VUB SUPERVISOR SURVEY 2022

REPORT

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Introduction

This report presents the results of the first edition of the PhD Supervisor Survey. This survey is organized by the Researcher Training and Development Office (RTDO) of the Vrije Universiteit Brussel (VUB) and was executed by the Research Group TOR (Sociology department, VUB). The survey functions as a complement to the PhD Survey; an annual survey aimed at monitoring the work experience and job satisfaction of PhD candidates at the VUB (see Glorieux, van Tienoven et al. (2021, 2022), Glorieux, te Braak et al. (2018, 2019, 2020) Verbeylen, Minnen et al. (2017)). The PhD Survey has been organized since 2017 and one of its main conclusions is that the supervisor plays an important role in the satisfaction and confidence of PhD candidates. To get a deeper understanding of the mechanisms behind this, it was decided to implement an extra survey to shed some light on the supervisor-side of a PhD trajectory.

The main goal of the Supervisor Survey is to complement the data of the PhD Survey and add more context by taking the expectations and experiences of the supervisors into consideration. This enables us to assess to what extent the expectations of the PhD candidates match those of the supervisors or not. A second goal of the survey is to investigate how the supervisors evaluate the support mechanisms that are in place to support them in their supervisory task. Finally, the survey can help us to uncover certain strategies supervisors use that we are currently unaware of (e.g., in the hiring process of new PhD candidates, for the organization of meetings with PhD candidates, etc.).

Since this is a pilot survey, only the supervisors of a select group of faculties were invited to participate. This included the Faculty of Engineering, the Faculty of Physical Education & Physiotherapy, the Faculty of Psychology & Educational Sciences and the Faculty of Medicine & Pharmacy. The first three faculties were selected because they were also part of the PhD Survey pilot study. The faculty of Medicine & Pharmacy was selected at the request of the policy makers of the faculty. Overall, the four faculties represent a good mix of the academic landscape. To respect the privacy of respondents the Supervisor Survey and the PhD Survey are independent from one another, in the sense that the data of the supervisors cannot be linked to the data of the PhD candidates they supervise. This was a deliberate choice. The Supervisor and PhD survey are monitoring instruments that

aim to provide a general overview of the PhD process at VUB. There are not meant to evaluate individual supervisors or PhD students.

Throughout the report, comparisons are made with the results of the PhD Survey 2022 (see Glorieux, van Tienoven et al., 2022). Please note that for these comparisons, we only selected the PhD candidates who are part of the faculties that are represented in the Supervisor Survey. The results of the PhD Survey that are presented in this report are thus not directly comparable with the results of the PhD Survey in the main report.

The first section of the report discusses the methodology of the research. The next section provides some background characteristics of the supervisors. In the third section, we discuss the previous experiences of the supervisors and the PhD candidates they currently supervise. In the fourth section, we investigate their practices as a supervisor (i.e., how they organize their meetings, whether their PhD candidates are guided by an advisory committee, etc.). The fifth section sheds light on supervisors' and PhD candidates' mutual expectations regarding the PhD trajectory. In the sixth section, we look at how supervisors experience the supervisory task in terms of stress, workload, and pleasure. The seventh section considers to what extent supervisors feel supported in their task, both by other actors within the university as well as by administrative processes. Section eight looks at how supervisors hire new PhD candidates, and what characteristics they take into consideration when doing so. In the ninth section, we look at how supervisors prepare their supervisees for a further career. Finally, in the last section, we discuss what (extra) training supervisors took to execute their task, what prevents them from taking extra training and to what extent they feel competent to perform the supervisory task.

1 Methodology

1.1 Population

Since this is the pilot edition of the PhD Supervisor Survey, a limited sample has been selected. All professors who supervised at least one PhD candidate as per January 1st, 2022, and were affiliated with either the faculty of Engineering, the faculty of Medicine & Pharmacy, the faculty of Psychology & Educational Sciences or the faculty Physical Education & Physiotherapy were invited to participate. A total of 246 respondents were invited. Their contact information was provided by the Researcher Training and Development Office (RTDO) and was handled in compliance with the GDPR guidelines.

1.2 Response

In total, 83 respondents completed the survey, resulting in a response rate of 33.7%. 11 supervisors started the survey but did not complete it. Their data is not included in the analyses.

Table 1 presents the response rate of each faculty. Half of the supervisors of the faculty of Physical Education & Physiotherapy completed the survey (50.0%), which makes this the faculty with the highest response rate. The faculty of Medicine & Pharmacy has the lowest response rate, with 27.6%.

The relatively low absolute number of respondents – because of the fact that this edition is a field trial for the supervisor survey – has implications regarding the statistical significance of observed differences. The relatively low statistical power implies that sometimes quite substantial differences do not reach the conventional significance threshold levels. Therefore, we decided to present all differences even when they are not statistically significant.

Table 1: Response by faculty

	N	% response
Physical Education & Physiotherapy	11	50.0
Engineering Sciences	29	39.2
Psychology & Educational Sciences	11	32.4
Medicine & Pharmacy	32	27.6
Total	83	33.7

1.3 Instrument and timing

The study consisted of one questionnaire. The respondents received an email in which they were invited to the survey. Generally, the VUB e-mail address was used to contact the respondents. However, for some of the supervisors of the faculty of Medicine & Pharmacy, their e-mail address of the university hospital was used when the administration knew that this was the e-mail address they usually use. Please note that the response rate might be influenced by the fact that not all respondents use their VUB e-mail.

With a personal username and password, they could log in to the MOTUS website (https://www.moturesearch.io) to complete the survey. After the initial invitation email, two additional reminders were sent throughout the fieldwork. In order to optimize the response in a next edition, a third reminder will be added. The data collection ran from April 19th, 2022, to May 31st, 2022 (i.e., the same timing as the PhD Survey).

2 Background characteristics

This section provides an overview of the characteristics of our sample. We investigate what type of employment supervisors have, what their position is, their distribution in terms of gender, and what faculty they are affiliated with.

2.1 Gender

As presented in Table 2, 60.2% of the supervisors in our sample is male. The remaining 39.8% is female. There were no respondents who identified with another gender. Women are slightly overrepresented in our sample.

Table 2: Respondents by gender

	N	% in sample	% in population
Male	50	60.2	65.0
Female	33	39.8	35.0
Total	83	100	100

2.2 Faculty affiliation

38.6% of the supervisors in our sample are affiliated with the faculty of Medicine & Pharmacy (see Table 3). 34.9% is affiliated with the faculty of Engineering Sciences. Both the faculty of Psychology & Educational Sciences, and the faculty of Physical Education & Physiotherapy make up for 13.3% of the sample.

The faculty of Medicine & Pharmacy is underrepresented in our sample. The faculties of Engineering and Psychology & Educational Sciences are slightly overrepresented.

Table 3: Respondents by faculty

	N	% in sample	% in population
Medicine & Pharmacy	32	38.6	47.2
Engineering Sciences	29	34.9	30.1
Psychology & Educational Sciences	11	13.3	8.9
Physical Education & Physiotherapy	11	13.3	13.8
Total	83	100	100

3 Current and past situation

This section looks at the previous experience of the supervisors and at the profile of the PhD candidates they are currently supervising.

3.1 Previous experience

As shown in Table 4, about one in five of the supervisors has up to five years of experience with supervising PhD candidates (20.7%). 30.5% has six to ten years of experience. Nearly one in four has eleven to fifteen years of experience (24.4%). 11% has sixteen to twenty years of experience and 13.4% 21 years or more.

Table 4: Respondents by years of experience

	N	Valid %
0-5 years	17	20.7
6-10 years	25	30.5
11-15 years	20	24.4
16-20 years	9	11.0
21+ years	11	13.4
Missing	1	
Total	83	100

Question: How many years have you been supervising PhD candidates? If you have been a supervisor at another university, please also include those years.

The supervisors were asked how many PhD candidates successfully submitted their PhD under their supervision over the last ten years. Seven supervisors have not yet had a successful completion under their supervision (see Table 5). All of those have less than five years of experience. For 12.5%, one PhD candidate successfully completed a PhD under their supervision. The biggest group of 35.0% has had two to five successful completions. 7.5% has had more than fifteen successful submissions under their supervision. The maximum number of successful doctorates indicated was 25.

Table 5: Respondents by number of PhD candidates that successfully graduated

	N	Valid %
None	7	8.8
One	10	12.5
2 to 5	28	35.0
6 to 10	18	22.5
11 to 15	11	13.8
15+	6	7.5
Missing	3	
Total	83	100

Question: How many PhD candidates under your supervision successfully submitted their PhD in the last 10 years?

In addition to successful completions, it is also possible that PhD candidates drop out without completing the PhD trajectory. If so, the supervisors were asked for what reason(s) PhD candidates stopped their doctoral research under their supervision. Multiple answers were possible.

Results are presented in Table 6. The most common reason mentioned was that doing a PhD just was not for the PhD candidate and that they did not like the work (40.0%). Other reasons were that the PhD candidate found another job (29.1%) or insufficient progress because the PhD candidate did not have the right skills (27.3%). 27.3% of the supervisors indicated that other reasons were at play. None of the supervisors indicated that insufficient supervision was the reason for unsuccessful completion. For about one third (33.7%), this question was not applicable, from which we can conclude that no PhD candidate under their supervision prematurely ended their research.

