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Report on Pilot of the YUFE Impact and Graduate Tracking Framework

Report on Pilot of the YUFE Impact and Graduate Tracking Framework

Deliverable 6.3

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Abstract

The YUFE Pilot on Doctoral Learning was designed and launched at eight YUFE universities to implement the YUFE DIOSI¹ Model for Doctoral Learning, which is a holistic approach that integrates doctoral research, supervision, mentoring, and a mix of formal and informal learning and training formats while supporting the personal and professional development of doctoral candidates. The Pilot aimed to improve universities' own processes, offer chances to learn from one another, establish a joint vision and overarching framework for doctoral education, and increase cooperation among YUFE universities.

This document aims to present the results of two surveys conducted on participants of the YUFE Pilot on Doctoral Learning of eight YUFE universities between May 2024 and December 2025. The first survey was conducted at the start of the Pilot and the second survey at the end of the Pilot. The main objective was to determine the opinions, attitudes and behaviors of the participants regarding their doctoral education, career related experience, learning, knowledge and skills, behavior (attitudes and intentions), and mobility, as well as to check whether they had changed

¹ [Developing and Implementing hands-on training on Open Science and Open Innovation for Early Career Researchers \(DIOSI\)](#) (2021–2023), funded by the European Union's Horizon 2020 Research and Innovation Programme

between the two measurements.

The data collected included unequally sized samples in the first (N=119) and second (N=52) measurements, which were nevertheless fairly uniform in terms of gender and age of the respondents, scientific field of the doctorate, professional status and position, but quite unequal in terms of the university they belong to, the country they come from, the year in which they started their doctorate and the proportion of working time they spend on research activities. Furthermore, for only a small number of respondents (N=22), the so-called Paired sample, it was possible to make direct comparisons between two measurements at the individual level.

The analyses were conducted according to the previously set main objectives and research questions, which were divided into five sections. In the first, doctoral education, the basic motivational aspects for pursuing a doctorate were determined, the intention for collaborative work on the doctorate was examined, what supervision during the doctoral study includes, how satisfied doctoral candidates (DCs) are with their research environment, and what their study funding options are. The second part was related to the career-related experiences of DCs: the areas that are important for their professional success and the extent to which they worry about their professional future were analyzed. In the third part, the learning, knowledge and skills of DCs were examined. The average self-assessments of various knowledge and skills of DCs were determined, as well as the sources of their acquisition. The fourth part was about behavior (attitudes and intentions). The aspirations and perspectives of DCs relevant to their professional development were analyzed. In the fifth section, mobility and the mobility intentions of DCs were examined.

The results, including descriptive statistics and testing the significance of the differences between the two measurements, which are presented in tables and/or figures, clearly point to the following conclusions:

1. Doctoral education

- respondents are primarily motivated to work as researchers in academia,
- they do not intend to do a doctorate in collaboration with external institutions,
- they mostly have supervisor(s) from their own university,
- they show greater satisfaction with research/academic versus operational/external aspects of their research environment,
- in the second measurement, respondents are more satisfied with mentoring

compared to those in first measurement,

- they are mostly self-funded or are employed by the university in different ways;

2. Career-related experience

- DCs consider the development of their research and transferable skills most important for their personal professional success,
- DCs are sometimes to often (with scale: 1 (never), 2 (rarely), 3 (sometimes), 4 (often) to 5 (continuously) worried about their professional future;

3. Learning, knowledge and skills

- DCs perceive themselves as more competent in knowledge and skills related to the research role, and less competent in general and transferable knowledge and skills,
- in the second measurement, the self-assessment of knowledge and skills increased, especially those related to the activities of the Pilot,
- different sources of knowledge acquisition (e.g., self-study, supervisors, etc.) are almost equally important to DCs;

4. Behavior (attitudes and intentions)

- attitudes and intentions of DCs related to their professional development reflect an orientation towards a research career rather than an entrepreneurial one,
- respondents at the second time point are more aware of the challenges that Open Science brings with it;

5. Mobility

- DCs mostly have positive attitudes about future professional and personal life mobility.

These findings are consistent with and additionally confirm the conclusions and recommendations already elaborated in the [Report on Pilot of the YUFE Model on Doctoral Learning](#).

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Introduction and Objectives

During the YUFE Pilot on Doctoral Learning, an anonymous survey was conducted on the participants at two time points with the aim of gaining a better understanding of professional development, doctoral education, career perspectives and future mobility, as well as to measure if there was an effect of the Pilot. While the YUFE Impact and Graduate Tracking Framework has a broader ambition of generating insights into graduates' future career trajectories, the present report focuses primarily on doctoral candidates' experiences, attitudes, skills development and career perspectives and their future ambitions during their participation in the YUFE Pilot on Doctoral Learning. As most participants were still enrolled in their doctoral programmes at the time of data collection, graduate tracking outcomes fell outside the scope of this report.

The design is aligned with the DIOSI Impact and Graduate Tracking Framework², which distinguished between a short-term perspective focus on participants' training experiences, learning outcomes and development, and a long-term perspective focused on career trajectories and broader societal impact. Given that most participants in the YUFE Pilot on Doctoral Learning were still enrolled in their doctoral programmes at the time of data collection, this report takes into account questions from the long-term perspective, although with a measurement time at the start and end of the YUFE Pilot on Doctoral Learning.

The first online survey was conducted at the start of the Pilot in spring 2024, and the second at the end of the Pilot in winter 2025. It should be noted that participants entered the Pilot in two cohorts (spring 2024 and autumn 2024). Therefore, respondents may have had different durations of participation in Pilot activities. This factor was not controlled for in the analyses but could be considered when interpreting the results.

In addition to basic demographic characteristics, the questionnaire used included various questions related to the insights of the doctoral candidates (DCs) on 1) their doctoral education, 2) their career-related experiences, 3) learning, knowledge and skills, 4) their behaviors (attitudes and intentions) and 5) mobility. The main objective was to determine the opinions, attitudes, and behaviors of the

² DIOSI Deliverable 5.3: [DIOSI Impact and graduate tracking Framework: self-report questionnaire adapted to the course contents and methodology to assess long-term impact](#)

participants regarding the aforementioned areas and to check whether they had changed between the two measurements. More specifically, the research objectives related to the following questions:

1. Doctoral education

- What is the main motivation for pursuing a doctorate?
- Is the doctorate intended to be done in collaboration with other organizations?
- What does supervision during the doctoral study include?
- How satisfied are doctoral candidates with various aspects of their current research environment?
- What funding opportunities do they use during their doctoral study?

2. Career-related experience

- Which areas and to what extent are important to doctoral candidates for their professional success?
- To what extent are they worried about their professional future?

3. Learning, knowledge and skills

- To what extent do doctoral candidates possess various relevant knowledge and skills?
- How did they acquire their current knowledge and skills?

4. Behavior (attitudes and intentions)

- What are the aspirations and perspectives of doctoral candidates relevant for their professional development?

5. Mobility

- How open are doctoral candidates to change the sector of their current professional activity?
- Are they considering living and working outside their country of citizenship?

Methodology

1. Respondents

As previously stated, the online survey was conducted at two measurement points: Survey 1 in Spring 2024 and Survey 2 in Winter 2025. After the completion of data collection, the database included 138 respondents in the first measurement and 71 respondents in the second measurement. Given that the database also included the data of respondents who did not fill out the relevant parts of the questionnaire and/or complete the survey, after data cleansing the final database on which statistical analyzes were performed included 119 respondents in the first and 52 respondents in the second measurement.

Furthermore, in the second measurement, respondents were asked to enter their personal anonymous Login ID (a 12-digit code unique to each respondent) that was automatically generated during the first measurement. This ID allowed responses from the two surveys to be linked without identifying individual respondents. Unfortunately, only 22 respondents entered their Login ID during the second measurement, which made it impossible to directly link the responses to both surveys at the individual level for all respondents. In other words, those statistical analyses that relate to determining possible changes between the two measurements at the individual level will be conducted on a smaller sample of 22 participants, while the results for each measurement will include a sample of 119 participants for Survey 1 and a sample of 52 respondents for Survey 2. Therefore, in the subsequent presentation of the research results, it will always be indicated on which sample certain statistical analyses were conducted.

Below are some basic characteristics of these samples: first, the gender and age of the respondents, then their country of residence, the university they belong to, the field of doctoral studies, their professional status and sector, the time since enrollment, and the time they have been spending on research activities.

Gender

Table 1. Gender with which respondents identify with

Gender	Survey 1	Survey 2	Paired sample
Female	69	24	17
Male	40	14	5
Non-binary	1	0	0
Prefer not to say	4	2	0
I prefer to identify myself as: human	1	0	0
Valid ³	115	40	22
Missing ⁴	4	12	0
Total	119	52	22

As can be seen from the table above, not all respondents provided an answer about their gender. Therefore, in order to make them easier to compare, the following figures show the proportions of respondents who provided an answer about their gender in the samples of the first and second measurements, as well as in the sample of paired respondents.

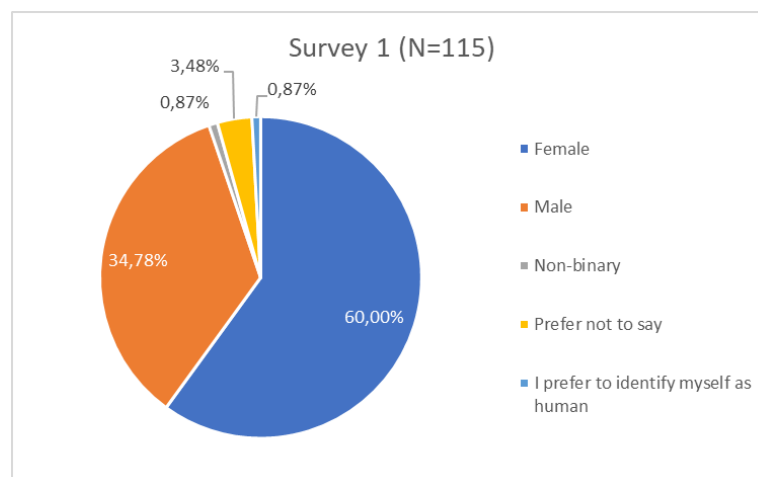


Figure 1. Percentage of DCs' gender in Survey 1

³ Valid: Number of respondents who provided a valid response to the question.

⁴ Missing: Number of respondents who did not provide a response to the question.

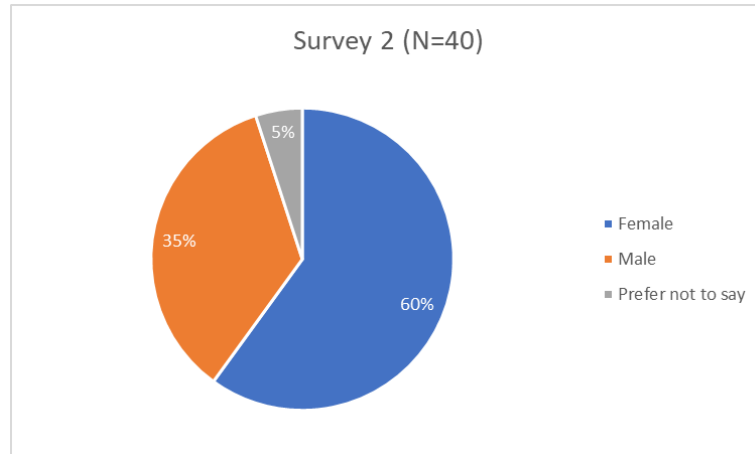


Figure 2. Percentage of DCs' gender in Survey 2

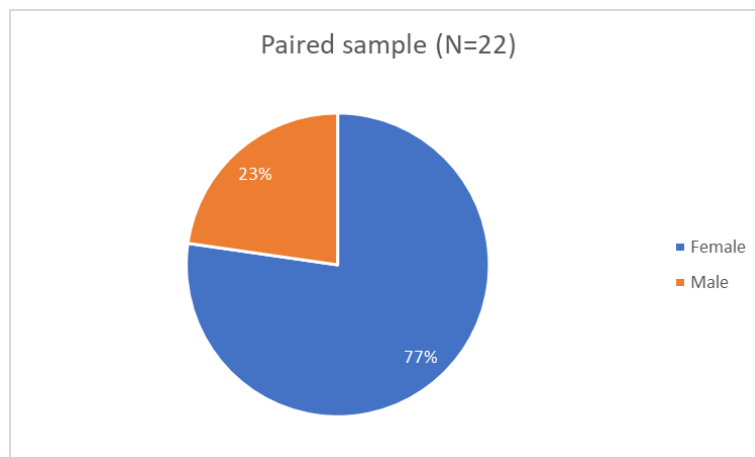


Figure 3. Percentage of DCs' gender in a Paired sample

It is visible from the figures above that, although unequal in size, the samples of respondents in the first and second measurements are almost completely equal in gender (approximately 2/3 women and 1/3 men), while in the sample of paired respondents, women predominate to a slightly greater extent.

Age

Table 2. Number of respondents by age group

Age group	Survey 1	Survey 2	Paired sample
under 30	42	17	10
30 - 50	62	21	11
over 50	11	3	1
Valid	115	41	22
Missing	4	11	0
Total	119	52	22

Again, not all respondents provided an answer about their age group. Therefore, to make them easier to compare, the following figures show the proportions of respondents who provided an answer about their age group in all three samples.

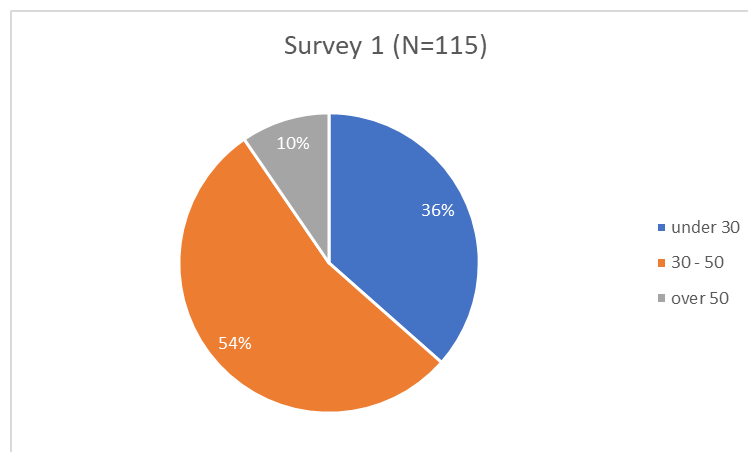


Figure 4. Percentage of DCs' age group in Survey 1

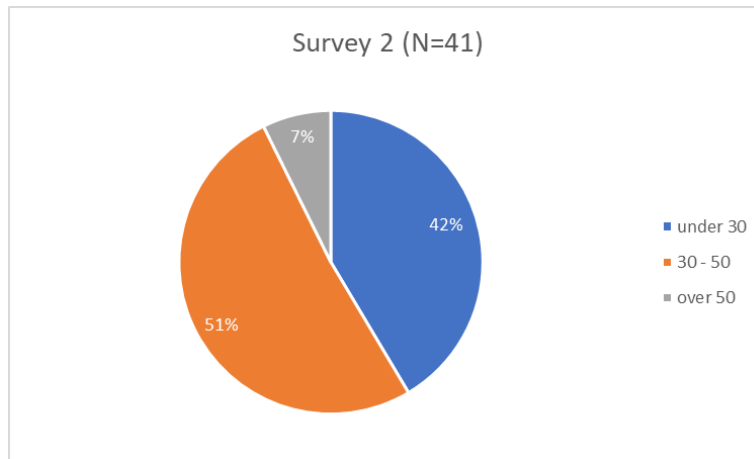


Figure 5. Percentage of DCs' age group in Survey 2

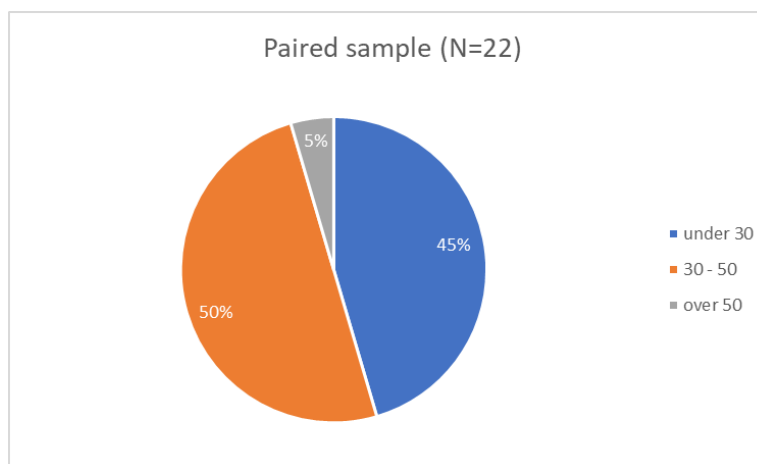


Figure 6. Percentage of DCs' age group in Paired sample

Again, although they are not of equal size, it is evident that the samples of respondents in both measurements are almost equal in terms of age group, and that even the paired sample does not deviate from the obtained proportions.

Country of residence

Table 3. Number of respondents by country of residence

Country of residence	Survey 1	Survey 2	Paired sample
Belgium	32	7	4
Croatia	27	8	7
Finland	11	5	3
France	14	11	5

Germany	3	0	0
the Netherlands	5	4	2
Poland	7	2	1
Spain	0	1	0
United Kingdom	6	1	0
Other	11	1	0
Valid	116	40	22
Missing	3	12	0
Total	119	52	22

Since not all respondents indicated which country they live in, the following figure shows the percentages of those who responded for easier comparison of the samples.

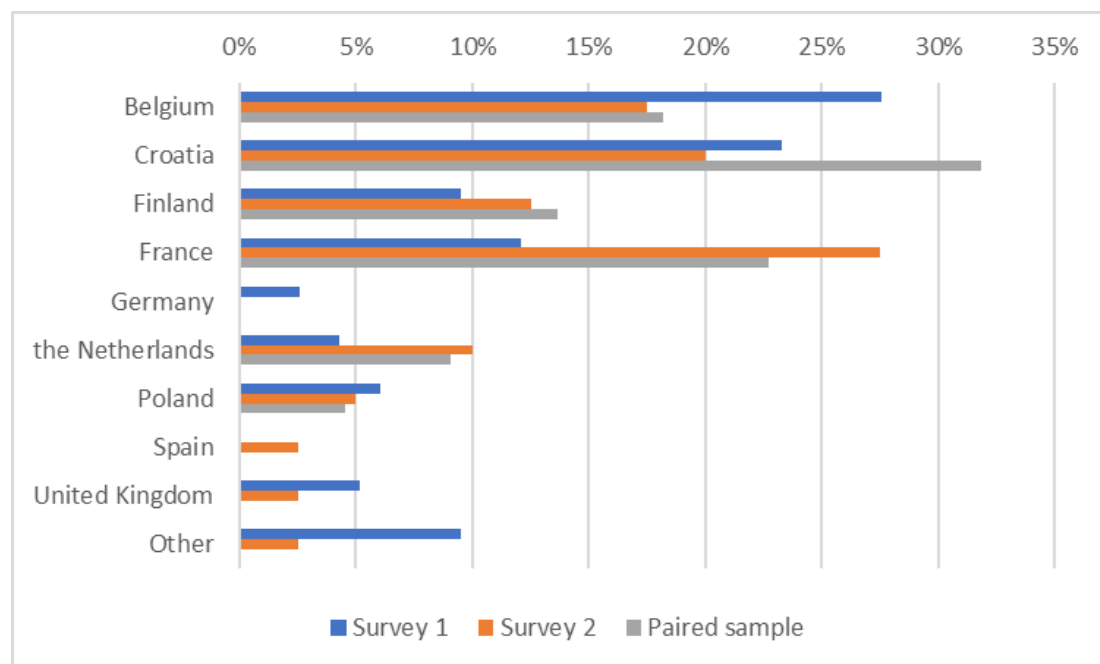


Figure 7. Percentage of respondents by country of residence in all three samples

It is evident that the samples are unequal in terms of the country in which the respondents live: in the first measurement, DCs from Belgium and Croatia dominate, and in the second measurement, there are relatively most of those from France and Croatia. In the paired sample, relatively most (almost one third) are from Croatia. In general, in both

measurements, DCs from Belgium, Croatia, France and Finland are the most represented, while DCs from other countries appear much less frequently. It is interesting that in the first measurement, almost 10% of the total sample comes from other countries, which are (in alphabetical order): Bangladesh, Cameroon, Canada, Caribbean region, Mexico, Norway, Slovenia, Sweden, Tunisia and Uganda.

