euacde COUNCIL FOR DOCTORAL EDUCATION

2025 SURVEY – REPORT I

Doctoral education in Europe today: enhanced structures and practices for the European knowledge society

By Simon Marti and Ana-Maria Peneoasu

June 2025

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Acknowledgements

In preparing the 2025 EUA-CDE survey and this report, we received invaluable support and input from many experts and institutions. First, we want to thank the 217 universities that participated in the 2025 EUA-CDE Survey 'Doctoral education in Europe today: achievements, policies and emerging trends'. Without their dedicated contribution, neither the survey nor this report would have been possible.

We are also especially grateful to the members of the EUA-CDE Steering Committee, colleagues at the EUA Secretariat, and external experts who provided crucial input and support. Aleksandra Kanjuo-Mrčela (Chair), Åse Gornitzka, Irma Grdzelidze, Peter Hanenberg, Ann MacPhail, Pirjo Nikander, Maurizio Tira, Karin van Wingerde, and Massimiliano Zattin provided valuable input and guidance in a dedicated session during the October 2024 Steering Committee meeting, as part of a preparatory group for the development of this survey, or during the final report drafting. At EUA, we received important advice and support from Amanda Crowfoot, Stephane Berghmans, Vinciane Gaillard, Kamila Kozirog, Eléonore Gueye and Lior Gianni.

We are especially grateful to EUA advisor Rita Morais and to Slavko Kurdija, Senior Research Associate at the Faculty of Social Sciences of the University of Ljubljana, for their invaluable advice on the survey design and the survey tool. Our thanks go to Isobel Head and Inès Mezher for preparing the graphics and layout and to Lily Philipose for the editing of this report.

THE AUTHORS

Foreword

This year marks the 20th anniversary of the Salzburg Principles – a key milestone in the transformation of doctoral education in Europe. Adopted in 2005 as part of the Bologna Process, these principles laid the foundations for a shared vision of structured doctoral education, focused on supporting an increased number of doctoral candidates as they prepare for careers both within and beyond academia, thus creating and disseminating knowledge for the betterment of society. At this important moment of reflection, EUA-CDE is proud to present this report, based on a comprehensive survey of European universities, to assess how far we have come and where we stand today.

Doctoral education is at the heart of research, innovation and academic excellence in Europe. Conducting this survey was essential not only to capture the structural changes that have taken place, but also to understand the diverse institutional dynamics that now shape the environment for early career researchers. The results provide a rich source of empirical data and comparative insights that will be useful to the EUA-CDE community, university leaders, policy makers, doctoral candidates, supervisors and all stakeholders committed to the advancement of doctoral education.

The results of the survey show that doctoral education in Europe has undergone profound changes over the last two decades. We see an increasing institutionalisation of doctoral education and various ways of strengthening its quality, including improved supervisory practices, expanded training in transferable skills, enhanced career support and increased international cooperation. These developments reflect a strong alignment with the original aspirations of the Salzburg Principles. Across Europe, universities have embraced these goals and implemented significant reforms that foster a more supportive and responsive environment for researchers at the beginning of their careers.

Crucially, this report goes beyond documenting structural change; it maps the emergence of a new culture of doctoral education – one of shared responsibility and continuous adaptation to the evolving needs of research and society. It reflects not only how universities are responding to challenges, but also how they are actively shaping the future of European research and higher education. These changes are taking place in a wider context of geopolitical uncertainty, economic instability and social fragmentation. In such precarious times, it is more important than ever to build a society based on knowledge, critical thinking and innovation. Universities have a crucial responsibility in this regard, and investing in doctoral education means investing in Europe's capacity to respond to current and future challenges.

I would like to express my sincere thanks to all the institutions that participated in the survey and shared their insights, as well as to all those who contributed to the analysis of the results and the preparation of this report. I invite readers to use the report not only as an overview of progress, but also as a starting point for renewed dialogue and development. Together we can ensure that doctoral education remains a cornerstone of Europe's academic excellence, inclusive society and democratic future.

ALEKSANDRA KANJUO-MRČELA
University of Ljubljana
Chair of EUA-CDE Steering Committee

1 Introduction

1.1 Objectives and context of this survey report

This is the first report on the results of the 2025 EUA Council for Doctoral Education (EUA-CDE) survey. The EUA-CDE survey launched just ahead of the 20th anniversary of the Salzburg Principles that emerged from the Bologna Process in 2005 and continue to play a vital role in shaping doctoral education in Europe. This anniversary provides an opportunity to evaluate the outcome of two decades of progress and to examine how reforms and changes have shaped doctoral education across Europe. This report focuses on the questions of the 2025 survey that are closely related to the topics covered by the Salzburg Principles. The survey parts that cover primarily research policy or new challenges and opportunities at a time of geopolitical change and technological acceleration will be analysed in later EUA-CDE reports.

The present survey report will provide the doctoral education community and its stakeholders with crucial data about today's state of play in doctoral education in Europe. It evaluates the extent today's patterns of institutional structures and practices in the third Bologna cycle reflect the objectives of the Salzburg Principles. A key question is: what degree of institutionalisation has been reached in doctoral education after 20 years of reforms and change? This means looking into how universities assume responsibility at the institutional level when it comes to the doctorate and to what extent they put institutional structures in place. In addition to providing new information on the structures that emerged at universities, the report will be able to answer questions on the diversity of approaches and practices in the institutional management of doctoral education in Europe: what is the typical status of doctoral candidates at universities in Europe? How is supervision organised, and what are the different approaches to further developing it? Another key topic centres around the question of how universities view the career development opportunities of their doctoral candidates – and what they do to further empower them on the labour market.

As several questions asked in the 2025 EUA-CDE survey are identical or related to questions in previous surveys, it becomes possible to identify changes in doctoral education that occurred over time and to evaluate how reforms have shaped it. Thus, the report will provide an overview of where we stand in 2025, progress that was achieved, and what still could or should be achieved in the future. The survey results can also serve as an opportunity for individual institutions to reflect on their own experiences, gain insights into ongoing developments and consider new directions in doctoral education. Furthermore, the survey results will also inform the future work and activities of EUA-CDE in its aim to support its members in developing and strengthening their doctoral education capacity.

When looking into the achievements of doctoral education over the past 20 years, it is important to understand the Salzburg Principles – that helped shape these developments – and their origins: Doctoral education gained increasing importance in the context of the Bologna Process since the 2003 Berlin conference of the education ministers of the Bologna countries, when ministers – on a recommendation from EUA[1] – included for the first time doctoral programmes as 'the third cycle' into the Bologna system.[2] The overarching objective of the Bologna Process was to build on the rich heritage of Europe's universities for the good of society.[3] The newly established European Higher Education Area (EHEA) was intended to achieve greater compatibility and comparability of higher education in Europe and increase its international competitiveness. The ministers of the Bologna countries declared that "we need to ensure that the European higher education system acquires a world-wide degree of attraction equal to our extraordinary cultural and scientific traditions."[4] At the 2003 Berlin ministerial conference, when the doctorate was declared the third cycle of the Bologna system, it was also seen as a crucial link between the newly established EHEA and the European Research Area (ERA) in a Europe of Knowledge:

> *"Ministers consider it necessary to go beyond the present focus on two main cycles of higher education to include the doctoral level as the third cycle in the Bologna Process. They emphasise the importance of research and research training and the promotion of interdisciplinarity in maintaining and improving the quality of higher education and in enhancing the competitiveness of European higher education more generally. Ministers call for increased mobility at the doctoral and postdoctoral levels and encourage the institutions concerned to increase their cooperation in doctoral studies and the training of young researchers. Ministers will make the necessary effort to make European Higher Education Institutions an even more attractive and efficient partner. Therefore Ministers ask Higher Education Institutions to increase the role and relevance of research to technological, social and cultural evolution and to the needs of society."*[5]

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1 EUA (2003): Graz Declaration 2003. Forward from Berlin: the Role of the Universities. Geneva, p.7. And: EUA (2005): Doctoral Programmes for the European Knowledge Society. Report on the EUA doctoral programmes project (supported by the European Commission's Socrates Programme). Brussels. p. 4.

2 Bologna Process (2003): "Realising the European Higher Education Area". Communiqué of the Conference of Ministers responsible for Higher Education in Berlin on 19 September 2003.

3 The Bologna Declaration of 19 June 1999, Joint declaration of the European Ministers of Education, Bologna.

4 Ibid.

5 Bologna Process (2003): "Realising the European Higher Education Area". Communiqué of the Conference of Ministers responsible for Higher Education in Berlin on 19 September 2003.

Following the inclusion of the third cycle into the Bologna system in 2003, EUA started an extensive project supported by the European Union's Socrates programme. It involved 48 universities in Europe that together took stock of the doctorate and assessed ongoing reforms and best practices. The rationale for action at the doctoral level was clearly and concisely formulated with the report's title 'Doctoral Programmes for the European Knowledge Society'.[6] As the 2005 EUA project report stated, in addition to being integrated as the third cycle of the Bologna system, "doctoral programmes also form the first phase of younger researchers' careers and are thus central to the drive to create a Europe of knowledge, as more researchers need to be trained than ever before if the ambitious objectives concerning enhanced research capacity, innovation and economic growth are to be met."[7] The report of this project set the stage for the seminal Bologna seminar that took place in early 2005 in Salzburg – and that saw a consensus emerge on a set of ten basic principles on the doctorate in Europe: [8]

Overview of the Salzburg Principles[9]

i. The core component of doctoral training is the advancement of knowledge through original research. At the same time it is recognised that doctoral training must increasingly meet the needs of an employment market that is wider than academia.

ii. Embedding in institutional strategies and policies: universities as institutions need to assume responsibility for ensuring that the doctoral programmes and research training they offer are designed to meet new challenges and include appropriate professional career development opportunities.

iii. The importance of diversity: the rich diversity of doctoral programmes in Europe –including joint doctorates – is a strength which has to be underpinned by quality and sound practice.

iv. Doctoral candidates as early stage researchers: should be recognized as professionals – with commensurate rights – who make a key contribution to the creation of new knowledge.

v. The crucial role of supervision and assessment: in respect of individual doctoral candidates, arrangements for supervision and assessment should be based on a transparent contractual framework of shared responsibilities between doctoral candidates, supervisors and the institution (and where appropriate including other partners).

vi. Achieving critical mass: Doctoral programmes should seek to achieve critical mass and should draw on different types of innovative practice being introduced in universities across Europe, bearing in mind that different solutions may be appropriate to different contexts and in particular across larger and smaller European countries. These range from graduate schools in major universities to international, national and regional collaboration between universities.

vii. Duration: doctoral programmes should operate within an appropriate time duration (three to four years full-time as a rule).

viii. The promotion of innovative structures: to meet the challenge of interdisciplinary training and the development of transferable skills.

ix. Increasing mobility: Doctoral programmes should seek to offer geographical as well as interdisciplinary and intersectoral mobility and international collaboration within an integrated framework of cooperation between universities and other partners.

x. Ensuring appropriate funding: the development of quality doctoral programmes and the successful completion by doctoral candidates requires appropriate and sustainable funding.

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6 Koch Christensen, Kirsti (2005): Bologna seminar. Doctoral programmes for the European knowledge society. Salzburg, 3-5 February 2005. General Rapporteur's Report Professor Kirsti Koch Christensen, Rector of the University of Bergen, Norway.

7 EUA (2005): Doctoral Programmes for the European Knowledge Society. Report on the EUA doctoral programmes project (supported by the European Commission's Socrates Programme). Brussels.

8 Ibid. EUA had already proposed to introduce a third cycle in its Trends III report that was noted during the Berlin Ministerial Conference. Reichert, Sybille and Tauch, Christian (2003): Trends 2003. Progress towards the European Higher Education Area. Bologna four years after: Steps toward sustainable reform of higher education in Europe. A report prepared for the European University Association. Brussels.

9 EUA (2010): Salzburg II Recommendations. European universities' achievements since 2005 in implementing the Salzburg Principles. And: Koch Christensen, Kirsti (2005): Bologna seminar. Doctoral programmes for the European knowledge society. Salzburg, 3-5 February 2005. General Rapporteur's Report Professor Kirsti Koch Christensen, Rector of the University of Bergen, Norway.

The Salzburg Principles were included in the Bergen Communiqué adopted by education ministers in May 2005, and EUA received a mandate to develop them further and present its findings to the Ministerial meeting in London in 2007.[10] In London, ministers asked "(…) EUA to continue to support the sharing of experience among HEIs on the range of innovative doctoral programmes that are emerging across Europe (….)", a call that led a year later to the creation of EUA-CDE.[11] While this report primarily focuses on the reforms and changes that universities in Europe achieved in areas of the doctorate covered by the Salzburg Principles, it should be noted here that there were further steps contributing to the development of a common framework for doctoral education in Europe after 2005.[12]

The ten Salzburg Principles address foundational questions of the doctorate still valid today. While the first principle highlights that "the core of doctoral training is the advancement of knowledge through original research", the same first principle recognises that "doctoral training must increasingly meet the needs of an employment market that is wider than academia" (i). In addition to this first principle, three additional ones also focus on career development opportunities – in academia and beyond (ii, viii and ix). Two principles focus on the status of doctoral candidates (iv, v) and – closely linked to it – on the crucial role of transparent supervision and assessment. While acknowledging the importance of the rich diversity of doctoral programmes in Europe, three principles (iii, vi, viii) strongly focus on quality, sound practice, creating critical mass, and promoting innovative structures. Linked to the quality and sustainability of doctoral education in Europe, the tenth Salzburg principle calls for ensuring appropriate funding (x). Last but not least, the duration of the doctoral programmes was also a

10 Bologna Process (2007): Towards the European Higher Education Area: responding to challenges in a globalised world. Communiqué of the Conference of Ministers responsible for Higher Education in London on 18 May 2007.

11 "We invite EUA to continue to support the sharing of experience among HEIs on the range of innovative doctoral programmes that are emerging across Europe as well as on other crucial issues such as transparent access arrangements, supervision and assessment procedures, the development of transferable skills and ways of enhancing employability. We will look for appropriate opportunities to encourage greater exchange of information on funding and other issues between our Governments as well as with other research funding bodies." Ibid.

12 These include a set of recommendations known as the "Salzburg Recommendations", which were adopted in 2010 by the EUA Council. It was followed in 2016 by a new set of recommendations, "Taking Salzburg Forward – Implementation and New Challenges", that were developed in an extensive consultation process with over 200 universities from 39 countries. In 2022, the EUA-CDE Vision Paper followed and included ten ways forward. EUA-CDE (2022): Building the Foundations of Research. A Vision for the Future of Doctoral Education in Europe. Geneva. The 'Salzburg Recommendations' included:

1. Doctoral education has a particular place in the European Research Area (ERA) and the European Higher Education Area (EHEA). It rests on the practice of research, which makes it fundamentally different from the first and second cycles.
2. Doctoral candidates must be allowed independence and flexibility to grow and develop. Doctoral education is highly individual and based on original research. The path of progress of the individual is unique, in terms of the research project as well as in terms of the individual professional development.
3. Doctoral education must be developed by autonomous and accountable institutions taking responsibility to cultivate the research mindset. Institutions need flexible regulation to create special structures and instruments and continue advancing European doctoral education. EUA (2010): Salzburg II Recommendations: European universities' achievements since 2005 in implementing the Salzburg Principles. Brussels.

key topic in Salzburg, three to four years full-time as a rule being included in the Salzburg Principles (vii). These ten Salzburg Principles form the starting point that guides this survey report. The survey analysis in this report is structured into the three main themes:

- Structures and institutionalisation
- Status of doctoral candidates and practices of supervision
- Career development opportunities

1.2 Survey methodology and representativeness

The following report is based on data provided by the 2025 EUA-CDE Survey 'Doctoral education in Europe today: achievements, policies and emerging trends'. It represents the first report on this survey, covering 24 of its 49 questions.[13] The comprehensive survey was sent by email to the entire membership of the EUA Council for Doctoral Education and the EUA membership. It was subsequently communicated in the EUA-CDE newsletter and other EUA channels, including the EUA and the EUA-CDE websites and social media. The survey was also further distributed by members of the EUA-CDE Steering Committee, by National Rectors' Conferences to their members, by individual universities within their networks as well as via partner organisations that also informed universities of the survey. The survey was open between 6 January and 1 March 2025 and it was conducted on a Qualtrics platform. The questionnaire included primarily multiple-choice questions with one or multi option responses. In many instances, answer options were on a three-, four-, or five-point unipolar scale. Several questions included options to supplement with own answers under 'other' and one question was open-ended.

This report also builds on previous reports that assessed the development of the doctorate in Europe. The above mentioned 2005 'Doctoral Programmes for the European Knowledge Society' report on the EUA doctoral programmes project was key in creating the Salzburg Principles. Several reports that focus to various degrees on the institutional development of the doctorate in Europe preceded or followed on it: Early reports that include a substantial focus on the doctorate are the EUA Trends reports of 2003, 2007, and 2010 or the 2013 ERA report of the European Commission.[14] The 2013 EUA ARDE report (on the respective 2011 survey) as well as the 2019 Report 'Doctoral education in Europe today: approaches and institutional structures' (on the 2017/2018 EUA-CDE survey) are two other important precursors to this report.[15] These reports serve as important points of reference when we assess the progress made over the

13 Other questions included the role of the respondent and the type of university.

14 Reichert, Sybille and Tauch, Christian (2003): Trends 2003. Progress towards the European Higher Education Area. Bologna four years after: Steps toward sustainable reform of higher education in Europe. A report prepared for the European University Association. Brussels.
Crosier, David; Purser Lewis; and Smidt, Hanne (2007) Trends V: Universities shaping the European Higher Education Area. A report prepared for the European University Association. Brussels.
Sursock, Andrée and Smidt, Hanne (2010): Trends 2010: A decade of change in European Higher Education. A report prepared for the European University Association. Brussels.