The respondents who indicated that (also) other reasons were the cause of unsuccessful completion were able to explain that answer in an open-ended question. Almost half of these answers were related to mental issues or burnout on the part of the student. For others, combining the PhD with another job became too difficult. Some also indicated that there were personal or family-related issues at play.

Table 6: Respondents by reasons for dropout

	N	%
Doing a PhD was just not for them/they did not like the work	22	40.0
Finding another job	16	29.1
Insufficient progress due to insufficient skills	15	27.3
Other reason	15	27.3
A bad fit with the project	4	7.3
Insufficient progress due to too many (practical) setbacks in the project	2	3.6
A bad fit between PhD candidate and promotor	2	3.6
Termination of the funding	2	3.6
Insufficient supervision	0	0.0
Not applicable	*28*	*33.7*

Question: In the last 10 years, did it occur that one or more PhD candidates under your supervision stopped without successfully submitting their PhD for one of the following reasons? Multiple answers possible.

3.2 PhD candidates under current supervision

Table 7 presents how many PhD candidates the supervisors currently supervise. A small percentage of 4.8% indicates that they supervise only one PhD candidate. 12% supervises two doctoral researchers. The biggest group of 36.1% supervises three to five researchers. About one in three has six to ten PhD candidates under their supervision (32.5%). A little under one in ten currently supervises eleven to fifteen PhD candidates and four supervisors supervise more than fifteen PhD candidates at present. The highest number indicated was 32. On average, supervisors from the faculty of Engineering Sciences have the most PhD candidates under their supervision (7.62 on average), while those from the faculty of Psychology & Educational Sciences and the faculty of Physical Education & Physiotherapy have the least (both 4.91 on average). In the faculty of Medicine & Pharmacy, supervisors have on average 6.75 PhD candidates under their supervision.

Table 7: Respondents by number of PhD candidates under current supervision

	N	%
One	4	4.8
Two	10	12.0
3 to 5	30	36.1
6 to 10	27	32.5
11 to 15	8	9.6
15+	4	4.8
Total	83	100

Question: How many PhD candidates are you currently supervising? (including as a co-promotor, joint-PhD's...)

Next to knowing how many PhD candidates one supervises, it is also interesting to know more about the background and statutes of these PhD candidates. We will go into more detail about that in this section. The next three tables present how many PhD candidates there are with a certain statute, relative to the total number of PhD candidates supervised by using the following formula.

$$\frac{number\ of\ supervisees\ \ with\ certain\ statute}{total\ number\ of\ supervisees} \times 100$$

The outcome is divided in three categories: "none of the PhD candidates I supervise has this statute", "less than half of the PhD candidates I supervise has this statute" or "half or more of the PhD candidates I supervise has this statute".

First up is the share of PhD candidates for which the supervisor is not the sole supervisor (formerly known as "co-promotor"). Table 8 shows that 28% of the supervisors are the main supervisor for all of their PhD candidates. 40.2% of the supervisors are not the main supervisor for up to half of the PhD candidates they supervise. 31.7% are not the main supervisor for half or more of the PhD candidates they supervise. From the PhD survey, we know that 27.2% of the PhD candidates in the selected faculties have one single supervisor. 48.8% has two and 23.9% has more than two.

Table 8: Respondents by shared supervision

	N	Valid %
For none of the PhD candidates	23	28.0
For less than half of the PhD candidates I supervise	33	40.2
For half of the PhD candidates I supervise or more	26	31.7
Missing	1	
Total	83	100

Question: For how many of the PhD candidates that you are currently supervising are you not the main supervisor (in the vernacular known as "co-promotor")? Note: this does not relate to joint-PhD's

Next up is the share of PhD candidates that have a joint PhD contract. From the data of the PhD survey 2022, we know that 17.8% of the PhD candidates at the VUB has a joint-PhD contract, which means that the supervision and coordination of the PhD trajectory is a shared responsibility between two or more universities. For 37.3% of the supervisors, less than half of the researchers under their supervision is doing a joint PhD, and for 19.3% this is more than half (Table

9). The remaining 43.4% of the supervisors supervises no PhD candidate with a joint contract.

Table 9: Respondents by joint PhD

	N	%
None of the PhD candidates I supervise	36	43.4
Less than half of the PhD candidates I supervise	31	37.3
Half of the PhD candidates I supervise or more	26	19.3
Total	83	100

Question: How many of the PhD candidates you are currently supervising are doing a joint PhD?

Finally, we look at the share of international PhD candidates. Supervisors were asked how many of the PhD candidates they currently supervise are international students. By this, we mean that the PhD candidate works at the VUB through an international, personal scholarship. The majority of the supervisors has no international PhD candidates under their guidance (56.6%, Table 10). For about one in four (26.5%) less than half of their supervisees is an international student and for 16.9% this is more than half. Note that in the faculties of Medicine & Pharmacy and Physical Education & Physiotherapy there are less international PhD candidates than in the other faculties.

Table 10: Respondents by international PhD candidates

	N	%
None of the PhD candidates I supervise	47	56.6
Less than half of the PhD candidates I supervise	22	26.5
Half of the PhD candidates I supervise or more	14	16.9
Total	83	100

Question: How many of the PhD candidates you are currently supervising are international students (working at the VUB through an international, personal scholarship e.g., CSC scholarship)?

4 Practices of supervision

This section explores what practices supervisors use to guide PhD candidates. We zoom in on how often they have meetings with their PhD candidates, and what type of meetings they have. We also investigate the occurrence of other support mechanisms among their supervisees, such as a research plan and an advisory commission. Analyses of the PhD survey data recurringly show that having a research plan is an important factor in the satisfaction and confidence of PhD candidates. Also the frequency of meetings with the supervisor is an important element. In 2022, 14.9% of the PhD candidates was not satisfied with the frequency of meetings they had with their supervisor, making it the item with the second highest level of dissatisfaction concerning the supervisor support. ("The introduction to other prominent researchers in the field of interest by the supervisor" has the highest level of dissatisfaction).

4.1 Frequency of meetings

We asked supervisors about the ideal frequency of formal and informal meetings with their PhD candidates. When it comes to formal meetings (i.e., meetings with a clear purpose that are scheduled in advance), about one in three prefers to have them on a weekly basis (32.9%) or several times a month (32.9%, Table 11). 28% thinks a monthly meeting would suffice. 4.9% wants to formally meet their PhD candidates only several times a year and only 1.2% thinks meeting several times a week is ideal.

When it comes to informal meetings (i.e., talking in the hallway, having lunch, stopping by the office, etc.), supervisors tend to prefer a higher frequency. 43.9% thinks informal meetings several times a week is ideal, whereas 35.4% would like to meet weekly (see Table 11). 14.6% would prefer to meet their PhD candidates informally several times a month. For a smaller group, informal meetings monthly (3.7%) or even just a few times a year (2.4%) would be sufficient.

Table 11: Respondents by ideal frequency of formal and informal meetings

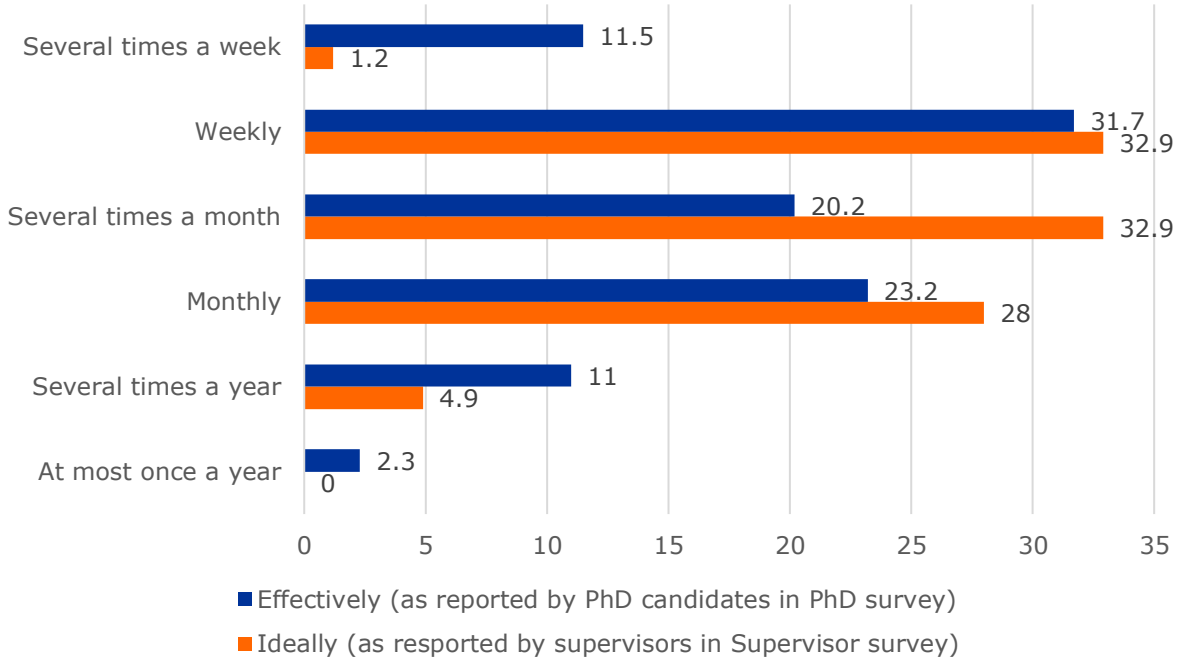
	Formal meetings [1]		Informal meetings [2]	
	N	Valid %	N	Valid %
Several times a week	1	1.2	36	43.9
Weekly	27	32.9	29	35.4
Several times a month	27	32.9	12	14.6
Monthly	23	28.0	3	3.7
Several times a year	4	4.9	2	2.4
At most once a year	0	0.0	0	0.0
(Almost) never	0	0.0	0	0.0
Missing	1		1	
Total	83	100	83	100

[1] Question: Ideally, how often would you have formal meetings with an individual PhD candidate? A formal meeting is scheduled in advance, with a clear purpose.
[2] Question: Ideally, how often would you have informal meetings with an individual PhD candidate? E.g., talking to each other in the hallway, having lunch together, spontaneously stopping by at the office...