DCs affiliated university

Table 4. Number of respondents per university

Affiliated university	Survey 1	Survey 2	Paired sample
Maastricht University, the Netherlands	5	4	2
Nicolaus Copernicus University, Poland	7	2	1
Sorbonne Nouvelle University, France	17	13	5
University of Antwerp, Belgium	38	8	4
University of Bremen, Germany	3	1	0
University of Eastern Finland, Finland	11	5	3
University of Essex, the United Kingdom	7	0	0
University of Rijeka, Croatia	30	10	7
Valid	118	43	22
Missing	1	9	0
Total	119	52	22

Since not all respondents indicated which university do they belong to, the following figure shows the percentages of those who responded for easier comparison of the samples.

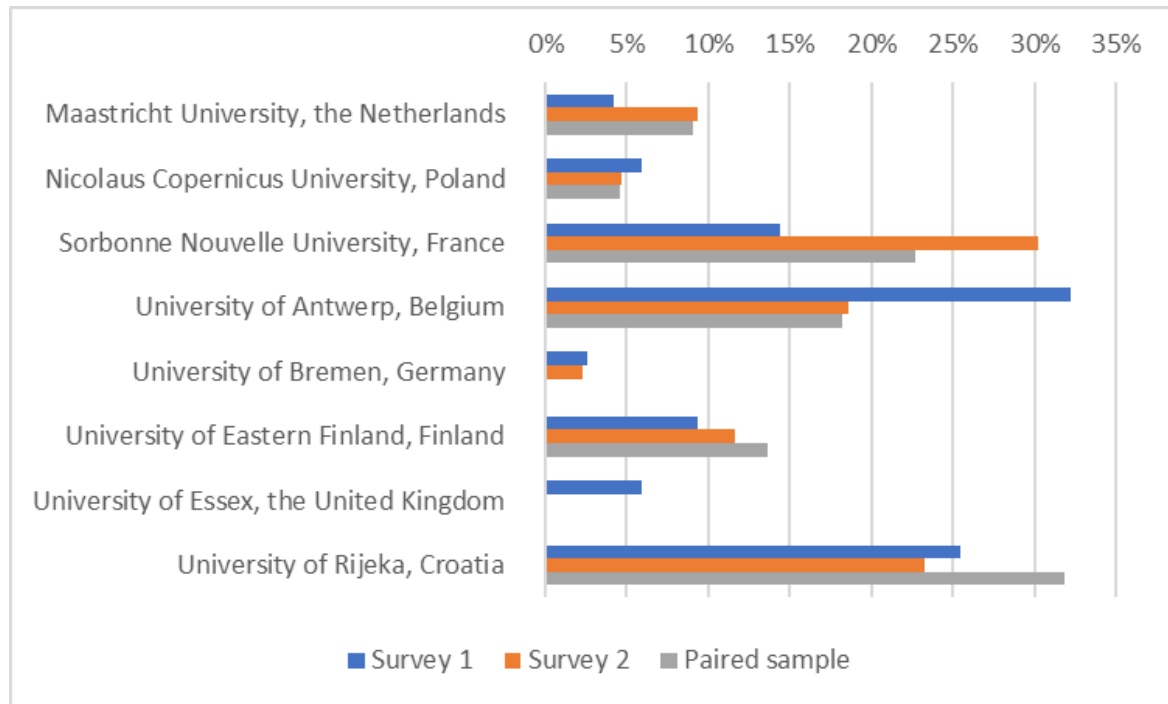


Figure 8. Percentage of respondents by affiliated university in all three samples

Similar to the country where DCs live, it is evident that the samples are unequal in terms of the affiliated university of respondents.

Field of doctoral study

Table 5. Number of respondents with regard to the field of doctorate

Field of doctorate	Survey 1	Survey 2	Paired sample
Agricultural sciences	0	1	0
Engineering and technology	23	7	4
Arts and Humanities	27	11	7
(Bio)medical and health sciences	16	5	1
Exact and natural sciences	6	1	1
Social sciences	33	16	5
Other (e.g., interdisciplinary)	13	2	4
Valid	118	43	22

Missing	1	9	0
Total	119	52	22

Since not all respondents indicated the field of their doctorate, the following figures show the percentages of those who responded for easier comparison of the samples.

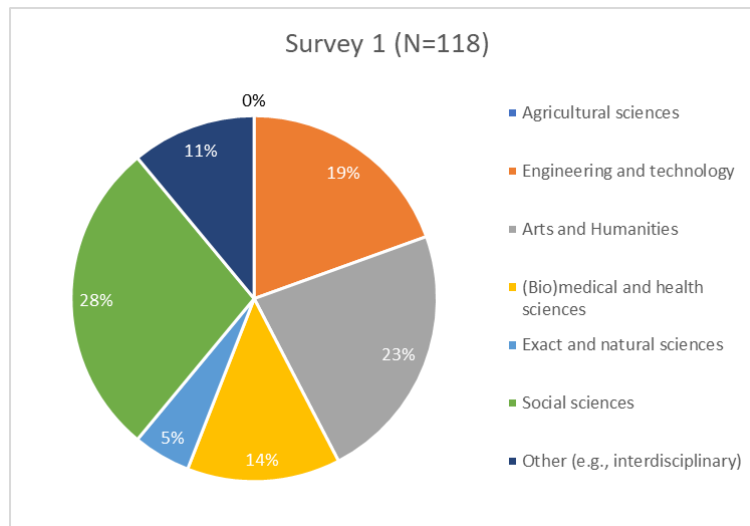


Figure 9. Percentage of DCs' field of doctorate in Survey 1

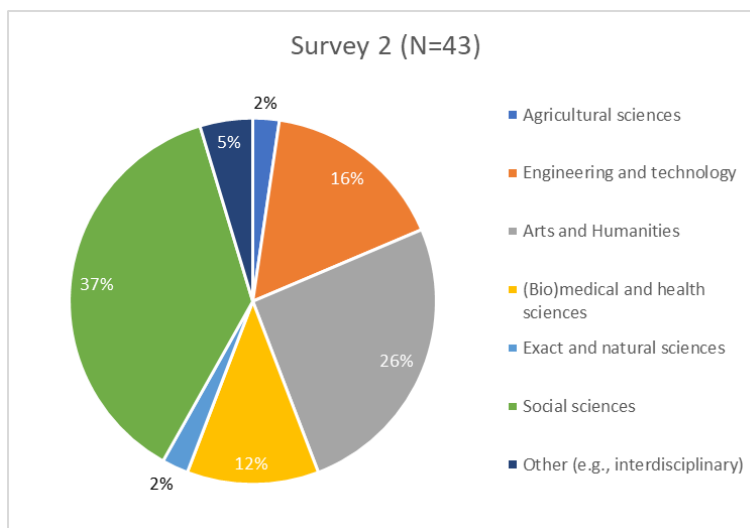


Figure 10. Percentage of DCs' field of doctorate in Survey 2

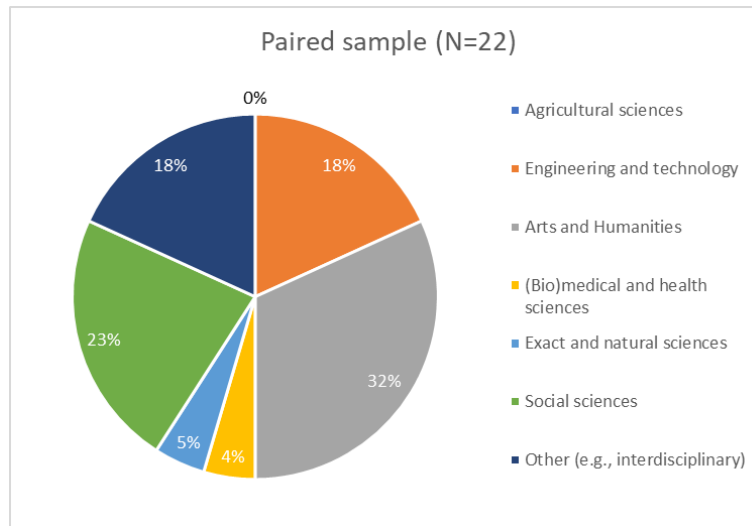


Figure 11. Percentage of DCs' field of doctorate in paired sample

The field of doctoral studies of the respondents varies across samples, although all are dominated by social sciences, arts and humanities, and to a somewhat lesser extent, engineering and technology. It is interesting that under the “Other”, interdisciplinary fields or different combinations of social sciences and humanities are most often mentioned, and to a lesser extent the fields of natural or biomedical sciences.

Current professional status of respondents

Table 6. Current primary professional status of respondents

Professional Status of respondents	Survey 1	Survey 2	Paired sample
Permanently full-time employed	46	19	9
Permanently part-time employed	4	1	0
Temporary full-time employed	43	14	9
Temporary part-time employed	11	5	2
Self employed	7	0	1
Retired	0	0	0
Unemployed	10	3	2
Internship	1	2	1

Career break (including childcare, elderly people care)	3	1	0
Other	2	0	0

To this question, DCs could select multiple answers, so the following figure shows the percentages of their responses to the offered professional status categories out of the total number of selected answers.

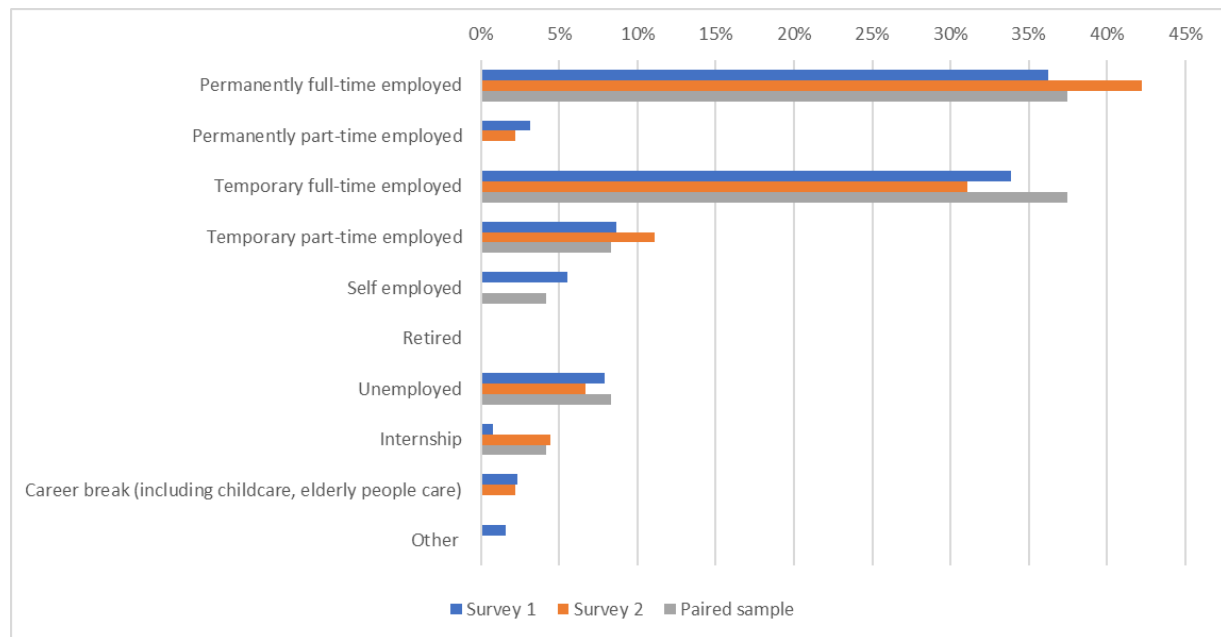


Figure 12. Percentage of DCs responding about their current professional status in all three samples

It is evident that the majority (about two-thirds) of respondents are employed full time, either permanently or temporary. Much fewer (less than 10%) are temporarily part-time employed or are unemployed, while the other answers occur even less often.

The sector of the respondents' primary professional position

Table 7 presents the sectors in which respondents hold their primary professional position. Multiple responses were possible for this question. In the paired sample ($n = 22$), two respondents did not provide an answer, while one respondent selected two sector categories. Therefore, the frequencies shown in the table do not correspond directly to the number of respondents.

Table 7. Number of respondents by sector of their current primary professional position

Current primary professional position	Survey 1	Survey 2	Paired sample
Research university	67	28	14
University of applied sciences and arts	10	5	2
Research organisation (e.g., research institute)	10	2	0
Business sector: industry	3	1	1
Business sector: services and other	10	0	3
Healthcare sector (e.g., hospital, clinical centre)	7	1	0
Non-higher education (e.g., secondary education)	5	4	1
Government or public sector other than listed above	7	1	0
Private non-profit sector	2	0	0
Other	4	2	0

It was possible to select multiple answers for this question. Therefore, the percentages of respondents by sector categories in all three measurements are shown below.

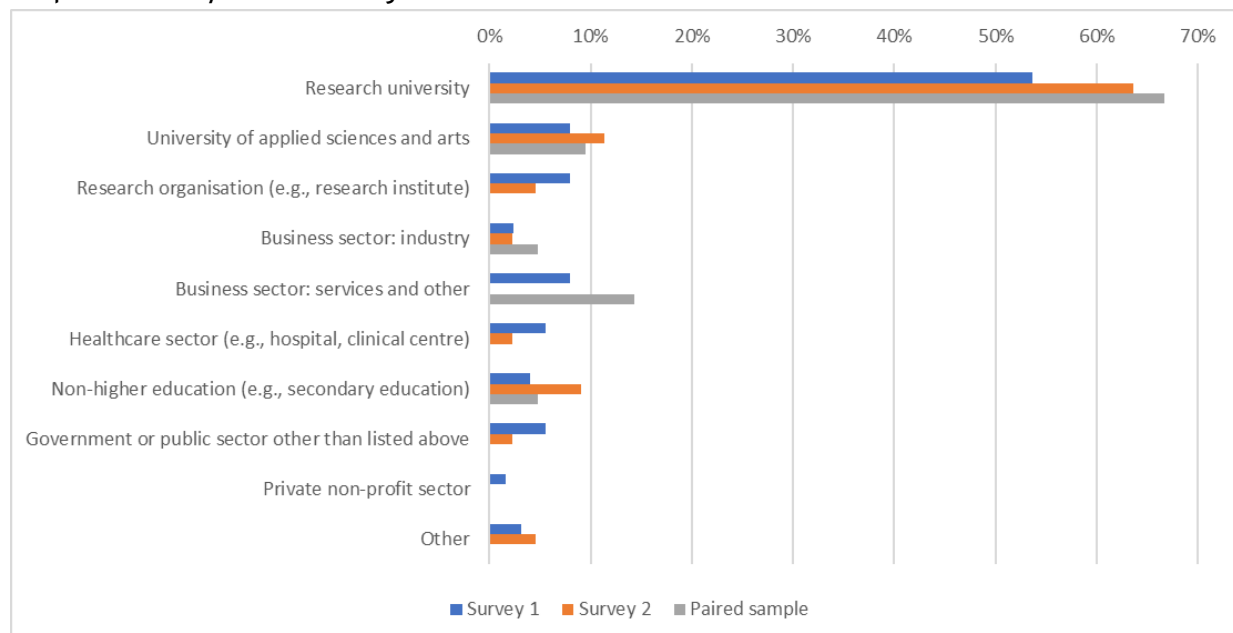


Figure 13. Percentage of DCs indicating the sector that best represents their current primary professional position in all three samples

Although the three respondent samples differ somewhat in the relative frequencies of

sectors, in all of them the research university is extremely dominant (more than 50%). All other types of sectors are present in a smaller percentage (about 10% or less).

Year in which respondents started their doctorate

Table 8. Number of respondents by year they started their doctorate

Starting date of doctorate	Survey 1	Survey 2	Paired sample
2024	23	1	4
2023	41	8	7
2022	23	15	5
2021	11	7	0
2020	8	2	3
2019	4	6	1
2018	2	1	0
2017	2	1	0
2014	1	0	0
2012	1	1	1
Valid	116	42	21
Missing	3	10	1
Total	119	52	22

Again, not everyone answered the question “In which year did you start your PhD/doctorate (formal admission)?”. The following table shows the answers of those who did in percentages for all three samples.

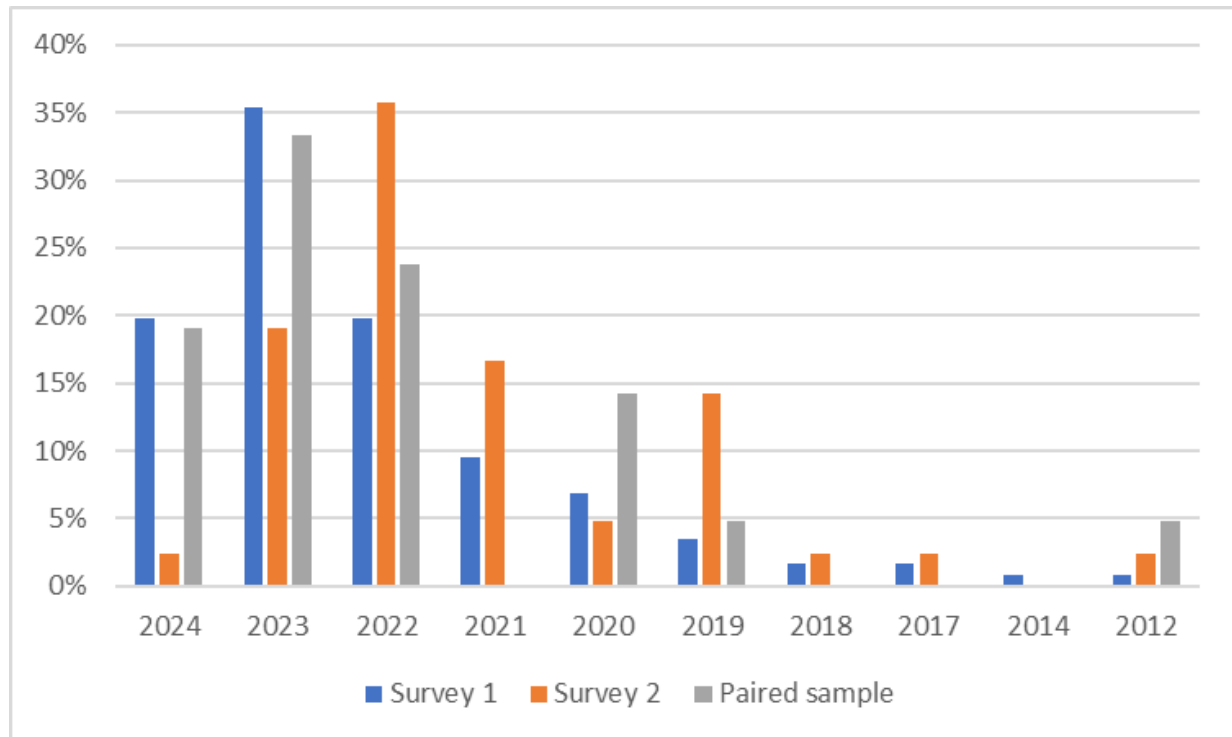


Figure 14. Percentage of DCs by year of starting the PhD/doctorate in all three samples

It can be seen that the sample from the first measurement mainly included doctoral candidates who enrolled for a doctorate between 2022 and 2024, while in the sample from the second measurement we have respondents who enrolled for a doctorate somewhat earlier (most often from 2021 to 2023). In the paired sample, these percentages are more similar to the sample from Survey 1.

Percentage of DCs' working time spent on research activities

To the question: "What percentage of your (working) time do you spend on research activities?", respondents answered by moving a slider on a scale from 0 to 100%. Their responses were categorized into 5 categories of 20% each, as shown in the table below.

Table 9. Number of respondents by categories of percentage of working time they use for research activities

% of working time used for research activities	Survey 1	Survey 2	Paired sample
0 - 20 %	11	6	4
21 - 40 %	30	7	4

41 - 60 %	20	7	6
61 - 80 %	31	10	3
81 - 100 %	24	12	5
Valid	116	42	22
Missing	3	10	0
Total	119	52	22

Not all respondents answered this question either. Therefore, the percentages of those who responded in all three samples are shown below.

