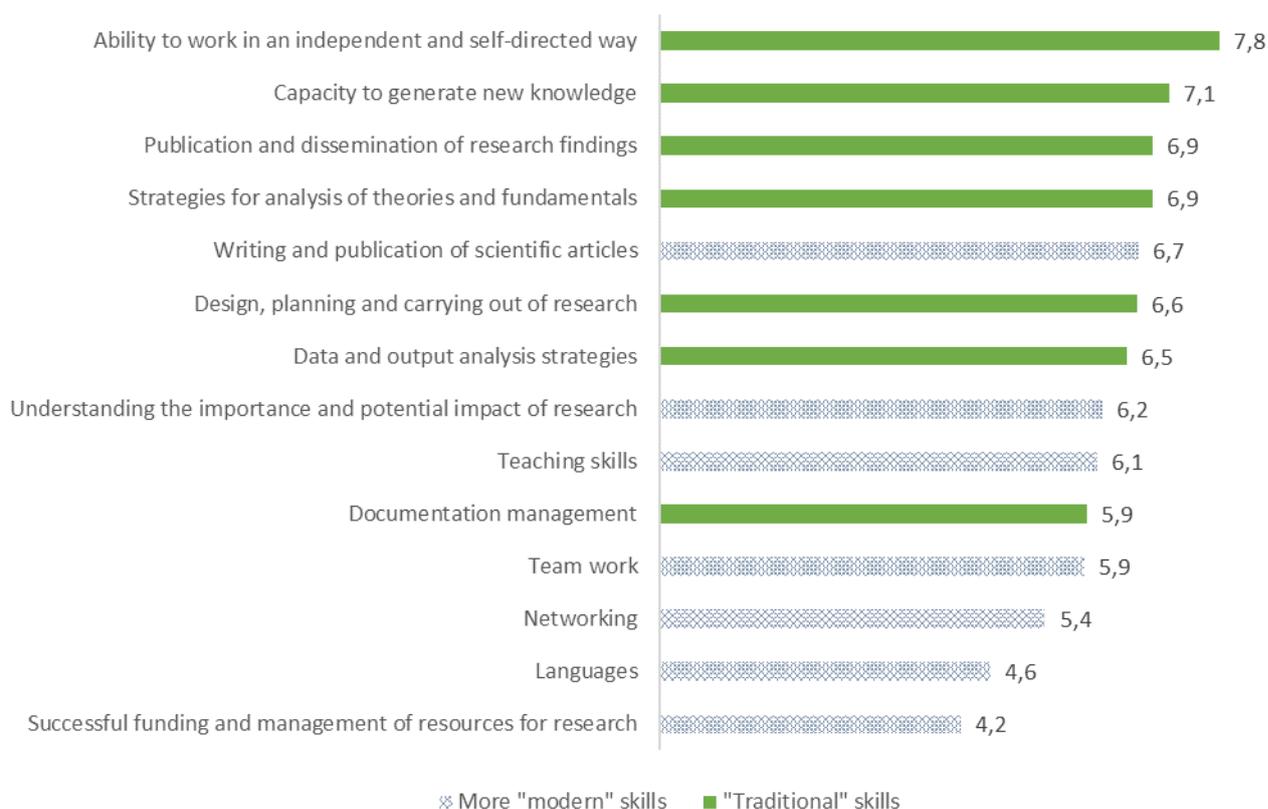
- > On average, overall job satisfaction stands at 7.9. Indeed, the most highly welcomed factor is job content (at 8.5). There are no differences when broken down according to educational fields or based on the place of work.
- > On the other hand, satisfaction levels with potential for promotion and enhancement, and with remuneration level, are far poorer at averages of 6.5 and 6.4, respectively. Specifically, doctors qualifying in the field of Humanities rate their promotion and enhancement prospects at 5.8.
- > Huge differences are seen in the results when broken down according to place of work when it comes to satisfaction with the link between PhD education and work: the figure is high for doctors working at university or research centres (7.7 and 7.8, respectively) while those working in private companies report far poorer satisfaction at 6.2.