In the PhD survey, we asked PhD candidates how often they formally meet with their supervisor. This enables us to compare the actual frequency of meetings with the ideal frequency as desired by the supervisors. Please note that to make this comparison, we only selected the PhD candidates of the faculties that are represented in the Supervisor Survey.

The results are shown in Figure 1. It is striking that the extremes of the continuum (i.e., "several times a week", "several times a year" and "at most once a year") occur more often in reality than supervisors think would be ideal. 11.5% of the supervisors meets with their PhD candidates several times a week, while only 1.2% think this is the ideal frequency. Another 11% meets only several times a year, whereas only 4.9% think this is ideal. The most ideal frequency of meeting according to the supervisors would be somewhere between weekly and monthly, which occurs less often in practice than ideally desired by the supervisors.

Figure 1: Reported frequency of meetings by PhD candidates compared to ideal frequency of formal meetings by supervisors (in %)



As shown in Table 12, female supervisors would prefer to meet their PhD candidates with a lower frequency compared to their male colleagues. Supervisors with a lot of PhD candidates prefer to meet them less frequently, whereas those with a lower number of PhD candidates prefer to meet them on a more regular basis. These associations are not statistically significant. When it comes to other background characteristics, there are no patterns that stand out.

Table 12: ideal frequency of formal meetings by background

	Several times a week	Weekly	Several times a month	Monthly	Several times a year	Total
	%	%	%	%	%	%
Gender (n.s.)						
Male	0.0	34.7	38.8	22.4	4.1	100
Female	3.0	30.3	24.2	36.4	6.1	100
Faculty (n.s.)						
IR	0.0	34.5	41.4	13.8	10.3	100
GF	3.2	35.5	25.8	32.3	3.2	100
PE	0.0	36.4	36.4	27.3	0.0	100
LK	0.0	18.2	27.3	54.5	0.0	100
Years of experience (n.s.)						
0 to 5	0.0	47.1	17.6	23.5	11.8	100
6 to 20	1.9	26.4	35.8	34.0	1.9	100
21+	0.0	36.4	45.5	9.1	9.1	100
Number of PhD candidates (n.s.)						
One to three	4.8	42.9	23.8	28.6	0.0	100
Four to five	0.0	30.4	34.8	26.1	8.7	100
Six to ten	0.0	34.6	34.6	26.9	3.8	100
More than ten	0.0	16.7	41.7	33.3	8.3	100
Number of international students (n.s.)						
None	2.1	31.9	34.0	27.7	4.3	100
Less than 50%	0.0	31.8	31.8	27.3	9.1	100
50% or more	0.0	38.5	30.8	30.8	0.0	100
Number of joint PhD contracts (n.s.)						
None	2.8	36.1	33.3	22.2	5.6	100
Less than 50%	0.0	32.3	38.7	25.8	3.2	100
50% or more	0.0	26.7	20.0	46.7	6.7	100

Question: Question: Ideally, how often would you have formal meetings with an individual PhD candidate? A formal meeting is scheduled in advance, with a clear purpose.

Similarly, when it comes to informal meetings, supervisors with more than ten supervisees prefer to meet less frequently compared to those who supervise less PhD candidates (see Table 13). Moreover, supervisors with many international PhD candidates and joint PhD candidates wish to see them informally more often than supervisors without this type of PhD candidates. These associations are not statistically significant. When it comes to other background characteristics, there are no patterns that stand out.

Table 13: ideal frequency of informal meetings by background

	Several times a week	Weekly	Several times a month	Monthly	Several times a year	Total
	%	%	%	%	%	%
Gender (n.s.)						
Male	44.9	36.7	14.3	4.1	0.0	100
Female	42.4	33.3	15.2	3.0	6.1	100
Faculty (n.s.)						
IR	48.3	37.9	13.8	0.0	0.0	100
GF	48.4	32.3	6.5	6.5	6.5	100
PE	27.3	36.4	36.4	0.0	0.0	100
LK	36.4	36.4	18.2	9.1	0.0	100
Years of experience (n.s.)						
0 to 5	41.2	23.5	29.4	5.9	0.0	100
6 to 20	45.3	39.6	11.3	1.9	1.9	100
21+	36.4	36.4	9.1	9.1	9.1	100
Number of PhD candidates (n.s.)						
One to three	52.4	33.3	4.8	9.5	0.0	100
Four to five	43.5	34.8	17.4	0.0	4.3	100
Six to ten	53.8	34.6	11.5	0.0	0.0	100
More than ten	8.3	41.7	33.3	8.3	8.3	100
Number of international students (n.s.)						
None	44.7	36.2	12.8	2.1.	4.3	100
Less than 50%	36.4	31.8	22.7	9.1	0.0	100
50% or more	53.8	38.5	7.7	0.0	0.0	100
Number of joint PhD contracts (n.s.)						
None	33.3	50.0	8.3	5.6	2.8	100
Less than 50%	51.6	22.6	19.4	3.2	3.2	100
50% or more	53.3	26.7	20.0	0.0	0.0	100

Question: Question: Ideally, how often would you have informal meetings with an individual PhD candidate? A formal meeting is scheduled in advance, with a clear purpose.

4.2 Types of meetings

Table 14 presents the types of meetings supervisors usually have with their PhD candidates. They were able to indicate multiple answers. 75.9% have spontaneous meetings, walking into each other's office or making unscheduled videocalls. 72.3% also have group meetings with the PhD candidates and other supervisors involved in the project. Furthermore, 68.7% also regularly have scheduled one-on-one appointments initiated by the PhD candidates, and about the same share often scheduled a one-on-one appointment themselves (66.3%). Group meetings with the PhD candidate and external partners are the least common, albeit still 44.6% of the supervisors regularly have this type of meeting. They mostly occur in the faculty of Medicine & Pharmacy (not shown in Table 14).

Table 14: Respondents by types of meetings

	N	%
Spontaneous meetings (E.g., walking into the office, unscheduled (video)call…)	63	75.9
Group meetings with PhD candidate and other promotors involved in the project	60	72.3
Scheduled one-on-one appointments initiated by the PhD candidate	57	68.7
Scheduled one-on-one appointments initiated by yourself	55	66.3
Recurring appointments with fixed intervals (E.g., weekly, biweekly, monthly…)	48	57.8
Group meetings with all/several of the PhD candidates you supervise	43	51.8
Group meetings with PhD candidate and external partners	37	44.6
Other (please specify)	1	1.2
Total		

Question: What type of meetings do you usually have with your PhD candidates?

4.3 Support for PhD candidates

Next to support by the supervisor, there are other mechanisms in place to guide the PhD candidates through their trajectory. The two main ones are the advisory committee and the research plan.

4.3.1 Advisory committee

More than half of the supervisors indicates that all their PhD candidates have an advisory committee (54.2%, see Table 15). 16.9% say most of their PhD candidates has an advisory committee. 14.5% say none of their PhD candidates have one.

The data of the PhD survey 2022 shows that 54.3% of the PhD candidates in the selected faculties has an advisory committee. This means that almost half of those PhD candidates does not have an advisory committee, even though this is a requirement. The advisory committee needs to be established within 18 months after the enrollment of the PhD candidate. Indeed, we see that those without an advisory committee are overrepresented in the starting phase of the trajectory, implying that they do not have a committee *yet.* However, 42.3% of those in the executing phase and 40.8% of those in the finalizing phase do not have an advisory committee either.

Table 15: Number of supervised PhD candidates that has advisory committee

	N	%
All of them	45	54.2
Most of them	14	16.9
About half of them	5	6.0
Some of them	7	8.4
None of them	12	14.5
Total	83	100

Question: How many of the PhD candidates you supervise have an advisory committee?