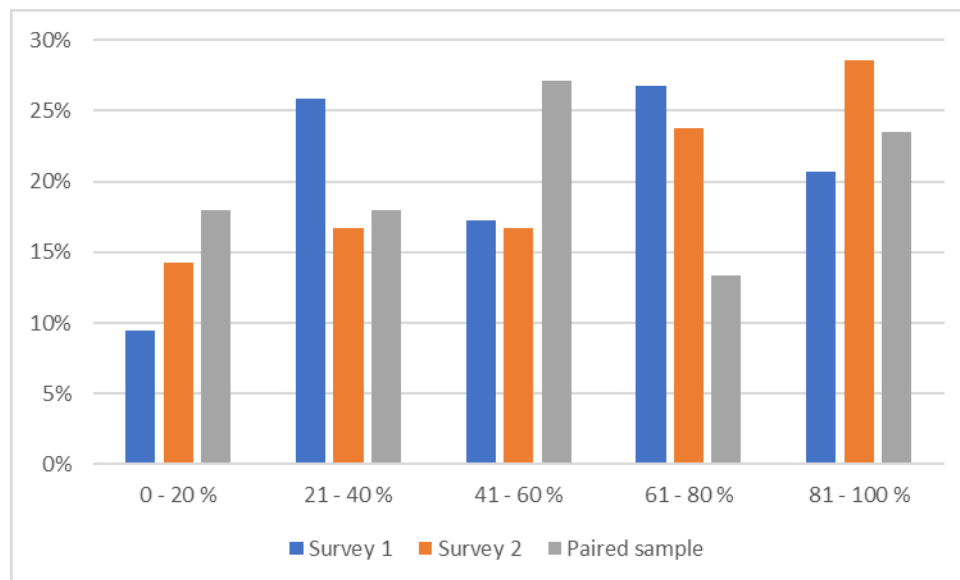


Figure 15. Percentage of DCs by time spent on research activities

It can be seen that the distribution of answers to the question about the proportion of working time that DCs spend on research activities is not equal in the three samples. This is also evidenced by the results of the central tendency measures: in Survey 1 Mean = 58%, Median = 60%, and Mode = 40%; in Survey 2 Mean = 61%, Median = 61%, Mode = 80%; while in Paired sample Mean = 53%, Median = 52%, and Mode = 50%.

In short, it seems that respondents from the first measurement sample spend proportionally less time on research activities than those from the second measurement sample, and those from the paired sample even less.

2. Instrument

The instrument (questionnaire) that was jointly created just for this occasion is attached in the Annex: the same questionnaire was used in the first (Survey 1) and second (Survey 2) measurements, with the addition of some questions related to the evaluation of the activities carried out within the Pilot, as well as on Equity, Diversity and Inclusivity feedback, in the second measurement point. These additional questions have already been qualitatively analyzed and presented in Report on Pilot of the YUFE Model on Doctoral Learning (Deliverable 6.1).

The questionnaires used consisted of the following parts:

- Part 1. Doctoral education
- Part 2. Career related experience
- Part 3. Learning (knowledge and skills)
- Part 4. Behavior (attitudes and intentions)
- Part 5. Mobility
- Part 6. Demographic details

The answers related to the description of the samples are presented in the previous chapter, and those related to the previously mentioned objectives and specific research questions are analyzed in the chapter Results.

3. Statistical Methods

As already described, the first survey wave included 119 respondents (Survey 1), whereas the second survey wave included 52 respondents (Survey 2). In addition to the participant attrition that occurred between the two survey waves, only 22 respondents (Paired sample) could be reliably matched across waves using their Login ID due to the participant coding procedure. Consequently, the small number of matched respondents limited the strength of inferences that could be drawn from the longitudinal analysis. The primary analyses were therefore based on comparisons of the two independent samples (Survey 1 and Survey 2) using the Mann–Whitney U test, which represents a conservative approach for analyzing individual ordinal Likert-scale items. Longitudinal changes were examined using Paired-Samples t-tests, as this test evaluates within-person differences between the two measurement occasions rather than the distributions of the original item scores. Wilcoxon signed-rank tests were also performed; as both approaches yielded the same conclusions, only the t-test results are shown.

All data were analyzed using the IBM SPSS Statistics Version 26.

Results

1. Doctoral education

What is the main motivation for pursuing a doctorate?

To the question "What motivated you to pursue a doctorate (both short-term and long-term)?" it was possible to give multiple answers. The percentages of DCs choosing the offered answers in the first (N=119) and second measurements (N=52) are shown below.

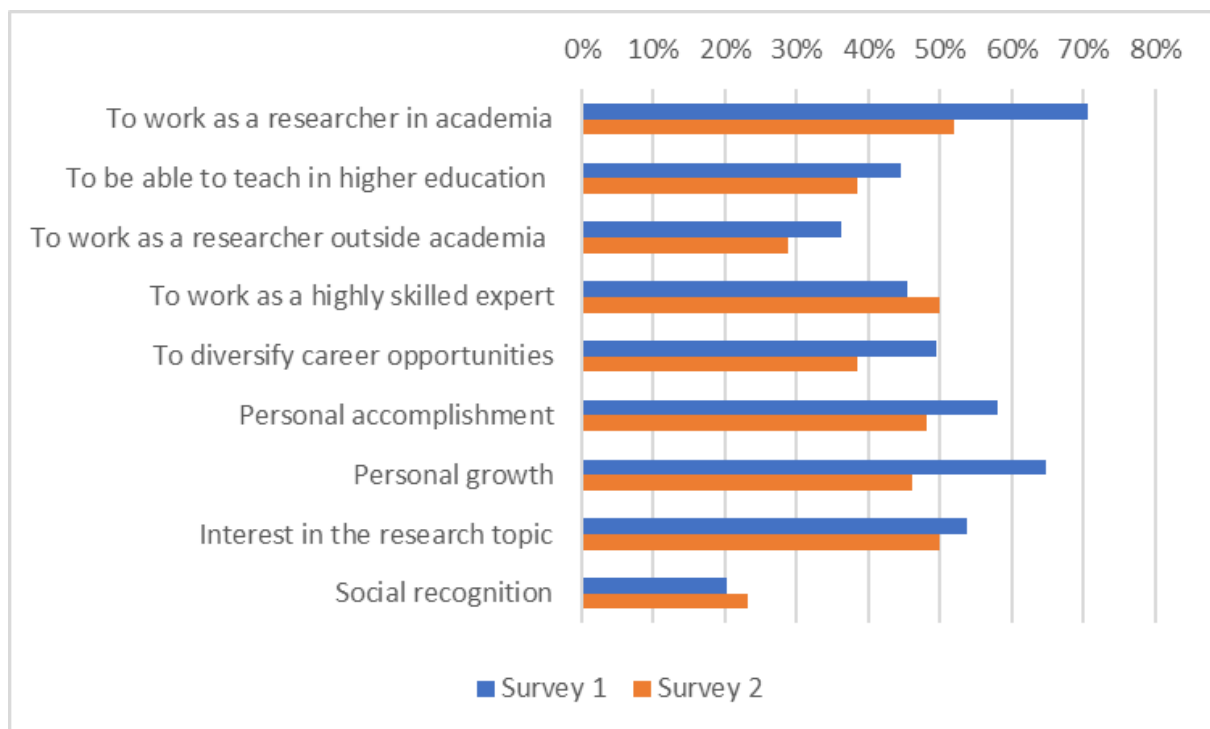


Figure 16. Percentage of selections of the offered answers to the question what motivates DCs to pursue a doctorate

Working as a researcher in academia is stated as the most common motive of DCs for pursuing a doctorate in both measurements. This is followed by personal growth and personal accomplishment in Survey 1, and interest in the research topic as well as to work as a highly skilled expert in Survey 2. Proportionally, the fewest DCs are motivated to pursue a doctorate because of social recognition or to work as researchers outside academia in both measurements. Although some differences in the relative frequency of motivations were observed between Survey 1 and Survey 2, these differences were not statistically significant.

Is the doctorate intended to be done in collaboration with other organizations?

For the question “Do you intend to do your doctorate in collaboration with another organisation?”, DCs could choose from the offered answers, and the percentages of their responses in Survey 1 (N=117) and in Survey 2 (N=41) are shown below.

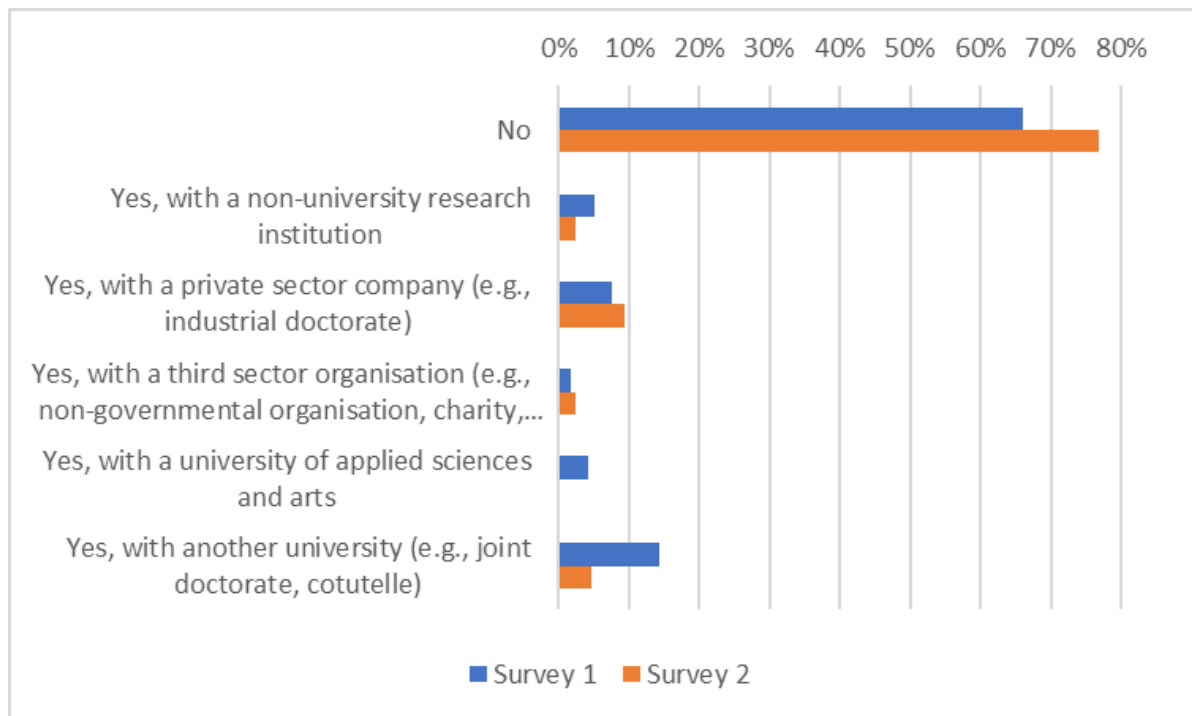


Figure 17. Percentage of answers on the question “Do you intend to do your doctorate in collaboration with another organization?”

The vast majority of DCs in both measurements do not intend to do a doctorate in collaboration with another institution. Less than 15% of them intend to collaborate with another university, and even fewer with a private sector company in Survey 1, while in Survey 2 slightly less than 10% intend to collaborate with a private sector company, and even fewer with another university.

What does supervision during the doctoral study include?

For the question “The supervision during my doctoral studies includes:”, DCs could choose multiple answers. The following figure shows the percentages of their responses in Survey 1 (N=119) and Survey 2 (N=52).

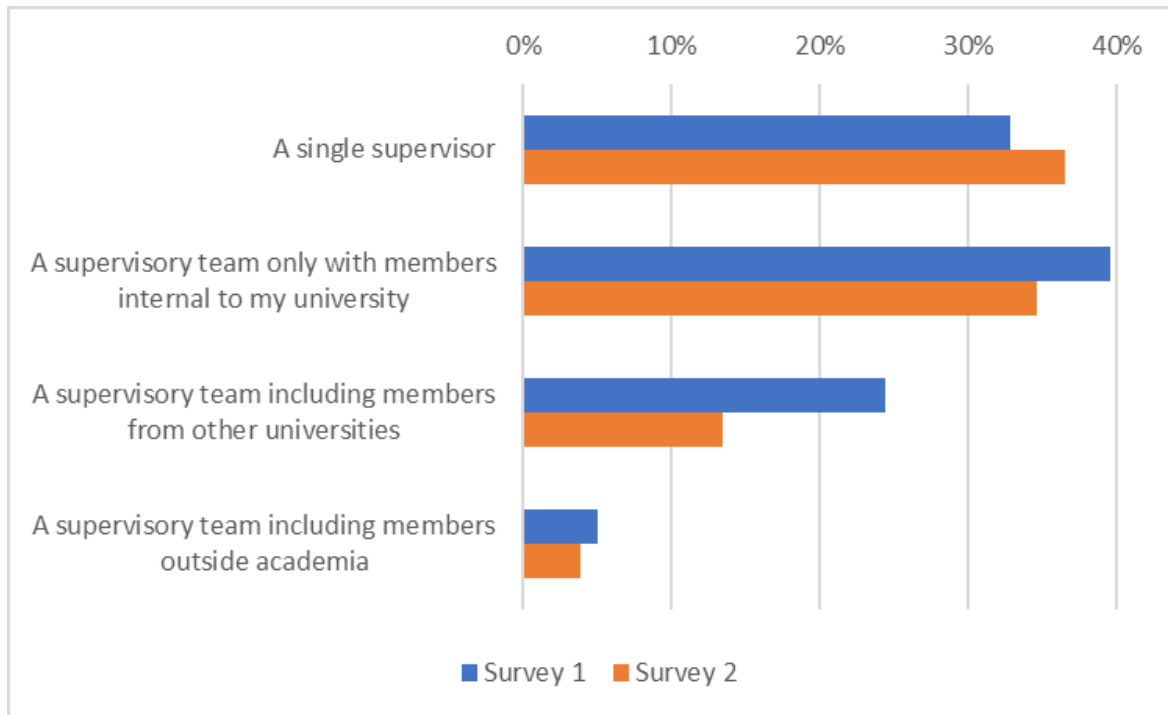


Figure 18. Percentage of answers on the question ““The supervision during my doctoral studies includes:”

A large majority (approximately three quarters) of DCs state that the supervision during their doctoral studies includes either a single supervisor or a supervisory team composed of members from within their own university. To a much lesser extent, they state that their supervisory team includes members from other universities, and only 5% or less that it includes members outside of academia.

How satisfied are doctoral candidates with various aspects of their current research environment?

Using the scale from 1 (very dissatisfied) to 5 (very satisfied), DCs rated how satisfied they are with the various aspects of their current research environment. The following figure shows their average responses in the first (from N=110 to N=118) and second (from N=38 to N=43) measurements.

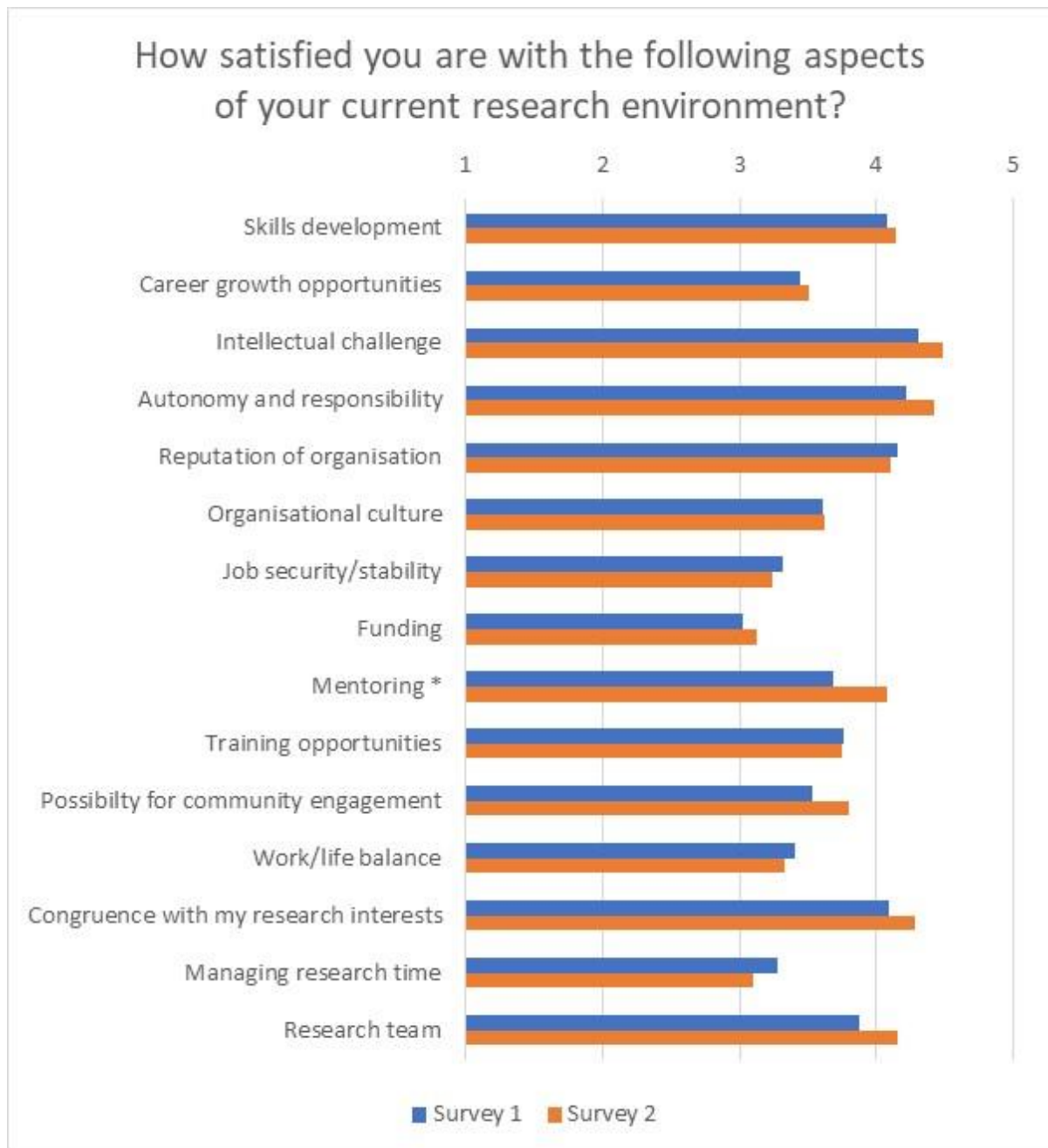


Figure 19. Average satisfaction of DCs with various aspects of their current research environment

In their current research environment, DCs are in both measurements most satisfied with intellectual challenges, autonomy and responsibility, congruence with their research interests and skills development, while they are least satisfied with funding, job security/stability, managing research time, work/life balance and career growth opportunities.

Although there appear to be differences between the two measurements, they are not statistically significant for any aspect of the research environment, except for satisfaction with mentoring (marked with an asterisk in the picture). Namely, Independent-Samples Mann-Whitney U Test shows that respondents are significantly

more satisfied with mentoring in Survey 2 (N=42) compared to Survey 1 (N=115): $U=2896.50$, $z=1.99$, $p=.047$.

This difference is even more visible in the distribution of ratings of satisfaction with mentoring in the following figure.