15 Byrne, Joanne; Jørgensen, Thomas; and Loukkola, Tia (2013): Quality Assurance in Doctoral Education – results of the ARDE project. EUA Publications 2013. With the support of the Lifelong Learning Programme of the European Commission. Brussels.
Hasgall, Alexander; Saenen, Bregt; and Borrell-Damian, Lidia (2019): Survey. Doctoral education in Europe today: approaches and institutional structures, European University Association Council for Doctoral Education. Geneva.
A 2022 EUA-CDE report covers in addition to doctoral education also the postdoctoral level. Hasgall, Alexander and Peneoasu, Ana-Maria (2022): Survey. Doctoral education in Europe: current developments and trends, European University Association Council for Doctoral Education. Geneva.

course of the past 20 years. In addition, six questions used in the 2017/2018 EUA-CDE survey, were included in identical form into the 2025 EUA-CDE survey, allowing readers to compare the development of the doctorate over time. Four additional questions in the 2025 survey are similar as in the 2017/2018 EUA-CDE survey and two are similar as in the 2011 EUA ARDE survey, which only allows for a limited comparison. There was one question in each of the surveys of the EUA Trends V and 2010 reports that are comparable to those in the 2025 survey. While there is only relatively little data available in the early years after the Salzburg conference, especially the questions retained from the 2017/2018 survey not only offer the opportunity to track progress in recent years but also to take stock of the doctorate in the years shortly before and after the pandemic.

When it comes to possible comparisons, it is important to have some caveats in mind. Even when identical questions were asked in different surveys over the time, the samples of universities that participated in these surveys was not identical, thus limiting the degree of comparability of data points over time. The differences in representativeness of surveys varied over time with, for example, the 2011 EUA ARDE survey including almost 20% of respondents from the United Kingdom alone. The overall representativeness in the 2017/2018 and 2025 EUA-CDE surveys is more balanced, given the relatively high proportion of doctorate-awarding universities and their doctoral candidates across Europe covered by the surveys. However, also in the case of these two surveys, representativeness across different countries still varies – and is not identical between the two surveys.

Another important reservation is that not all change that can be observed is the result of targeted reforms based on the Salzburg Principles. Thus, the conscious objective to pursue these principles is not always the mechanism leading to change. However, while it is not possible to distinguish between a targeted approach following the Salzburg Principles or reforms based on other initiatives and objectives, the data covering these changes can nevertheless be assessed in the light of the Salzburg Principles.

Moreover, there were important changes over the course of the past 20 years that were not directly related to the Salzburg Principles but nevertheless might affect how doctoral education is managed across Europe. One key change was the steady and substantial increase of the numbers of doctoral candidates – and graduates. According to the OECD, the share of doctorate holders in the working population of 25-64 year-olds in the 28 EHEA countries that are covered by the respective OECD data increased from 0.90% in 2014 to 1.28% in 2022, an increase of 42% in eight years.[16] It is likely that such a substantial increase has an effect on how universities manage the third Bologna cycle and conversely, these adjustments can in turn increase participation. Thus, it is possible that the expansion of the share of doctorate holders was – and still is – accompanied by complex interactions with how universities organise and manage doctoral education.

16 OECD Main Science and Technology Indicators 2023. EHEA countries covered by the OECD data include: Slovenia, Switzerland, Luxembourg, Sweden, Germany, United Kingdom, Ireland, Denmark, Norway, Finland, Austria, Iceland, Netherlands, Belgium, France, Slovak Republic, Greece, Portugal, Spain, Estonia, Poland, Lithuania, Czechia, Italy, Hungary, Türkiye, Latvia, Bulgaria.

Table 1: Number of universities per country participating in the 2025 EUA-CDE survey

Country	Number of valid responses
Andorra	1
Austria	6
Belgium	6
Croatia	2
Cyprus	1
Czech Republic	3
Denmark	2
Estonia	2
Finland	7
France	11
Georgia	3
Germany	26
Greece	2
Hungary	8
Iceland	1
Ireland	9
Italy	26
Kazakhstan	1
Latvia	2
Lithuania	4
Luxembourg	1
Malta	2
Montenegro	1
Netherlands	4
Norway	11
Poland	10
Portugal	7
Romania	9
Serbia	1
Slovakia	2
Slovenia	3
Spain	18
Sweden	6
Switzerland	5
Türkiye	6
Ukraine	3
United Kingdom	5
Total	**217**

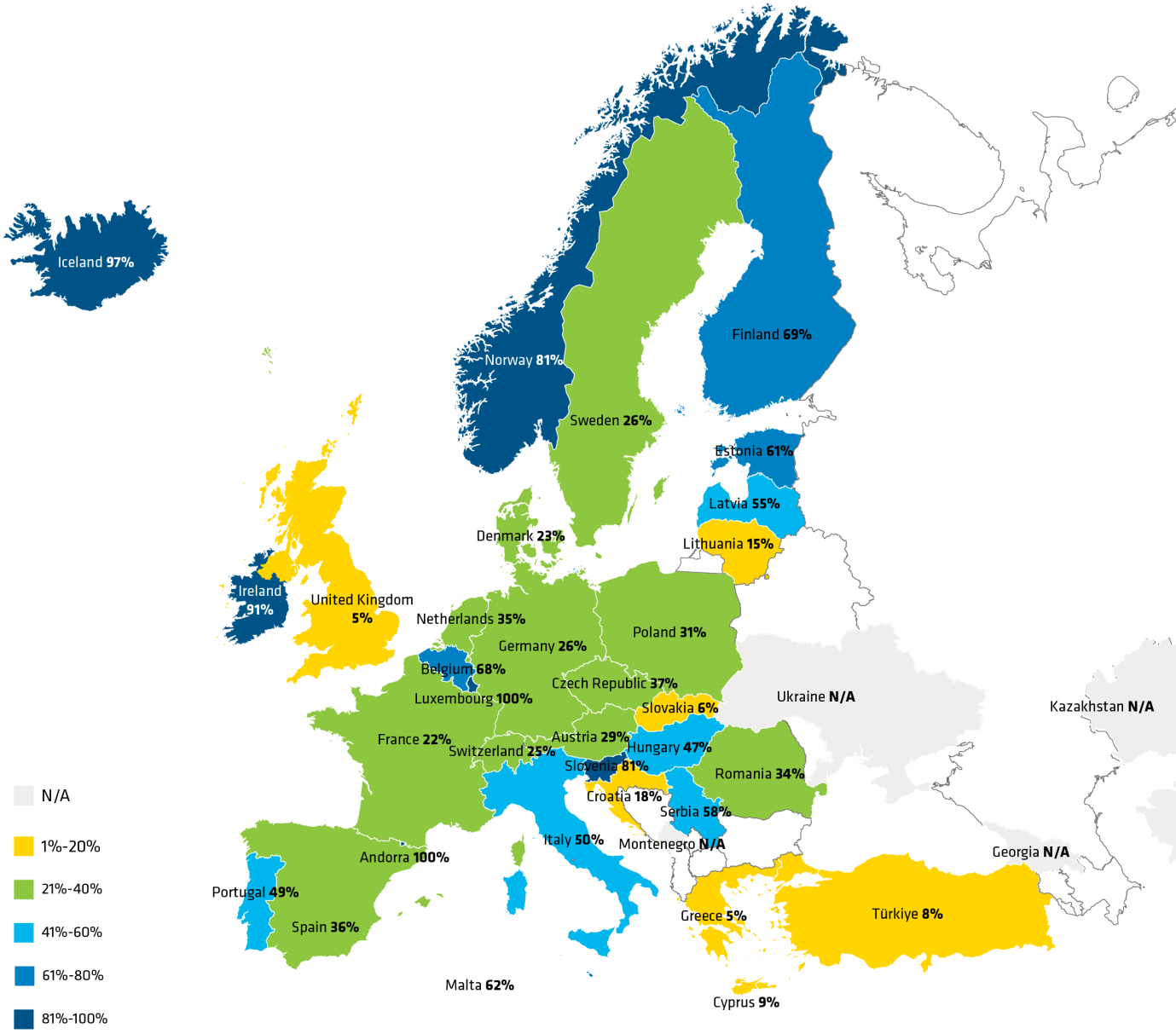
There were additional uncertainties that were difficult to control. One representative per university, typically at a central institutional level, filled in the 2025 EUA-CDE survey. However, in less centralised institutions, it might have been difficult to provide all facets of how the doctorate is managed. In addition, there are typically discipline-related differences even within relatively centralised institutions. In the case of some questions, it was possible to capture internal diversity via questions with unipolar scales. However, in the case of other questions that was more difficult to achieve.

The 2025 EUA-CDE survey received 217 valid responses from 139 EUA-CDE members and from 78 EUA members that are not currently part of EUA-CDE. With 139 universities participating, almost half of the 283 EUA-CDE members filled in the questionnaire. Overall, the participants in this survey included institutions from 37 countries. Each institution provided one single, consolidated response to the survey. In almost half of the cases, the survey was filled in by a director/head of the doctoral school or similar structure (49%). In addition, 18% of the respondents were professionals working at a doctoral school or similar structure, 15% were vice-rectors or deputy vice-chancellors, 8% were advisers to the rector/rector's cabinet, and 10% indicated 'other' roles when filling in the survey.[17] Thus, the participating institutions provide an institution-wide view of the 217 universities. The largest group of institutions that participated in the survey were comprehensive universities (66%), followed by specialised universities like medical science, music and arts universities (12%), technical universities/universities of technology (11%), and universities of applied sciences (7%). Just 4% indicated 'other' types of institutions.

Based on the data available by the European Tertiary Education Register (ETER), we estimated the survey sample's representativeness per country and for Europe by measuring how many universities that award doctorates and how many doctoral candidates it covered. We found that 14% of all doctorate-awarding institutions in the 33 countries for which ETER data was available and 28% of all doctoral candidates currently enrolled in these countries were covered by the survey. Given the higher percentage of doctoral candidates compared to the percentage of institutions covered in the 2025 survey, it can be concluded that larger doctorate-awarding universities are more represented in this survey than smaller and medium ones. Furthermore, there are clear differences in representativeness when it comes to various countries. Typically, universities in countries with a smaller or medium-size population are better represented. In the case of Andorra and Luxemburg 100% of doctoral candidates are represented, followed by Iceland (97%), Ireland (91%) and Norway and Slovenia (both 81%). Representativeness in the large European countries varies from 5% to 50%, led by Italy (50%) and followed by Spain (36%), Poland (31%), Germany (26%), France (22%) Türkiye (8%) and the United Kingdom (5%). However, the overall representativeness varies greatly across Europe with no clear trends in the different European regions – there are countries with lower or higher representativeness in the south and north, as well as in the east and west.

17 The following roles were mentioned under 'other': Head of International Students Office, Head of the Central Quality Assurance Service, Rector Delegate for Didactics, President of the Doctorate Board, Chairman of the Doctoral Council, Rector's Delegate for PhD Courses, Rector, Senior Adviser, Coordinator of the Internationalization Office, and Executive Assistant to the Vice President Research.

Figure 1: Share of doctoral candidates per country covered by the universities participating in the 2025 EUA-CDE survey



The ETER dataset does not include the following countries with participants in the 2025 EUA-CDE survey: Georgia (3 universities), Kazakhstan (1 university), Montenegro (1 university), and Ukraine (3 universities).

When it comes to terminology, this report uses 'third Bologna cycle', 'doctoral education', and 'doctorate' in an interchangeable way to aid readability and when the level of precision allows it. Similarly, 'institution' and 'university' are both used for contextual equivalent instances to enhance narrative flow. For better readability, when referring to the universities that participated in the survey, 'participants', 'respondents', 'universities', and 'institutions' are also used synonymously.

2 Structures and institutionalisation

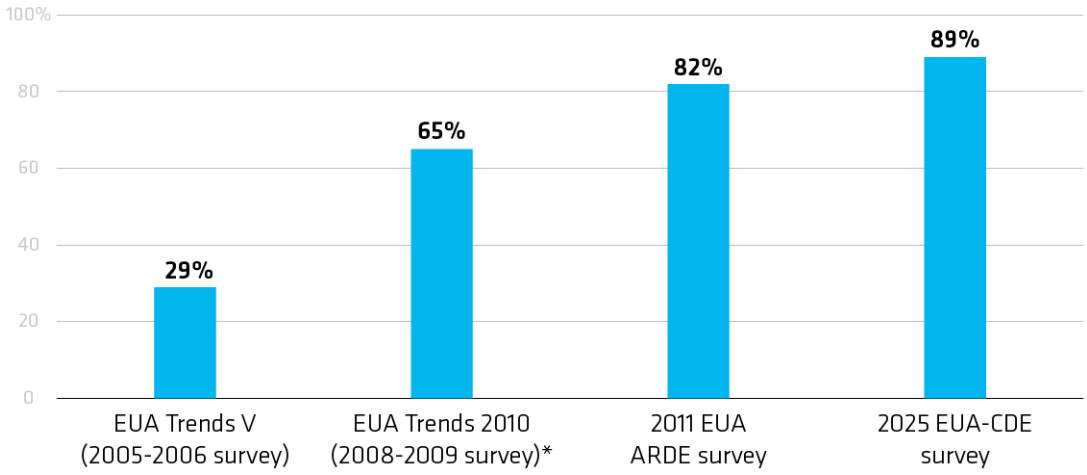
2.1 The rise of the doctoral schools in Europe

The reforms that preceded the Salzburg Bologna conference of 2005 in a bottom-up manner – and especially the progress achieved since – led to a major degree of institutional change across Europe: the establishment and proliferation of doctoral schools as the entity that is increasingly overseeing the doctorate at universities. The 2025 EUA-CDE survey defines a doctoral school as an organisational structure dedicated to the coordination and support of doctoral programmes that provides comprehensive research training and resources for the career development of doctoral candidates. Doctoral schools create a link between the university, the doctoral candidates, and the supervisors – thus, enhancing a relationship previously often characterised by a master-apprentice relationship between the doctoral candidate and their supervisor.[18] This institutionalisation in turn becomes instrumental in implementing reforms that touch on a multitude of dimensions of the doctorate, increasingly enabling universities to influence key aspects such as quality, supervision, the status of the doctoral candidates and career development support. This is of fundamental importance as it creates the very structures at universities that enable them to take responsibility for the management of the doctorate at the institutional level. This first chapter takes a closer look at the current state of play when it comes to the structures in place and the level of institutionalising of the third Bologna cycle in Europe.

When analysing the 2025 survey data and comparing it with previous surveys on the third Bologna cycle, one key aspect stands out: the rise and consolidation of doctoral schools. This was a main objective of the second and sixth Salzburg principles that called for university-wide responsibility and creating critical mass by institutionalising doctoral schools or similar structures. The institutionalisation of doctoral education can be measured by the percentage of universities that indicate that they have a central doctoral school. The first years after the Salzburg conference saw a steep rise in universities with doctoral schools: The percentage of institutions with doctoral schools more than doubled between the 2005/2006 and 2008/2009

18 The EUA Trends III report found that "Europe is divided in two halves regarding the organisation of these third-tier doctoral studies. In half of the countries, doctoral students receive mainly individual supervision and tutoring, while in the other half, taught doctoral courses are also offered in addition to individual work." Reichert, Sybille and Tauch, Christian (2003): Trends 2003. Progress towards the European Higher Education Area. Bologna four years after: Steps toward sustainable reform of higher education in Europe. A report prepared for the European University Association. Brussels.

Figure 2: Percentage of doctorate-awarding universities with doctoral schools in Europe



** 49% with doctoral schools including only doctoral candidates and 16% with doctoral schools including Master students and doctoral candidates*

surveys from 29% to 65%. This rise continued with 82% in 2011 and now consolidated at 89% in 2025.[19] Thus, what was already a key feature of the reforms of the third cycle since the early 2000s has now become a typical entity in today's university landscape across Europe.