Table 4. Job satisfaction according to place of work in 2020 (from 0 to 10)

	At university	At a research centre	At a company	Total
Job content	8.5	8.3	8.5	8.5
Potential for promotion and enhancement	6.4	5.6	6.8	6.5
Remuneration level	6.0	6.2	6.7	6.4
Link between PhD education and work	7.7	7.8	6.2	6.8
Overall job satisfaction	8.0	7.8	7.9	7.9

> Skills acquisition

Figure 37. Extent of skills acquisition in 2020 (from 0 to 10)⁸



The best level of skills acquisition by doctors is reported for the “traditional” skills characteristic of a researcher

- > The extent of acquisition of the skills that are more directly associated with the preparation of a doctoral thesis – such as independent work, ability to generate new knowledge and the publication of findings – is good or very good (6.5 or higher).
- > On the other hand, there is scope for improvement when it comes to ensuring the acquisition of more “modern” skills, since the attainment of such skills has been less widespread than the above. Skills exhibiting poorer acquisition include languages and successful funding and management of resources for research, for which the assessments reported are below 5.

⁸ The list of skills is based on sources that define the qualities expected from doctors: the Dublin Descriptors from the Joint Quality Initiative (2004), the Irish Universities Association (2008), Viate (2010) and LERU (2010).

Table 5. Extent of skills acquisition in 2020 according to educational field

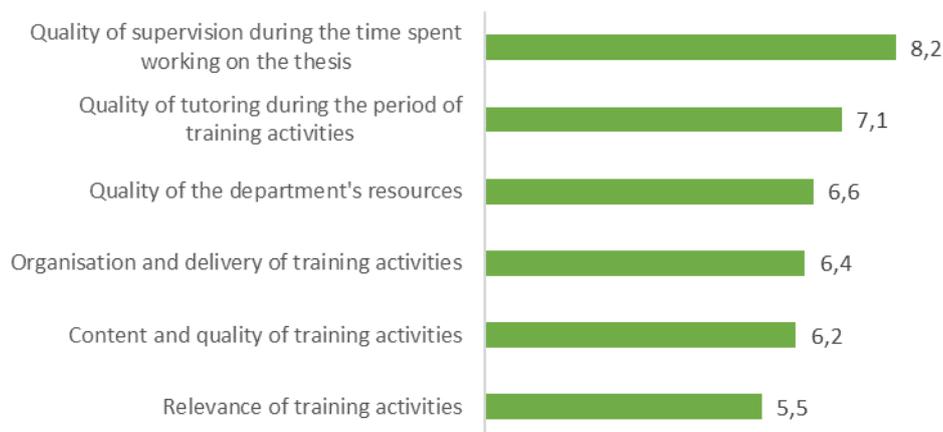
	Humanities	Social Sciences	Experimental Sciences	Health Sciences	Technical Field
Documentation management	6.0	6.3	6.0	5.6	5.9
Strategies for analysis of theories and fundamentals	6.9	7.2	7.3	6.3	6.8
Data and output analysis strategies	5.8	6.5	7.3	6.2	6.5
Publication and dissemination of research findings	6.7	6.6	7.5	6.6	6.9
Writing and publication of scientific articles	6.5	6.3	7.4	6.4	6.8
Design, planning and carrying out of research	6.7	6.9	7.0	6.3	6.4
Capacity to generate new knowledge	7.3	7.3	7.4	6.6	7.1
Ability to work in an independent and self-directed way	8.3	7.9	8.2	7.2	7.9
Networking	4.9	5.4	5.7	5.2	5.4
Understanding the importance and potential impact of research	5.8	6.2	6.2	6.2	6.0
Successful funding and management of resources for research	4.0	3.8	4.6	4.1	4.4
Teaching skills	6.3	6.1	5.9	5.7	6.2
Languages	4.5	4.2	5.6	4.0	5.0
Team work	4.8	5.0	6.8	6.2	6.0

Skills acquisition is greater among those qualifying in Experimental Sciences than the remaining fields

- > Doctoral education in the field of Experimental Sciences leads to better skills acquisition during the study programme in terms of both “traditional” skills (strategies for analysis of theories and fundamentals; data and output analysis strategies; publication and dissemination of research findings) and more “modern” skills (writing and publication of scientific articles; team work; networking; languages).