As shown in Table 16, PhD candidates supervised by female supervisors are more likely to have an advisory committee. More than half of the PhD candidates who are supervised by someone from the faculty of Engineering Sciences are less likely to have an advisory committee. In the faculty of Medicine & Pharmacy, PhD candidates are more likely to have an advisory committee. The more years of experience a supervisor has, the less likely the PhD candidate is to have an

advisory commission. An explanation for this could be that having an advisory committee was not yet compulsory when those supervisors started out, and they are thus less likely to compose a committee for all of their PhD candidates. There seems to be no pattern when it comes to the number of PhD candidates under supervision. When a supervisor has a lot of international students under their supervision, the PhD candidates are less likely to have an advisory committee – because international PhD candidates overall are less likely to have an advisory committee (data PhD Survey 2022).

Table 16: Respondents by number of advisory committee

	All/most of them	Half of them	Some/none of them	Total
	%	%	%	%
Gender (*)				
Male	64.0	10.0	26.0	100
Female	81.8	0.0	18.2	100
Faculty ***				
IR	41.4	6.9	51.7	100
GF	90.6	6.3	3.1	100
PE	81.8	9.1	9.1	100
LK	81.8	0.0	18.2	100
Years of experience (n.s.)				
0 to 5	76.5	11.8	11.8	100
6 to 20	70.4	5.6	24.1	100
21+	63.6	0.0	36.4	100
Number of PhD candidates (n.s.)				
One to three	71.4	9.5	19.0	100
Four to five	65.2	8.7	26.1	100
Six to ten	74.1	3.7	22.2	100
More than ten	75.0	0.0	25.0	100
Number of international students (*)				
None	74.5	10.6	14.9	100
Less than 50%	72.7	0.0	27.3	100
50% or more	57.1	0.0	42.9	100
Number of joint PhD contracts (n.s.)				
None	72.2	11.1	16.7	100
Less than 50%	71.0	3.2	25.8	100
50% or more	68.8	0.0	31.3	100

Question: How many of the PhD candidates you supervise have an advisory committee?

4.3.2 Research plan

The PhD Survey has repeatedly shown that having a research plan is an important predictor of the satisfaction and confidence of PhD candidates. A research plan is an individual plan that can include elements like milestones, deadlines, a training schedule, a publication strategy, and so on. This plan can be adapted throughout the doctoral process.

Table 17 shows that 61.4% of the supervisors indicate that all of their PhD candidates have a research plan. For about one in four (24.1%), this is the case for most of their PhD candidates. 7.2% says that none of the PhD candidates under their supervision has a research plan. The data from the PhD survey shows that 18.5% of the PhD candidates in the selected faculties does not have a research plan.

Table 17: Number of supervised PhD candidates that has a research plan

	N	%
All of them	51	61.4
Most of them	20	24.1
About half of them	3	3.6
Some of them	3	3.6
None of them	6	7.2
Total	83	100

Question: How many of the PhD candidates you supervise have a research plan?

PhD candidates of female supervisors are less likely to have a research plan compared to those of male supervisors (see Table 18). As with the advisory committee, PhD candidates in the faculty of Engineering sciences are less likely to have a research plan. Those from the faculty of Medicine & Pharmacy and the faculty of Physical Sciences & Physiotherapy are most likely to have a plan. This does not correspond entirely to the data of the PhD Survey, where PhD candidates in both the faculties of Engineering and Medicine & Pharmacy are less likely to have a research plan. Contrary to the pattern observed for the advisory committee, the more international students the supervisor guides, the more likely these PhD candidates have a research plan. However, this is not necessarily a sign of good supervisorship, but rather a result of the fact that international PhD candidates most often have a research plan (e.g., because this is a requirement of their personal mandate). None of these associations are statistically significant.

Table 18: Respondents by number of research plan

	All/most of them	Half of them or less	Total
	%	%	%
Gender (n.s.)			
Male	88.0	12.0	100
Female	81.8	18.2	100
Faculty (n.s.)			
IR	79.3	20.7	100
GF	90.6	9.4	100
PE	81.8	18.2	100
LK	90.9	9.1	100
Years of experience (n.s.)			
0 to 5	82.4	17.6	100
6 to 20	87.0	13.0	100
21+	81.8	18.2	100
Number of PhD candidates (n.s.)			
One to three	90.5	9.5	100
Four to five	87.0	13.0	100
Six to ten	77.8	22.2	100
More than ten	91.7	8.3	100
Number of international students (n.s.)			
None	85.1	14.9	100
Less than 50%	81.8	18.2	100
50% or more	92.9	7.1	100
Number of joint PhD contracts (n.s.)			
None	86.1	13.9	100
Less than 50%	83.9	16.1	100
50% or more	87.5	12.5	100

Question: How many of the PhD candidates you supervise have a research plan?

5 Expectations of PhD candidates

To get a view on the relationship between PhD candidates and their supervisors, it is important to know more about what supervisors expect from the PhD candidates they supervise. In this section we first look at how the responsibilities of taking on different tasks within the PhD trajectory are expected to be divided between supervisor and PhD candidate – and compare the findings with those of the PhD Survey. Next, we investigate what the supervisor expects from their PhD candidates in terms of achievements related to their PhD, and in terms of tasks that should be performed next to their PhD research. The PhD survey showed that performing extra tasks is related to higher levels of time pressure, which in turn is closely negatively related to overall job satisfaction. Finally, we look at the type of relationship the supervisors expect to have with their supervisees and compare this with the expectations of PhD candidates.

5.1 Expectations of responsibilities

In the PhD survey, we asked PhD candidates how they think the responsibility for several tasks of the PhD trajectory should be divided. In the Supervisor Survey, we repeated this question but now for the supervisors. As shown in Table 19, 77.1% of the supervisors think it is their responsibility to ensure access to the appropriate services and facilities for the research. More than half also feels like they are responsible to choose the research topic (56.6%). 39.8% sees it as their responsibility to ensure the thesis is up to standard. Supervisors do not perceive writing the thesis and articles, and presenting (part of) the thesis as their responsibility.

Table 19: Expectations of responsibilities

	Fully/mainly supervisor's responsibility	Both the supervisor and student's responsibility	Fully/mainly student's responsibility
	%	**%**	**%**
Ensuring access to the appropriate services and facilities for the research	77.1	18.1	4.8
Selecting a research topic	56.6	39.8	3.6
Ensuring the thesis is up to standard	39.8	53.0	7.2
Deciding on which and how many drafts are submitted to the supervisor for feedback and revision	38.6	54.2	7.2

	Fully/mainly supervisor's responsibility	Both the supervisor and student's responsibility	Fully/mainly student's responsibility
Familiarisation with the relevant policies, procedures and requirements relating to the PhD candidature	31.3	43.4	25.3
Deciding which theoretical framework and/or methodology is most appropriate	28.9	63.9	7.2
Deciding on the recognition received for the contribution to publications that arise during and after the candidature	26.8	65.9	7.3
Coordinating the communication between the PhD candidate and the supervisor(s)	18.1	63.9	18.1
Deciding on when to organise meetings between the PhD candidate and the supervisor(s)	16.9	75.9	7.2
Developing an appropriate program and timetable of research and study	15.7	72.3	12.0
Making sure time is spent on the appropriate tasks	12.0	43.4	44.6
Deciding on the submission date	12.0	84.3	3.6
Writing the articles/manuscript	1.2	24.1	74.7
Writing the thesis	0.0	7.2	92.8
Presenting (part of) the results of the thesis (e.g., at conferences)	0.0	22.9	77.1
Total	100	100	100

Question: Each of the following statements expresses a task or an aspect of the PhD research. Please indicate to what extent you think this is the responsibility of the supervisor or the PhD candidate.

In Figure 2 and 3, we compare the expectations of the supervisors and the PhD candidates. Figure 2 shows to what extent both parties think a certain task is the supervisor's responsibility. For most of the items, supervisors expect themselves to be more responsible for it than the PhD candidates expect them to be. According to supervisors, tasks related to execution and time management are most often considered the PhD candidates' responsibility (i.e., writing and presenting the thesis, making sure time is spent on appropriate tasks etc.), whereas the content and the standard of the thesis are most often considered their own responsibility (i.e., the research topic, the number of drafts etc.). Organizational aspects, such as initiating meetings, coordinating the communication etc., is seen as a shared responsibility. Overall, this expectation pattern corresponds to that of PhD candidates. However, when it comes to selecting the research topic, there is quite a lot of disagreement about who is

responsible. More than half of the supervisors think this is their responsibility (56.6%), whereas only 18.5% of the PhD candidates consider this the supervisor's responsibility.