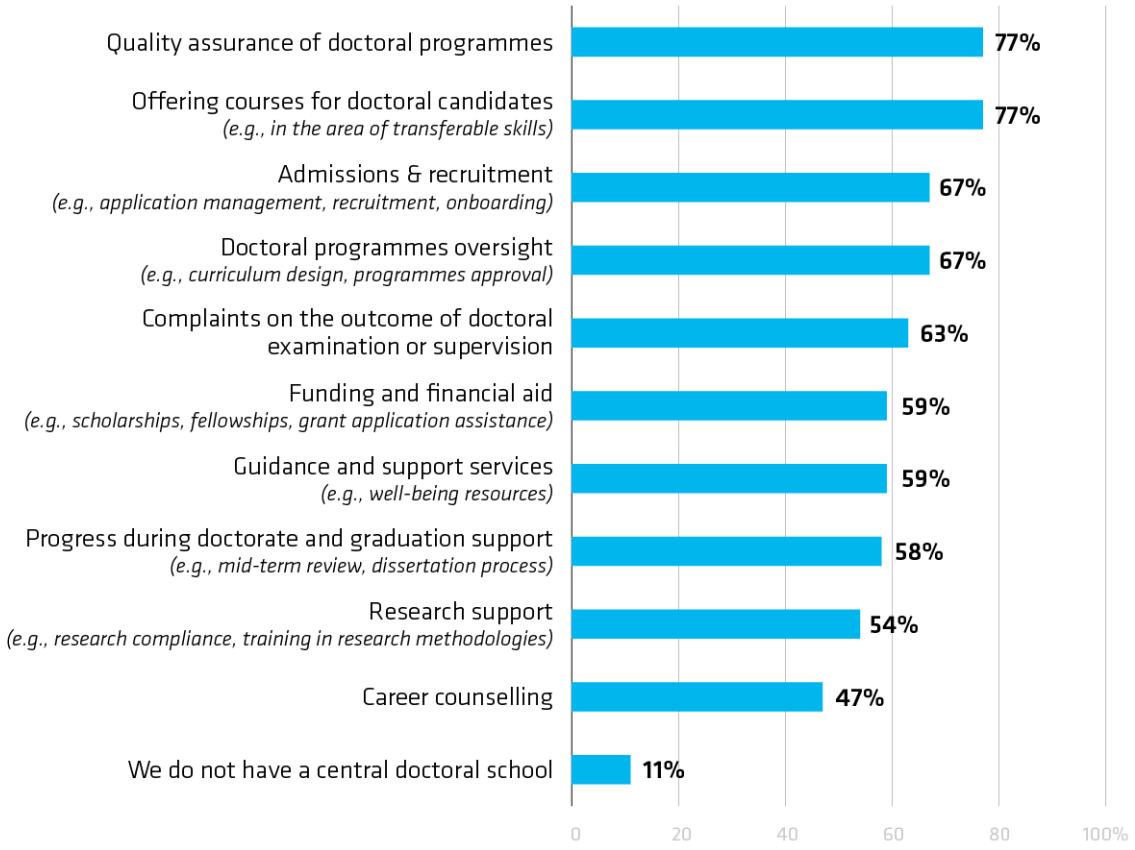
2.2 The role of doctoral schools and their leadership

While a rise and consolidation of central doctoral schools or similar structures can be observed as highlighted above, the concrete roles of these entities in Europe remain very diverse. The diversity of approaches is not new and was recognised as a strength by the third Salzburg principle. However, it should not obscure the fact that the establishment of central doctoral schools is a major concurrent development in the same direction across Europe. The diversity of approaches rather concerns the concrete tasks of this new dominant entity, a diversity of approaches that also reflects the way the doctorate is organised in Europe, mainly at the disciplinary, faculty or programme level. While doctoral schools play a key role, they are not in charge of everything.

The diversity of approaches is illustrated by the different sets of roles that doctoral schools assume and exercise. It can be observed that tasks that concern mostly the institutional level are more widespread than tasks that directly support doctoral candidates at the individual level. This points to a division of labour between various actors with distinct functions, including the important role of supervisors when it comes to the support and mentoring of doctoral candidates: When asked about specific elements delivered, 77% of universities mentioned that their doctoral school or similar structure is in charge of quality assurance of doctoral

19 In the case of the 2011 EUA ARDE survey, around 20% of the survey participants were universities in the UK. This overrepresentation might have affected the percentage of doctoral schools indicated here. Furthermore, while 'doctoral school' could be broader understood in the earlier surveys, the term 'central doctoral school' was explicitly used in the 2025 survey.

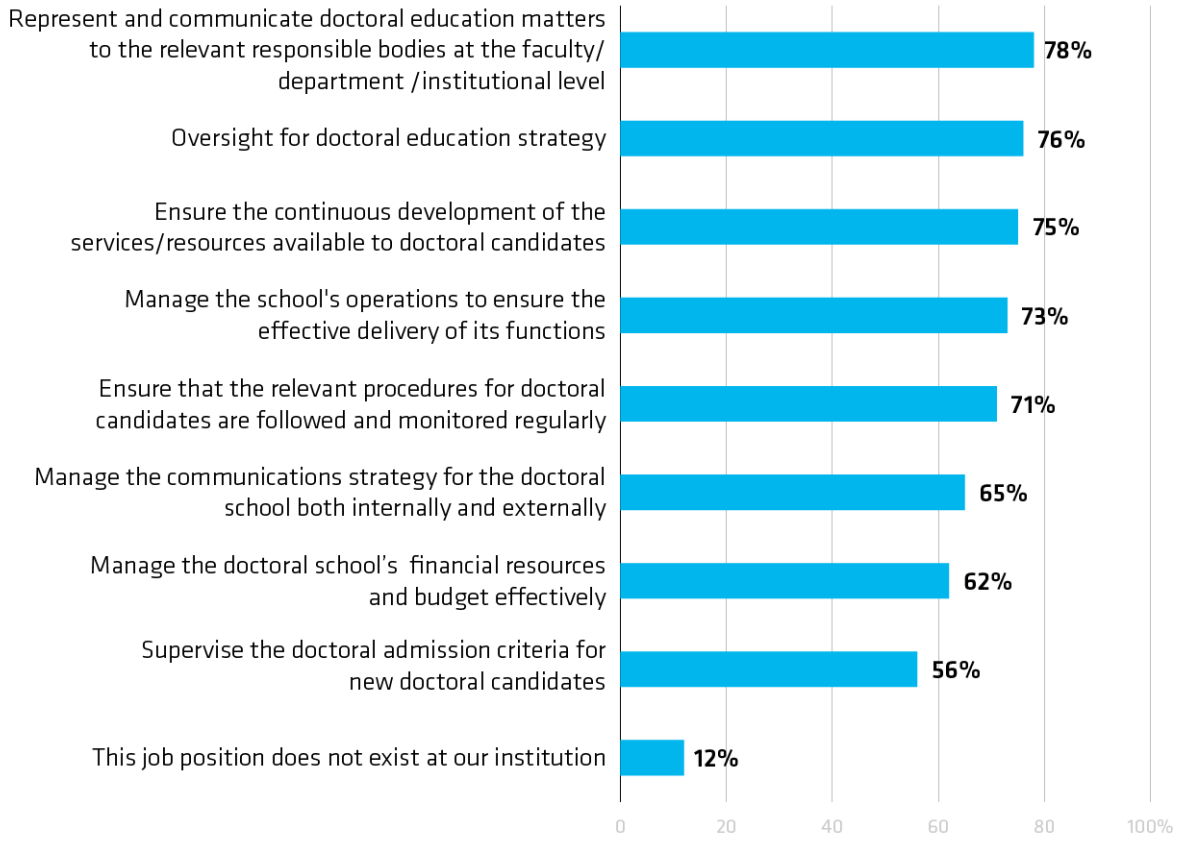
Figure 3: Which of the following elements are delivered by the central doctoral school or similar structure for doctoral candidates? – select all that apply.
Number of respondents: 217/217



programmes. While 77% of central doctoral schools specified that they offered courses to doctoral candidates, for instance in the area of research training or transferable skills, 67% of the universities indicated the management of admissions & recruitment was a key task delivered by them. Also, 67% of doctoral schools play a role in overseeing doctoral programmes, an activity typically including curriculum design or programme approval, and 63% cover complaints on the outcome of either doctoral examination or supervision, a key function typically not provided at the institutional level before. Doctoral schools also play a key role in supporting doctoral candidates, for instance in guidance and support services or funding and financial aid with 59% of the institutions active in these two fields, and 47% offering career counselling to doctoral candidates. A majority of doctoral schools, 58%, indicated they were involved in 'progress during doctorate and graduation support', typically including involvement in mid-term review or graduation process, and 54% are involved in the core activity of doctoral candidates by offering research support. Only 11% of the participating universities indicated that their institution does not have a central doctoral school.

We also looked into the role of a new leadership function that emerged together with the development of central doctoral schools in Europe: the Head or Director of the central doctoral school, or similar entity. The role of the leadership of doctoral schools or similar structures is varied and underscores its function as a central entity at European higher education institutions. Key remits of these leadership roles include 'managing the operations of the school to ensure

Figure 4: Please indicate which of the following key duties are part of the regular tasks of the Head of the central doctoral school or similar structure at your institution – select all that apply.
Number of respondents: 215/217



the effective delivery of its functions' and 'ensuring the continuous development of the services/resources available to doctoral candidates'. Both functions were selected by about three quarters of all survey respondents (73% and 75% respectively), 76% indicated that directors or heads of doctoral schools were in charge of the 'oversight for strategy of doctoral education'. These remits are mirrored by the role that doctoral school leadership fulfils vis-à-vis university-internal entities like faculty, department or other institutional levels: 78% of respondents indicated that their doctoral school director or head 'represents and communicates doctoral education matters to the relevant responsible bodies'. In 65% of the cases, they were also in charge of 'developing and managing the communications strategy for the doctoral school both internally and externally'.

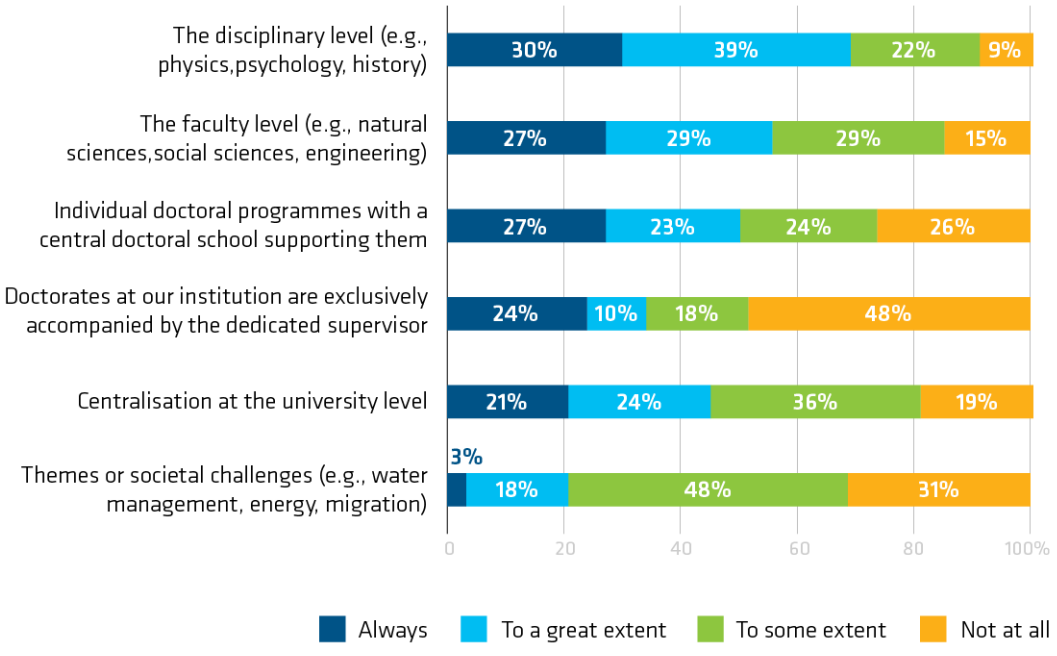
More than two thirds of institutions, 71%, indicated that their doctoral school leaders 'ensure that the relevant procedures for doctoral candidates are followed and monitored regularly'. In more than half of the cases (56%), doctoral school directors 'supervise the application of admission criteria for new doctoral candidates', while 62% of respondents indicated that the director of the central doctoral school was in charge of managing 'the doctoral school's financial resources and budget effectively'. Among the respondents, 12% indicated that the position did not exist in their institution, a number consistent with a similar proportion of respondents indicating that their institution does not have a central doctoral school.

2.3 Organisation and governance of the doctorate

When it comes to how doctoral education is organised in Europe, we see a multitude of approaches that are often overlapping – while at the same time they do not mutually exclude each other. This diversity was explicitly welcomed by the third and sixth Salzburg principles and continues to provide a rich reservoir of inspiration. We observe that doctoral education in Europe remains foremost organised around the disciplinary and/or the faculty levels, or around individual doctoral programmes with a central doctoral school supporting them. In contrast, the doctorate is not typically organised around themes or societal challenges nor exclusively accompanied by dedicated supervisors in a majority of cases. However, while the disciplinary and the faculty level are the only approaches present in more than half of universities always or to a great extent, it is clear there is a diversity of approaches to how doctoral education is organised in Europe today.[20] It is for example possible for an individual doctoral programme to be organised at a faculty and simultaneously be supported by a central doctoral school. The same university could have another faculty, e.g. the humanities faculty, in which doctoral candidates are accompanied exclusively by the dedicated supervisor.

These overlapping remits and involvement of different actors at universities is reflected in the governance structures and decision-making procedures in the European doctorate. The national level and respective regulations do play a role, but the influence of the government is the lowest of all actors, which indicates a high degree of institutional autonomy in the third Bologna cycle.

Figure 5: To what extent is doctoral education in your institution organised at or around ...?
Number of respondents: 217/217



20 While a similar question was asked in the 2017/2018 survey, results are not fully comparable as different answer options were defined.

However, in the case the national level is involved it can influence key aspects of the doctorate, such as the examination rules and guidelines, which was the case for almost a third of all institutions that participated in the 2017/2018 EUA-CDE Survey. This number has gone down to about 21% in our 2025 EUA-CDE Survey. In other areas, such as in the case of contract conditions or required topics of doctoral training, the national level kept its influence in decision-making stable.

Figure 6: Who makes decisions about the following aspects of the doctorate at your institution? - select all that apply.
Number of respondents: 215-217/217

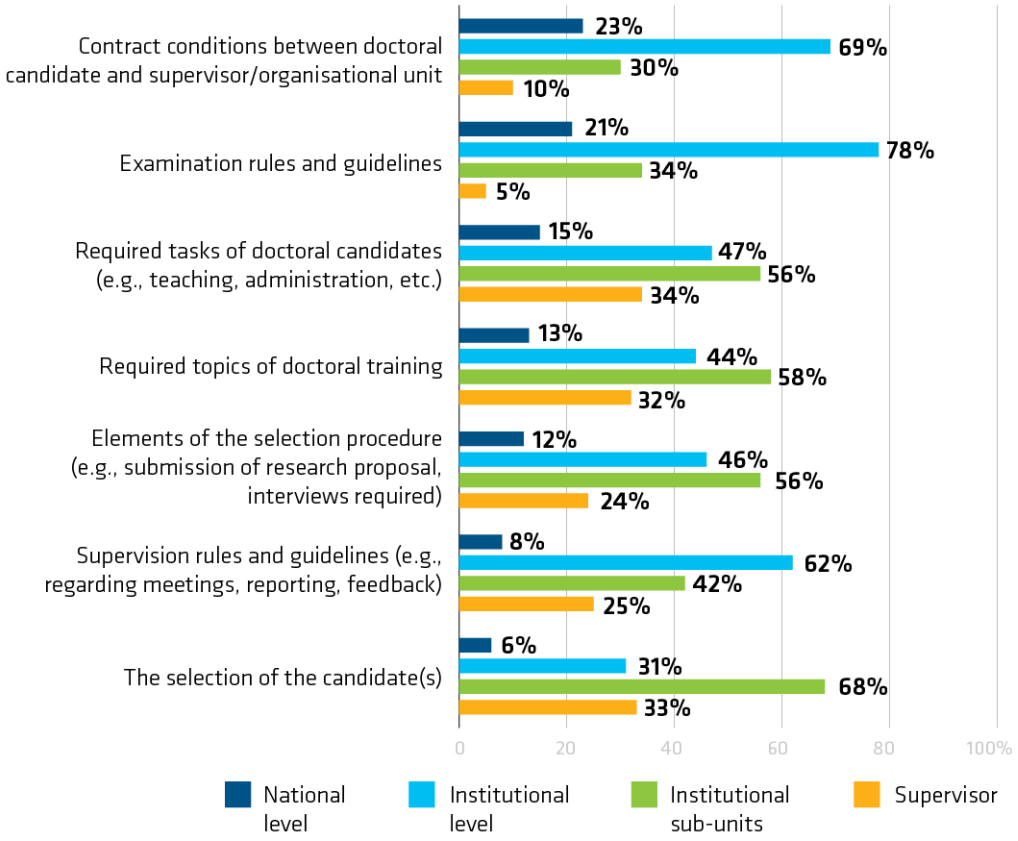


Table 2: Comparison of influence of the national level in decision-making related to the doctorate.[21]

	National level	
	2017/2018 EUA-CDE survey	2025 EUA-CDE survey
Elements of the selection procedure	16,2%	12%
The selection of the candidate(s)	5,0%	6%
Contract conditions between doctoral candidate and supervisor/organisational unit	21,9%	23%
Supervision rules and guidelines	12,3%	8%
Required topics of doctoral training	11,6%	13%
Required tasks of doctoral candidates	14,0%	15%
Examination rules and guidelines	32,8%	21%

21 For the 2017/2018 data: Hasgall, A., Saenen, B., Borrell-Damain, L.,(2019), *Doctoral education in Europe today: approaches and institutional structures,* European University Association, pg.27.

The level of institutional sub-units dominates participation in decision-making procedures at universities when it comes to four out of seven issues listed in figure 6. This holds true for the required tasks of doctoral candidates (56%), the required topics of doctoral training (58%), elements of the selection procedure (56%) and the selection of candidates (68%). Concerning the remaining issues, the institutional level dominates participation in decision-making procedures on the contract conditions between the doctoral candidate and the supervisor (69%), examination rules and guidelines (78%), and supervision rules and guidelines (62%). When looking at the fourth actor mentioned in figure 6, we notice that the supervisor also plays an important role, taking part in decisions in connection to the selection of the doctoral candidates in 33% of the responding universities, in defining the required topics of doctoral training (32%) or the required tasks of doctoral candidates (34%).