> Satisfaction with the doctoral programme

Figure 38. Satisfaction with doctoral programmes in 2020 according to different items (from 0 to 10)



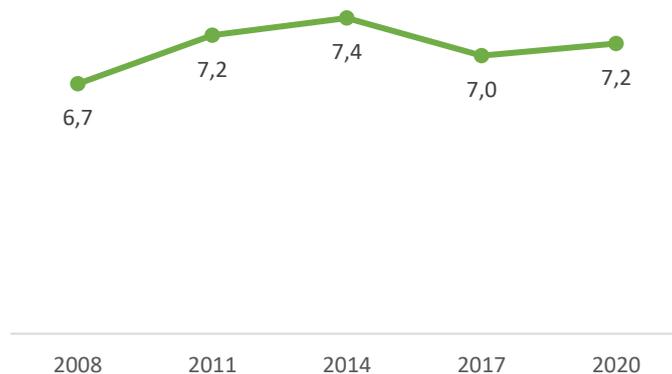
Quality of thesis supervision during the doctoral programme is the highest rated aspect in all educational fields

- > Average satisfaction of doctors with this item stands at 8.2. The second most highly rated item in terms of satisfaction is quality of tutoring (7.1).
- > The remaining factors, such as quality of the department's resources and all factors relating to training activities are assessed at satisfaction levels below 7 and in fact the actual relevance of training activities is the worst rated aspect at 5.5.

Table 6. Satisfaction with doctoral programmes in 2020 according to different items broken down by educational fields

	Humanities	Social Sciences	Experimental Sciences	Health Sciences	Technical Field
Content and quality of training activities	6.5	6.7	6.0	5.9	6.2
Relevance of training activities	5.6	6.0	5.5	5.1	5.8
Organisation and delivery of training activities	6.4	6.8	6.3	6.1	6.4
Quality of tutoring during the period of training activities	7.7	7.7	7.0	6.5	7.4
Quality of supervision during the time spent working on the thesis	8.3	8.6	8.1	8.1	8.0
Quality of the department's resources and availability for conducting research	6.2	6.1	7.1	6.5	6.7
Overall satisfaction with the doctoral programme	7.0	7.2	7.4	7.0	7.2

Figure 39. Trend in overall satisfaction with the doctoral programme (from 0 to 10)



Overall satisfaction with the doctoral programme according to the data from 2020 stands at 7.2

- > Overall satisfaction with the doctoral programme is good and has remained somewhat constant over the period examined.

> Willingness to take the doctoral programme again

Figure 40. Trend in the percentage of doctors who would take the doctoral programme again

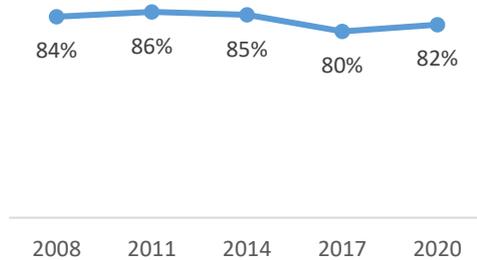
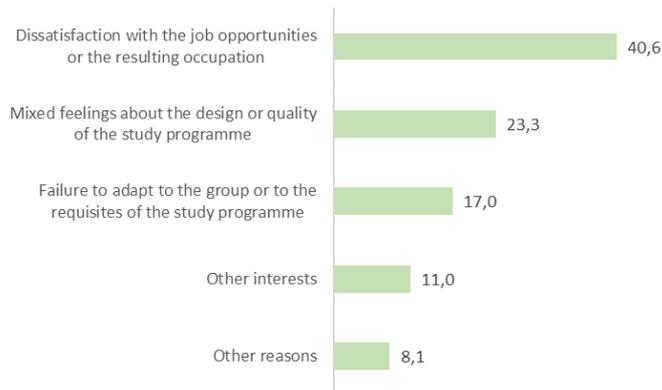


Figure 41. Reasons for not taking the doctoral programme again (2020)



82% of doctors would take the doctoral programme again

- > This indicator has shown a stable trend over the period reviewed (around 80%-86%).
- > The primary reason for not taking the doctoral programme again is dissatisfaction with job opportunities.
- > No huge differences are seen in willingness to take the doctoral programme again according to educational field: the highest level of willingness is seen among those who qualify in Health Sciences at 85% while the lowest is reported by individuals who qualify in Humanities at 77%.
- > There is also no significant change in this percentage according to the place of work: 86% of those working at university would take the same doctoral programme again, while this is true of 84% of individuals working at research centres and 80% of those employed by private companies.