Figure 2: Percentage of respondents that indicated "Fully/mainly supervisor's responsibility"

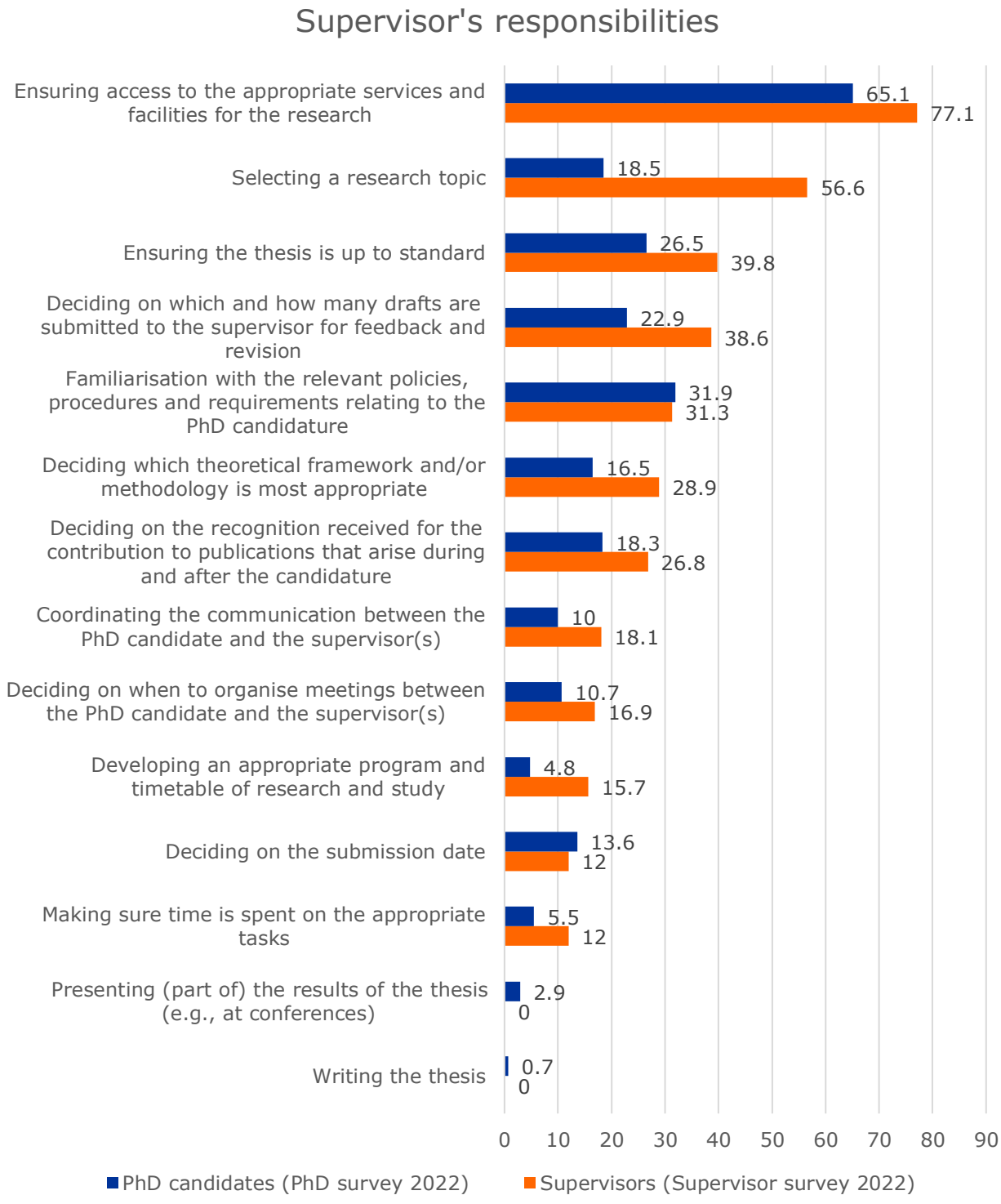
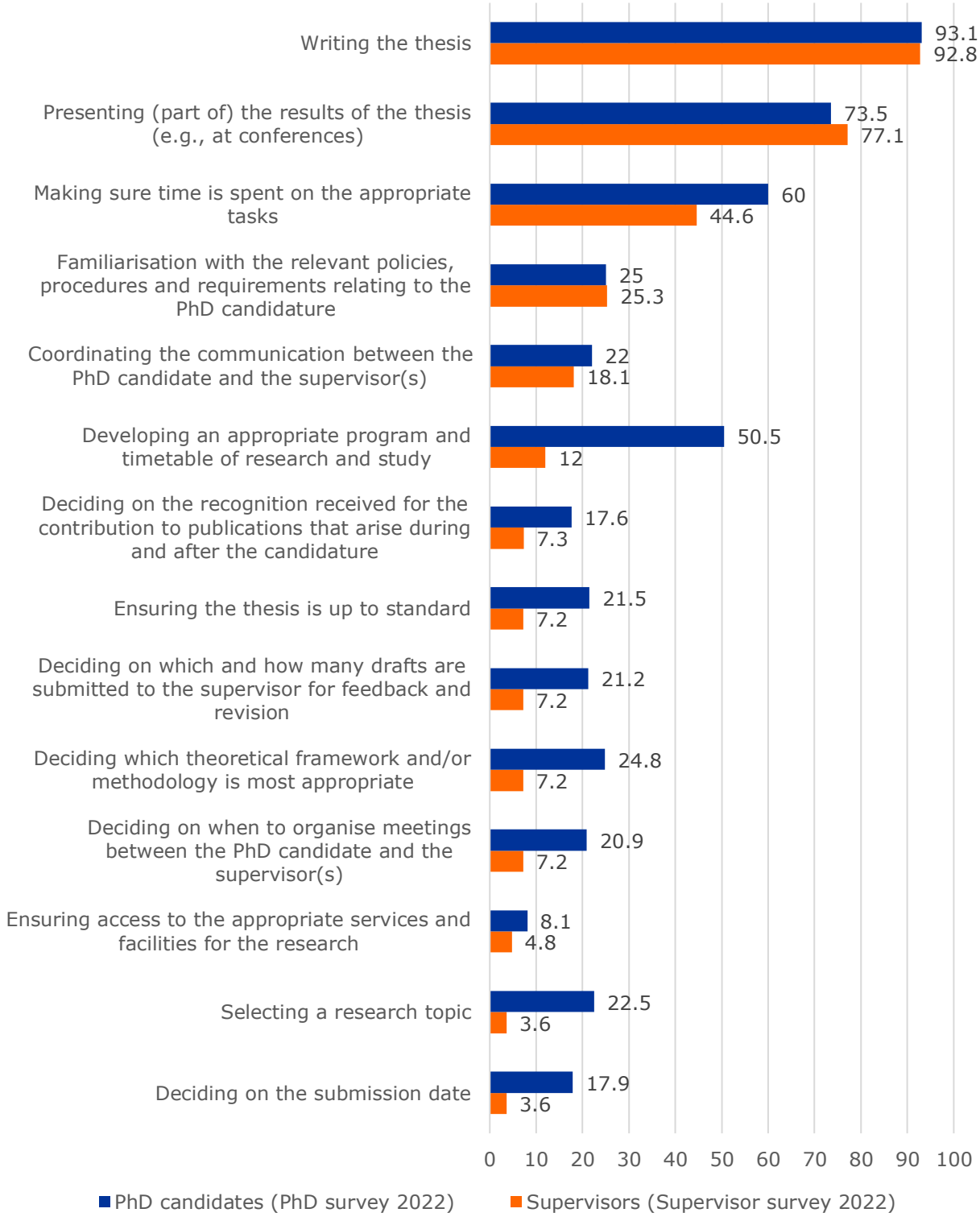


Figure 3 is the complement of the previous figure and presents to what extent a task is considered the PhD candidate's responsibility. In the same line, PhD candidates oftentimes feel more responsible for a certain task than their supervisors expect them to. Here, the biggest disagreement is on the development of an appropriate program and timetable. Supervisors consider this more of a shared responsibility, whereas half of the PhD candidates consider this their own responsibility.

Figure 3: Percentage of respondents that indicated "Fully/mainly students' responsibility"



The supervisors were also asked to what extent they expect their supervisees to fulfill certain achievements related to their doctorate (see Table 20). For this question, we specified to only take into account their personal expectations and to not consider conditions laid down by regulations. 82.9% says

they expect their PhD candidates to have at least one of their papers published or accepted for publication before they submit their thesis. 79.5% wants their PhD candidates to publish in the highest impact journals (Q1 journals). This is valued more in the faculties of Engineering and Medicine & Pharmacy. Opinions are quite divided as to whether the PhD candidates are expected to complete their PhD in their spare time if they are not ready before their contract expires: 36.1% does expect them to, another 34.9% does not, and 28.9% is undecided. Finally, about one in four supervisors (26.5%) expects their PhD candidates to have all papers of the thesis published or accepted before they submit their thesis – 42.4% does not expect this. Again, the faculties of Engineering and Medicine & Pharmacy put more emphasis on this than the other two faculties.

Table 20: I expect the PhD candidates that I supervise to… (row percentage)

	(Strongly) disagree	Neutral	(Strongly) agree
	%	%	%
Have at least one of their papers published or accepted for publication before they submit their thesis.	8.5	8.5	82.9
Publish in the highest impact journals (Q1 journals)	3.6	16.9	79.5
Finish their PhD in their spare time if they do not finish within the time of their contract.	34.9	28.9	36.1
Have all the papers of the thesis published or accepted for publication before they submit their thesis.	42.2	31.3	26.5

Question: I expect the PhD candidates that I supervise to… For this question, please only consider your personal expectations and do not take into account conditions laid down by regulations.