Table 3: Comparison of influence of the institutional level in decision-making related to the doctorate.[22]

	Institutional level	
	2017/2018 EUA-CDE survey	2025 EUA-CDE survey
Elements of the selection procedure	46,9%	46%
The selection of the candidate(s)	16,5%	31%
Contract conditions between doctoral candidate and supervisor/organisational unit	66,0%	69%
Supervision rules and guidelines	58,7%	62%
Required topics of doctoral training	37,8%	44%
Required tasks of doctoral candidates	39,9%	47%
Examination rules and guidelines	69,7%	78%

It is mostly the institutional level that gained in importance in the decision-making related to the doctorate, likely as a consequence of the larger role of central doctoral schools or similar structures that the 2025 survey highlights. With the exception of 'elements of the selection procedure' that remained about the same in 2025 (46%) as it was in 2017/2018 (46.9%), all other aspects see the role of the institutional level increased in decision-making, in some cases significantly (cf. table 3).

Table 4: Comparison of influence of the supervisor role in decision making related to the doctorate.[23]

	Supervisor	
	2017/2018 EUA-CDE survey	2025 EUA-CDE survey
Elements of the selection procedure	45,8%	24%
The selection of the candidate(s)	56,8%	33%
Contract conditions between doctoral candidate and supervisor/organisational unit	27,5%	10%
Supervision rules and guidelines	42,8%	25%
Required topics of doctoral training	52,0%	32%
Required tasks of doctoral candidates	50,9%	34%
Examination rules and guidelines	15,7%	5%

22 For the 2017/2018 data: Ibid.
23 For the 2017/2018 data: Ibid.

Consequently, the role of the supervisor is significantly less pronounced in all aspects of the decision-making related to the doctorate in 2025 as it was in 2017/2018 (cf. table 4).

The loss of influence in the case of institutional sub-units is similarly pronounced, again consistent with the rise of central doctoral schools. According to the 2025 survey, institutional sub-units also lost influence in all aspects of the decision-making related to the doctorate compared to the results of the 2017/2018 survey.

Table 5: Comparison of influence of the institutional sub-units in decision-making related to the doctorate.[24]

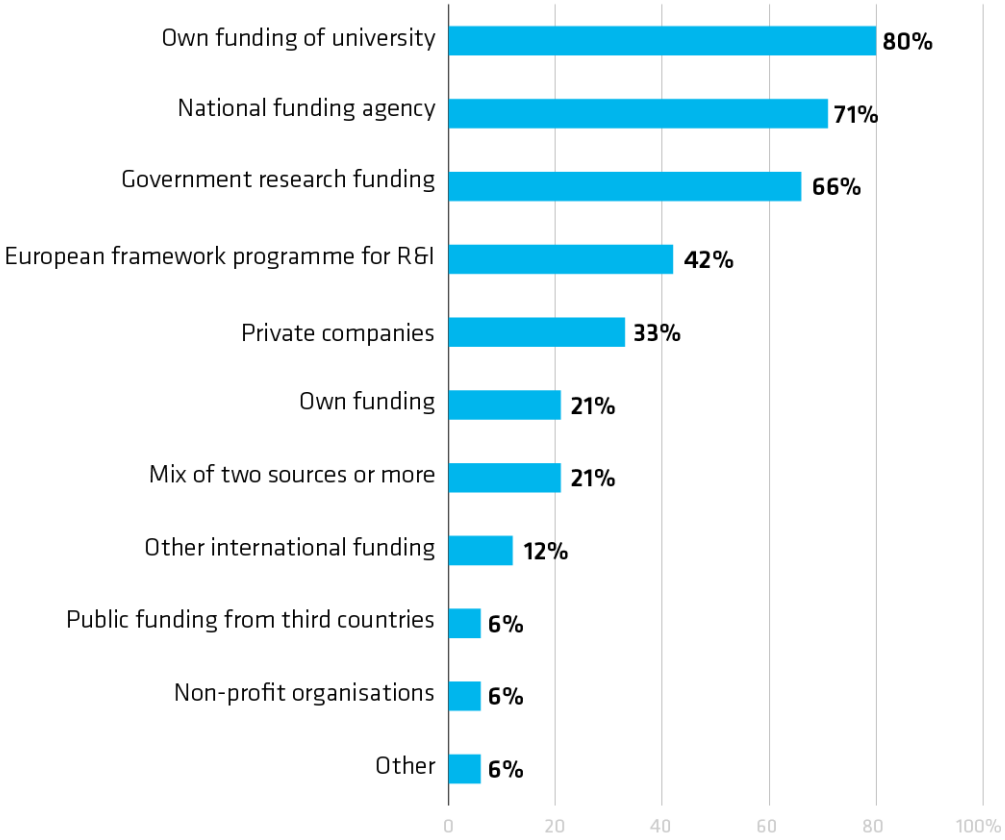
	Institutional sub-units	
	2017/2018 EUA-CDE survey	2025 EUA-CDE survey
Elements of the selection procedure	84,1%	56%
The selection of the candidate(s)	91,7%	68%
Contract conditions between doctoral candidate and supervisor/organisational unit	60,0%	30%
Supervision rules and guidelines	77,9%	42%
Required topics of doctoral training	86,2%	58%
Required tasks of doctoral candidates	86,3%	56%
Examination rules and guidelines	69,0%	34%

2.4 Funding of doctoral candidates

An important matter of interest, enshrined in the tenth Salzburg principle, is the objective of ensuring appropriate funding. This principle was formulated in the knowledge that "the development of quality doctoral programmes and the successful completion by doctoral candidates requires appropriate and sustainable funding".[25] Asked about the funding sources that play the most important role in funding doctoral candidates, the participating institutions could select up to four sources of funding that are the most frequently used at their institution. Own funding by the university itself and funding by the national funding agency are clearly leading the list with 80% and 71% respectively. Government research funding also plays a key role. These findings demonstrate the important role that the national policy environment plays when it comes to the funding of doctoral candidates, especially given the traditionally important role of public funding of higher education institutions in Europe. However, this national context is followed by the European level: 42% selected the European framework programme for research and innovation. Thus, the EU level plays a more important role than the private sector, as private companies were mentioned by just a third of the universities as a key funding source of doctoral candidates. Here, 21% of the institutions indicated that own funding by the doctoral candidate also plays a role, i.e., typically by doctoral candidates who pursue their doctorate while working part-time. Also, 21% of institutions mentioned that doctorates are funded by a mix of two sources or more. Other (unspecified) international funding (12%), public funding from third countries (6%), or by non-profit institutions (6%) play a smaller role.

24 For the 2017/2018 data: Ibid.
25 Cf. chapter 1.1 above.

Figure 7: Which funding sources play the most important role in funding doctoral candidates at your institution? Please select up to 4 funding sources.
Number of respondents: 217/217

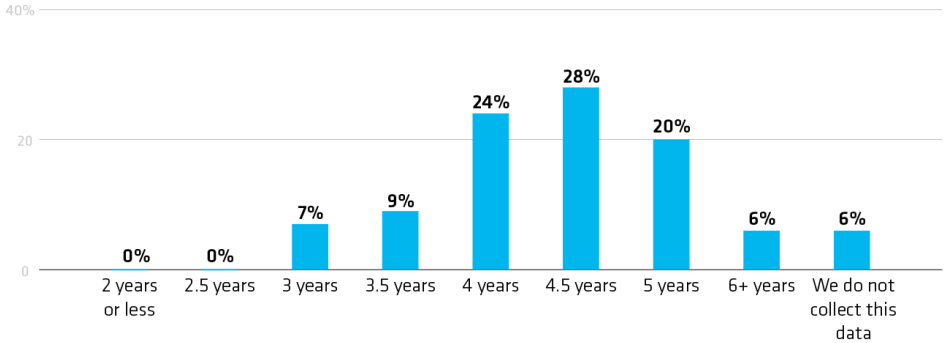


The topic of funding also features prominently in the answers to the open 2025 EUA-CDE survey question about the single most important challenge universities are facing in doctoral education today. The topic that universities mentioned most often, by 30% of the 183 respondents, is that ensuring sufficient and reliable funding constitutes the main challenge today.

Time to completion

The duration of the doctorate has slightly increased since 2017/2018. The 3-4 years full time duration for a doctorate, as advised as a rule by the seventh Salzburg principle, is fulfilled by 40% of the institutions, a number that was higher (51%) in the 2017/2018 survey. At the same time, there are slightly fewer universities that report five or more years duration (26%) in 2025 compared to 28% in 2017/2018. With 28%, there is an increased percentage of universities that report that their doctoral candidates take 4.5 years to complete their doctorate compared to 21% of institutions indicating this average duration in the 2017/2018 survey.

Figure 8: In your institution, how long on average do your graduates take to complete their full-time doctorate?
Number of respondents: 217/217

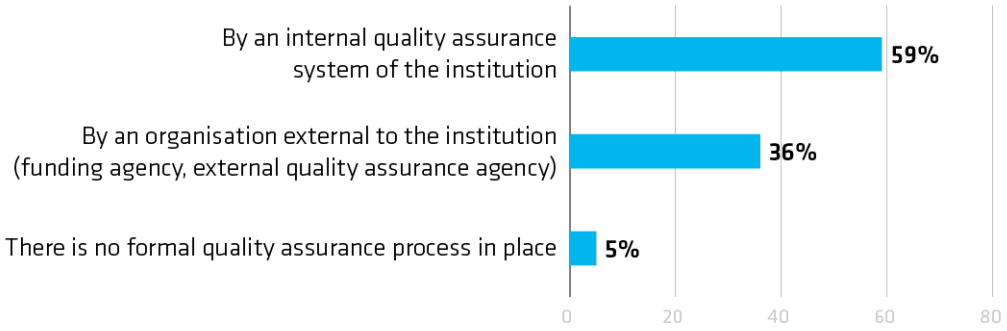


2.5 Quality assurance

The third Salzburg principle states that universities should take full responsibility for the quality assurance of their doctoral programmes.[26] Quality assurance at the doctoral level usually seeks to establish a process for the management and improvement of all aspects of doctoral education. This can include the monitoring and evaluation of doctoral programmes to ensure a continuous improvement of the doctoral education system.

95% of the institutions that participated in the survey indicated that they have quality assurance measures in place for the doctoral level. A majority, 59% of universities, ensures the quality of doctoral education via an internal quality assurance system, while in 36% of the cases, quality is ensured by an external organisation, such as a quality assurance agency or a funding agency.[27]

Figure 9: In your institution, how is the quality of doctoral education ensured?
Number of respondents: 215/217

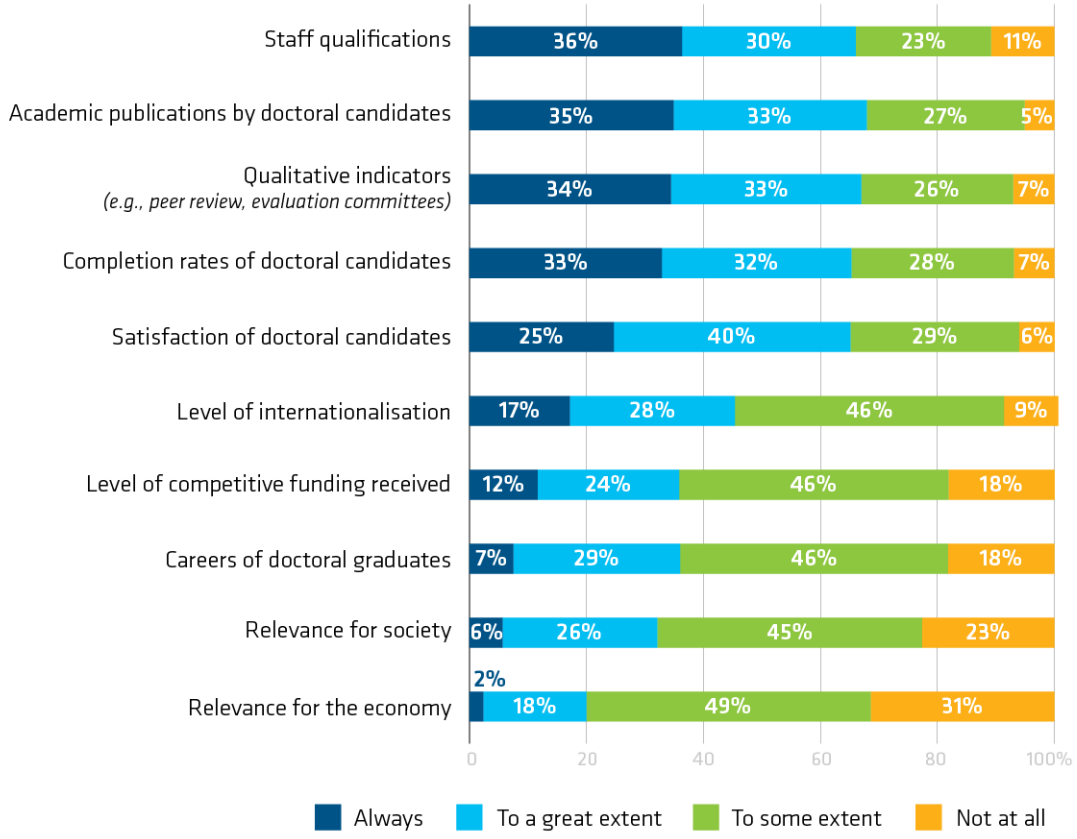


When it comes to concrete aspects and criteria that are used to assess the quality of doctoral education, a complex picture emerges, characterised by a multitude of approaches that are implemented to various extents, without a clearly dominating approach. The main indicators used by institutions to measure the quality of doctoral education include staff qualifications, the academic publications by doctoral candidates, qualitative indicators (e.g., peer review, evaluation committees), and the completion rate, all of which are 'always' used by 33-36% of universities and 'to a great extent' by 30-33%. The satisfaction of doctoral candidates comes next, 'always' used to assess the quality of doctoral education by 25% of universities and by 40% 'to a great extent'.

26 Koch Christensen, Kirsti (2005): Bologna seminar. Doctoral programmes for the European knowledge society. Salzburg, 3-5 February 2005. General Rapporteur's Report Professor Kirsti Koch Christensen, Rector of the University of Bergen, Norway, p. 4.

27 While the question asked in the 2017/2018 survey was not exactly the same, the percentage of universities that indicated not to have internal quality assurance in place was slightly higher with 6.5% than the 5% in the 2025 survey (in addition, in 2017/2018, 19% indicated that they didn't have external quality assurance). Hasgall, A., Saenen, B., Borrell-Damain, L.,(2019), *Doctoral education in Europe today: approaches and institutional structures,* European University Association, p. 31.

Figure 10: To what extent are the following aspects/criteria used to assess/evaluate the quality of doctoral education?
Number of respondents: 210/217-216/217



Comparing the results of this survey with the use of indicators in the 2017/2018 EUA-CDE survey, we can observe differences in most cases. In 2025 fewer institutions than in the 2017/2018 survey used academic publications or completion rates of doctoral candidates 'always' or 'to a great extent' as one of the main indicators for the quality of doctoral education. The use of staff qualifications remained the same in 2025 as it was in 2017/2018. Interestingly, universities indicated a more widespread use of the satisfaction rate of doctoral candidates and qualitative indicators, or the relevance for society, compared to 2017/2018.[28] These results correspond also to the current discourse on the reform of the research assessment that focus more on qualitative than quantitative criteria.[29]

28 The EUA ARDE report of 2013 includes even higher numbers for the use of these indicators (84% for scientific publications and 77% for completion rates), although the ARDE survey did not differentiate between the extent to which the indicators are used as the 2017/2018 and 2025 surveys did.

29 Coalition for Advancing Research Assessment. (2022, July 20). Agreement on Reforming Research Assessment. CoARA.

Table 6: Comparison of aspects/criteria used to assess/evaluate the quality of doctoral education.[30]

	To a great extent+Always	
	2017/2018 EUA-CDE survey	2025 EUA-CDE survey
Academic publications by doctoral candidates	76%	68%
Completion rates of doctoral candidates	72%	65%
Staff qualifications	66%	66%
Satisfaction of doctoral candidates	54%	65%
Qualitative indicators (e.g. peer review, evaluation committees)	54%	67%
Level of internationalisation	53%	45%
Level of competitive funding received	40%	36%
Careers of doctoral graduates	33%	36%
Relevance for society	26%	32%
Relevance for the economy	18%	20%

2.6 Internationalisation in doctoral education

According to OECD and EUA reports, attracting international doctoral candidates is essential for countries around the world to be at the forefront of research and innovation.[31] The objective of increased mobility and international exchange was also stated as key in the 2003 Bologna ministerial conference when the doctorate became the third cycle in the Bologna system as well as in the ninth Salzburg principle.[32] These benefits include enhanced research opportunities and a more diverse academic environment. Internationalisation exposes doctoral candidates and faculty to diverse perspectives and cutting-edge research from around the world. It can also help attract international talent – doctoral candidates and faculty alike.

Universities were asked in the 2025 survey to indicate the three most important activities related to internationalisation in doctoral education. The activity most frequently chosen by universities to improve internationalisation is the fostering of research collaborations in Europe, for example, within a university alliance.[33] Of the responding universities, 67% indicated this option. About half of the participants (54%) are developing joint and/or double doctorates and/or co-tutelles. Similarly, also about half of the universities (52%) are supporting outgoing mobility of doctoral candidates, 46% are attracting international doctoral candidates, and 14% included the international recruitment of professors among their three most important activities.