Figure 42. Percentage of doctors who would take the doctoral programme again according to educational field (2020)

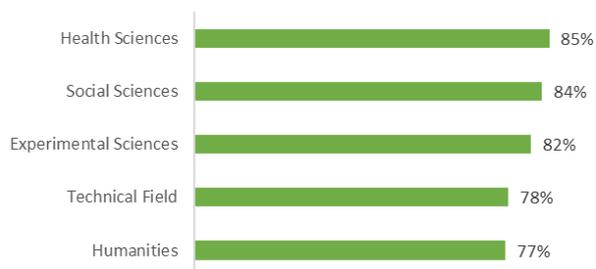
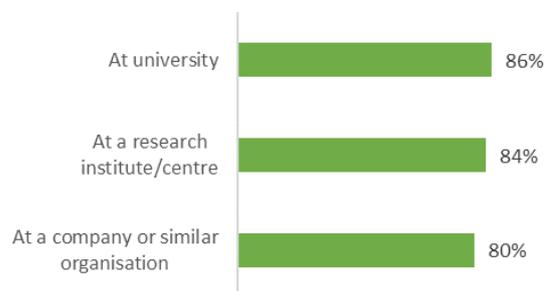


Figure 43. Percentage of doctors who would take the doctoral programme again according to place of work (2020)



> Funding during the doctoral programme

Figure 44. Trend in the source of funding during the doctoral programme

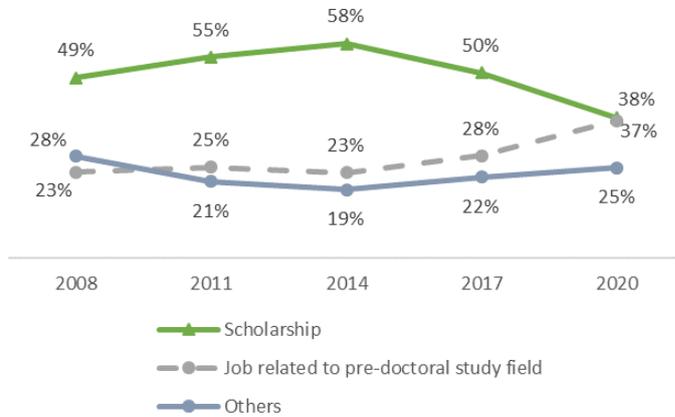
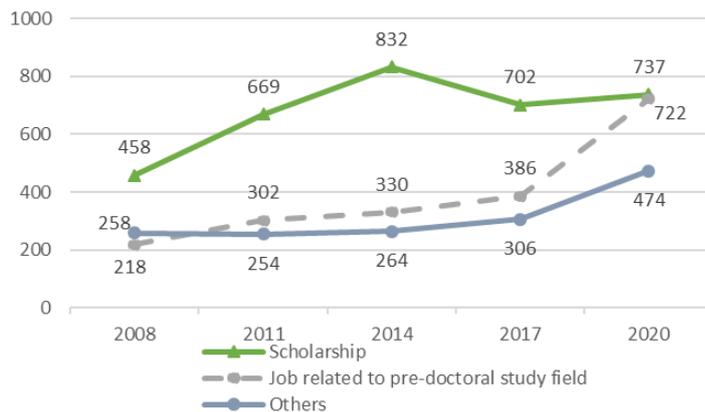
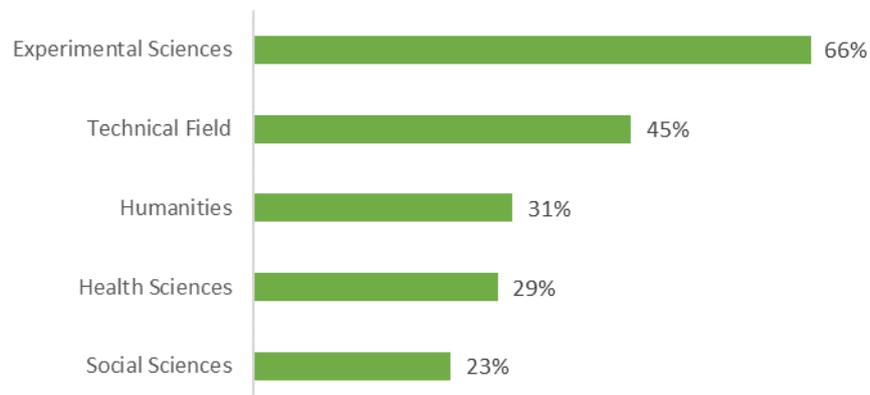


Figure 45. Trend in the source of funding during the doctoral programme (absolute value according to raising factor)



Note: the raising factor has been calculated based on the proportion of the total population comprised by the total sample.