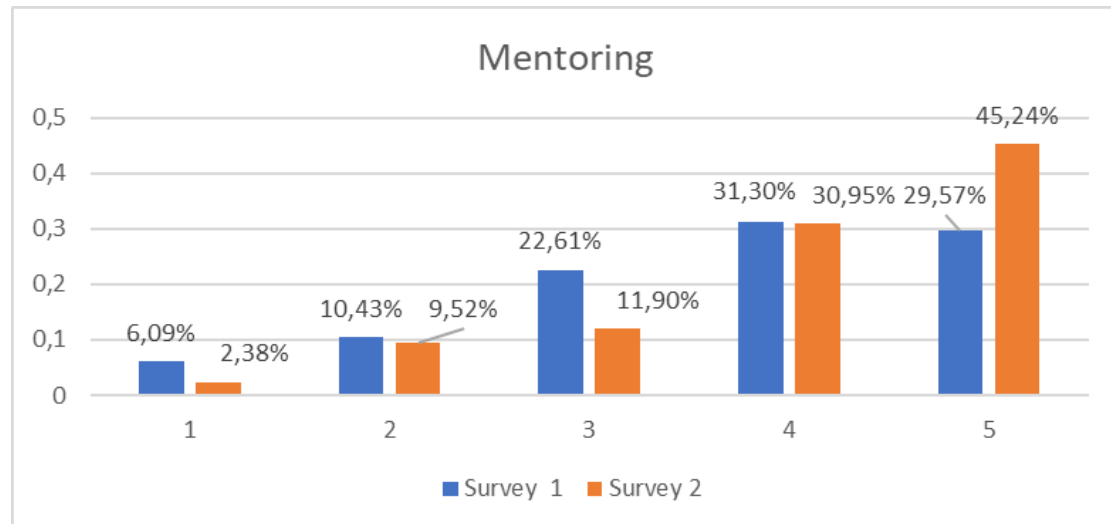


Figure 20. Distribution of ratings of satisfaction with mentoring on the scale from 1 (very dissatisfied) to 5 (very satisfied)

The figure above shows that the number of DCs who were very satisfied with mentoring was significantly larger in Survey 2 than in Survey 1, while in Survey 1 the number of those who were neutral or very dissatisfied with mentoring was significantly larger than in Survey 2.

However, comparisons (t-tests) between the two satisfaction measurements on a sample of matched respondents (N=22) did not confirm the statistical significance of the differences for any aspect of the current research environment, including mentoring, most likely due to the small sample size.

What funding opportunities do DCs use during their doctoral study?

The question "Which of the following funding options have you used/are you using during the course of your doctoral studies?" could be answered with multiple answers. The response frequencies in both studies are shown below.

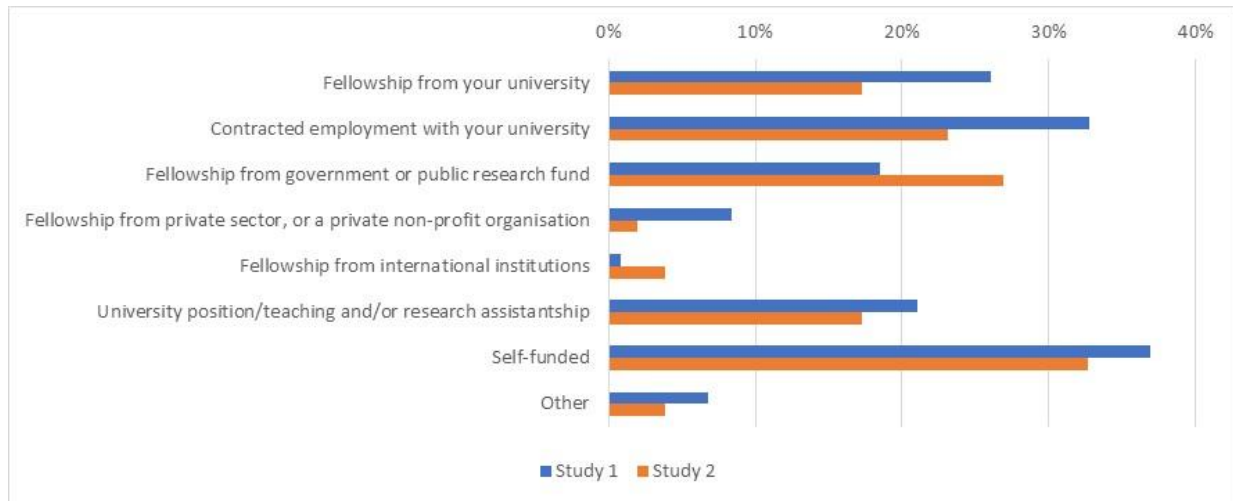


Figure 21. Percentage of use of different funding options during doctoral studies

Among the various options for financing doctoral studies, approximately a third of DCs are self-funded. A slightly smaller percentage of DCs are in contracted employment, getting fellowship or having a teaching/research assistantship position with their university. A smaller percentage receives scholarships from the private sector or private non-profit organizations, and from international institutions. Few of them mention some specific forms of financing their doctoral studies (such as the use of EU funds, Erasmus, Ceepus, Fulbright scholarship, employer's contribution and others).

2. Career-related experience

Which areas and to what extent are these important to doctoral candidates for their professional success?

On a scale from 1 (not at all important) to 5 (very important), DCs rated the importance of certain areas for their professional development. The average ratings for both measurements ($N_{\text{Survey 1}} = 116$, $N_{\text{Survey 2}} = 42$) are shown in the following figure.

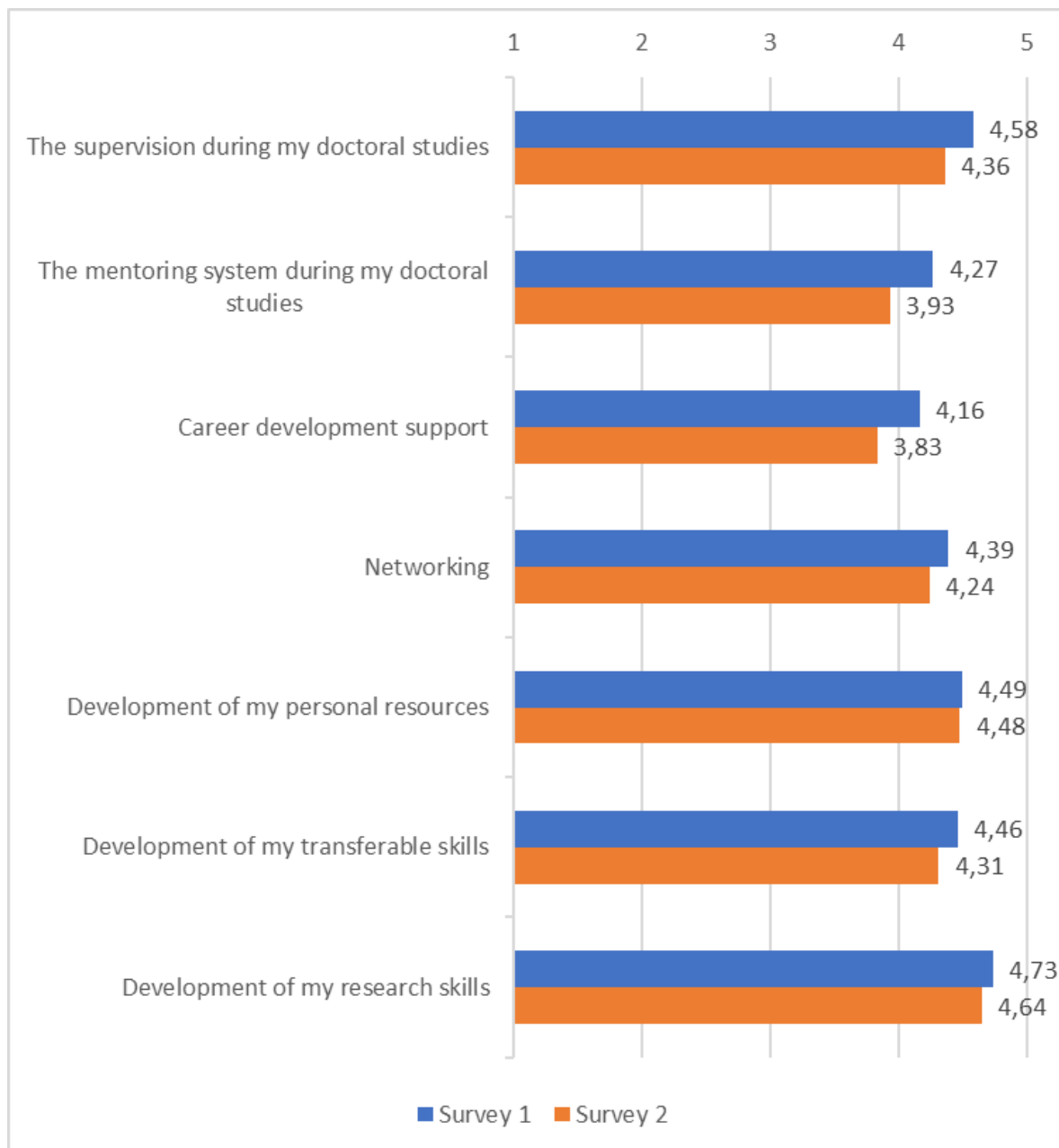


Figure 22. Average estimates of the importance of certain areas for the professional

success of doctoral candidates

The results show that all of the above areas are quite important for DCs' professional success. They considered the development of their research skills and supervision during their doctoral studies to be the most important, and support for career development to be the least important.

The Independent-Samples Mann-Whitney U Test showed that the differences between the two measurements were not statistically significant. The analysis on the sample of paired participants ($N = 22$) showed the same: the t-test for small dependent samples also confirms that the differences between the two measurements are not statistically significant. Therefore, it can be concluded that the surveyed areas that DCs consider important for their professional success are stable over time.

To what extent are DCs worried about their professional future?

On a scale from 1 (never) to 5 (continuously), DCs rated the extent that they are worried about their professional future. The distribution of their responses for both measurements ($N_{\text{Survey 1}} = 116$, $N_{\text{Survey 2}} = 42$) is shown in the following figure.

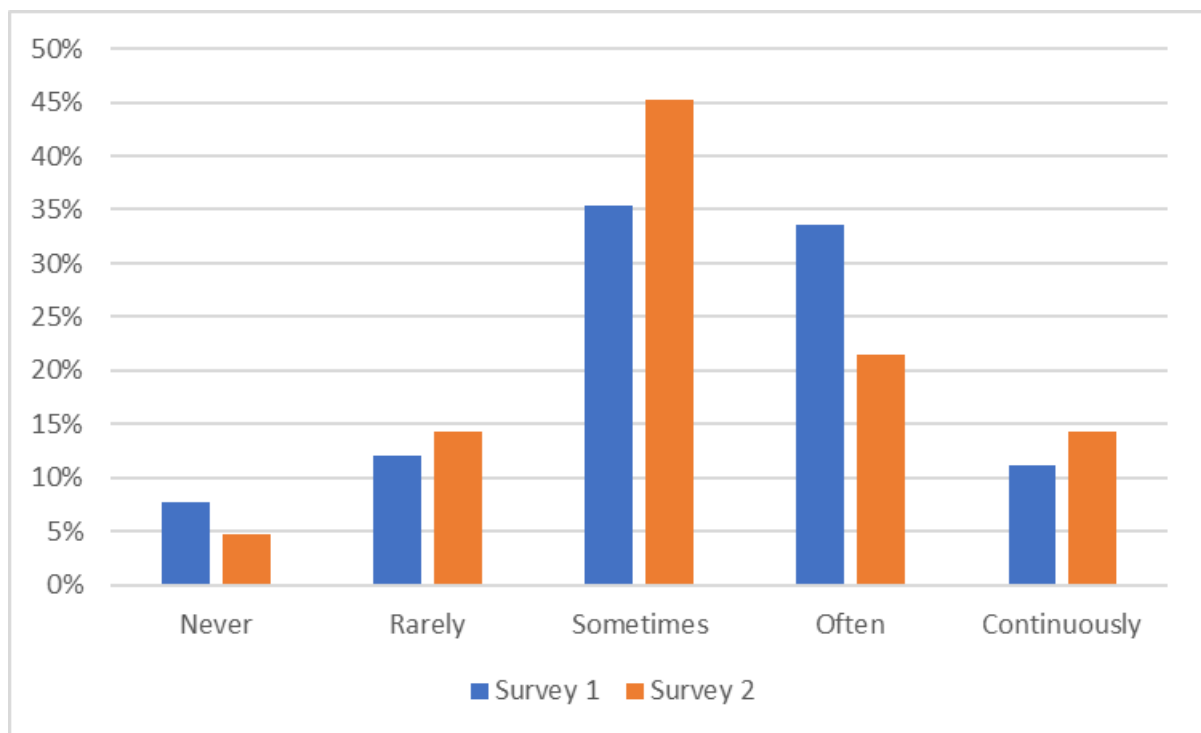


Figure 23. Distribution of the extent that DCs are worried about their professional future

The results show that DCs are sometimes to often worried about their professional future. This is confirmed by the average response values: the arithmetic mean in Survey 1 is $M = 3.28$, and in Survey 2 $M = 3.26$. The differences between the two measurements did not prove to be statistically significant, neither at the level of the total samples nor in the sample of paired respondents. In other words, worrying about the professional future of DCs did not change during the Pilot.

3. Learning, knowledge and skills

To what extent do DCs possess various relevant knowledge and skills?

Using the scale from 1 (I have no developed knowledge and skills at all) to 5 (I have very well-developed knowledge and skills), DCs evaluate their knowledge and skills related to specific topics. Their average ratings in both measurements are shown below.

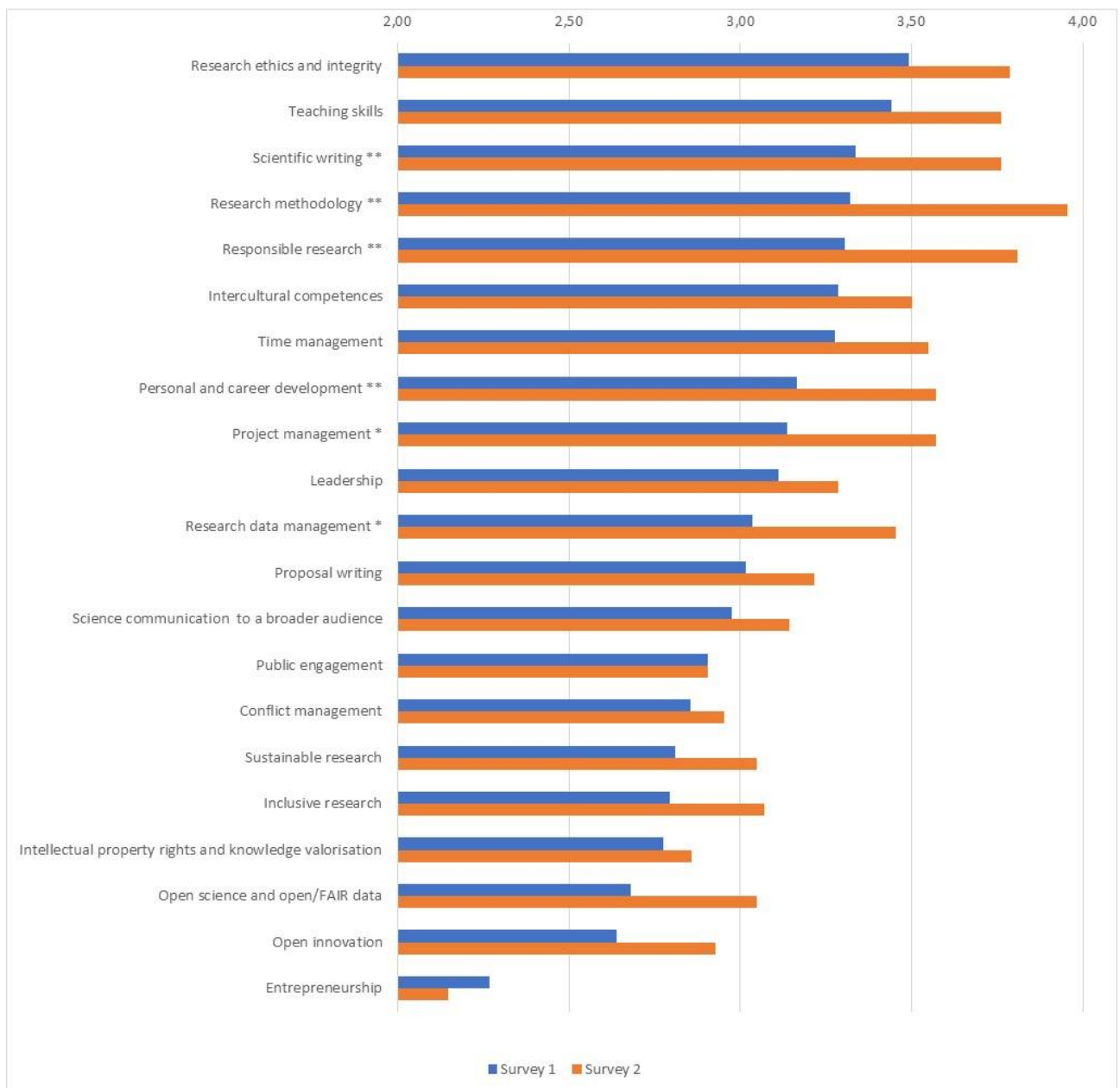


Figure 24. Average self-assessments of knowledge and skills of DCs (sorted by the average ratings in Survey 1)

The above results show that the knowledge and skills that DCs assess as somewhat better developed mainly relate directly to the field of scientific research (e.g. research ethics and integrity, scientific writing or research methodology), while they assessed their general and transferable knowledge and skills as somewhat less developed (e.g. public engagement, conflict management, intellectual property rights and knowledge valorization, open innovation, and especially entrepreneurship).

It is interesting that in the second measurement, all average assessments of knowledge and skills of DCs are higher, with only one single exception of entrepreneurship. Of course, not all differences in self-rated knowledge and skills between Survey 1 and Survey 2 are statistically significant: if the Independent-Samples Mann-Whitney U Test was significant at the 5% risk level, they were marked with one asterisk, or with two asterisks when the same test is significant at the 1% level. More precisely, a statistically significant difference between the first and second measurements was obtained only for four knowledge and skills related to the scientific research area (research methodology, responsible research, scientific writing and research data management), and for two transferable knowledge and skills (project management and personal and career development).

However, the results are even more favorable when we look at the changes between Survey 1 and Survey 2 obtained only on the paired sample of respondents. They are shown in the following figure.

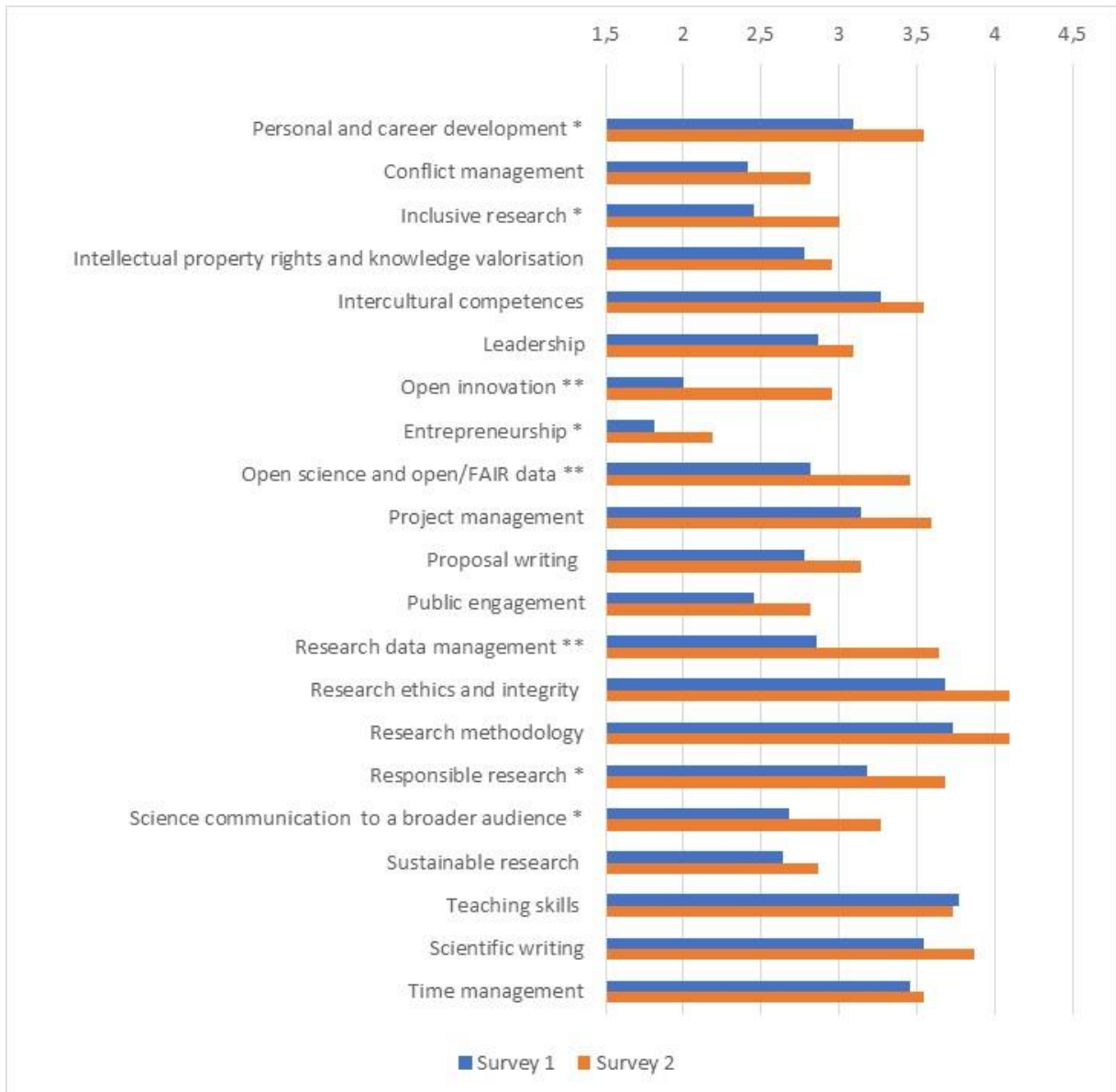


Figure 25. Average self-assessments of DCs' knowledge and skills of DCs (N=22)

When looking at the same results of self-assessments of knowledge and skills obtained on a paired sample of respondents (N=22), it is first seen that all changes from Survey 1 to Survey 2, except for teaching skills, are positive.