30 For the 2017/2018 data: Hasgall, A., Saenen, B., Borrell-Damain, L.,(2019), *Doctoral education in Europe today: approaches and institutional structures,* European University Association, pg.27.

31 OECD (2019), Education at a Glance 2019: OECD Indicators, OECD Publishing, p.228 and EUA-CDE (2015), Doctoral Education – Taking Salzburg Forward. Implementation and New Challenges, p.5.

32 Cf. chapter 1.1 above and: Bologna Process (2003): Realising the European Higher Education Area. Communiqué of the Conference of Ministers responsible for Higher Education in Berlin on 19 September 2003. And Koch Christensen, Kirsti (2005): Bologna seminar. Doctoral programmes for the European knowledge society. Salzburg, 3-5 February 2005. General Rapporteur's Report Professor Kirsti Koch Christensen, Rector of the University of Bergen, Norway, p. 9

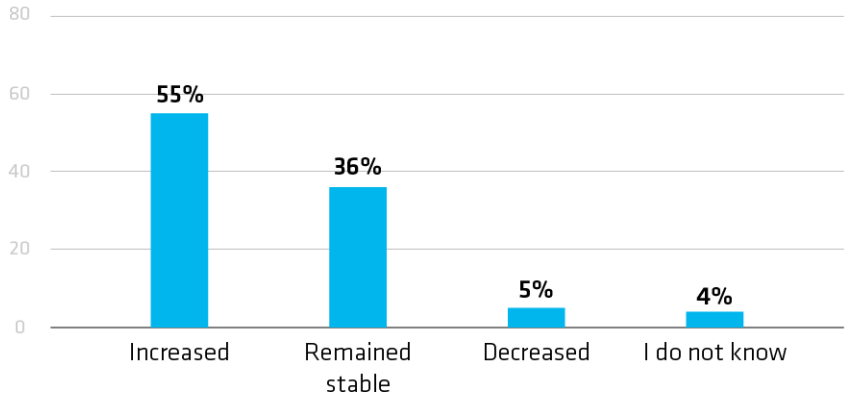
33 This survey question did not specify a particular type of university alliance.

Following on these most widespread practices is the fostering of international research collaborations beyond Europe. Of the responding universities, 22% are active in this field, significantly fewer than the number of institutions looking for research collaborations in Europe, while 17% mention that they strive to enhance the research quality through global partnerships. Less common among the top three activities to promote internationalisation are providing mobility opportunities for doctoral education staff (11%), strengthening virtual internationalisation opportunities for doctoral candidates (6%), and recruiting international doctoral education staff (3%).

Figure 11: Which key activities related to internationalisation in doctoral education does your institution mostly focus on? – select the 3 most important ones.
Number of respondents: 217/217

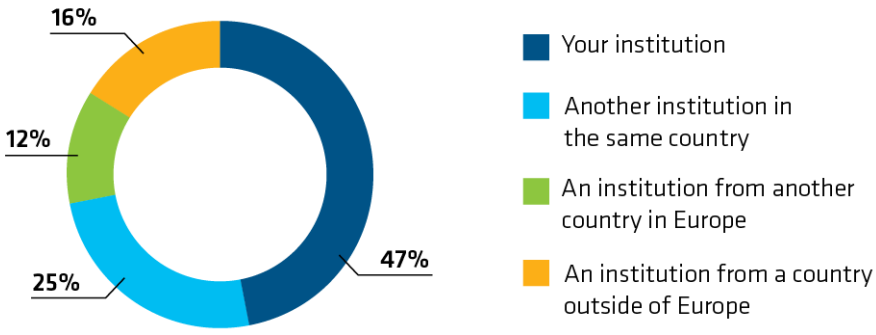
The 2025 EUA-CDE survey also analysed how the share of international doctoral candidates has changed in the past five years. Of the responding universities, 55% indicated that the share of doctoral candidates has increased at their institutions, thus confirming universities' success in their efforts in attracting doctoral candidates from abroad.

Figure 12: How has the share of international doctoral candidates (from outside your country) changed at your institution in the past 5 years?
Number of respondents: 217/217



The survey results show that responding universities estimate on average that 47% of doctoral candidates have a qualifying degree from the same university at which they are pursuing their doctorate. An additional 25% come from a different university in the same country, 12% come from a different European country and 16% from a country outside Europe. Thus, according to the results of our 2025 survey, a total of 28% of doctoral candidates comes from another country, while this number was at 20% in the 2017/2018 survey. This increase is in line with the fact that 55% of universities experienced an increase in international doctoral candidates. The trend of an increase of international doctoral candidates also corresponds to the data of the 2024 ERA Scoreboard that identifies a rise in the share of international doctoral candidates in the EU-27 countries between 2017/2018 and 2024 from 18.7% to 22.7%.[34] It has to be noted that the EUA-CDE 2025 survey covers 11 additional countries that are not EU member states.

Figure 13: What approximate percentage of doctoral candidates at your institution have a qualifying degree (necessary to start a doctorate) from ...?
Number of respondents: 178/217 (results calculated as average)



One factor that may have contributed to the increase in the share of international doctoral candidates in recent years could be the lack of suitable applicants for doctoral candidate positions at home. Challenges in recruiting highly qualified doctoral candidates was the second most mentioned issue (9% of the 183 respondents) in the open 2025 survey question about the most important challenge universities are facing in doctoral education today.

34 European Commission (2024): ERA Scoreboard 2024. Brussels.

3 Status of doctoral candidates and practices of supervision

3.1 The share of doctoral candidates among all researchers at universities

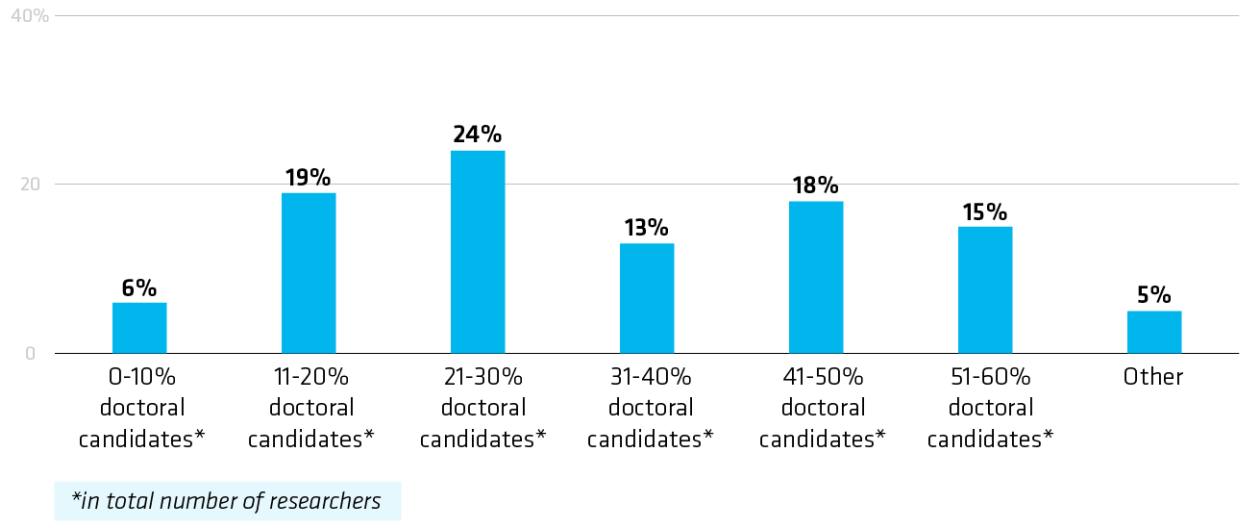
The status of doctoral candidates and their transparent supervision and assessment are at the core of the fourth and fifth Salzburg principles and the related reforms across Europe.[35] Thus, assessing progress made over the course of the last two decades and existing trends in this area are important to understanding the state of doctoral education in Europe. The principles that emerged from the Bologna seminar in Salzburg defined doctoral candidates as early-stage researchers. They should be recognised as professionals with commensurate rights who make a key contribution to the creation of new knowledge.

A main outcome of the 2025 EUA-CDE survey underscores the importance that doctoral candidates play for the research activities of universities in Europe: Almost 75% of universities indicate that doctoral candidates account for 21% or more of their total number of researchers.[36] Almost half, 46%, of respondents indicate that 31-60% of the researchers at their universities are doctoral candidates. This highlights the important contribution by doctoral candidates to the overall research performance of universities in Europe. On average, institutions estimate that about a third of their researchers are doctoral candidates. This highlights that, in addition to the importance of the doctorate as a formative period for Europe's future researchers, doctoral candidates already play an invaluable role in a vast number of research projects and contribute enormously to the research in Europe during their doctorate. Given the focus of the doctorate on original research, this underscores the key role doctoral candidates and the doctorate play in pushing the knowledge boundary in Europe.

35 Cf. chapter 1.1 above.

36 The universities that chose 'other' indicated 'more than 70%', 75%, 77%, 70-80%. One response indicated that the number of doctoral candidates is "almost matching the number of permanent research staff members" i.e., close to 50%.

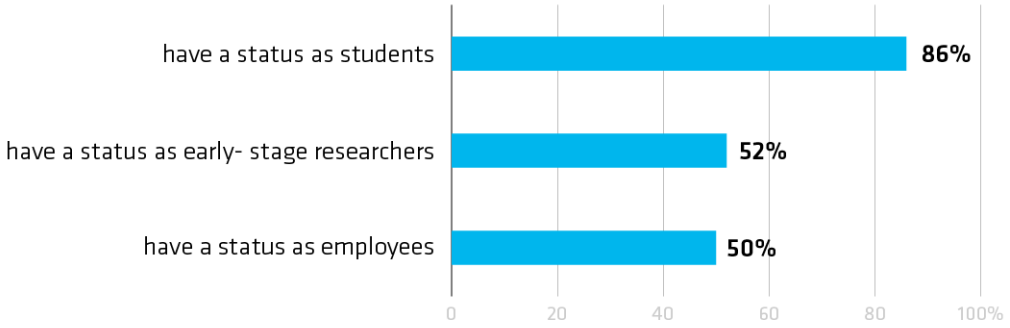
Figure 14: How large do you estimate the proportion of doctoral candidates (R1 career stage) in the total number of researchers at your institution (career stages R1-R4 of the European Framework for Research Careers)?
Number of respondents: 208/217



3.2 The status of doctoral candidates

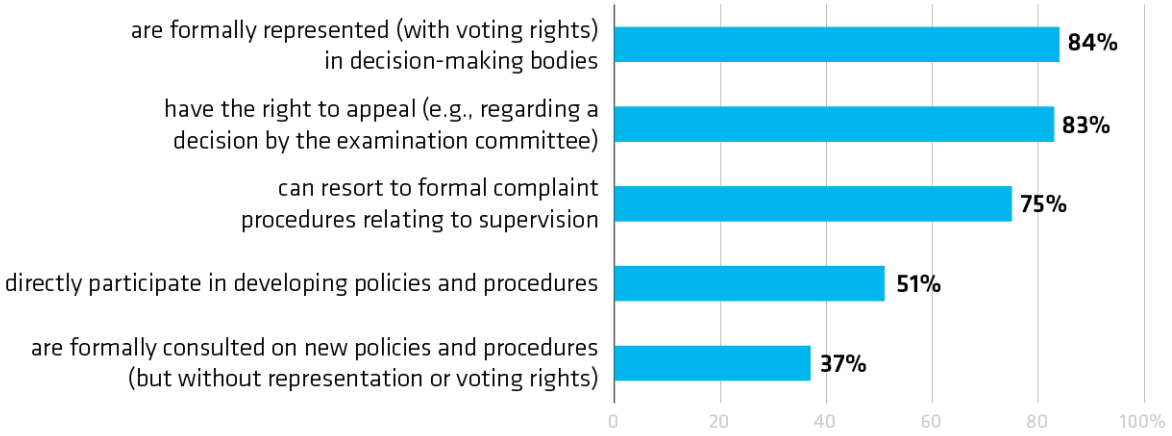
Our survey results show that doctoral candidates 'have a status as early-stage researchers' at slightly more than half (52%) of the participating institutions. 50% of institutions indicated that their doctoral candidates have a status as employees. This survey question allowed for multiple answers. Thus, these percentages are not mutually exclusive but overlapping. A clear majority of respondents, 86%, indicated that – often in addition to other statuses – their doctoral candidates have a status as students.

Figure 15a: At your institution, doctoral candidates - select all that apply.
Number of respondents: 217/217



When it comes to the rights of doctoral candidates, an important concern of the fourth Salzburg principle, 84% of the participating universities indicated that their doctoral candidates are formally represented (with voting rights) in decision-making bodies and in about half of the cases, at 51% of the universities, they are directly participating in developing policies and procedures. At 37% of universities, they are formally consulted on new policies and procedures (but without representation or voting rights). 75% of institutions indicated that doctoral candidates can resort to formal complaint procedures relating to supervision. In 83% of the cases, doctoral candidates have the right to appeal (e.g., regarding a decision by the examination committee). Again, this question allowed to choose multiple options.

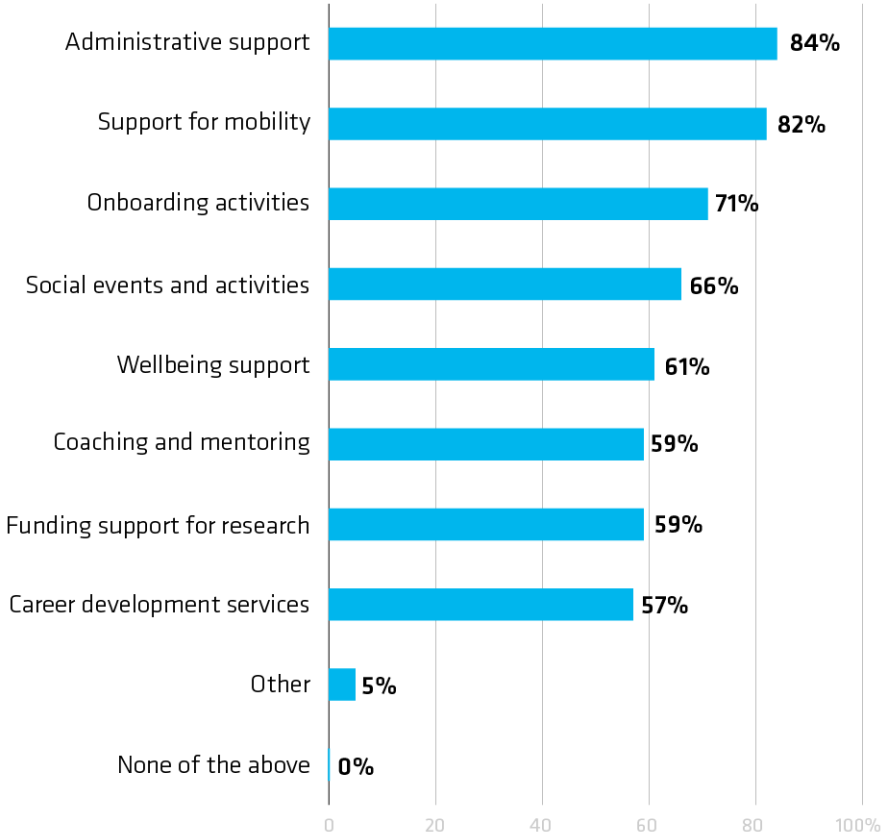
Figure 15b: At your institution, doctoral candidates - select all that apply.
Number of respondents: 217/217



3.3 Services offered to doctoral candidates

Related to the previous question, the 2025 survey also aimed at identifying the most common services universities are offering to doctoral candidates in addition to transferable skills training. The most frequently offered service was administrative support, which typically includes activities such as admission or graduation procedures, or additional administrative work for a joint doctorate or a co-tutelle, etc.), with 84% of the respondents selecting this option. Second in terms of frequency was the support offered for the mobility of doctoral candidates: 82% of the respondents indicated that their institution provides this service. Closely behind and present in 71% of the responding universities were onboarding activities and information offered to doctoral candidates in the initial phase of the doctoral trajectory. Offering social events and activities as well as wellbeing support also ranked high with 66% and 61% of institutions respectively indicating these services. At 59% of the participating universities, we found initiatives supporting doctoral candidates in terms of coaching and mentoring as well as raising research funding. 57% of universities offered career development services.

Figure 16: What are the most common additional services and resources offered to doctoral candidates at your institution (in addition to transferable skills training)? - select all that apply.
Number of respondents: 217/217



These results clearly show that universities provide a wide range of support services to doctoral candidates, recognising the multi-layered demands in doctoral education.

3.4 Trends in supervision

A key dimension of the doctorate is supervision. When it comes to the crucial role supervision and assessment play for doctoral candidates, the fifth Salzburg principle highlights the importance of respect for individual doctoral candidates and arrangements for supervision and assessment based on a transparent contractual framework of shared responsibilities between doctoral candidates, supervisors and the institution.[37] Where appropriate, these frameworks can include other partners.