Figure 46. Percentage of doctors who benefitted from a scholarship according to educational field (2020)



The importance of scholarships as a source of funding to pursue the doctoral programme has declined hugely in recent years

- > From 2014 onwards, the percentage of doctors with a scholarship fell by 20 pp (from 58% to 38%). The most common source of funding after the scholarship in order to pursue the doctoral programme is work related to the pre-doctoral study field.
- > However, in absolute terms the number of doctors benefitting from a scholarship has increased over the past 3 years.
- > There are huge variations in securing a scholarship across the educational fields: 66% of individuals following Experimental Sciences are successful in this respect compared to only 23% of those undertaking Social Sciences securing a scholarship.

> Doctoral programme method: independent vs. research group

Figure 47. Trend in the percentage of doctors preparing their thesis as part of a research group

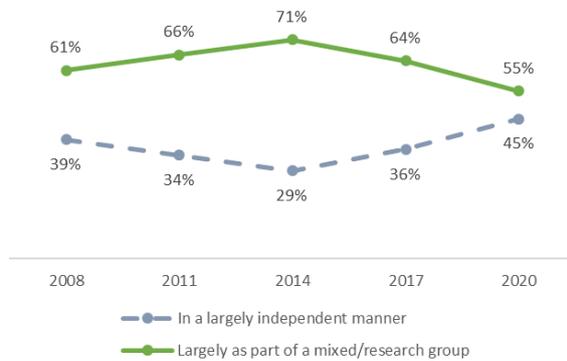
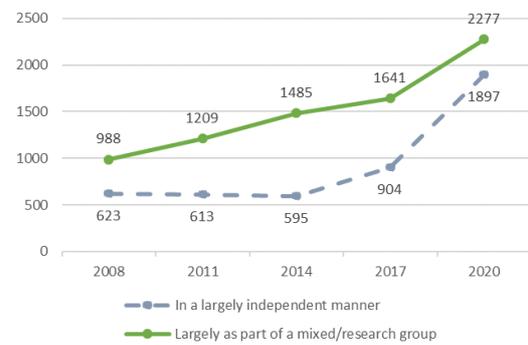


Figure 46. Trend in the number of doctors preparing their thesis as part of a research group (absolute values according to raising factor)