Furthermore, it is evident that at the individual level between the two measurements there are significant differences in a somewhat larger number of knowledge and skills. They are marked with one asterisk if the Paired Sample t-Test was significant at $p < 0.05$, or with two asterisks when the same test is significant at the $p < 0.01$ level. Their content relates more to general and transferable than to scientific research knowledge and skills. They are, in order of the size of the difference shown in parentheses, as follows: open innovation (0,95), research data management (0,78), open science and open/FAIR data (0,64), science communication to a broader audience (0,59), inclusive research (0,55), responsible research (0,50), personal and

career development (0,45), and entrepreneurship (0,38).

While significant improvements were observed in several knowledge and skills areas that were also addressed through the YUFE Pilot on Doctoral Learning, these findings should be interpreted with caution. Doctoral candidates continued to develop through their ongoing research work, training and professional experiences as well.

These differences are even more visible if the distribution of responses in both measurements is observed, which is therefore shown in the following figures, precisely for those knowledge and skills that proved to be significantly higher in the second measurement.

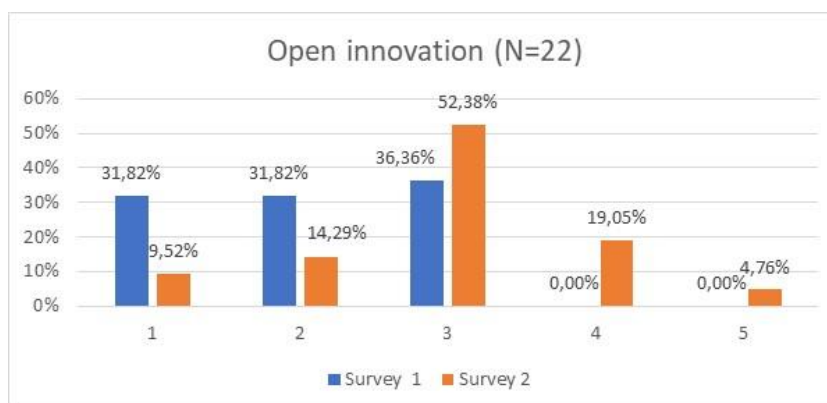


Figure 26. Distribution of self-assessments of the level of knowledge and skills related to open innovation.

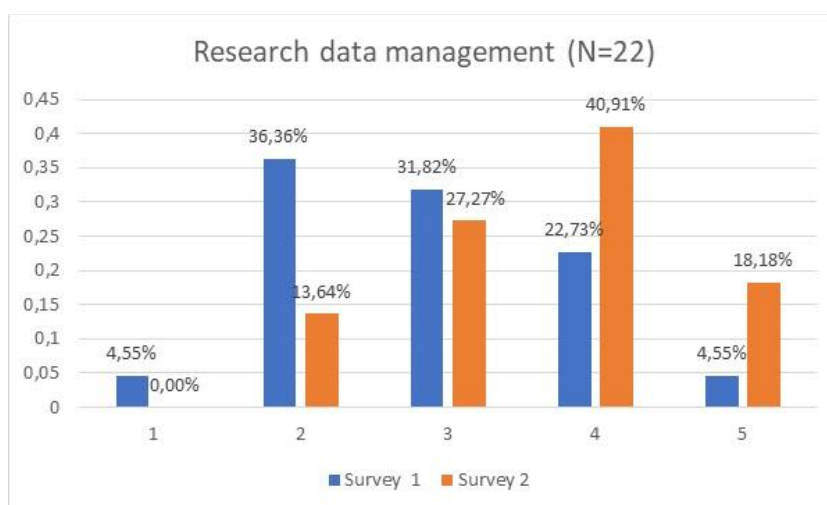


Figure 27. Distribution of self-assessments of the level of knowledge and skills related to research data management

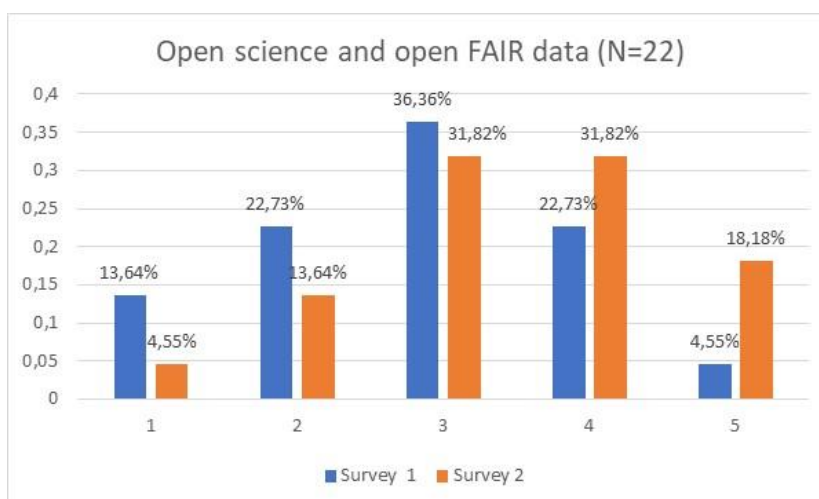


Figure 28. Distribution of self-assessments of the level of knowledge and skills related to open science and open/FAIR data

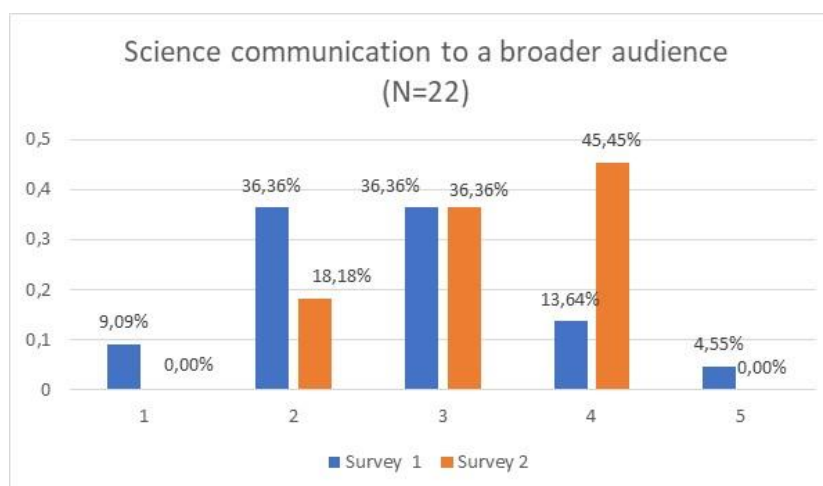


Figure 29. Distribution of self-assessments of the level of knowledge and skills related to science communication to a broader audience

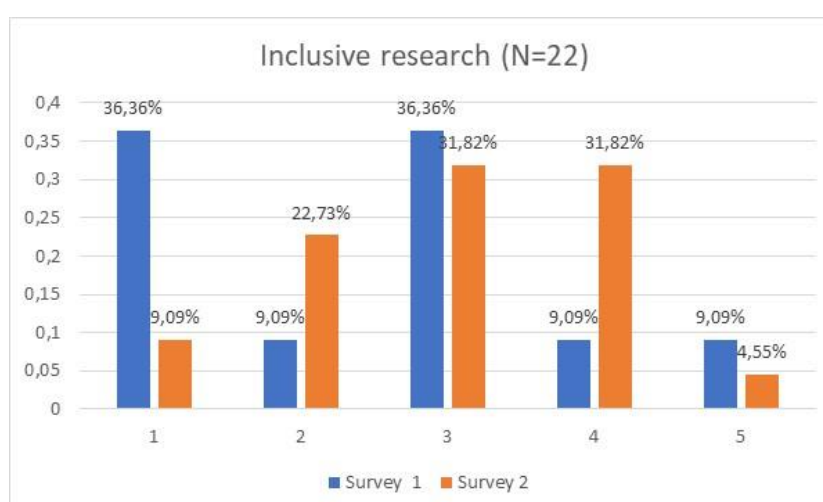


Figure 30. Distribution of self-assessments of the level of knowledge and skills related to inclusive research

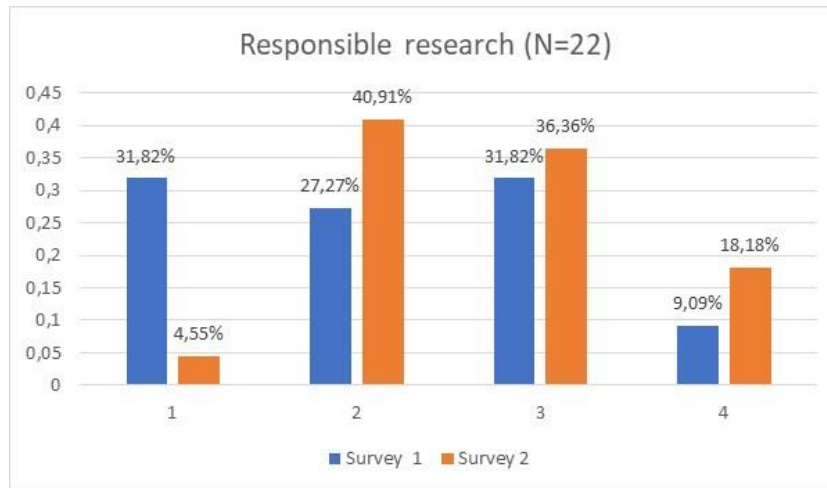


Figure 31. Distribution of self-assessments of the level of knowledge and skills related to responsible research

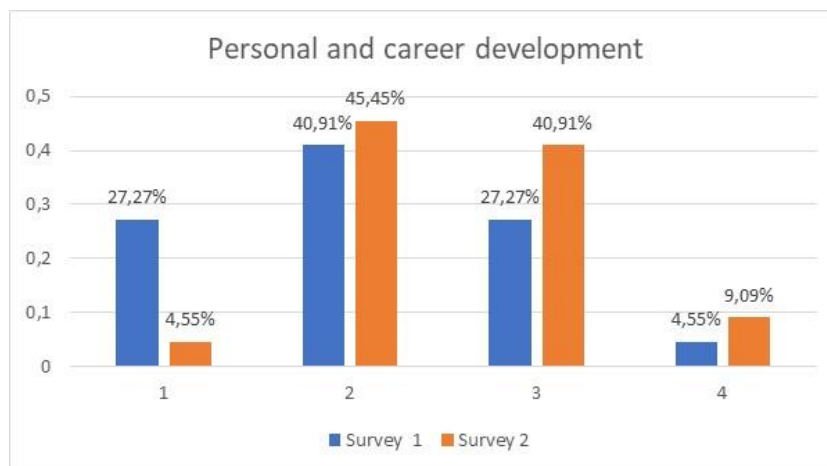


Figure 32. Distribution of self-assessments of the level of knowledge and skills related to personal and career development

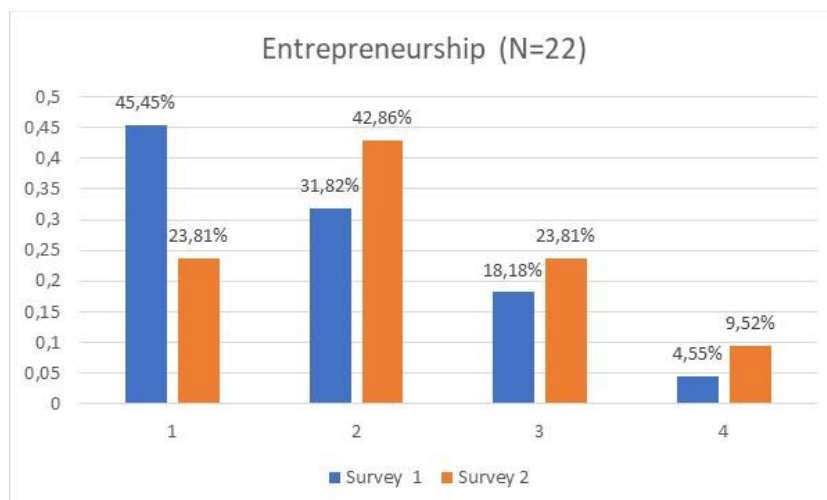


Figure 33. Distribution of self-assessments of the level of knowledge and skills related to entrepreneurship

In all the previous pictures it is visible that in the second measurement the number of respondents who assess the development of their knowledge and skills as poorly decreases, and the number of those who consider them to be moderately to well-developed increases. In other words, it can be concluded that during the YUFE Pilot project, a significant improvement in relevant knowledge and skills occurred among DCs. Of course, this interpretation should be taken with caution since the analyses were conducted on a relatively small sample of paired respondents.

How did DCs acquire their current knowledge and skills?

The next question was about how DCs acquired their knowledge and skills. Multiple possible answers were offered, and in the second measurement, the YUFE Pilot on Doctoral Learning was added as a source of knowledge and skills acquisition. The response frequencies in percentages for Survey 1 (N=119) and Survey 2 (N=52) are shown below.

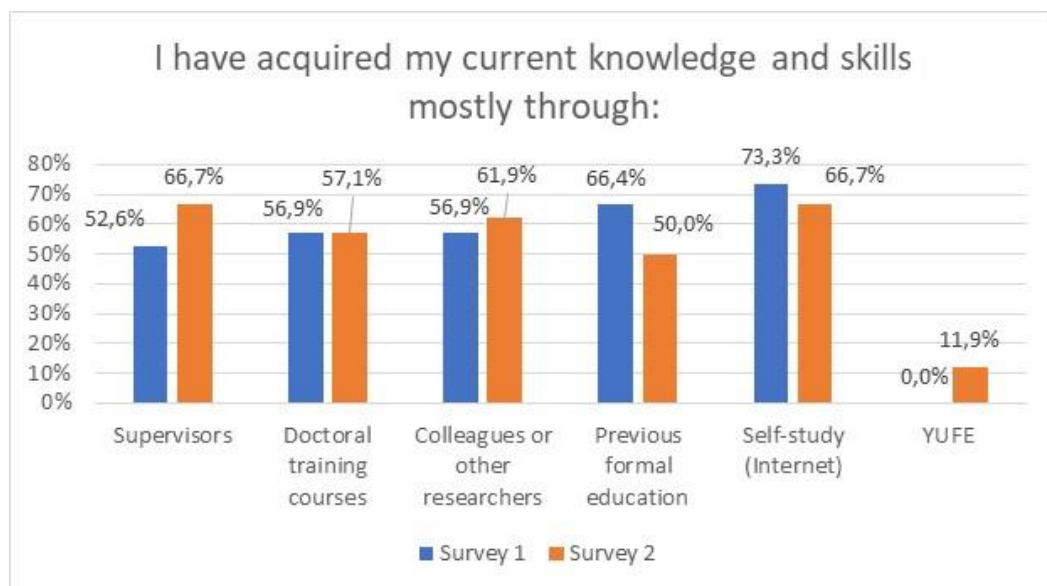


Figure 34. Percentage of DCs who indicated the offered sources of knowledge and skills acquisition

In the first measurement, as a source of acquiring knowledge and skills, DCs most often indicated self-study (internet) and previous formal education, then colleagues or other researchers and doctoral study courses at their university, and to the least extent supervisor(s). In the second measurement, this picture has changed: the most common source of acquiring knowledge and skills is still self-study (internet), but to an equal extent also supervisor(s). Doctoral study courses at their university, and colleagues or other researchers follow, and previous formal education occurs the least.

Although it appears at first glance that there are differences between the two measurements, they did not prove to be significant: χ^2 (Chi-square) test was not

statistically significant for any of the offered sources of knowledge and skills acquisition. The analysis of differences on the sample of paired respondents (N=22) showed a similar result: the significance of the difference between their responses from Survey 1 to Survey 2 is tested using McNemar's test for small samples (Exact McNemar's Test), but the results also did not prove to be significant. Unfortunately, the sample size may be too small to reach statistical significance.

In short, the offered sources of knowledge and skills acquisition were rated by DCs as equally important in both measurements. It should be noted here that only a smaller number (around 12%) in the second measurement indicated the YUFE Pilot on Doctoral Learning as a source of knowledge and skills acquisition.

4. Behavior (attitudes and intentions)

What are the aspirations and perspectives of DCs relevant for their professional development?

In this part of the questionnaire, an attempt was made to go deeper into aspirations and perspectives on different aspects of the YUFE DIOSI model that could be relevant for the professional development of DCs. They were asked to indicate their level of agreement on a scale from 1 (strongly disagree) to 5 (strongly agree) with each of the proposed statements. The average values of their responses are shown below.

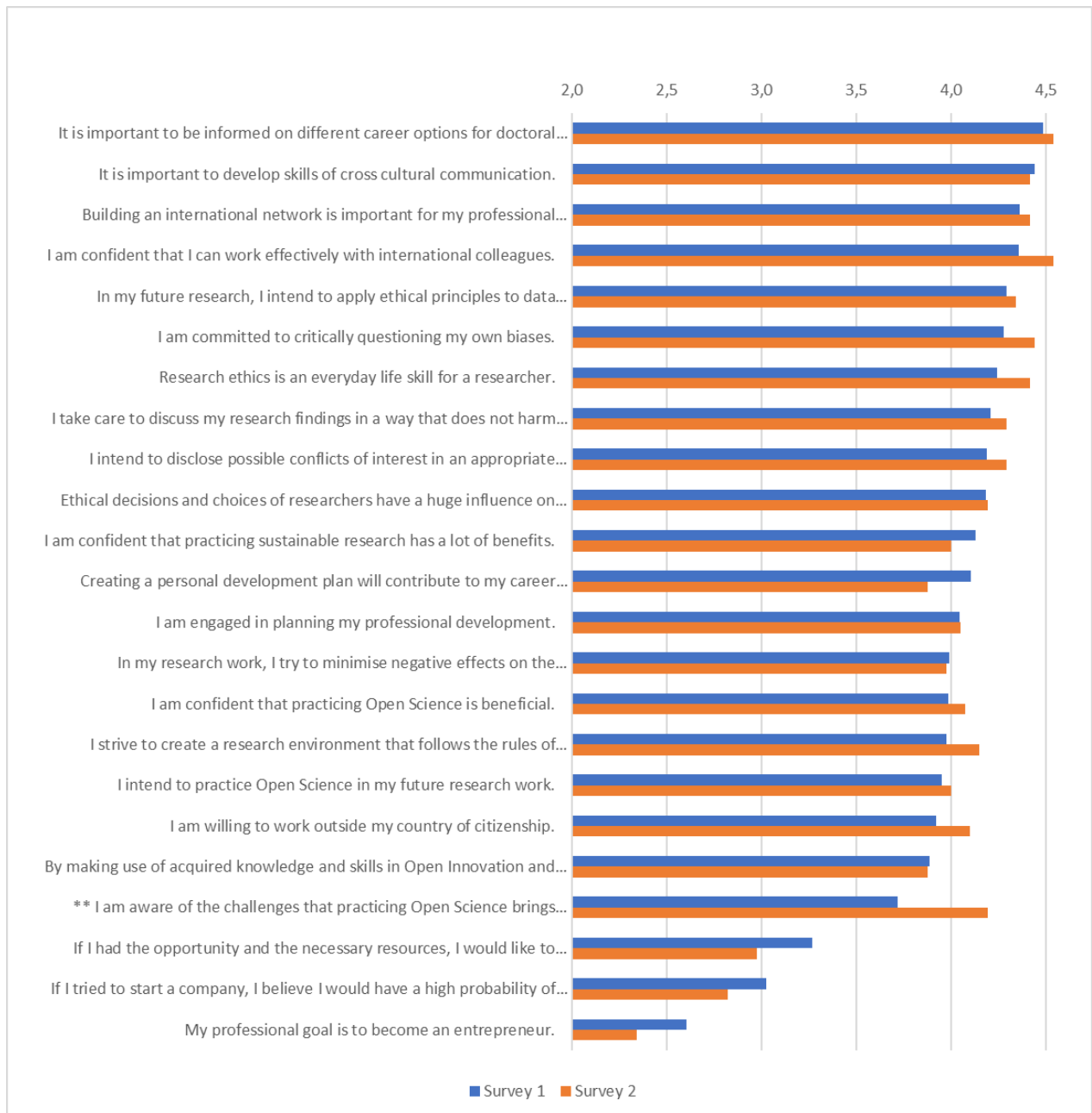


Figure 35. Average assessment of DCs' behavior (attitudes and intentions) sorted by size according to Survey 1 results

DCs mostly agree with the statements related to the importance of having information on different career options, developing skills of cross-cultural communication, and building an international network for their professional success. Furthermore, they are quite confident that they can work effectively with international colleagues. In their future research, they intend to apply ethical principles to data collection and processing, dissemination, and authorship.