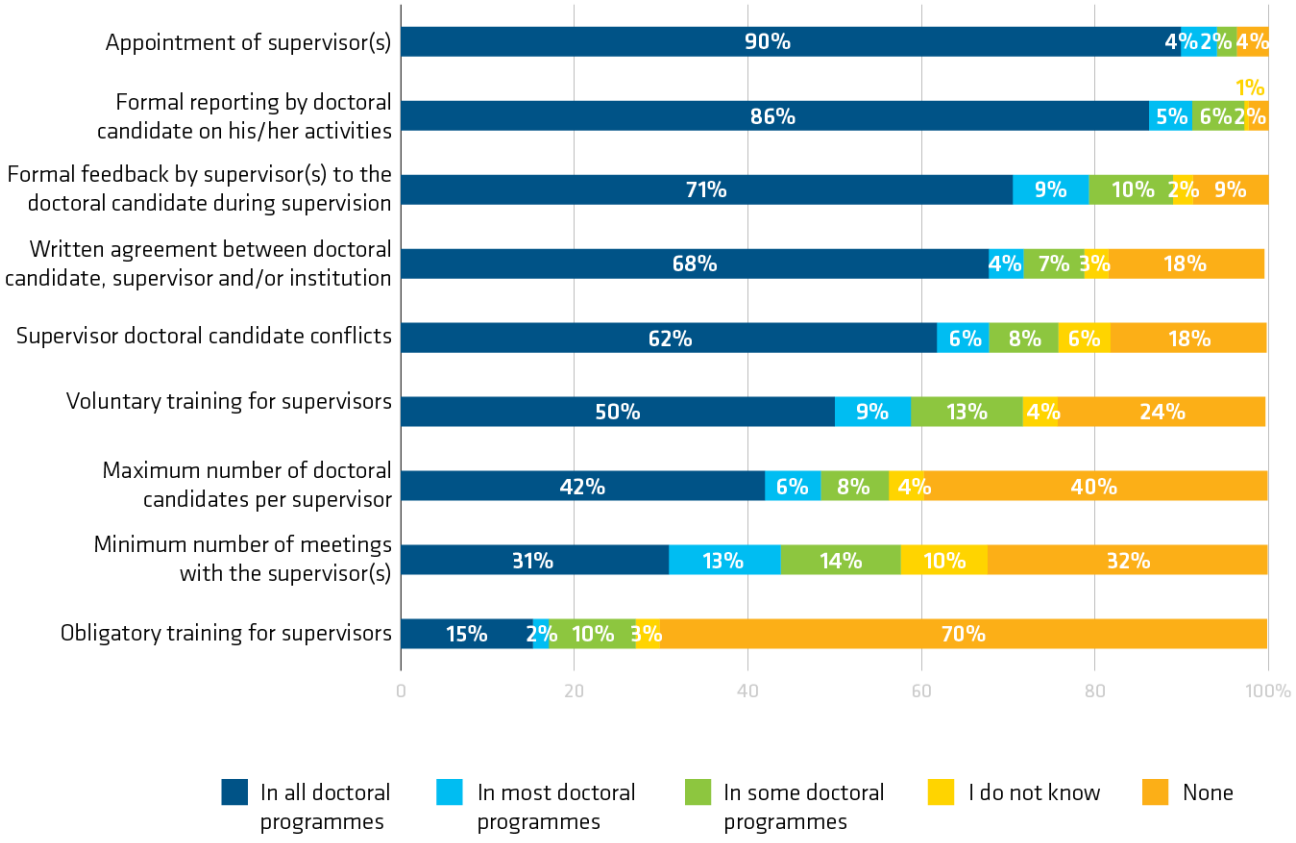
In the 2025 EUA-CDE survey, universities were specifically asked about rules and guidelines in place to organise key aspects of supervision. The outcomes of this survey question show that rules or guidelines have been implemented for most aspects of doctoral supervision in 'all' or 'in most' doctoral programmes. For instance, the appointment of supervisors is covered in all or most programmes by 94% of responding institutions, with 90% of them having rules or guidelines in place 'in all doctoral programmes'. The results regarding the formal reporting by doctoral candidates on their activities (91%) are on a comparable level (for implementation in either all or most

37 Cf. chapter 1.1 above.

programmes). Rules and guidelines on formal feedback by supervisors follows next (80%). Present in the case of clearly more than the majority of universities are rules or guidelines for written agreements between the candidate, supervisor and the university (72%), on supervisor-doctoral candidate conflicts (68%) and the voluntary training for supervisors (59%).

The results for supervisors' obligatory training attracts attention due to the relatively low rate of rules or guidelines implemented at responding universities. Obligatory training for supervisors is regulated only in 17% of responding institutions, either 'in most' (2%) or 'in all doctoral programmes' (15%). This suggests that universities generally allow supervisors the discretion to participate in training rather than establishing it as a mandatory requirement.

Figure 17: In your institution, are there rules or guidelines regarding the following aspects of doctoral supervision?
Number of respondents: 217/217



Looking at the results of the current EUA-CDE survey in comparison to the 2017/2018 survey, we can observe an increases in 2025 in the percentage of the responding institutions that have rules or guidelines related to supervision in place. Only the minimum number of meetings (40% in 2017/2018) went down in 2025 (31%). Overall, this indicates that more universities assume responsibility at the institutional level when it comes to doctoral supervision in 2025 than was the case in 2017/2018. This trend is in line with the respective objectives of the fifth Salzburg principle and another expression of the institutionalisation of doctoral education.[38]

38 Hasgall, A., Saenen, B., Borrell-Damain, L.,(2019), Doctoral education in Europe today: approaches and institutional structures, European University Association, p.23.

Table 7: Comparison of rules and guidelines on doctoral supervision in 2017/2018 and 2025

	In all doctoral programmes	
	2017/2018 EUA-CDE survey	2025 EUA-CDE survey
Appointment of supervisors	81%	90%
Formal reporting by doctoral candidate	77%	86%
Formal feedback by supervisor to doctoral candidate	60%	71%
Written agreement	56%	68%
Supervisor- doctoral candidate conflicts	51%	62%
Minimum number of meetings with supervisor(s)	40%	31%
Voluntary training for supervisors	36%	50%
Maximum number of doctoral candidates per supervisor	33%	42%
Obligatory training for supervisors	12%	15%

When comparing the results of the 2011 EUA ARDE survey, the 2017/2018 EUA-CDE survey, and the current survey regarding the voluntary training for supervisors, significant progress can be noticed with an increase in universities that offer voluntary supervision training in all or most doctoral programmes: 35% in 2011, 43% in 2017/2018, and 59% in 2025. These results reflect a continuous increase in the importance universities attribute to doctoral supervision and support for doctoral supervisors.

Further looking into the practice of supervision, universities were also asked to what extent doctoral candidates find themselves supervised by a single supervisor or by a supervisory team. Supervision in teams with members internal to the institution is now the predominant form of supervision in 64% of the responding universities, which report that this type of supervision exists in either all or most of their doctoral programmes. On a lower level, at 45% of the responding universities, we find single supervision, either 'in most' (15%) or 'in all doctoral programmes' (30%). At the same time, supervision in teams with members from other universities can be found in all or most doctoral programmes at 41% of the responding universities.

Figure 18: To what extent are doctoral candidates in your institution supervised by ...
Number of respondents: 213/217-217/217

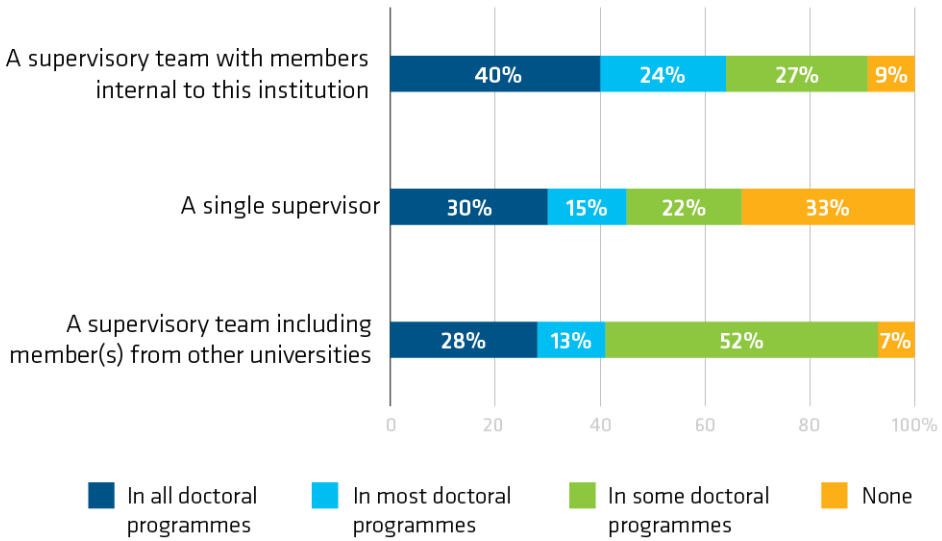


Table 8: Team vs. single supervision

	In all + in most doctoral programmes	
	2017/2018 EUA-CDE survey	2025 EUA-CDE survey
A supervisory team with members internal to this institution	47%	64%
A single supervisor	49%	45%
A supervisory team including members from other universities	24%	41%

Overall, in comparison to the 2017/2018 survey, these results show a trend towards supervision in teams. In the 2017/2018 survey, supervision in teams with internal members was at only 23% of universities represented in all doctoral programmes, compared to 40% in 2025. When we look at the situation in 'all' and 'most' programmes, 47% of universities indicated having supervisory teams back in 2017/2018, compared to 64% in 2025. At the same time, the universities indicating a single supervisor in all or most programmes went down slightly from 49% to 45%. The prevalence of supervisory teams that include members from other universities in all or most programmes also significantly grew in recent years from 24% in 2017/2018 to 41% in 2025.[39]

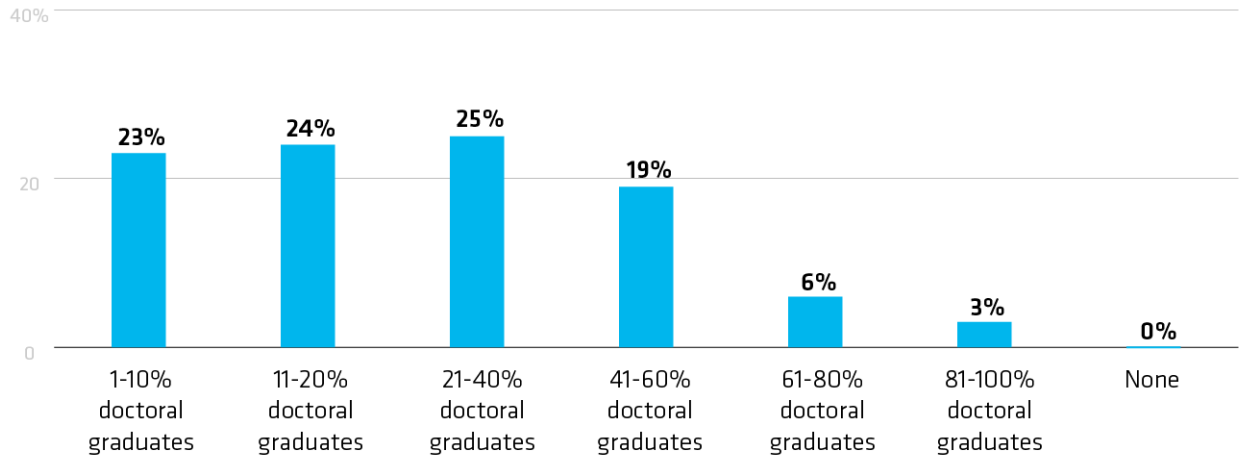
39 For 2017/2018 survey data: Hasgall, A., Saenen, B., Borrell-Damain, L.,(2019), Doctoral education in Europe today: approaches and institutional structures, European University Association, pg.24.

4 Career development opportunities

4.1 Career trajectories within and beyond academia

As the second Salzburg principle points out, universities are called upon to "assume responsibility for ensuring that the doctoral programmes and research training they offer are designed to meet new challenges and include appropriate professional career development opportunities."[40] An important way to promote professional career opportunities of doctoral candidates includes educational offers that help them not only succeed in their doctorate and in their journey in academia, but also develop potential professional pathways beyond academia, where most of them are heading after they graduate. As the survey results show, 72% of the participating institutions estimate that 40% or fewer doctoral candidates at their university will find a permanent position in academia. However, still around half (53%) of the universities estimate that 21% or more of their doctoral candidates will pursue a career in academia.

Figure 19: How many doctoral graduates from your university do you estimate will find a permanent position in academia?
Number of respondents: 211/217



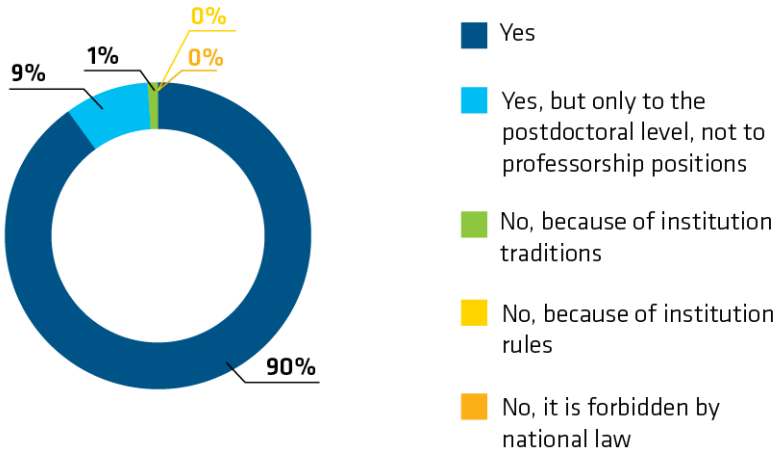
40 Koch Christensen, Kirsti (2005): Bologna seminar. Doctoral programmes for the European knowledge society. Salzburg, 3-5 February 2005. General Rapporteur's Report Professor Kirsti Koch Christensen, Rector of the University of Bergen, Norway, p. 3.

On average, institutions estimate that 29% of their doctoral graduates will find a permanent position in academia and 71% will pursue a professional career beyond academia. Earlier data, shortly after the Salzburg conference in 2005, estimated that around 50% of doctorate holders at the time were employed outside academia.[41] This underscores the increasing importance of the labour market outside academia for graduates from doctoral programmes, as already stated in the first Salzburg principle.

Pursuing academic career opportunities at own university

When it comes to pursuing academic career opportunities, our survey finds that most universities in Europe (90%) allow their doctoral graduates to continue their career at their institution, provided, of course, that there are vacancies. Of the universities, 9% allow their graduates to stay on for the postdoctoral level but not to stay on for professorship positions, while 1% of the institutions do not allow in-house appointments due to institutional traditions. None of the universities indicated that in-house appointments are not permitted by national law or institutional rules.
Although the reply options are not completely identical, it can be noted that in the 2017/2018 survey, a slightly higher percentage of respondents (94%) mentioned that their university allowed doctoral graduates to continue their career in the same institution – again, not automatically, but provided there are vacancies.

Figure 20: Can doctoral graduates continue their academic career in your institution?
Number of respondents: 217/217



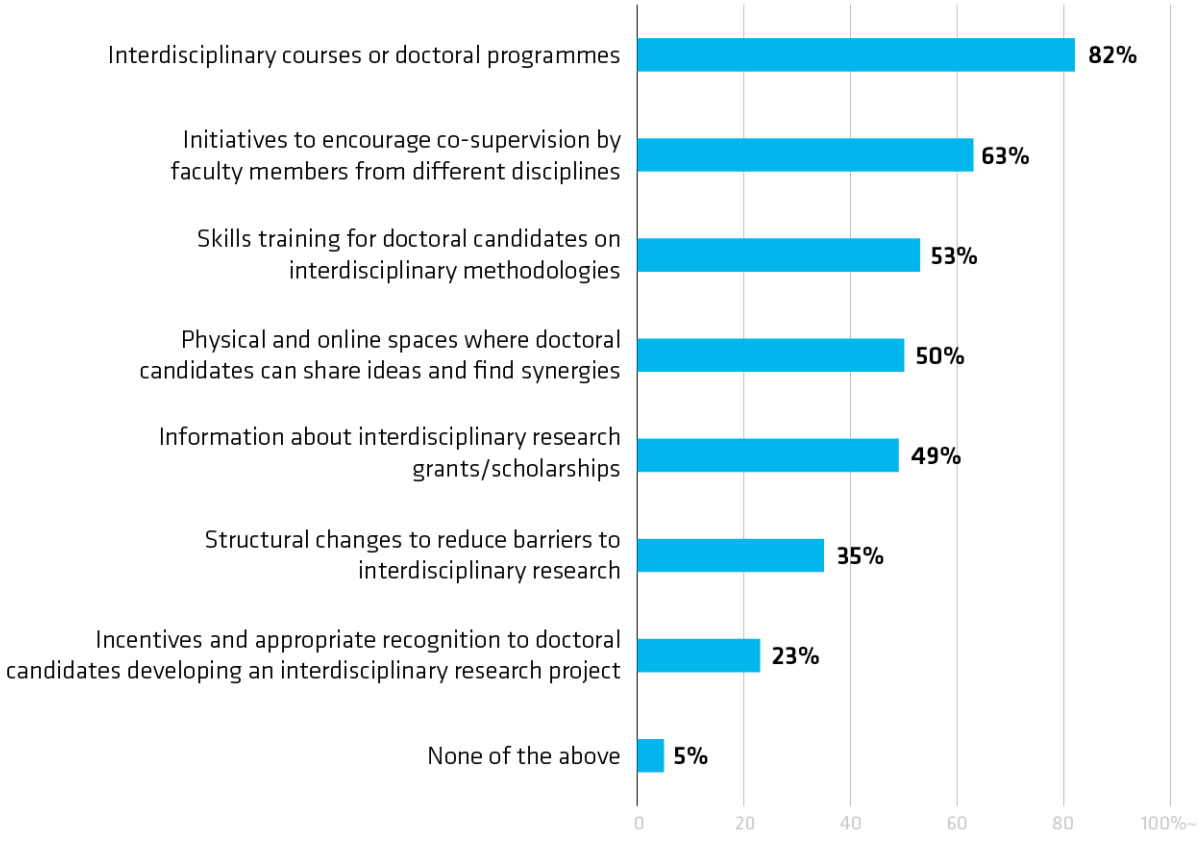
41 Borrell-Damian, Lidia (2009). Collaborative Doctoral Education: University-Industry Partnerships for Enhancing Knowledge Exchange (DOC-CAREERS Project), A report prepared for the European University Association. Brussels, p. 103.