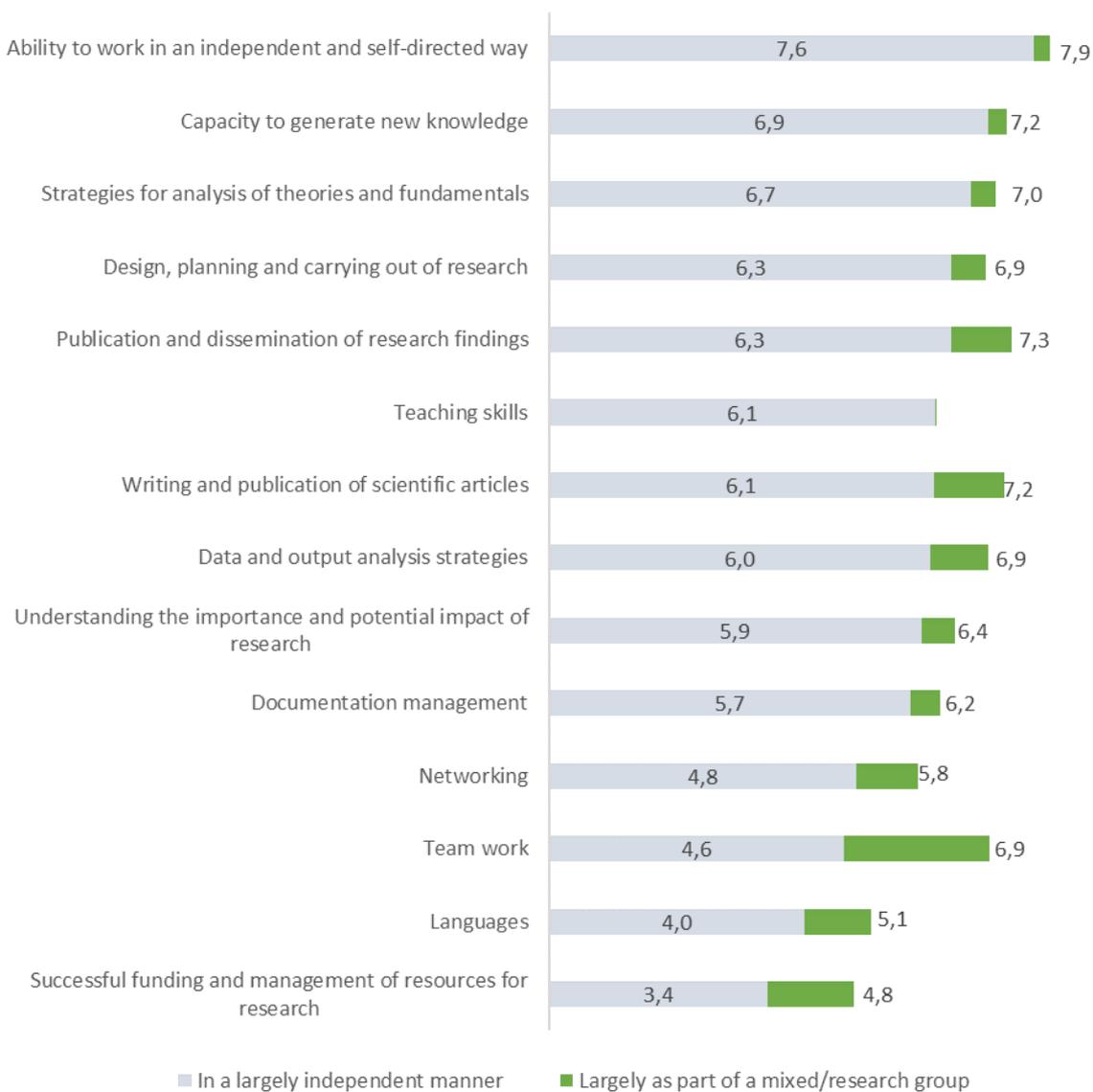


Note: the raising factor has been calculated based on the proportion of the total population comprised by the total sample.

PhD students who have prepared their thesis as part of a research group benefit from optimal skills achievement compared to other methods. Nevertheless, the percentage of these prepared as part of a research group has fallen in recent years

- > In 2020, 55% of theses were prepared as part of a research group (compared to 71% in 2014).
- > Better skills achievement is reported among doctors who prepare their thesis as part of a research group compared to those who do so independently.
- > The most noteworthy differences are seen with respect to skills such as team work (2.3), successful funding and management of resources for research (1.3), and writing and publication of scientific articles (1.1).

Figure 49. Extent of skills acquisition in 2020 according to thesis preparation method (from 0 to 10)



> Mobility during the doctoral programme

Figure 50. Trend in national or international mobility during the doctoral programme

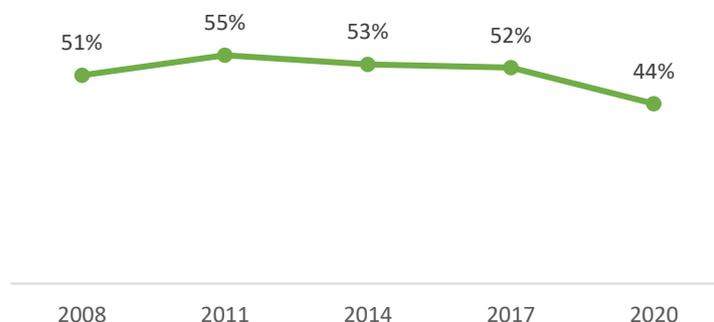
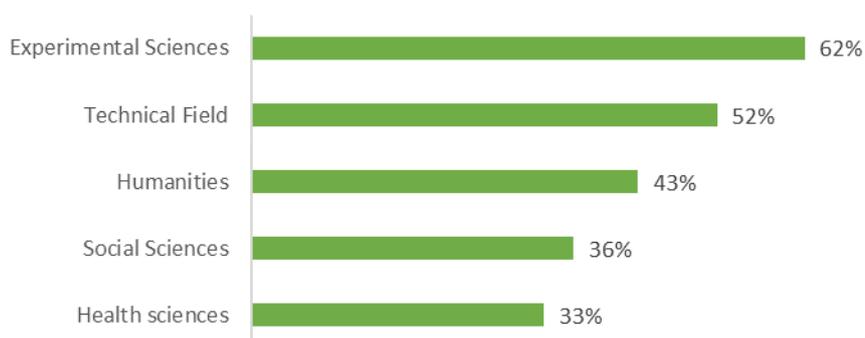