5.2 Expectations of PhD candidates related to other tasks

Next to conducting research, PhD candidates can be involved in other tasks as well. We asked the supervisors to what extent they consider it important that the PhD candidates they supervise are involved in certain tasks. Almost all supervisors find it important, or even critical, that research results are shared on conferences, through press releases, etc. (98.8%, see Table 21). Another 94% finds networking an important task of the PhD candidate. Developing skills and knowledge through courses, seminars, etc. is considered important by 89.2% of the supervisors. 67.5% considers teaching duties an important task of PhD candidates (e.g., grading, supervising bachelor- or master theses, giving guest lectures, etc.). Assisting in other projects is considered less important: only half of the supervisors think it is important that their supervisees engage in such tasks.

Table 21: Expectations related to other tasks (row percentage)

	Not important/of minor importance	Neutral	Important/ critical
	%	%	%
Sharing research results (E.g., presenting at conferences, writing press releases…)	0.0	1.2	98.8
Networking (E.g., attending conferences)	1.2	4.8	94.0
Developing skills/knowledge (E.g., following extra courses, seminars, summer schools…)	0.0	10.8	89.2
Teaching (E.g., supervising bachelor-/master-theses, giving guest lectures, grading…)	14.5	18.1	67.5
Assisting in other projects	15.7	34.9	49.4

Question: For the next question, please think about your ideal PhD candidate. How important do you think it is that this PhD candidate completes tasks related to…

5.3 Relationship with PhD candidates

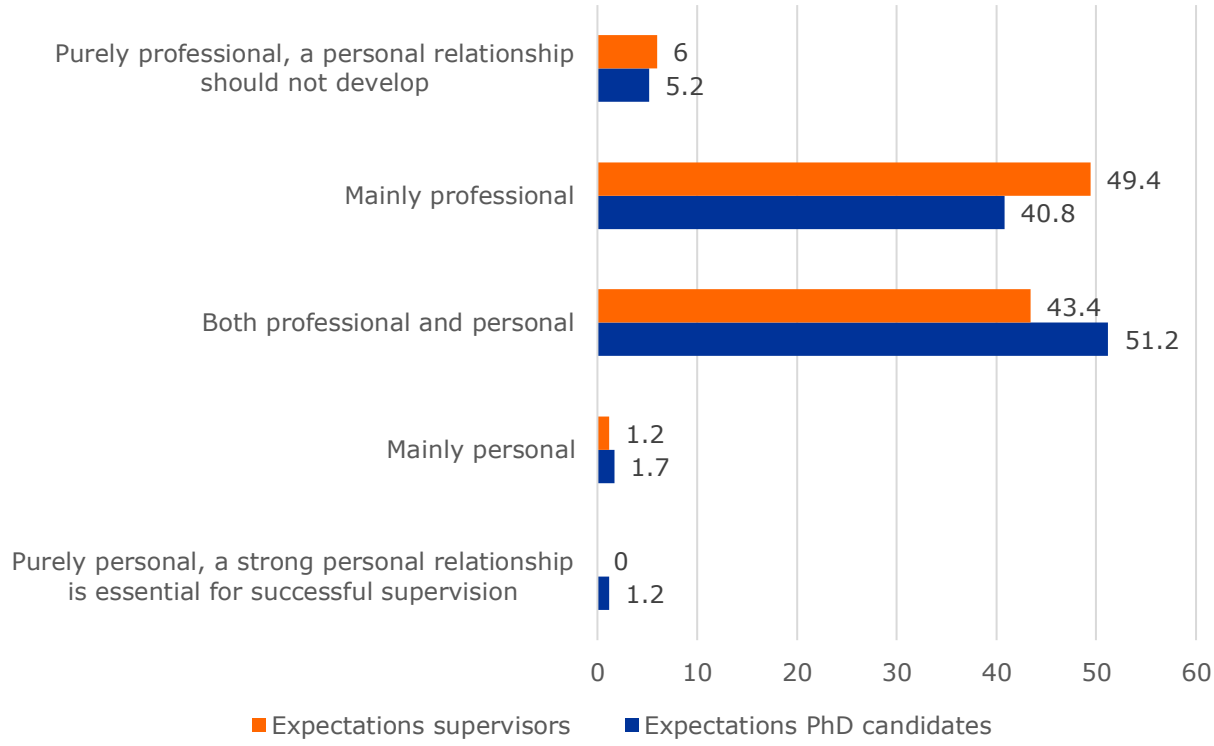
The type of relationship supervisors have with their PhD candidates can also play an important role in how PhD candidates feel supported by their supervisor. As shown in Table 22, 95.2% of the supervisors says to have a good relationship with the PhD candidates they supervise. For almost half of the supervisors, the quality of this relationship is different for each PhD candidate (47.0%). 85.5% finds having a good relationship with their PhD candidates necessary to supervise them well. 12% is neutral about this and 2.4% disagrees.

Table 22: Relationship with PhD candidates (row percentage)

	(Strongly) disagree	Neutral	(Strongly) agree
	%	**%**	**%**
In general, I have a good relationship with all my PhD candidates.	2.4	2.4	95.2
The quality of the relationship varies a lot for each PhD candidate.	32.5	20.5	47.0
For me, having a good relationship with a PhD candidate is necessary to supervise him/her well.	2.4	12.0	85.5

Figure 4 compares the expectations of supervisors and PhD candidates regarding their relationship with one another. The majority of both groups prefers a mainly professional or both a professional and personal relationship. A purely professional relationship is not desired, indicating that both groups value a somewhat personal approach. However, there does seem to be a slight difference between the two groups. PhD candidates are more inclined towards wanting a relationship with their supervisor that is a combination between professional and personal (51.2%), whereas supervisors lean more towards wanting a *mainly* professional relationship (49.4%). A relationship in which the emphasis lies on the personal side is also not desired by either group.

Figure 4: Relationship with PhD candidates (in %)



Question: How do you see the relationship between supervisor and PhD candidate?

6 Experience of supervisory task

This section looks deeper into how supervisors experience the supervisory tasks. First, we investigate how they evaluate the number of supervisees and what their ideal number would be. Then, we look into how they experience the workload of the task, whether they find it stressful, and how much it pleases them.

6.1 Number of PhD candidates

Supervisors were asked how they felt about the number of PhD candidates they supervise. As shown in Table 23, the majority is satisfied and thinks the number they supervise is perfectly fine. 14.6% would like to supervise more PhD candidates and 13.4% feels like they are supervising too many.

Table 23: Opinion on number of PhD candidate to supervise

	N	Valid %
There are too few, I would like to supervise more PhD candidates	12	14.6
The number is perfectly fine	59	72.0
There are too many, I would like to supervise fewer PhD candidates	11	13.4
Missing	1	
Total	83	100

Question: How do you feel about the number of PhD candidates you supervise?

In Table 24, we look at how the perception of the number of PhD candidates varies between subgroups within the supervisors. The male supervisors in our sample more often think they supervise too few PhD candidates, whereas the female ones more often feel like the number is fine, or even that there are too many. This gender division could partly be explained by the fact that women experience more overall time pressure, because they usually spend more time on unpaid work (i.e., household work) than men. Supervisors of the faculty of Psychology & Educational Sciences and the faculty of Physical Education & Physiotherapy are most often satisfied with the number of PhD candidates they supervise. 17.2% of those in the faculty of Engineering Sciences feel like they supervise too few PhD candidates. In the faculty of Medicine & Pharmacy the opinions are more divided. 42.9% of the supervisors who supervise one to three

PhD candidates think this is too few. 58.3% of those who supervise more than ten PhD candidates feel like this is too many. Supervising around five PhD candidates seems to be the ideal situation. This is the only variable for which the association is statistically significant.

Table 24: Opinion on number of PhD candidate to supervise by background (row percentages)

	Too few	Perfectly fine	Too many	Total
	%	%	%	%
Gender (n.s.)				
Male	18.0	70.0	12.0	100
Female	9.4	75.0	15.6	100
Faculty (n.s.)				
IR	17.2	69.0	13.8	100
GF	15.6	68.8	15.6	100
PE	10.0	80.0	10.0	100
LK	9.1	81.8	9.1	100
Years of experience (n.s.)				
0 to 5	11.8	76.5	11.8	100
6 to 20	15.1	71.7	13.2	100
21+	18.2	63.6	18.2	100
Number of PhD candidates ***				
One to three	42.9	57.1	0.0	100
Four to five	13.0	87.0	0.0	100
Six to ten	0.0	84.6	15.4	100
More than ten	0.0	41.7	58.3	100
Number of international students (n.s.)				
None	21.3	63.8	14.9	100
Less than 50%	0.0	86.4	13.6	100
50% or more	15.4	76.9	7.7	100
Number of joint PhD contracts (n.s.)				
None	22.9	71.4	5.7	100
Less than 50%	6.5	74.2	19.4	100
50% or more	12.5	68.8	18.8	100

Question: How do you feel about the number of PhD candidates you supervise?