On the other hand, they least agree with statements related to the possibility of their own entrepreneurial career: they are quite neutral in assessing the statements about starting their own company and being successful in it, and they mostly disagree that their professional goal is to become an entrepreneur.

It is interesting that the measured attitudes and intentions of DCs are quite stable over time. Namely, although there are differences in the average results of the first and second measurements, they are almost always not significant. The only exception was obtained for the following statement (marked with two asterisks): "I am aware of the challenges that practicing Open Science brings with it (e.g., predatory journals)": the average assessment increased significantly in the second measurement compared to the first. Namely, the Independent-Samples Mann-Whitney U Test confirmed the significance of the obtained difference ($U=3032.5$, $Z=2.745$, $p=0.006$). The same result was obtained in a sample of paired respondents ($N=22$): also only for this statement, the Paired-Sample t-Test confirms the statistical significance of the obtained difference ($t(21) = -2.430$, $p=.024$).

Therefore, it can be concluded that the attitudes and intentions of DCs are the same in both measurements and that only in the awareness of the challenges that Open Science brings with it has there been a positive change over time. This is even more visible if we observe the distribution of responses according to the degree of agreement, which is shown in the following picture.

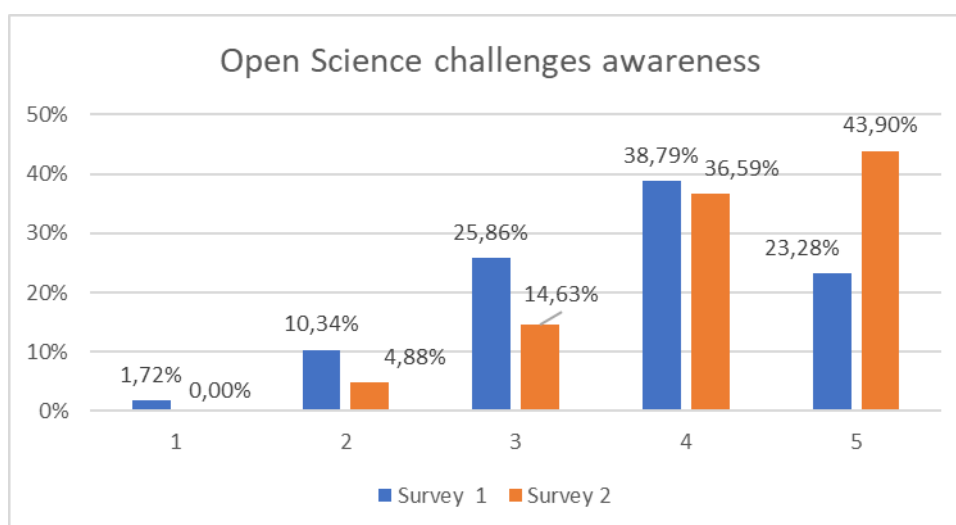


Figure 36. Percentages of DCs' level of agreement with the statement "I am aware of the

challenges that practicing Open Science brings with it (e.g., predatory journals).” in Survey 1 (N=119) and Survey 2 (N=52)

From the distribution of responses shown, it is evident that the number of DCs who disagree or are neutral is smaller in Survey 2 than in Survey 1, and the number of those who agree or strongly agree is higher in Survey 2.

5. Mobility

This section explores DCs' openness to professional mobility, both inside and outside of their current country of residency. Below are their answers, first related to the change of the sector in which they currently work, and then to moving outside their country of citizenship.

How open are DCs changing the sector of their current professional activity?

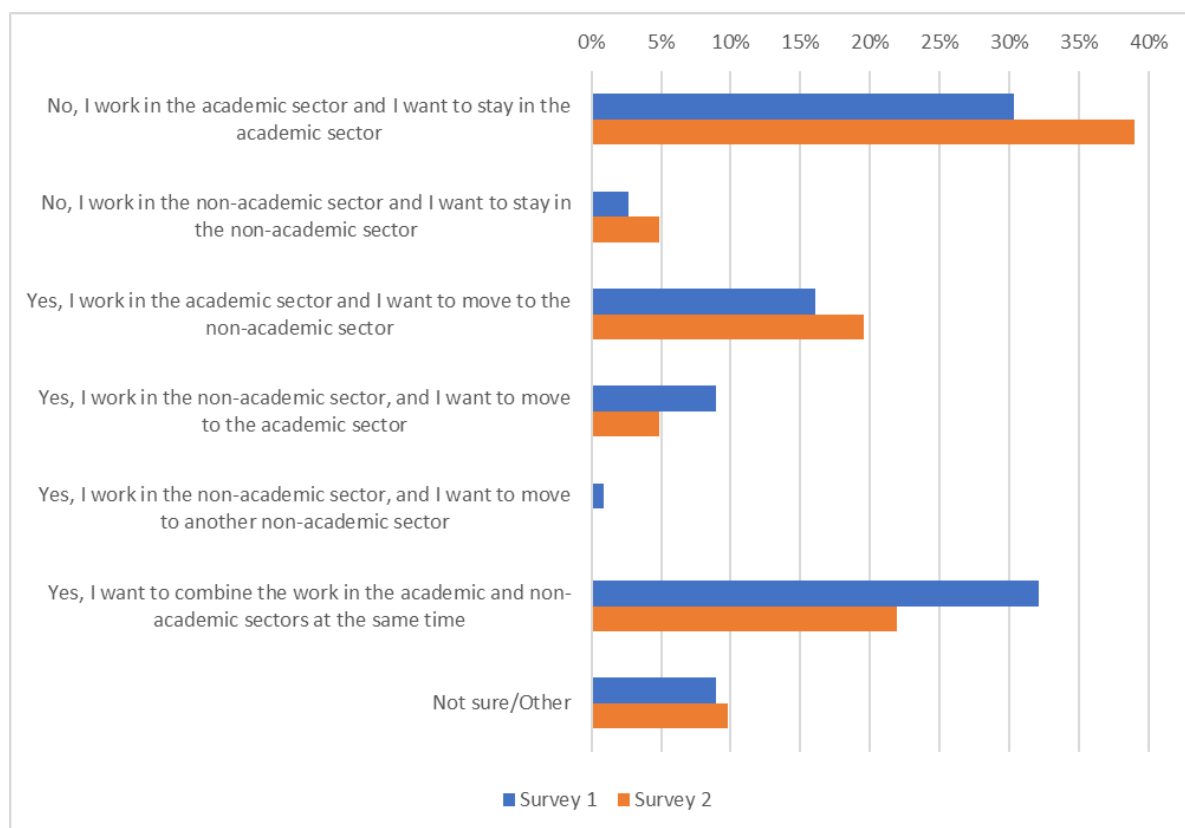


Figure 37. Percentages of DCs' responses to the question "At this moment, are you considering changing the sector of your current main professional activity?" in Survey 1 (N=112) and Survey 2 (N=41)

The results show that in the first measurement there was an approximately equal number (one third) of DCs intending to combine academic and non-academic sectors as those intending to remain in an academic environment. In the second measurement, the number of those who would like to remain in an academic environment was slightly higher, and the number of those who want to combine academic and non-academic sectors was slightly lower by the same amount. A smaller number (15-20%) of DCs would switch from the academic sector to the non-academic sector, and the remaining responses are even rarer and approximately similar in both measurements. It should be noted that

approximately 10% of participants are unsure, which they explain most often by saying that they are open to both options, or that they simply do not know yet.

Are DCs considering living and working outside their country of citizenship?

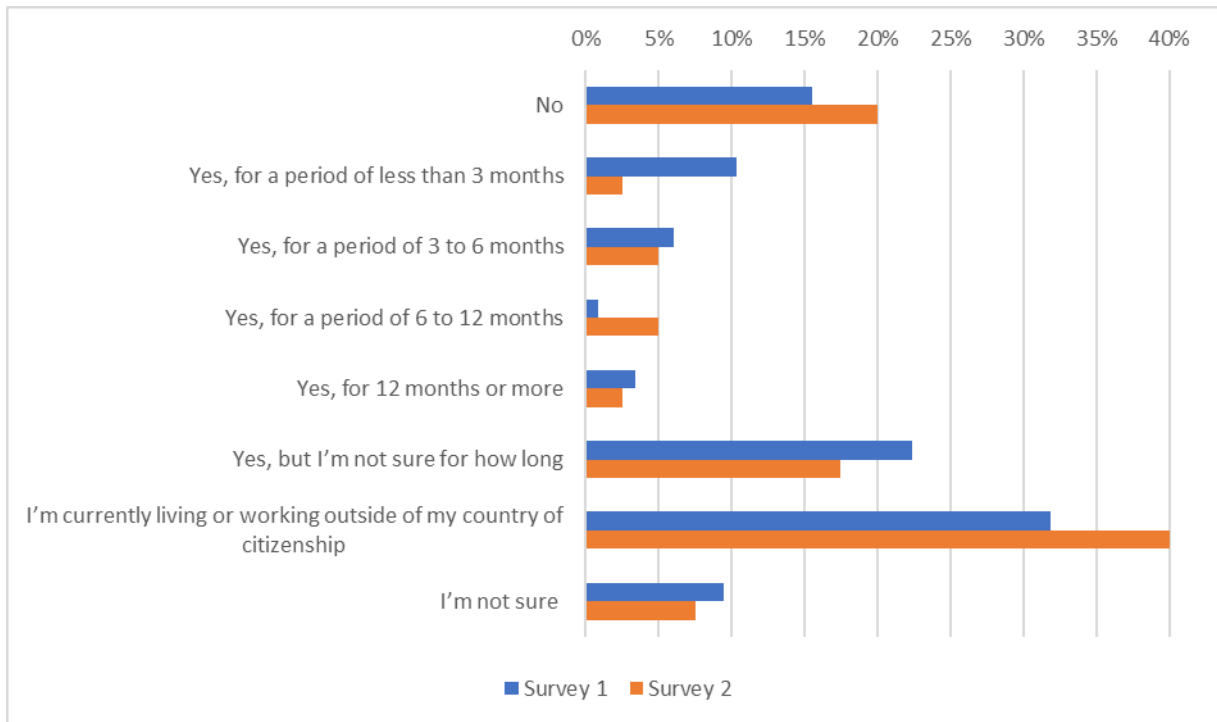


Figure 38. Percentages of DCs' responses to the question “At this moment, are you considering living and working outside your country of citizenship?” in Survey 1 (N=116) and Survey 2 (N=40)

Approximately one-third of DCs currently live and work outside of their country of citizenship, and fewer (about 20%) are willing to relocate, although they are not sure for how long. Slightly fewer (15% to 20%) have no intention of moving to other countries, and the remaining responses are even rarer.

Analysis and Discussion

Below, the results presented earlier are briefly summarized, interpreted, and discussed, in the order of the main objectives and research questions.

1. Doctoral education

Respondents are primarily motivated to obtain a doctorate so that they can work as researchers in an academic environment. They are also motivated by personal growth and personal achievement, interest in the research topic, and to work as highly skilled experts. They are least motivated by social recognition. These findings show that most doctoral candidates mainly consider an academic career. Careers outside academia seem to be less on their radar, even though many doctoral graduates eventually work beyond the academic sector. This highlights the importance of increasing doctoral candidates' awareness of different career paths and the transferability of their skills across sectors.

Regarding collaborative doctoral work, most respondents do not have such intentions. This is probably primarily a consequence of the common expectation for independent personal work and development by each doctoral candidate during their doctoral studies. On the other hand, this may also indicate insufficiently developed cooperation between doctoral studies and other research-educational or private sector institutions or companies.

Respondents' answers to the question of what the supervision during their doctoral studies includes confirms the fact that doctoral studies are mostly oriented towards a single supervisor or a team of supervisors coming from the same university. This further supports the previous conclusion about the possible underdeveloped cooperation between doctoral studies and other external institutions.

Respondents showed greater satisfaction with those aspects of their research environment that are actually more important to them in terms of content (intellectual challenges, autonomy and responsibility, congruence with their research interests and skills development) compared to those related to operational, life, or external aspects (funding, job security/stability, managing research time, work/life balance and career growth opportunities). These findings are, of course, positive in terms of what features a research

environment should have. However, they also point to other aspects that are very important to DCs, and which, obviously, are less efficiently dealt with. It is interesting that there are no significant differences between the two measurements in any measured aspect of satisfaction with the research environment except for mentoring: it was significantly better assessed in the second measurement, and this change was also confirmed at the individual level in a small sample of paired respondents. Hence, after implementing the Pilot program, respondents are clearly more satisfied with mentoring.

Regarding the financing of the doctorate, about a third of the respondents are self-financed, while the rest are mostly employed at the university in some form or have some kind of fellowship.

2. Career-related experience

No major differences were found among the offered areas that are important to DCs for their professional success: respondents generally rated them as somewhat important to very important. However, among the most important, DCs consider the development of their own research and transferable skills as well as personal resources, along with the importance of supervision during their doctoral studies. This suggests that respondents are quite aware of their own responsibility for personal and professional success. Furthermore, since no significant differences were found between the two measurements, the reasons to which DCs attribute their professional success can be considered stable over time.

DCs are sometimes to often worried about their professional future, and no significant difference was found in this regard at the two measurement points. This finding is not bad in itself: at this stage of career development, concerns about the future of a DC's career are quite expected and can also be a driving force in career change.

3. Learning, knowledge and skills

At both measurement points, respondents assessed their own knowledge and skills related to different topics. First, it was shown that they considered themselves somewhat better in the knowledge and skills related to their research role, and somewhat weaker in general and transferable knowledge and skills. Second, in all topics except entrepreneurship, there was an increase in self-assessment of knowledge and skills during the Pilot program, although not all of these differences were statistically significant. There was significant progress between the two measurements, which is especially visible in the Paired sample, and precisely for the knowledge and skills that were covered by the Pilot program. This could be considered the greatest contribution of the YUFE Pilot program, given that, despite the dropout of respondents in the second measurement and the relatively small number of paired respondents, significant positive changes in relevant knowledge and skills of DCs were confirmed. In terms of content, significant progress has been confirmed in knowledge and skills about open innovation, research data management, open science and open/FAIR data, science communication to a broader audience, inclusive research, responsible research, personal and career development, and entrepreneurship.

As sources of knowledge acquisition, respondents consider self-study, but also supervisors, colleagues and other researchers, doctoral training offers and previous formal education as the most important sources. Changes between the two measurements were not statistically confirmed.

4. Behavior (attitudes and intentions)

In measuring the attitudes and intentions of DCs related to their professional development, respondents expressed the greatest agreement with statements that referred to the importance of having information on different career options, developing skills of cross-cultural communication, building an international network, and working effectively with international colleagues. They least agree with those statements that refer to the possibility of starting their own business and becoming a successful entrepreneur. This finding is not surprising: by choosing to earn a doctorate, DCs have already steered a career path that is more closely tied to a research environment. This direction of DCs' professional development is also confirmed by very positive assessments of statements that mainly relate to critical thinking, as well as ethics, sustainability and openness in their future research work, which are in turn precisely the characteristics of the research profession.

Furthermore, DCs' attitudes and intentions have proven to be stable over time. Namely, out of twenty-three behavioral statements, only one showed a difference in the second measurement compared to the first: the awareness of the challenges that Open Science brings with it, which increased significantly during the Pilot. Although a causal relationship cannot be inferred based on this type of data, this change in attitude towards the challenges of Open Science could, at least in part, be attributed to relevant activities carried out within the YUFE DIOSI model for Doctoral Learning.

5. Mobility

As far as mobility is concerned, two types of it were investigated: a possible change of sector and a change of country where DCs live and work.

Most DCs (approximately one third) currently work in the academic sector and want to remain there, while slightly fewer (twenty to thirty percent) want to combine the academic and non-academic sectors at the same time. They are followed by those (about twenty percent) who would move from the academic sector to the non-academic sector, and approximately ten percent of them are not sure yet.

As for geographical mobility, more than a third of respondents are already living in a foreign country, and even more are prepared to do so for a shorter or longer period of time. Only about twenty percent are not prepared to leave their country.

Such mostly positive attitudes about future mobility are quite common in the academic and/or research environment and are therefore also expected in the population of DCs.

Impact

Impact on doctoral candidates

The findings indicate that participation in the YUFE Pilot on Doctoral Learning may have contributed to positive developments in several aspects of the doctoral experience. While the available data does not allow firm conclusions about causality, positive developments were observed in some areas that were addressed by Pilot activities. These include DCs' improved satisfaction with mentoring, taking responsibility for their own professional success, progress in relevant knowledge and skills, the importance of supervision as a source of knowledge and skills development, awareness of the challenges of Open Science, as well as a generally positive attitude towards mobility. At the same time, the results also show other areas that may require further attention. Collaboration with institutions/companies outside the university and expressing worry about their professional future.

Impact on institutions

The YUFE Pilot on Doctoral Learning provided the participating universities with the opportunity to experiment with new tools, practices, procedures, and even to implement some procedural changes and introduce new elements into doctoral programs. Through the development and implementation of training activities, mentoring initiatives, and other support measures, partner institutions were able to test elements that may inform future developments in doctoral programmes.

Alignment with the YUFE DIOSI Model for Doctoral Learning

The results are consistent with the objectives of the YUFE DIOSI Model for Doctoral Learning. The model promotes a holistic approach to doctoral education that combines research training, supervision, mentoring, personal and professional development. The positive results observed in mentoring, Open Science awareness, transferable skills, and personal and career development suggest that the Pilot contributed to strengthening several of these dimensions among participating doctoral candidates.

Limitations and recommendations

The limitations of the analysis conducted should be highlighted. Namely, for this kind of primarily evaluative research, it is very important to have an adequate database. The measurements were carried out at two points in time (before and after the implementation of the Pilot Program activities), and it was intended to analyze the data collected on the same respondents, and on a sufficiently large number of them to be able to analyze the differences in certain subgroups, that is, to test the possible moderating effects of some variables. Therefore, the initial idea was to collect data from at least thirty respondents per involved university, and at both timepoints. Unfortunately, this did not happen. First, the number of respondents in the first measurement was not large enough nor included a sufficient number of respondents from each university, and the dropout rate was considerable: the second measurement collected almost two and a half times fewer respondents than in the first. To make matters worse, only for a small number of them (twenty-two) we were able to match data from both measurements because many respondents did not enter their personal login. This practically means that in the second measurement we had less than twenty percent of respondents compared to the first measurement. Since some relevant parts of the questionnaire were not yet fully completed by all respondents, all of this led to major problems in statistical analysis, and then in the interpretation of the results obtained in this way. Simply, for all of the above reasons, some expected changes in the second measurement could not be statistically proven. Therefore, problems in data collection can be considered the main cause of limitation in drawing conclusions about the possible impact of the Pilot on the attitudes, intentions, and behaviors of the target group of DCs involved. In other words, the samples of subjects on which statistical analyzes were performed were not fully suitable for real longitudinal monitoring, determination of changes that occurred during the Pilot and any predictive conclusions. Furthermore, any observed changes between the two measurement points cannot be attributed solely to participation in the Pilot activities. During the same period, doctoral candidates continued to develop through their ongoing research work, training, and professional experiences. While participation data is available for several Pilot activities, the small sample size and limited number of matched responses make it difficult to disentangle the effects of Pilot participation from broader doctoral development. For example, mentoring satisfaction improved between

the two measurements. However, due to the small sample size, it is difficult to determine how much of this improvement can be linked to Pilot activities.