Figure 51. Mobility during the study programme according to educational field (2020)



Mobility during the doctoral programme is declining

- > The reduction has been by 11 pp since 2011 (from 55% to 44%).
- > The differences between educational fields are substantial: those qualifying in Experimental Sciences benefit from broad mobility at 62% while the figure for those who undertake Health Sciences is as low as 33%.

> Access to the labour market in 2020 for international doctors who have undertaken the doctoral programme in Catalonia

Table 7. Percentage of employment and of those working in Spain

	Spanish	International
% employment	95%	90%
% working in Spain	95%	88%

Most international doctors are in work and are employed in Spain

> The percentages are slightly below those for Spanish doctors.

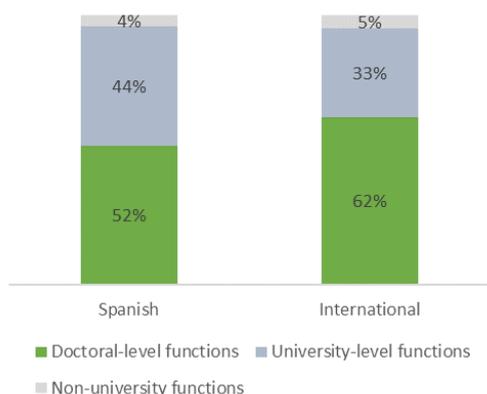
Figure 52. Place of work



The percentage of international doctors working at universities is higher than the proportion of Spanish doctors

> Half work at companies or similar organisations while one third work at universities. In the case of Spanish doctors, 59% work at companies while 1 in every 4 is employed by universities.

Figure 53. Suitability at work



The percentage performing doctoral-level functions at work is also higher among international doctors

> 62% of international doctors perform doctoral-level functions at work while this proportion stands at 52% in the case of Spanish doctors.

Table 8. Satisfaction with the doctoral programme

	Spanish	International
Content and quality of training activities	6.2	6.7
Relevance of training activities	5.5	6.5
Organisation and delivery of training activities	6.4	6.8
Quality of tutoring during the period of training activities	7.1	7.6
Quality of supervision during the time spent working on the thesis	8.2	8.3
Quality of the department's resources and availability for conducting research	6.6	7.4
Overall satisfaction with the doctoral programme	7.2	7.7

The level of satisfaction among international doctors with the doctoral programme is slightly higher than the level reported among Spanish doctors

- > International doctors exhibit higher levels of satisfaction with the PhD education.
- > As with Spanish doctors, the most highly rated factor for international doctors is quality of supervision during the time spent working on the thesis.
- > Their overall satisfaction with the doctoral programme stands at 7.7, higher than Spanish doctors who report a satisfaction level of 7.2.

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DATA SHEET

Table 9. Survey on doctors

Population	Individuals who obtained their PhDs in the academic years 2014-15 and 2015-16 (with a valid telephone number): 4,198
Survey period	From 7/01/2020 to 28/02/2020
Average time taken	If employed: 12 mins 58 sec
Participating universities	UB, UAB, UPC, UPF, URL, UdL, UdG, URV, UOC, UVic-UCC, UIC and UAO-CEU

Table 10. Population data and sample for Spanish doctors

	2008	2011	2014	2017	2020
Population	1,611	1,824	2,080	2,661	4,198
Sample	934	1,225	1,426	1,394	1,945
Response rate	58.0%	67.2%	68.6%	52.4%	46.3%
Sample error	2.1%	1.6%	1.5%	1.8%	1.7%

Table 11. Population data and sample for international doctors

	2017	2020
Population	1,243	1,718
Sample	152	258
Response rate	12.2%	15.0%
Sample error	7.6%	5.7%

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