Apart from knowing whether supervisors are satisfied about the number of PhD candidates they supervise, it is also interesting to look into how many supervisees they would consider ideal. About half of the supervisors think three to

five PhD candidates would be an ideal number (50.5%, see Table 25), which confirms the previous expectation from Table 24. 35.8% think six to ten would be an ideal number to supervise. 6.2% would prefer to supervise two PhD candidates and only 1.2% would like to only have one supervisee. 3.7% think eleven to ten would be an ideal number, whereas 2.4% find more than fifteen PhD candidates acceptable. On average, supervisors in the faculty of Engineering Sciences report the highest ideal number (seven PhD candidates), whereas those in the faculties of Psychology & Educational Sciences and Physical Education & Physiotherapy report the lowest (five PhD candidates). On average, supervisors in the faculty of Medicine & Pharmacy think six would be ideal.

Table 25: Respondents by ideal number of PhD candidates to supervise

	N	Valid %
One	1	1.2
Two	5	6.2
3 to 5	41	50.5
6 to 10	29	35.8
11 to 15	3	3.7
15+	2	2.4
Missing	2	
Total	83	100

Question: According to you, what would be the ideal number of PhD candidates to supervise?

6.2 Workload

The supervisors were asked how they evaluate the workload of their supervisory task. The results are presented in Table 26. More than half of them indicated that the workload is high (56.6%). About one in three thinks the workload is average (32.5%). 7.2% find the workload of supervising very high, and a small percentage of 3.6% think the workload is low.

Table 26: Opinion on workload of the supervisory task

	N	Valid %
Very low	0	0.0
Low	3	3.6
In between	27	32.5
High	47	56.6
Very high	6	7.2
Total	83	100

Question: How do you experience the workload of your supervisory tasks?

Table 27 shows that the number of supervisees and the number of joint PhD candidates are significantly associated with the perception of the workload. The more PhD candidates one is supervising, the higher the perceived workload. However, when supervising more than ten PhD candidates, the perceived workload drops. It could be that those who have a very high number of PhD candidates to supervise get more help from others – reducing the workload of the task, or that the supervisory task becomes more of a routine. Indeed, we see that those who indicated to be "very satisfied" with the support they receive from postdocs, on average have a little over 10 PhD candidates to supervise. Moreover, the effect of the number of PhD candidates on the workload is mediated by the satisfaction with the support of received from postdocs.

The more international students one has under their supervision, the higher they evaluate the workload. Guiding an international student might require more contact moments, closer guidance, more administrative work, and more support in personal situations, increasing the overall workload of the task. Finally, when they have several joint PhD's, the workload is perceived the highest. This can be explained by the fact that this group of supervisors have the most overall PhD candidates to supervise.

Table 27: Respondents by opinion on workload (row percentage)

	(very) low	In between	(very) high	Total
	%	%	%	%
Gender (n.s.)				
Male	6.0	32.0	62.0	100
Female	0.0	33.3	66.7	100
Faculty (n.s.)				
IR	0.0	37.9	62.1	100
GF	9.4	21.9	68.8	100
PE	0.0	27.3	72.7	100
LK	0.0	54.5	45.5	100
Years of experience (n.s.)				
0 to 5	0.0	41.2	58.8	100
6 to 20	3.7	31.5	64.8	100
21+	9.1	27.3	63.6	100
Number of PhD candidates ***				
One to three	14.3	61.9	23.8	100
Four to five	0.0	39.1	60.9	100
Six to ten	0.0	11.1	88.9	100
More than ten	0.0	16.7	83.3	100
Number of international students (n.s.)				
None	6.4	36.2	57.4	100
Less than 50%	0.0	31.8	68.2	100
50% or more	0.0	21.4	78.6	100
Number of joint PhD contracts **				
None	8.3	50.0	41.7	100
Less than 50%	0.0	12.9	87.1	100
50% or more	0.0	31.3	68.8	100

Question: How do you experience the workload of your supervisory tasks?

6.3 Stress

Even though the workload of the supervision task is considered rather high, supervisors do not seem to find the task extremely stressful. As shown in Table 28, 39.8% is rather neutral about whether or not the task is stressful. Almost one in three (32.5%) finds the task not that stressful and 4.8% says to not find it stressful at all. One in five do report supervision as stressful (21.7%) and a small percentage of 1.2% rate the task very stressful.

Table 28: Considering the supervisory task stressful

	N	Valid %
Not at all stress	4	4.8
Not that stressful	27	32.5
In between	33	39.8
Stressful	18	21.7
Very stressful	1	1.2
Total	83	100

Question: To what extent do you consider supervising PhD candidates stressful?

As shown in Table 29, male supervisors tend to find the task more stressful than female ones. This is interesting, given that male supervisors indicated more often than their female colleagues that they are supervising "too few" PhD candidates (see above in Table 24). In the faculty of Physical Education & Physiotherapy, the supervisory task is evaluated the least stressful whereas almost one in three in the faculty of Engineering Sciences finds the task stressful (31%). This is remarkable, given that this faculty indicates the highest "ideal number" of PhD candidates and most often indicates to supervise "too few" PhD candidates (see above in Table 24). The more years of experience one has, the more stressful one considers supervising. This finding is rather counterintuitive, as it would be expected that more experience is related to less stress. The number of PhD candidates under supervision plays a role too. The more supervisees, the more the task is perceived as stressful. However and similar to workload, when there are more than ten PhD candidates to supervise, the level of stress decreases. This could again be explained by the fact that those who have to supervise a lot of PhD candidates get more help from other actors in this task, or have more routine in the supervisory task.

The higher the number of international PhD candidates, the higher the stress level of the supervision task. Just like with the workload, this can be explained by the fact that international students may need closer guidance, and that the PhD trajectory might have more divergent or administrative requirements. Finally, supervisors experience more stress when there are some PhD candidates (i.e., less than half of their total number of PhD candidates) with a joint contract. As explained above, this is related to having more PhD candidates under the supervision, and thus with experiencing more stress.

Only the association between the number of PhD candidates and the number of international supervisees is statistically significant.

Table 29: Respondents by experiencing the task stressful

	Not at all/not that stressful	In between	Stressful to very stressful	Total
	%	%	%	%
Gender (n.s.)				
Male	38.0	34.0	28.0	100
Female	36.4	48.5	15.2	100
Faculty (n.s.)				
IR	34.5	34.5	31.0	100
GF	34.4	43.8	21.9	100
PE	27.3	45.5	27.3	100
LK	63.6	36.4	0.0	100
Years of experience (n.s.)				
0 to 5	52.9	29.4	17.6	100
6 to 20	31.5	44.4	24.1	100
21+	45.5	27.3	27.3	100
Number of PhD candidates *				
One to three	61.9	23.8	14.3	100
Four to five	39.1	47.8	13.0	100
Six to ten	14.8	48.1	37.0	100
More than ten	41.7	33.3	25.0	100
Number of international students (*)				
None	48.9	29.8	21.3	100
Less than 50%	27.3	54.5	18.2	100
50% or more	14.3	50.0	35.7	100
Number of joint PhD contracts (n.s.)				
None	41.7	41.7	16.7	100
Less than 50%	25.8	41.9	32.3	100
50% or more	50.0	31.3	18.8	100

Question: To what extent do you consider supervising PhD candidates stressful?

6.4 Pleasure

As shown in Table 30, the majority of the supervisors are pleased with the supervisory task (60.2%). 18.1% even finds it extremely enjoyable. One in five says to moderately enjoy the supervisory task (20.5%). Only 1.2% says to only find it marginally pleasurable. Overall, even though the workload of the task is considered heavy, supervisors nonetheless enjoy doing it.

Table 30: Experiencing work pleasure from supervisory task

	N	Valid %
Not at all	0	0.0
Slightly	1	1.2
Moderately	17	20.5
Very	50	60.2
Extremely	15	18.1
Total	83	100

Question: To what extent does supervising PhD candidates contribute to your work pleasure?

As shown in Table 31, female supervisors tend to enjoy the supervisory task more than the male ones. Supervisors in the faculty of Physical Education & Physiotherapy enjoy the task more than their colleagues in the other faculties. This could be related to the fact that they find supervision the least stressful. Supervisors who have four to five or more than ten supervisees enjoy the task more than their colleagues with fewer or more PhD candidates. It could be that those who supervise a few number of PhD candidates have less experience with research supervision and thus find it less pleasurable, whereas for those who supervise a lot of PhD candidates, the pressure overshadows the pleasure. Those who supervise more than ten PhD candidates find the task more pleasurable, which might be related to the fact that they experience it as less stressful (see above). Finally, having more joint PhD candidates as supervisees appears to be related to more pleasure. None of these associations are statistically significant.