Therefore, some recommendations for future analysis of this type should be highlighted. They primarily relate to collecting a sufficiently large number of respondents, enabling easier matching of their responses obtained at two points in time, and to the necessary simplifications of the questionnaire used. More precisely, the questionnaire could better not use questions with multiple answers, unless this is truly justified, as such questions complicate the statistical analysis and interpretation of the results.

However, using appropriate, mostly non-parametric statistical analyses, interesting results were obtained, some of which suggest the positive effects of the Pilot. This also points to the possibility of a longer-term impact that the activities implemented in the Pilot could have on DCs' attitudes in the future. These effects could be visible internally (at the level of individual professional development and success), but also externally (at the level of institutional development of doctoral studies, as well as in their future connection and impact on society as a whole).

Dissemination

This evaluative analysis on the results on the Pilot of the YUFE Impact and Graduate Tracking Framework may be disseminated through a combination of digital communication channels, website content, newsletters, presentations, and external networks, in order to be used by institutions as results which could support improvements to doctoral training, mentoring and career development support for DCs.

Conclusion

The results of the YUFE Impact and Graduate Tracking Framework point to the following conclusions about relevant opinions, attitudes, and behavior of DCs:

1. Doctoral education

- respondents are primarily motivated to work as researchers in academia,
- they do not intend to do a doctorate in collaboration with external institutions,
- they mostly have a single supervisor or an internal team of supervisors,
- they show greater satisfaction with research/academic versus operational/external aspects of their research environment,
- in the second measurement, respondents are more satisfied with mentoring,
- they are mostly self-funded or are employed by the university in different ways,

2. Career-related experience

- DCs consider the development of their research and transferable skills most important for their personal professional success,
- DCs are sometimes to often worried about their professional future,

3. Learning, knowledge and skills

- DCs perceive themselves as more competent in knowledge and skills related to the research role, and less competent in general and transferable knowledge and skills,
- in the second measurement, the self-assessment of knowledge and skills was higher, especially those related to the activities of the Pilot,
- different sources of knowledge acquisition (e.g., self-study, supervisors, etc.) are almost equally important to DCs,

4. Behavior (attitudes and intentions)

- attitudes and intentions of DCs related to their professional development reflect an orientation towards a research career rather than an entrepreneurial career,
- are more aware of the challenges that Open Science brings with it in the second measurement,

5. Mobility

- DCs mostly have positive attitudes about future professional and personal life mobility.

Although the study was affected by a relatively small number of respondents

in the second survey wave and a limited paired sample, it provides some insights into doctoral candidates' experiences, skills development, attitudes and future career perspectives.

Overall, the findings point towards positive developments in several areas that are closely related to the objectives of the YUFE DIOSI Model for Doctoral Learning. Improvements were observed in mentoring satisfaction, awareness of Open Science challenges, and self-assessed knowledge and skills in a number of areas that were addressed through Pilot activities. At the same time, the results highlight continuing challenges, including concerns about future career prospects, limited collaboration with external organizations, and the need for sustainable support structures for doctoral candidates.

While the results should be interpreted with caution and do not allow conclusions about causality, the observed trends suggest that the Pilot contributed to some intended outcomes of the YUFE DIOSI Model for Doctoral Learning.

Beyond the specific findings, some lessons learned are listed. These include the value of mentoring, the continued need for transferable skills development, the importance of raising awareness for diverse career pathways beyond academia, and the necessity of strengthening longitudinal data collection procedures. In addition, the Pilot highlighted the importance of strong institutional engagement and internal promotion of activities and surveys.

Annex

1. YUFE Impact and Graduate Tracking Framework – Survey 1
2. YUFE Impact and Graduate Tracking Framework – Survey 2

YUFE Impact and Graduate Tracking Framework - Survey 1

Start of Block: Intro

Intro Dear participant, You wish to participate in the YUFE Impact and Graduate Tracking Framework. This consists of two surveys that are conducted as part of the pilot of the YUFE DIOSI model for Doctoral Learning, carried out by several of the YUFE institutions. The data collected will help us gain a better understanding of professional development and doctoral education. This is the first of the two surveys. In a moment, we will present you a questionnaire. This will take about 15 minutes. Please note this survey is not optimised for mobile devices, so use your laptop or desktop PC instead. Please read every question carefully and answer honestly. Please note you will be asked to take part in the second survey at the end of the YUFE pilot on Doctoral Learning (circa December 2025). **This is an anonymous study: you are never recognisable** during the course of this study, nor in the data we collect. All data from this study are digitised and stored for 10 years after the end of the study. **You have the right to refuse to participate and to stop your participation at any time.** You do not have to explain this. All data already collected at that time can be used for data analysis. **The researchers of this study have the right to share anonymous databases** (in which participants are not recognisable to anyone) **with (inter)national colleagues** in the context of this study. These data files are not accessible to other parties, including yourself or companies/organisations that do not fit within scientific research institutions. **If you have any further questions or comments**, please contact the leads of this survey, Zoran Sušanj and Nikoleta Zubić of the University of Rijeka at karijere@uniri.hr. Yours sincerely, the YUFE team I have read and understood the information above and (tick as appropriate):

- ☐ I voluntarily agree to participate (1)
- ☐ I do not wish to participate in this study (2)

End of Block: Intro

Start of Block: Login ID

ID IMPORTANT: YOUR PERSONAL, ANONYMOUS LOGIN ID We are using Qualtrics, an online survey platform, to conduct this survey. Qualtrics will generate a random 12-digit code that is unique to you. You will need to keep this 12-digit code in your files as it is your personal, anonymous Login ID that you will need to log into the second survey at the end of the pilot (circa December 2025). This is the only way we can link the responses to both surveys while

maintaining complete anonymity. **So please, copy your personal, anonymous Login ID and save it somewhere for later use: `{e://Field/Login%20ID}`**

End of Block: Login ID

Start of Block: Doctoral education

P1 Part 1. DOCTORAL EDUCATION This section focuses specifically on your doctoral education. We would like to gain insights into your current experiences with your PhD programme.

UNI Please select your affiliated university: *(Multiple answers possible.)*

- ☐ Maastricht University, the Netherlands (1)
 - ☐ Nicolaus Copernicus University, Poland (2)
 - ☐ Sorbonne Nouvelle University, France (3)
 - ☐ Universidad Carlos III De Madrid, Spain (4)
 - ☐ University of Antwerp, Belgium (5)
 - ☐ University of Bremen, Germany (6)
 - ☐ University of Cyprus, Cyprus (7)
 - ☐ University of Eastern Finland, Finland (8)
 - ☐ University of Essex, the United Kingdom (9)
 - ☐ University of Rijeka, Croatia (10)
 - ☐ Other (please specify): (11)
-

YEAR In which year did you start your PhD/doctorate (formal admission)?
year (4)

▼ 2024 (1) ... 1990 (35)

MOTIVATION What motivated you to pursue a doctorate (both in the short term and long term)? *(Multiple answers possible)*

- ☐ To work as a researcher in academia (1)
 - ☐ To be able to teach in higher education (13)
 - ☐ To work as a researcher outside academia (14)
 - ☐ To work as a highly skilled expert (15)
 - ☐ To diversify career opportunities (16)
 - ☐ Personal accomplishment (17)
 - ☐ Personal growth (18)
 - ☐ Interest in the research topic (19)
 - ☐ Social recognition (20)
 - ☐ Other (please specify): (21)
-

FIELD Please select the field that best corresponds to your doctorate:

- ☐ Agricultural sciences (1)
 - ☐ Engineering and technology (8)
 - ☐ Arts and Humanities (9)
 - ☐ (Bio)medical and health sciences (10)
 - ☐ Exact and natural sciences (11)
 - ☐ Social sciences (12)
 - ☐ Other (e.g., interdisciplinary) (please specify): (13)
-

COLLAB Do you intend to do your doctorate in collaboration with another organisation?

- ☐ No (1)
 - ☐ Yes, with a non-university research institution (8)
 - ☐ Yes, with a private sector company (e.g., industrial doctorate) (9)
 - ☐ Yes, with a third sector organisation (e.g., non-governmental organisation, charity, non-profit) (10)
 - ☐ Yes, with a university of applied sciences and arts (11)
 - ☐ Yes, with another university (e.g., joint doctorate, cotutelle) (12)
 - ☐ Yes, with another type of organisation (please specify): (13)
-

SUPERVISION The supervision during my doctoral studies includes: *(Multiple answers possible.)*

☐

A single supervisor (1)

☐

A supervisory team only with members internal to my university (6)

☐

A supervisory team including members from other universities (7)

☐

A supervisory team including members outside academia (8)

☐

Other (please specify): (9)

Page Break



RESEARCH_ENVIRONMENT Using the scale below, please rate how satisfied you are with the following aspects of your current research environment:

	Very dissatisfied (1)	Somewhat dissatisfied (2)	Neutral (3)	Somewhat satisfied (4)	Very satisfied (5)	Not applicable (99)
Skills development (RE_skills)	☐	☐	☐	☐	☐	☐
Career growth opportunities (RE_growth)	☐	☐	☐	☐	☐	☐
Intellectual challenge (RE_challenge)	☐	☐	☐	☐	☐	☐
Autonomy and responsibility (RE_autonomy)	☐	☐	☐	☐	☐	☐
Reputation of organisation (RE_rep)	☐	☐	☐	☐	☐	☐
Organisational culture (RE_culture)	☐	☐	☐	☐	☐	☐
Job security/stability (RE_secure)	☐	☐	☐	☐	☐	☐
Funding (RE_funds)	☐	☐	☐	☐	☐	☐
Mentoring (RE_mentor)	☐	☐	☐	☐	☐	☐
Training opportunities (RE_train)	☐	☐	☐	☐	☐	☐
Possibility for community engagement (RE_community)	☐	☐	☐	☐	☐	☐
Work/life balance (RE_balance)	☐	☐	☐	☐	☐	☐

Congruence with my research interests (RE_congruence)	☐	☐	☐	☐	☐	☐
Managing research time (RE_time)	☐	☐	☐	☐	☐	☐
Research team (RE_team)	☐	☐	☐	☐	☐	☐

FUNDING Which of the following funding options have you used/are you using during the course of your doctoral studies? *(Multiple answers possible.)*

- ☐ Fellowship from your university (1)
 - ☐ Contracted employment with your university (9)
 - ☐ Fellowship from government or public research fund (10)
 - ☐ Fellowship from private sector, or a private non-profit organisation (11)
 - ☐ Fellowship from international institutions (12)
 - ☐ University position/teaching and/or research assistantship (13)
 - ☐ Self-funded (14)
 - ☐ Other (please specify): (15)
-

End of Block: Doctoral education

Start of Block: Career related experience

P2 Part 2. CAREER RELATED EXPERIENCE This section is centered around your overall professional background, not just your doctoral experience. We'd like to understand your current professional environment and its impact on your satisfaction with various other aspects.

PROF_STATUS Please select all that apply to your current primary professional status:
(Multiple answers possible.)

- ☐ Permanently full-time employed (1)
 - ☐ Permanently part-time employed (14)
 - ☐ Temporary full-time employed (15)
 - ☐ Temporary part-time employed (16)
 - ☐ Self employed (17)
 - ☐ Retired (18)
 - ☐ Unemployed (19)
 - ☐ Internship (20)
 - ☐ Career break (including childcare, elderly people care) (21)
 - ☐ Other (please specify): (22)
-

Display this question:

If PROF_STATUS = 1

Or PROF_STATUS = 14

Or PROF_STATUS = 15

Or PROF_STATUS = 16

Or PROF_STATUS = 17

Or PROF_STATUS = 20

Or PROF_STATUS = 22

Or PROF_STATUS = 21

PROF_SECTOR Please indicate the sector that best represents your current primary professional position: *(Multiple answers possible.)*

☐

Research university (1)

☐

University of applied sciences and arts (13)

☐

Research organisation (e.g., research institute) (14)

☐

Business sector: industry (15)

☐

Business sector: services and other (16)

☐

Healthcare sector (e.g., hospital, clinical centre) (17)

☐

Non-higher education (e.g., secondary education) (18)

☐

Government or public sector other than listed above (19)

☐

Private non-profit sector (20)

☐

Other (please specify): (21)

PROF_RESEARCHTIME What percentage of your time do you spend on research activities?

0 10 20 30 40 50 60 70 80 90 100

percentage of working time ()



PROF_SUCCESS Using the scale below, please rate the following areas in terms of their importance for your professional success.

	Not at all important (1)	Slightly unimportant (2)	Neutral (3)	Slightly important (4)	Very important (5)
The supervision during my doctoral studies (PROF_SUCCESS_1)	☐	☐	☐	☐	☐
The mentoring system during my doctoral studies (PROF_SUCCESS_2)	☐	☐	☐	☐	☐
Career development support (PROF_SUCCESS_3)	☐	☐	☐	☐	☐
Networking (PROF_SUCCESS_10)	☐	☐	☐	☐	☐
Development of my personal resources (PROF_SUCCESS_11)	☐	☐	☐	☐	☐
Development of my transferable skills (PROF_SUCCESS_12)	☐	☐	☐	☐	☐
Development of my research skills (PROF_SUCCESS_13)	☐	☐	☐	☐	☐



PROF_WORRY Using the scale below, please indicate to what extent you are worried about your professional future.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Continuously (5)

Display this question:

If PROF_WORRY = 3

Or PROF_WORRY = 4

Or PROF_WORRY = 5

PROF_WORRY_LOT Please provide a brief description of your primary concerns:

End of Block: Career related experience

Start of Block: Learning, knowledge and skills

P3 Part 3. LEARNING (KNOWLEDGE AND SKILLS) This section aims to assess your current level of knowledge and skills in various topics relevant to your research and academic development.



SKILLS_RATE Please evaluate your knowledge and skills related to specific topics using the scale below:

	I have no developed knowledge and skills at all (1)	I have poorly developed knowledge and skills (2)	I have moderately developed knowledge and skills (3)	I have well developed knowledge and skills (4)	I have very well developed knowledge and skills (5)
Personal and career development (Q11_23)	☐	☐	☐	☐	☐
Conflict management (Q11_83)	☐	☐	☐	☐	☐
Inclusive research (Q11_84)	☐	☐	☐	☐	☐
Intellectual property rights and knowledge valorisation (Q11_85)	☐	☐	☐	☐	☐
Intercultural competences (Q11_86)	☐	☐	☐	☐	☐
Leadership (Q11_87)	☐	☐	☐	☐	☐
Open innovation (Q11_88)	☐	☐	☐	☐	☐
Entrepreneurship (Q11_89)	☐	☐	☐	☐	☐
Open science and open/FAIR data (Q11_90)	☐	☐	☐	☐	☐
Project management (Q11_91)	☐	☐	☐	☐	☐
Proposal writing (Q11_92)	☐	☐	☐	☐	☐

Public engagement (Q11_93)	☐	☐	☐	☐	☐
Research data management (Q11_94)	☐	☐	☐	☐	☐
Research ethics and integrity (Q11_95)	☐	☐	☐	☐	☐
Research methodology (Q11_96)	☐	☐	☐	☐	☐
Responsible research (Q11_97)	☐	☐	☐	☐	☐
Science communication to a broader audience (Q11_98)	☐	☐	☐	☐	☐
Sustainable research (Q11_99)	☐	☐	☐	☐	☐
Teaching skills (Q11_100)	☐	☐	☐	☐	☐
Scientific writing (Q11_101)	☐	☐	☐	☐	☐
Time management (Q11_102)	☐	☐	☐	☐	☐



SKILLS_LEARNED I have acquired my current knowledge and skills mostly through: *(Multiple answers possible.)*

- ☐ Supervisor(s) (1)
 - ☐ Doctoral training courses (2)
 - ☐ Colleagues or other researchers (3)
 - ☐ Previous formal education (4)
 - ☐ Self-study (internet) (5)
 - ☐ Other (please specify): (99)
-

End of Block: Learning, knowledge and skills

Start of Block: Behaviour (attitudes and intentions)

P4 Part 4. BEHAVIOUR (ATTITUDES AND INTENTIONS) This section goes deeper into your aspirations and perspectives on various aspects of the YUFE DIOSI model that might be relevant to your professional development.



BEHAVIOR Please indicate the level of agreement with each of the following statements using the scale below.

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
My professional goal is to become an entrepreneur. (34)	☐	☐	☐	☐	☐
If I had the opportunity and the necessary resources, I would like to start a company. (35)	☐	☐	☐	☐	☐
If I tried to start a company, I believe I would have a high probability of being successful. (36)	☐	☐	☐	☐	☐
By making use of acquired knowledge and skills in Open Innovation and Entrepreneurship, a broader part of society can benefit from innovation and knowledge created. (37)	☐	☐	☐	☐	☐
I am confident that practicing Open Science is beneficial. (38)	☐	☐	☐	☐	☐
I am aware of the challenges that practicing Open Science brings with it (e.g., predatory journals). (39)	☐	☐	☐	☐	☐

I intend to practice Open Science in my future research work. (40)	☐	☐	☐	☐	☐
Ethical decisions and choices of researchers have a huge influence on the whole society. (41)	☐	☐	☐	☐	☐
I intend to disclose possible conflicts of interest in an appropriate manner in my future research work. (42)	☐	☐	☐	☐	☐
In my future research, I intend to apply ethical principles to data collection and processing, dissemination and authorship. (43)	☐	☐	☐	☐	☐
Research ethics is an everyday life skill for a researcher. (44)	☐	☐	☐	☐	☐
I strive to create a research environment that follows the rules of universal design (i.e., inclusive). (45)	☐	☐	☐	☐	☐
I am committed to critically questioning my own biases. (46)	☐	☐	☐	☐	☐

I take care to discuss my research findings in a way that does not harm others. (47)

☐☐☐☐☐

I am confident that I can work effectively with international colleagues. (48)

☐☐☐☐☐

Building an international network is important for my professional success. (49)

☐☐☐☐☐

I am willing to work outside my country of citizenship. (50)

☐☐☐☐☐

It is important to develop skills of cross cultural communication. (51)

☐☐☐☐☐

I am confident that practicing sustainable research has a lot of benefits. (52)

☐☐☐☐☐

In my research work, I try to minimise negative effects on the environment, society and the economy. (53)

☐☐☐☐☐

Creating a personal development plan will contribute to my career success. (54)

☐☐☐☐☐

I am engaged in planning my professional development. (55)

☐☐☐☐☐

It is important to be informed on different career options for doctoral candidates. (56)

☐☐☐☐☐

End of Block: Behaviour (attitudes and intentions)

Start of Block: Mobility

P5 **PART 5. MOBILITY** This section explores your openness to professional mobility, both inside and outside of your current country of residency.



MOBILITY_sector At this moment, are you considering changing the sector of your current main professional activity?

- ☐ No, I work in the academic sector and I want to stay in the academic sector (1)
- ☐ No, I work in the non-academic sector and I want to stay in the non-academic sector (2)
- ☐ Yes, I work in the academic sector and I want to move to the non-academic sector (3)
- ☐ Yes, I work in the non-academic sector, and I want to move to the academic sector (4)
- ☐ Yes, I work in the non-academic sector, and I want to move to another non-academic sector (5)
- ☐ Yes, I want to combine the work in the academic and non-academic sectors at the same time (6)
- ☐ Not sure/Other (please specify): (99)

- ☐ Not applicable (999)



MOBILITY_country At this moment, are you considering living and working outside your country of citizenship?

- ☐ No (1)
- ☐ Yes, for a period of less than 3 months (2)
- ☐ Yes, for a period of 3 to 6 months (3)
- ☐ Yes, for a period of 6 to 12 months (4)
- ☐ Yes, for 12 months or more (5)
- ☐ Yes, but I'm not sure for how long (6)
- ☐ I'm currently living or working outside of my country of citizenship (9)
- ☐ I'm not sure (10)

End of Block: Mobility

Start of Block: Demo

P6 PART 6. DEMOGRAPHIC DETAILS



COUNTRY In which country do you currently live?