4.2 Interdisciplinarity

Promoting interdisciplinary research is stated as an objectives in the eight Salzburg principle.[42] Interdisciplinarity has become a driving force for innovation and progress in research, rethinking the way complex problems are approached. By sharing knowledge from multiple disciplines and by integrating diverse perspectives, interdisciplinary research allows doctoral candidates to tackle challenges with a more holistic and creative mindset. Doctoral candidates engaged in such research can play a crucial role in addressing pressing global challenges – including climate change, poverty, public health, cybersecurity threats, etc. – highlighting their broader contributions to society.

In the 2025 survey, a significant share of universities reported that their institutions are mainly providing interdisciplinary courses or doctoral programmes (82%) or encouraging co-supervision with faculty members from different disciplines (63%). Present in about half of responding universities are skills training on interdisciplinary methodologies (53%) and physical and online spaces where doctoral candidates can share ideas (50%). More than one third of responding universities (35%) indicated that they address structural changes to reduce barriers to interdisciplinary research, while slightly over one fifth (23%) provide incentives and recognition to doctoral candidates developing an interdisciplinary research project. In contrast, only 5% of responding universities do not have any mechanisms in place to foster interdisciplinarity.

Figure 21: At your institution which of the following mechanisms are in place to foster interdisciplinary research? – select all that apply.
Number of respondents: 216/217



42 Cf. chapter 1.1 above.

The survey results clearly show that universities are taking steps to foster and encourage interdisciplinary research through different initiatives and by adopting a wide range of measures and approaches.

4.3 Skills offered during doctoral education

The courses offered to doctoral candidates, is another main area of progress in Europe. The EUA Trends report 2003 found that, at the country level, "Europe is divided in two halves regarding the organisation of these third-tier doctoral studies. In half of the countries, doctoral students receive mainly individual supervision and tutoring, while in the other half, taught doctoral courses are also offered in addition to individual work."[43] This has fundamentally changed over the years. We have seen above that 77% of doctoral schools are now in charge of offering courses to doctoral candidates – and 100% of the universities that participated in the 2025 survey indicated that they are offering courses. Some specific topics such as research ethics and integrity are covered even by 90% or more of the universities. Thus, we see a steady increase in universities offering taught courses: 49% in Trends V (survey run in 2005/2006), 72% in Trends 2010 (survey in 2008/2009),[44] and 100% in the 2025 EUA-CDE survey.

When looking at the research training courses and transferable ("generic" professional and personal) skills and competences training that universities offer to doctoral candidates, it becomes clear that courses that aim to support doctoral research as such are the most widespread ones offered across Europe: 93% of the responding universities indicate that they offer courses in research ethics and integrity, 88% deliver training in research methodology, 86% offer research data management training, and 81% indicate that their courses for doctoral candidates include thesis writing. One of the most frequently run courses is scientific communication, indicated by 90% of the respondents.

While these most frequently provided courses do equip doctoral candidates with skills that are useful for both, a career in academia and beyond (especially research-related careers outside academia), they are at the same time, with the exception of scientific communication, aimed at honing their research skills as such.

Another widespread skill set that is provided by most universities, include skills that help them succeed in the academic endeavour: 74% of respondents indicate that their institution delivers courses in publication strategies and 72% in proposal writing. Linked to the latter, 67% offer their doctoral candidates information on national funding instruments and 68% on EU or other international funding opportunities. It is notable that information on national and EU or international funding opportunities is provided almost equally often. Universities also aim to ensure that their doctoral candidates are staying up to date with developments in open science: 79% offer courses on this topic.

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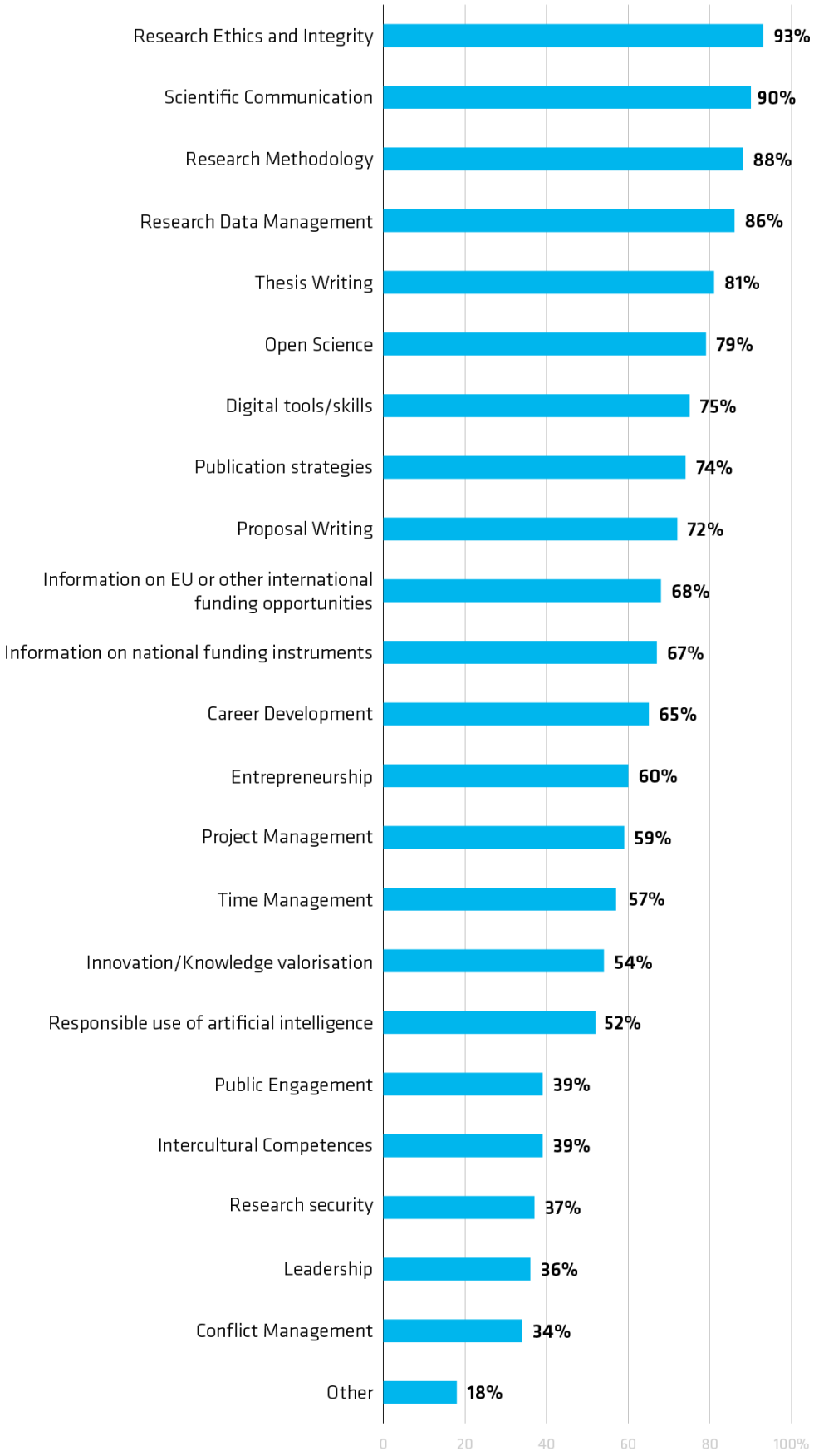
43 Reichert, Sybille and Tauch, Christian (2003): Trends 2003. Progress towards the European Higher Education Area. Bologna four years after: Steps toward sustainable reform of higher education in Europe. A report prepared for the European University Association. Brussels.

44 Crosier, David; Purser Lewis; and Smidt, Hanne (2007) Trends V: Universities shaping the European Higher Education Area. A report prepared for the European University Association. Brussels. And: Sursock, Andrée and Smidt, Hanne (2010): Trends 2010: A decade of change in European Higher Education. A report prepared for the European University Association. Brussels.

Figure 22: What type of transferable skills training is offered to doctoral candidates at your institution? – select all that apply.
Number of respondents: 217/217



Courses including genuinely transferable generic skills that are of equal, if not more, use for career trajectories beyond academia are offered by a majority of universities, although by significantly fewer ones than the courses that are at the core of an academic career path: 59% of institutions offer courses in project management, 57% in time management, and importantly 65% deliver courses in career development. Similar courses that are of equal use for careers outside academia are offered by around a third or a bit more of the respondents, 39% in public engagement, 34% in conflict management, 36% in leadership, and 39% in intercultural competences.

A majority of universities are providing courses that help doctoral candidates valorise their research or become entrepreneurs: 54% offer innovation or knowledge valorisation training and 60% provide courses in entrepreneurship. When it comes to improving digital skills or tools, we see that 75% of universities are providing these and 52% of universities also offer courses in responsible use of artificial intelligence.

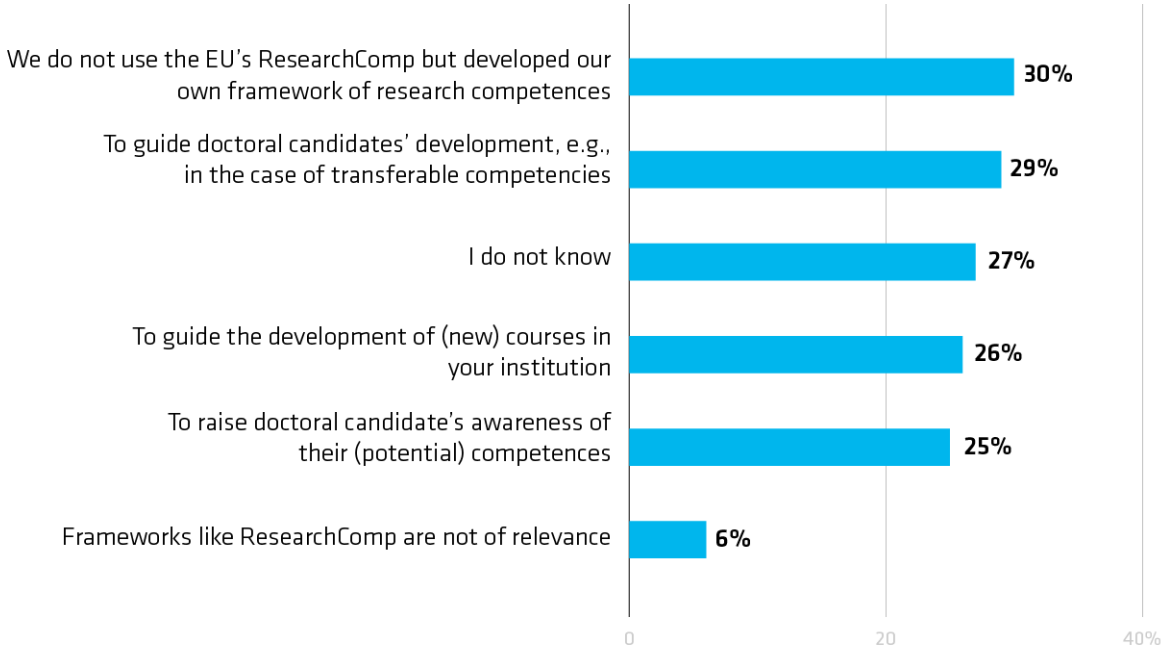
Newer developments in research policy that became more important due to recent geopolitical shifts, such as research security are already included by more than a third (37%) of the universities in their doctoral education curriculum. The survey's predefined course topics covered most of the courses that are offered across the participating universities. Only 18% of institutions indicated 'other' and provided a total of 29 additional course topics that are offered at their universities.[45]

The analysis of research-related competencies, e.g., via the use of tools such as the EU ResearchComp, plays a certain – although not yet very widespread – role when universities are developing transferable skills and competencies, with 29% of universities indicating that this was the case for EU ResearchComp.[46] While 26% used it to develop (new) courses in their institution, about 25% used EU ResearchComp to help raise awareness in doctoral candidates of their potential competencies, 30% developed their own framework, and only 6% saw no relevance in frameworks like the EU ResearchComp. However, 27% of respondents selected the option 'I do not know'.

45 Course topics mentioned under 'other': SDG / transition policies, Scientific Writing in English, Oral communication, IP rights, training for resilience, Language skills, Presentation skills, Procrastination in your PhD, Critical Thinking (mentioned twice), Articulating Research Impact, teacher training, Sustainability in research, academic citizenship, Balancing family and academic career, digital tools and AI, Technology Transfer, gender equity, Negotiating, Preparation of teaching activities, emotional wellbeing, Teamwork, citizen science, Wellbeing, Statistics, Predatory Publishers, Poster Design, pedagogy, public speaking, and personal branding.

46 EU ResearchComp refers to the European Competence Framework for researchers. European Commission. (2023). European Competence Framework for Researchers (ResearchComp). Publications Office of the European Union. Brussels.

Figure 23: Does your institution use the EU's ResearchComp for the following ? – select all that apply.
Number of respondents: 209/217

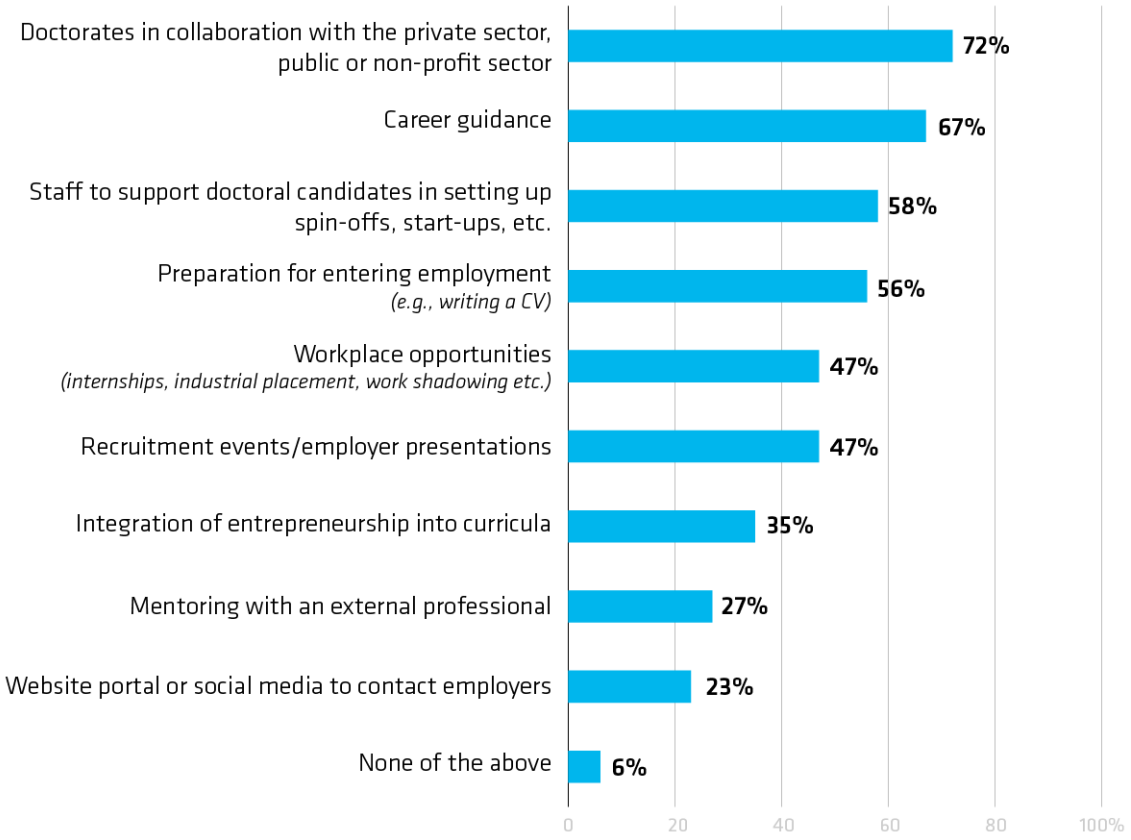


4.4 Promoting career development opportunities beyond academia

In the survey, universities were also asked whether they are offering specific types of measures to promote the employment of doctoral candidates outside of academia. The results show clearly that this type of support is becoming common in doctoral education. Doctorates in collaboration with the private sector, public or non-profit institutions, offered by 72% of institutions, and career guidance (67%) are the two most widespread examples mentioned by universities when it comes to promoting employment of doctoral candidates outside academia.