- ☐ Belgium (4)
 - ☐ Croatia (9)
 - ☐ Cyprus (6)
 - ☐ Finland (7)
 - ☐ France (2)
 - ☐ Germany (5)
 - ☐ the Netherlands (1)
 - ☐ Poland (100)
 - ☐ Spain (3)
 - ☐ United Kingdom (8)
 - ☐ Other (please specify): (99)
-

BIRTH What is your age group?

- ☐ under 30 (4)
 - ☐ 30 - 50 (5)
 - ☐ over 50 (6)
-



GENDER Which gender do you identify with?

- ☐ Female (0)
 - ☐ Male (1)
 - ☐ Non-binary (2)
 - ☐ Prefer not to say (9)
 - ☐ I prefer to identify myself as (please specify): (99)
-

End of Block: Demo

YUFE Impact and Graduate Tracking Framework - Survey 2

Contents

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PART 7. DEMOGRAPHIC DETAILS	24

Dear participant,

Welcome to the YUFE Impact and Graduate Tracking Framework, which consists of two surveys that are conducted as part of the YUFE Pilot on Doctoral Learning carried out by several of the YUFE institutions. The data collected will help us gain a better understanding of professional development and doctoral education. The surveys were approved by the ethical committee of the University of Antwerpen.

This is the second of the two surveys. In a moment, we will present you a questionnaire. This will take about 15 minutes. Please note that this survey is not optimised for mobile devices, so use your laptop or desktop PC instead. Please read every question carefully and answer honestly.

This is an anonymous study: you are never recognisable during the course of this study, nor in the data we collect. All data from this study are digitised and stored for 10 years after the end of the study. **You have the right to refuse to participate and to stop your participation at any time.** You do not have to explain this. All data already collected at that time can be used for data analysis.

The researchers of this study have the right to share anonymous databases (in which participants are not recognisable to anyone) **with (inter)national colleagues** in the context of this study. These data files are not accessible by other parties, including yourself or companies/organisations that do not fit within scientific research institutions.

If you have any further questions or comments, please contact Maša Cek of the University of Rijeka at karijere@uniri.hr.

Yours sincerely, the YUFE team

I have read and understood the information above and (tick as appropriate):

- ☐ I voluntarily agree to participate (1)
- ☐ I do not wish to participate in this study (2)

General Feedback on YUFE Pilot on Doctoral Learning

Throughout the pilot you had the opportunity to participate in a wider range of activities (which we will hereafter refer to as the 'YUFE pilot on Doctoral Learning activities'). The following questions relate to these activities, and we would like to ask you to answer them based on your experiences in the activities you participated in.

During the YUFE Pilot on Doctoral Learning, you may have participated in activities aimed at professional development, research development, or a combination of both. Some of these activities were offered via the YUFE Virtual Campus and could be attended together with doctoral candidates from other YUFE universities. Please indicate all categories of activities in which you have participated:

- Kick-off event(s)
- Trainings and workshops
- Aperio Doctoring events
- MOOCs (Massive Open Online Courses) (Research Ethics and Integrity; Equity, Diversity, and Inclusivity)
- Feedback sessions (Research Ethics and Integrity; Equity, Diversity, and Inclusivity)
- I did not participate in any YUFE-wide activities

In addition to YUFE-wide activities, certain activities were organized exclusively by your home university and were not open to participants from other YUFE universities. These activities may have been conducted either on-site or online. Please indicate all categories of activities at your home university in which you have participated:

- Kick-off event(s)
- Trainings and workshops
- Academic or networking events
- Mentoring
- I did not participate in any local activities
- Other (please specify): _____

From 1 (I fully disagree) to 5 (I fully agree), please indicate your agreement with the following statements about the YUFE Pilot on Doctoral learning:

- It helped to clarify my career goals.
- It opened new career opportunities for me.
- It provided me with opportunities for professional growth.
- It helped me develop new skills or knowledge relevant to my employment possibilities.
- It helped me to establish new connections with other doctoral researchers in my university
- It helped me to establish new connections with other doctoral researchers in another YUFE university

What aspects of the YUFE Pilot on Doctoral Learning did you find most beneficial, and why?

What aspects of the YUFE Pilot on Doctoral Learning could be improved, and how (themes, methods, lecturers, ...)?

How would you rate your overall experience with the YUFE Pilot on Doctoral Learning?
(1 – Very Poor, 5 – Excellent)

Would you recommend the YUFE Pilot on Doctoral Learning to other doctoral researchers?

Yes

No

Please share your additional thoughts, suggestions, or feedback about your experience with the YUFE Pilot on Doctoral Learning.

If you would like to publicly share your experience with the YUFE Pilot on Doctoral Learning, please email us at karijere@uniri.hr

IMPORTANT: YOUR PERSONAL, ANONYMOUS LOGIN ID We are using Qualtrics, an online survey platform, to conduct this survey. In the first survey, you received 12-digit code via email that is unique to you. This is the only way we can link the responses to both surveys while maintaining complete anonymity.

Do you have your **personal, anonymous Login ID**? **Remember to check your email!**

a) **YES**

b) **NO**

If Yes -> Please write in your personal Login ID:

Part 1. DOCTORAL EDUCATION This section focuses specifically on your doctoral education. We would like to gain insights into your current experiences with your PhD programme.

UNI Please select your affiliated university: *(Multiple answers possible.)*

- ☐ Maastricht University, the Netherlands (1)
 - ☐ Nicolaus Copernicus University, Poland (2)
 - ☐ Sorbonne Nouvelle University, France (3)
 - ☐ Universidad Carlos III De Madrid, Spain (4)
 - ☐ University of Antwerp, Belgium (5)
 - ☐ University of Bremen, Germany (6)
 - ☐ University of Cyprus, Cyprus (7)
 - ☐ University of Eastern Finland, Finland (8)
 - ☐ University of Essex, the United Kingdom (9)
 - ☐ University of Rijeka, Croatia (10)
 - ☐ Other (please specify): (11)
-

YEAR In which year did you start your PhD/doctorate (formal admission)?
year (4)

▼ 2024 (1) ... 1990 (35)

MOTIVATION What motivated you to pursue a doctorate (both in the short term and long term)?
(Multiple answers possible)

☐

To work as a researcher in academia (1)

☐

To be able to teach in higher education (13)

☐

To work as a researcher outside academia (14)

☐

To work as a highly skilled expert (15)

☐

To diversify career opportunities (16)

☐

Personal accomplishment (17)

☐

Personal growth (18)

☐

Interest in the research topic (19)

☐

Social recognition (20)

☐

Other (please specify): (21)

FIELD Please select the field that best corresponds to your doctorate:

- ☐ Agricultural sciences (1)
 - ☐ Engineering and technology (8)
 - ☐ Arts and Humanities (9)
 - ☐ (Bio)medical and health sciences (10)
 - ☐ Exact and natural sciences (11)
 - ☐ Social sciences (12)
 - ☐ Other (e.g., interdisciplinary) (please specify): (13)
-

COLLAB Do you intend to do your doctorate in collaboration with another organisation?

- ☐ No (1)
 - ☐ Yes, with a non-university research institution (8)
 - ☐ Yes, with a private sector company (e.g., industrial doctorate) (9)
 - ☐ Yes, with a third sector organisation (e.g., non-governmental organisation, charity, non-profit) (10)
 - ☐ Yes, with a university of applied sciences and arts (11)
 - ☐ Yes, with another university (e.g., joint doctorate, cotutelle) (12)
 - ☐ Yes, with another type of organisation (please specify): (13)
-

SUPERVISION The supervision during my doctoral studies includes ~~(Multiple answers possible.)~~

☐

A single supervisor (1)

☐

A supervisory team only with members internal to my university (6)

☐

A supervisory team including members from other universities (7)

☐

A supervisory team including members outside academia (8)

☐

Other (please specify): (9)

RESEARCH_ENVIRONMENT Using the scale below, please rate how satisfied you are with the following aspects of your current research environment:

	Very dissatisfied (1)	Somewhat dissatisfied (2)	Neutral (3)	Somewhat satisfied (4)	Very satisfied (5)	Not applicable (99)
Skills development (RE_skills)	☐	☐	☐	☐	☐	☐
Career growth opportunities (RE_growth)	☐	☐	☐	☐	☐	☐
Intellectual challenge (RE_challenge)	☐	☐	☐	☐	☐	☐
Autonomy and responsibility (RE_autonomy)	☐	☐	☐	☐	☐	☐
Reputation of organisation (RE_rep)	☐	☐	☐	☐	☐	☐
Organisational culture (RE_culture)	☐	☐	☐	☐	☐	☐
Job security/stability (RE_secure)	☐	☐	☐	☐	☐	☐
Funding (RE_funds)	☐	☐	☐	☐	☐	☐
Mentoring (RE_mentor)	☐	☐	☐	☐	☐	☐
Training opportunities (RE_train)	☐	☐	☐	☐	☐	☐
Possibility for community engagement (RE_community)	☐	☐	☐	☐	☐	☐
Work/life balance (RE_balance)	☐	☐	☐	☐	☐	☐

Congruence with my research interests (RE_congruence)	☐	☐	☐	☐	☐	☐
Managing research time (RE_time)	☐	☐	☐	☐	☐	☐
Research team (RE_team)	☐	☐	☐	☐	☐	☐

FUNDING Which of the following funding options have you used/are you using during the course of your doctoral studies? *(Multiple answers possible.)*

- ☐ Fellowship from your university (1)
 - ☐ Contracted employment with your university (9)
 - ☐ Fellowship from government or public research fund (10)
 - ☐ Fellowship from private sector, or a private non-profit organisation (11)
 - ☐ Fellowship from international institutions (12)
 - ☐ University position/teaching and/or research assistantship (13)
 - ☐ Self-funded (14)
 - ☐ Other (please specify): (15)
-

Part 2. CAREER RELATED EXPERIENCE This section is centered around your overall professional background, not just your doctoral experience. We'd like to understand your current professional environment and its impact on your satisfaction with various other aspects.

PROF_STATUS Please select all that apply to your current primary professional status:
(Multiple answers possible.)

- ☐ Permanently full-time employed (1)
 - ☐ Permanently part-time employed (14)
 - ☐ Temporary full-time employed (15)
 - ☐ Temporary part-time employed (16)
 - ☐ Self employed (17)
 - ☐ Retired (18)
 - ☐ Unemployed (19)
 - ☐ Internship (20)
 - ☐ Career break (including childcare, elderly people care) (21)
 - ☐ Other (please specify): (22)
-

Display this question:

If PROF_STATUS = 1, 14, 15, 16, 17, 20, 21, 22

PROF_SECTOR Please indicate the sector that best represents your current primary professional position: *(Multiple answers possible.)*

☐

Research university (1)

☐

University of applied sciences and arts (13)

☐

Research organisation (e.g., research institute) (14)

☐

Business sector: industry (15)

☐

Business sector: services and other (16)

☐

Healthcare sector (e.g., hospital, clinical centre) (17)

☐

Non-higher education (e.g., secondary education) (18)

☐

Government or public sector other than listed above (19)

☐

Private non-profit sector (20)

☐

Other (please specify): (21)

PROF_RESEARCHTIME What percentage of your time do you spend on research activities?

0 10 20 30 40 50 60 70 80 90 100

percentage of working time ()



PROF_SUCCESS Using the scale below, please rate the following areas in terms of their importance for your professional success.

	Not at all important (1)	Slightly unimportant (2)	Neutral (3)	Slightly important (4)	Very important (5)
The supervision during my doctoral studies (PROF_SUCCESS_1)	☐	☐	☐	☐	☐
The mentoring system during my doctoral studies (PROF_SUCCESS_2)	☐	☐	☐	☐	☐
Career development support (PROF_SUCCESS_3)	☐	☐	☐	☐	☐
Networking (PROF_SUCCESS_10)	☐	☐	☐	☐	☐
Development of my personal resources (PROF_SUCCESS_11)	☐	☐	☐	☐	☐
Development of my transferable skills (PROF_SUCCESS_12)	☐	☐	☐	☐	☐
Development of my research skills (PROF_SUCCESS_13)	☐	☐	☐	☐	☐

PROF_WORRY Using the scale below, please indicate to what extent you are worried about your professional future.

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Continuously (5)

Display this question:

If PROF_WORRY = 3 - 5

PROF_WORRY_LOT Please provide a brief description of your primary concerns:

Part 3. LEARNING (KNOWLEDGE AND SKILLS) This section aims to assess your current level of knowledge and skills in various topics relevant to your research and academic development.

SKILLS_RATE Please evaluate your knowledge and skills related to specific topics using the scale below:

	I have no developed knowledge and skills at all (1)	I have poorly developed knowledge and skills (2)	I have moderately developed knowledge and skills (3)	I have well developed knowledge and skills (4)	I have very well developed knowledge and skills (5)
Personal and career development (Q11_23)	☐	☐	☐	☐	☐
Conflict management (Q11_83)	☐	☐	☐	☐	☐
Inclusive research (Q11_84)	☐	☐	☐	☐	☐
Intellectual property rights and knowledge valorisation (Q11_85)	☐	☐	☐	☐	☐
Intercultural competences (Q11_86)	☐	☐	☐	☐	☐
Leadership (Q11_87)	☐	☐	☐	☐	☐
Open innovation (Q11_88)	☐	☐	☐	☐	☐
Entrepreneurship (Q11_89)	☐	☐	☐	☐	☐
Open science and open/FAIR data (Q11_90)	☐	☐	☐	☐	☐
Project management (Q11_91)	☐	☐	☐	☐	☐
Proposal writing (Q11_92)	☐	☐	☐	☐	☐

Public engagement (Q11_93)	☐	☐	☐	☐	☐
Research data management (Q11_94)	☐	☐	☐	☐	☐
Research ethics and integrity (Q11_95)	☐	☐	☐	☐	☐
Research methodology (Q11_96)	☐	☐	☐	☐	☐
Responsible research (Q11_97)	☐	☐	☐	☐	☐
Science communication to a broader audience (Q11_98)	☐	☐	☐	☐	☐
Sustainable research (Q11_99)	☐	☐	☐	☐	☐
Teaching skills (Q11_100)	☐	☐	☐	☐	☐
Scientific writing (Q11_101)	☐	☐	☐	☐	☐
Time management (Q11_102)					



SKILLS_LEARNED I have acquired my current knowledge and skills mostly through: *(Multiple answers possible.)*

☐

Supervisor(s) (1)

☐

Colleagues or other researchers (3)

☐

Previous formal education (4)

☐

Self-study (internet) (5)

☐

Doctoral study courses at my university

☐

YUFE pilot on Doctoral Learning

☐

Other (please specify): (99)

End of Block: Learning, knowledge and skills

Start of Block: Behaviour (attitudes and intentions)

Part 4. BEHAVIOUR (ATTITUDES AND INTENTIONS) This section goes deeper into your aspirations and perspectives on various aspects of the YUFE DIOSI model that might be relevant to your professional development.



BEHAVIOR Please indicate the level of agreement with each of the following statements using the scale below.

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
My professional goal is to become an entrepreneur. (34)	☐	☐	☐	☐	☐
If I had the opportunity and the necessary resources, I would like to start a company. (35)	☐	☐	☐	☐	☐
If I tried to start a company, I believe I would have a high probability of being successful. (36)	☐	☐	☐	☐	☐
By making use of acquired knowledge and skills in Open Innovation and Entrepreneurship, a broader part of society can benefit from innovation and knowledge created. (37)	☐	☐	☐	☐	☐
I am confident that practicing Open Science is beneficial. (38)	☐	☐	☐	☐	☐
I am aware of the challenges that practicing Open Science brings with it (e.g., predatory journals). (39)	☐	☐	☐	☐	☐

I intend to practice Open Science in my future research work. (40)	☐	☐	☐	☐	☐
Ethical decisions and choices of researchers have a huge influence on the whole society. (41)	☐	☐	☐	☐	☐
I intend to disclose possible conflicts of interest in an appropriate manner in my future research work. (42)	☐	☐	☐	☐	☐
In my future research, I intend to apply ethical principles to data collection and processing, dissemination and authorship. (43)	☐	☐	☐	☐	☐
Research ethics is an everyday life skill for a researcher. (44)	☐	☐	☐	☐	☐
I strive to create a research environment that follows the rules of universal design (i.e., inclusive). (45)	☐	☐	☐	☐	☐
I am committed to critically questioning my own biases. (46)	☐	☐	☐	☐	☐

I take care to discuss my research findings in a way that does not harm others. (47)	☐	☐	☐	☐	☐
I am confident that I can work effectively with international colleagues. (48)	☐	☐	☐	☐	☐
Building an international network is important for my professional success. (49)	☐	☐	☐	☐	☐
I am willing to work outside my country of citizenship. (50)	☐	☐	☐	☐	☐
It is important to develop skills of cross cultural communication. (51)	☐	☐	☐	☐	☐
I am confident that practicing sustainable research has a lot of benefits. (52)	☐	☐	☐	☐	☐
In my research work, I try to minimise negative effects on the environment, society and the economy. (53)	☐	☐	☐	☐	☐
Creating a personal development plan will contribute to my career success. (54)	☐	☐	☐	☐	☐

I am engaged in planning my professional development. (55)

☐

☐

☐

☐

☐

It is important to be informed on different career options for doctoral candidates. (56)

☐

☐

☐

☐

☐

End of Block: Behaviour (attitudes and intentions)

Start of Block: Mobility

PART 5. MOBILITY This section explores your openness to professional mobility, both inside and outside of your current country of residency.



MOBILITY_sector At this moment, are you considering changing the sector of your current main professional activity?

- ☐ No, I work in the academic sector and I want to stay in the academic sector (1)
- ☐ No, I work in the non-academic sector and I want to stay in the non-academic sector(2)
- ☐ Yes, I work in the academic sector and I want to move to the non-academic sector(3)
- ☐ Yes, I work in the non-academic sector, and I want to move to the academic sector(4)
- ☐ Yes, I work in the non-academic sector, and I want to move to another non-academic sector (5)
- ☐ Yes, I want to combine the work in the academic and non-academic sectors at the same time (6)
- ☐ Not sure/Other (please specify): (99)
-
- ☐ Not applicable (999)



MOBILITY_country At this moment, are you considering living and working outside your country of citizenship?

- ☐ No (1)
- ☐ Yes, for a period of less than 3 months (2)
- ☐ Yes, for a period of 3 to 6 months (3)
- ☐ Yes, for a period of 6 to 12 months (4)
- ☐ Yes, for 12 months or more (5)
- ☐ Yes, but I'm not sure for how long (6)
- ☐ I'm currently living or working outside of my country of citizenship (9)
- ☐ I'm not sure (10)

EQUITY, DIVERSITY&INCLUSIVITYFEEDBACK

To help us understand the participants of the YUFE Pilot on Doctoral Learning better, we invite you to share more information about your background. Your response is voluntary and will remain confidential.

From 1 (I fully disagree) to 5 (I fully agree), please indicate your agreement with the following statements:

- Inclusivity and diversity were well represented in the themes and topics of the pilot.
- Lecturers considered inclusivity and diversity in their teaching.
- The pilot was organised in a way that made it accessible to all participants.

Do you consider yourself to be part of any minority group (e.g., based on ethnicity, culture, religion, language, disability, sexual orientation, or other aspects of identity)?

- • Yes
- No
- Prefer not to say

(If Yes) Please share more about which group(s) you identify with or any information you would like us to know.

PART 7. DEMOGRAPHIC DETAILS



COUNTRY In which country do you currently live?

- ☐ Belgium (4)
 - ☐ Croatia (9)
 - ☐ Cyprus (6)
 - ☐ Finland (7)
 - ☐ France (2)
 - ☐ Germany (5)
 - ☐ the Netherlands (1)
 - ☐ Poland (100)
 - ☐ Spain (3)
 - ☐ United Kingdom (8)
 - ☐ Other (please specify): (99)
-

BIRTH What is your age group?

☐ under 30 (4)

☐ 30 - 50 (5)

☐ over 50 (6)



GENDER Which gender do you identify with?

☐ Female (0)

☐ Male (1)

☐ Non-binary (2)

☐ Prefer not to say (9)

☐ I prefer to identify myself as (please specify): (99)