More than half of the universities (58%) have dedicated staff to support doctoral candidates in setting up spin-offs or start-ups, and 47% of respondents provide workplace opportunities such as internships, placements or job shadowing. Similarly, 47% offer recruitment events and employer presentations. While 35% integrate entrepreneurship into their curricula, initiatives like mentoring opportunities with an external professional or a specific website portal that could facilitate contact between doctoral candidates and employers rank lower, with only 27% and 23% of the respondents selecting these options.

Figure 24: Does your institution provide any of the following to promote the employment of doctoral candidates outside academia? – select all that apply.
Number of respondents: 217/217

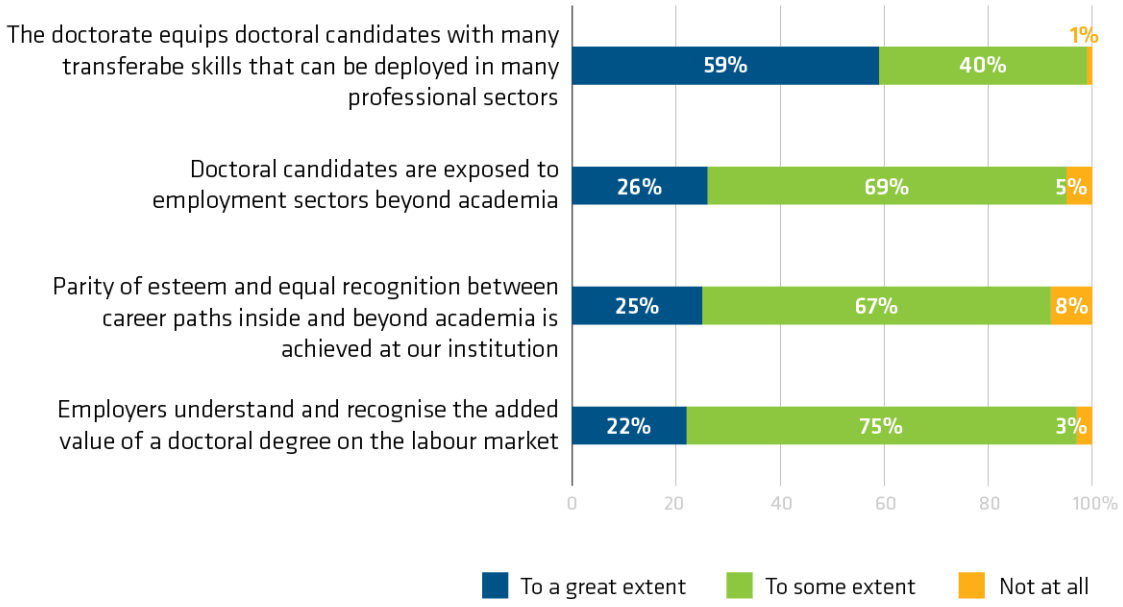


Given that the large majority of doctoral graduates pursues careers outside academia, these pathways merit further attention. Of the participating universities, 95% report that their doctoral candidates are 'to a great extent' or 'to some extent' exposed to employment sectors beyond academia. Of these 95%, 26% of institutions indicate that their doctoral candidates are to a great extent exposed to employment sectors beyond academia, while this is the case 'to some extent' for 69% of universities. Only doctoral candidates of about 5% of universities do not have exposure to employment sectors beyond academia at all.

The level of exposure to sectors beyond academia is similar to the assessment of how employers value the doctorate. The 2025 EUA-CDE survey shows that only 22% of the universities think that employers understand and recognise the added value of the doctorate to a great extent. Three quarters of the survey participants believe that employers understand to some extent what doctoral graduates can offer them, and just 3% report that employers do not understand the value of the doctorate at all.

In all, 59% of universities indicate that their doctoral candidates are equipped to a great extent with transferable skills that can be used in many professional sectors. While 25% of institutions views parity of esteem and equal recognition between careers inside and beyond academia to a great extent achieved, 67% see it to some extent achieved and 8% not at all.

Figure 25: To what extent do the following statements apply from the perspective of your institution?
Number of respondents: 210/217-216/217



5 Conclusions

- **Main outcomes:** The analysis of the 2025 EUA-CDE survey reveals what European universities have achieved in the past 20 years in the field of doctoral education: a high degree of institutionalisation and progress in key doctoral education practices, especially in supervision and in providing research courses and transferable skills offers. Data comparisons with previous surveys, especially the 2017/2018 EUA-CDE survey, indicate that progress also continues in recent years. The share of institutions with a central doctoral school or a similar structure has now reached 89%. The third Bologna cycle is increasingly an area of universities' activity that is overseen at the institutional level. This indicates an impressive increase and consolidation of institutionalisation in doctoral education over the last two decades – a key goal of the second and sixth Salzburg principles, which focus on university-wide guidelines on the doctorate and on achieving critical mass by developing new structures of doctoral programmes. This answers one of the central questions raised in the introduction. The thematic questions raised at the beginning of this study, which are linked to the corresponding Salzburg Principles, are answered in the following sections.

- **The rise of the doctoral school:** The rise of the central doctoral school can be observed both quantitatively and qualitatively. Their share among participating universities has reached a new high. However, the higher degree of institutionalisation of doctoral education also has an important qualitative component, which is reflected in the broad range of core functions that these entities now are looking after at European universities: quality assurance, oversight functions on doctoral education, offering courses for doctoral candidates, and essential administrative functions. The different roles of doctoral school directors mirror the broad remits of doctoral schools or similar structures, including when it comes to the strategic development of the doctorate. Over three quarters of all participating universities indicate that this is a key task of the directors of their doctoral schools.

- **Organisation and decision-making in doctoral education:** A closer analysis of how the doctorate is organised at universities shows a complex picture of various actors and levels involved in different tasks, often including overlaps. This reflects the rich diversity in how universities organise doctoral programmes across Europe, as already stated in the third Salzburg principle. Furthermore, it can also be assumed that this – at least to a certain degree – reflects the complexity of tasks that often require close cooperation among different entities or actors, like the central university level, institutional sub-units, and supervisors. This is reflected when it comes to decision-making. An analysis of the actors involved in

making decisions illustrates that it is mostly the (central) institutional level or institutional sub-units of a university that are the most often involved in decision-making. It can be observed, however, that the institutional level gained in importance in decision-making while the influence of the institutional sub-units dropped considerably since 2017/2018. Again, this result is consistent with the rise of the central doctoral school and its roles. The influence of these two levels is followed by the role of the supervisor, which retains a key position in decision-making. However, one of the most significant changes the 2025 survey captures is that the role of supervisors in decision-making processes significantly dropped in comparison to the 2017/2018 EUA-CDE survey. The national level, the government, is involved to a lesser degree than the university actors, pointing to a high degree of institutional autonomy of universities in Europe when it comes to the doctorate. However, while the national level's influence decreased in some areas, it remained relatively stable in others, illustrating a continued role for governments in aspects of doctoral education, such as in employment standards.

- **Funding:** Regarding the funding of doctoral candidates, own funding of universities was indicated as the most important source, followed by public funding at the national level (research councils or government research funding). Also important are funding sources such as the EU framework programme for research and innovation and the private sector. However, ensuring sustainable funding of doctoral education is also the most often mentioned key challenge in doctoral education today, pointing also to challenges when it comes to the tenth Salzburg principle on 'ensuring appropriate funding'.

- **Quality assurance:** The most widespread indicators used by institutions to assess and evaluate the quality of doctoral education include staff qualifications, the academic publications by doctoral candidates, qualitative indicators (e.g., peer review, evaluation committees), the completion rate, and the satisfaction of doctoral candidates. The main changes since 2017/2018 in relation to the indicators used include a lower importance attributed to academic publications by doctoral candidates and to completion rates, and a higher importance to the satisfaction of doctoral candidates, to qualitative indicators, and the relevance for society. Thus, these recent trends fit into the current debates and practice changes around the reform of the research assessment that focus more on qualitative than quantitative criteria.[47]

- **Internationalisation:** As highlighted by the ninth Salzburg principle, supporting internationalisation plays a key role at the doctoral level in Europe. The majority of universities promotes international research cooperation at the level of the doctorate, for instance as part of universities alliances. More than half of the universities also pursues co-tutelles. Over the last seven years, universities in Europe saw a significant increase in internationalisation, especially when it comes to the share of doctoral candidates that come from abroad.

47 Coalition for Advancing Research Assessment. (2022, July 20). Agreement on Reforming Research Assessment. CoARA.

- **Status and rights of doctoral candidates:** Half of the participating universities indicate that their doctoral candidates have employee status, and a similar share view them as early-career researchers. However, doctoral candidates have overlapping statuses, and most universities (also) selected the status 'doctoral students'. While there is movement in the sense of the fourth Salzburg principle that designate doctoral candidates as early-career researchers, the numbers still show room for progress. Another important dimension of the status of doctoral candidates includes their rights, for instance participation rights, which are widespread, especially when it comes to participating in decisions, including voting rights.

- **Supervision:** While the status of doctoral candidates shows a mixed picture, there is significant change when it comes to supervision. A comparison between the results of the 2017/2018 EUA-CDE survey and this year's survey shows that the share of supervisory committees with faculty internal to the institution or with members from other universities went up considerably. An equally significant change concerns the increase in responsibility at the institutional level when it comes to supervision. The 2025 survey results show that more universities have put rules or guidelines in place on key aspects of supervisors' responsibilities and supervision-related aspects in general than was the case in 2017/2018. Similarly, there is an increased importance universities attribute to offering voluntary courses to the supervisors of their doctoral candidates. These developments are in line with the fifth Salzburg principle.

- **Career development opportunities:** The 2025 survey outcomes clearly confirm what the first Salzburg principle stated: The labour market of most doctoral candidates will be outside academia. We observe that a clear majority of universities are offering their doctoral candidates exposure to that labour market, and more than 70% of institutions offer the possibility to collaborate on a doctoral project with sectors beyond academia. Universities are actively supporting career development opportunities of doctoral candidates within and beyond academia in line with the relevant four Salzburg principles (i, ii, viii, ix) although there is still more potential in the area of preparing for career opportunities beyond academia. In the case of courses provided to doctoral candidates, the most frequently offered topics focus on enabling doctoral candidates to succeed in their doctoral research. Compared to research training, fewer universities are also providing generic transferable skills that are useful to doctoral candidates in academia as well as when pursuing career opportunities outside academia. Universities are very active when it comes to promoting interdisciplinarity, a crucial approach to societal challenges in academia and beyond.

- **The share of doctoral candidates among all researchers at European universities:** The survey results also highlight the important contribution of doctoral candidates – supported by the doctoral education structures in place – to universities' overall research activities: about a third of all researchers at universities are doctoral candidates. The impact of doctoral candidates in universities is further underscored by the fact that doctoral candidates focus on original research – pushing the boundaries of research. Thus, even when most doctoral candidates are leaving academia after their graduation, their contribution to the universities' research endeavours during their doctorate alone is considerable.

Annex

Table 9: Representativeness of the EUA-CDE survey: number of doctorate awarding higher education institutions (HEIs) and respective number of doctoral candidates covered by the 2025 EUA-CDE survey compared to total number of HEIs and number of doctoral candidates included in the European Tertiary Education Register (ETER).*

	ETER		EUA-CDE survey cases in ETER		Representativeness	
	Doctorate awarding HEIs	Number of doctoral candidates	Number of HEIs	Number of doctoral candidates	Share of doctoral awarding institutions	Share of doctoral candidates
Andorra	1	19	1	19	100%	100%
Austria	31	19975	5	5786	16%	29%
Belgium	12	20982	6	14205	50%	68%
Croatia	10	4485	2	815	20%	18%
Cyprus	9	1719	1	157	11%	9%
Czech Republic	29	21620	3	7994	10%	37%
Denmark	16	9354	2	2143	13%	23%
Estonia	7	2353	2	1444	29%	61%
Finland	14	19196	7	13277	50%	69%
France	107	61083	11	13356	10%	22%
Germany	191	108303	20	28687	10%	26%
Greece	24	32873	2	1602	8%	5%
Hungary	27	10486	8	4893	30%	47%
Iceland	4	704	1	680	25%	97%
Ireland	16	10005	9	9125	56%	91%
Italy	89	37909	26	18775	29%	50%
Latvia	22	2032	2	1122	9%	55%
Lithuania	15	1215	1	180	7%	15%
Luxembourg	1	1029	1	1029	100%	100%
Malta	3	331	2	205	67%	62%
Netherlands	19	11176	4	3896	21%	35%
Norway	24	11946	9	9654	38%	81%
Poland	101	25165	10	7748	10%	31%
Portugal	27	24413	7	11922	26%	49%
Romania	46	21324	9	7203	20%	34%
Serbia	17	11727	1	6763	6%	58%
Slovakia	29	6482	2	384	7%	6%
Spain	75	97749	18	35234	24%	36%
Slovenia	20	3457	3	2804	15%	81%
Sweden	33	20041	6	5158	18%	26%
Switzerland	13	27268	3	6897	23%	25%
Türkiye	202	109540	6	8713	3%	8%
United Kingdom	139	112465	5	5430	4%	5%
Total	**1373**	**848'426**	**195**	**237'300**	**14%**	**28%**

ETER data 2021; France year 2019
*Missing ETER data for respondents of the survey: Austria (1), Germany (6), Georgia (3), Kazakhstan (1), Lithuania (3), Montenegro (1), Norway (2), Switzerland (2), Ukraine (3).

The ETER dataset does not include the following countries with participants in the 2025 EUA-CDE survey:
Georgia (3 universities), Kazakhstan (1 university), Montenegro (1 university), and Ukraine (3 universities).

References

- Bologna Process (2003): Realising the European Higher Education Area. Communiqué of the Conference of Ministers responsible for Higher Education in Berlin on 19 September 2003.
- Bologna Process (2007): Towards the European Higher Education Area: responding to challenges in a globalised world. Communiqué of the Conference of Ministers responsible for Higher Education in London on 18 May 2007.
- Borrell-Damian, Lidia (2009). Collaborative Doctoral Education: University-Industry Partnerships for Enhancing Knowledge Exchange (DOC-CAREERS Project), A report prepared for the European University Association. Brussels.
- Byrne, Joanne; Jørgensen, Thomas; and Loukkola, Tia (2013): Quality Assurance in Doctoral Education – results of the ARDE project. EUA Publications 2013. With the support of the Lifelong Learning Programme of the European Commission. Brussels.
- Coalition for Advancing Research Assessment. (2022, July 20). Agreement on Reforming Research Assessment. CoARA.
- Crosier, David; Purser Lewis; and Smidt, Hanne (2007) Trends V: Universities shaping the European Higher Education Area. A report prepared for the European University Association. Brussels.
- EUA (2003): Graz Declaration 2003. Forward from Berlin: the Role of the Universities. Geneva.
- EUA-CDE (2015): Doctoral Education – Taking Salzburg Forward. Implementation and New Challenges.
- EUA-CDE (2022): Building the Foundations of Research. A Vision for the Future of Doctoral Education in Europe. Geneva.
- European Commission (2013): European Research Area Progress Report 2013, accompanied by Facts and Figures 2013. Brussels.
- European Commission. (2023). European Competence Framework for Researchers (ResearchComp). Publications Office of the European Union. Brussels.
- European Commission (2024): ERA Scoreboard 2024. Brussels.
- European University Association (2005): Doctoral Programmes for the European Knowledge Society. Report on the EUA doctoral programmes project (supported by the European Commission's Socrates Programme). Brussels.
- European University Association (2015), Principles and Practices for International Doctoral Education. Brussels.
- Hasgall, Alexander; Saenen, Bregt; and Borrell-Damian, Lidia (2019): Survey. Doctoral education in Europe today: approaches and institutional structures, European University Association Council for Doctoral Education. Geneva.
- Hasgall, Alexander and Peneoasu, Ana-Maria (2022): Survey. Doctoral education in Europe: current developments and trends, European University Association Council for Doctoral Education. Geneva.
- Koch Christensen, Kirsti (2005): Bologna seminar. Doctoral programmes for the European knowledge society. Salzburg, 3-5 February 2005. General Rapporteur's Report Professor Kirsti Koch Christensen, Rector of the University of Bergen, Norway.
- The Bologna Declaration of 19 June 1999, Joint declaration of the European Ministers of Education. Bologna.
- OECD (2013): OECD Science, Technology and Industry Working Papers 2013/04. Paris.
- OECD (2023): Main Science and Technology Indicators 2023. Paris.
- Reichert, Sybille and Tauch, Christian (2003): Trends 2003. Progress towards the European Higher Education Area. Bologna four years after: Steps toward sustainable reform of higher education in Europe. A report prepared for the European University Association. Brussels.
- Sursock, Andrée and Smidt, Hanne (2010): Trends 2010: A decade of change in European Higher Education. A report prepared for the European University Association. Brussels.

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The EUA Council for Doctoral Education (EUA-CDE) was launched in 2008 at the initiative of the European University Association, responding to a growing interest in doctoral education and research training in Europe. An integral part of the European University Association, it is now the largest European network in this field, covering more than 280 universities and institutions working on issues related to doctoral education and research training in 39 countries.

Since its creation, EUA-CDE has been leading the transformation and strengthening of doctoral education in Europe. Building on the outcomes of EUA's work on doctoral programmes and research careers, EUA-CDE has been the driving force behind the implementation of the Salzburg Principles and Recommendations and the promotion of doctoral education as a main intersection between the European higher education and research areas (EHEA and ERA).