Table 31: Respondents by work pleasure

	Not at all/slightly	Moderately	Very/extremely	Total
	%	%	%	%
Gender (n.s.)				
Male	2.0	24.0	74.0	100
Female	0.0	15.2	84.8	100
Faculty (n.s.)				
IR	0.0	20.7	79.3	100
GF	3.1	21.9	75.0	100
PE	0.0	27.3	72.7	100
LK	0.0	9.1	90.9	100
Years of experience (n.s.)				
0 to 5	0.0	17.6	82.4	100
6 to 20	1.9	22.2	75.9	100
21+	0.0	18.2	81.8	100
Number of PhD candidates (n.s.)				
One to three	4.8	19.0	76.2	100
Four to five	0.0	17.4	82.6	100
Six to ten	0.0	29.6	70.4	100
More than ten	0.0	8.3	91.7	100
Number of international students (n.s.)				
None	2.1	25.5	72.3	100
Less than 50%	0.0	9.1	90.9	100
50% or more	0.0	21.4	78.6	100
Number of joint PhD contracts (n.s.)				
None	2.8	27.8	69.4	100
Less than 50%	0.0	22.6	77.4	100
50% or more	0.0	0.0	100.0	100

Question: To what extent does supervising PhD candidates contribute to your work pleasure?

7 Support received

This section investigates to what extent supervisors feel supported in their supervisory task. More specifically, we look at how they experience the support of other actors at the university and the administrative procedures that are in place.

7.1 Support received from other actors at the university

As shown in Table 32, 70.6% of the supervisors who are supported by postdoctoral researchers are satisfied with this support. Another 70.0% is satisfied with the support received from the doctoral schools. When it comes to the support received from the administrative staff at the level of the research group or department, 61.6% is satisfied, but almost one in five is dissatisfied (19.2%). The faculty of Psychology & Educational Sciences shows the most dissatisfaction. In the faculty of Engineering sciences, there is the most satisfaction with this type of support. 60.0% of those who receive support from teaching assistants is satisfied with this. About half of the supervisors are satisfied with the support they get from the administrative staff at faculty level (55.4%). There is no difference between faculties for this type of support. Only one third is satisfied with the support received from the administrative staff at university level (34.2%), and even fewer are satisfied with the support received from People and Organization (M&O) (28.8%). These findings show that the further away the support is from the supervisor themself (i.e., the more centralized the support service), the less explicit satisfaction is expressed, and the more neutral supervisors are. An exception in this reasoning are the doctoral schools. The most explicit dissatisfaction is expressed about the administrative instances.

The satisfaction of the supervisors with the support they receive is not related to the size of their research group. Supervisors who are part of a bigger team thus do not necessarily feel more supported (data not shown).

Table 32: Respondents by satisfaction with support (row percentage)

	Not (at all) satisfied		Neutral		(very) satisfied		N/A
	N	Valid %	N	Valid %	N	Valid %	N
Postdocs	4	7.8	11	21.6	36	70.6	32
Doctoral schools	2	2.5	22	27.5	56	70.0	3
Administrative staff at research group/department	14	19.2	14	19.2	45	61.6	10
Teaching assistants	2	6.7	10	33.3	18	60.0	52
Administrative staff at faculty level	11	14.9	22	29.7	41	55.4	9
Administrative support at university level	14	19.2	34	46.6	25	34.2	10
People and Organization (M&O)	12	16.4	40	54.8	21	28.8	10

Question: To what extent are you satisfied with the support you get from the following actors in the supervision of PhD candidates?

7.2 Support received from administrative procedures

In this section, we zoom into the satisfaction of supervisors with several administrative processes. As shown in Table 33, 57.8% is satisfied the annual progress reports PhD candidates must prepare. 52.5% is satisfied with the procedure concerning joint PhD contracts. Half of the supervisors says to be satisfied with the digital deposit of doctoral theses and another half is satisfied with the compulsory doctoral training program. Supervisors appear to be less satisfied with the PURE-database: 37.5% is satisfied and 23.8% is dissatisfied. The PhD registration procedure in CALI and the PhD portfolio in CALI account for the highest levels of dissatisfaction (respectively 32.5 and 29.5%). Moreover, there is a lot of dissatisfaction with the PhD appointments in TEO (28.4%). This indicates that things that should be simple and straightforward (e.g., registering a PhD candidate in a database) are considered a burden by the people who have to use the systems. Moreover, being unable to perform these administrative procedures correctly can have big consequences. This underlines the importance of making sure the procedures are user-friendly and that sufficient support is provided in case of problems.

Table 33: Respondents by satisfaction with support administrative procedures

	Not (at all) satisfied		Neutral		(very) satisfied		N/A
	N	Valid %	N	Valid %	N	Valid %	N
Annual progress reports	12	14.5	23	27.7	48	57.8	0
Joint PhD contracts	9	14.8	20	32.8	32	52.5	22
Digital deposit of doctoral theses	4	5.7	31	44.3	35	50.0	12
Compulsory doctoral training program	4	5.0	36	45.0	40	50.0	3
PURE	19	23.8	31	38.8	30	37.5	3
PhD portfolio in CALI	23	29.5	32	41.0	23	29.5	5
PhD appointments in TEO	21	28.4	33	44.6	20	27.0	9
The PhD registration procedure in CALI	25	32.5	33	42.9	19	24.7	6

Question: To what extent are you satisfied with the support you get from the following administrative procedures in the supervision of PhD candidates?

7.3 Open question

In an open-ended question, supervisors were asked if they had any additional remarks concerning the administrative support they get in their supervisory task. Overall, some indicate that administration takes too long and that when problems arise, it is very difficult to solve them. The ticketing service that is currently in place takes too long to answer.

This problem is related to another common remark, namely the fact that there are too many platforms and channels through which administrative processes must be completed. This makes it very complicated. Several respondents suggest there should be one central contacting point to ask for guidance and address issues concerning PhD candidates.

"As is reflected by the number of different platforms for administrative support, it is often a hassle to find the right channel that will be able to help me with specific tasks."

Some indicated that their research group solved this by making one person responsible for administrative matters (e.g., CALI registrations).

Furthermore, there were some remarks specifically about the PhD registration process. There is no decent follow-up, and the system often stalls.

8 Selecting PhD candidates

This section looks at how supervisors select their PhD candidates. We asked the respondents to indicate how they identified their most successful PhD candidates. Most often, it concerned a (BA or MA) student of theirs (67.5%), or someone that was selected during an application process (57.8%, see Table 34). In 42.4% of the cases, the PhD candidates approached the supervisor. One in three indicated they appointed PhD candidates after an open solicitation (32.5%), meaning the PhD candidate applied for a job when there was no specific vacancy, or after recommendation by a colleague (32.5%).

Table 34: Respondents by ways of finding PhD candidates

	N	%
They were a student of mine	56	67.5
Solicitation process	48	57.8
They approached me	35	42.2
Open public solicitation	27	32.5
They were recommended to me by a colleague	27	32.5
Other	1	1.2

Question: In what way did you identify the most successful PhD candidates you (have) supervise(d)? Multiple answers possible.

The supervisors were asked to select from a list of several items the five most important aspects that they take into account when hiring a new PhD candidate. Figure 5 shows the results. The majority finds it important that the PhD candidate is highly motivated (74.7%) and that they show a strong interest in the research topic (71.1%). Also considered important, is being able to work independently (60.2%) and being critical (55.4%). Having honors or awards (3.6%) or having previous work experience (3.6%) are considered the least important. From this, we can conclude that a strong intrinsic motivation and having certain soft skills are valued more than previous experiences and achievements.

Figure 5: Percentage of supervisors that indicated to take characteristic into consideration when hiring a new PhD candidate

Question: Please think about your best/ideal PhD candidate. Select the five most important characteristics of this PhD candidate that you considered/would consider when hiring.

The supervisors were asked to what extent they would be interested in outsourcing the hiring process. As shown in Table 35, more than half of the supervisors would like the administrative part of the hiring process to the outsourced (54.2%). However, only 7.2% would be interested in outsourcing the whole procedure, showing that supervisors still want to have a say in who they recruit. More than one in three would not be interested in outsourcing any part of the selection procedure (38.6%).

Table 35: Respondents by interest in outsourcing selection procedure

	N	%
No	32	38.6
Yes, the whole process	6	7.2
Yes, but only the administrative part	45	54.2
Total	83	100

Question: Would you find it interesting if the selection procedure of PhD candidates was outsourced to a HR department?

Female supervisors are more inclined towards being interested in outsourcing the whole recruitment process (12.0%) compared to their male colleagues, whereas the latter more often would prefer to outsource the administrative part only (56.0%, see Table 36). In the faculties of Engineering Sciences and Physical Education & Physiotherapy, there is more interest in outsourcing (part of) the recruitment process compared to the other two faculties. Supervisors with more years of experience are less in favor of outsourcing the procedure, whereas more than three in four supervisors with less than five years of experience would prefer to outsource (part of) the process (76.5%). Supervisors with more than ten PhD candidates are more in favor to outsourcing the whole process compared to their colleagues with less PhD candidates. Supervisors that supervise joint PhD candidates that make up less than half of their total number of PhD candidates are most willing to outsource the recruitment process. Only this last association is statistically significant.

Table 36: Respondents by interest to outsource selection procedure

	No	Yes, whole process	Yes, administration	Total
	%	%	%	%
Gender (n.s.)				
Male	40.0	4.0	56.0	100
Female	36.4	12.1	51.5	100
Faculty (n.s.)				
IR	31.0	6.9	62.1	100
GF	43.8	9.4	46.9	100
PE	45.5	0.0	54.5	100
LK	36.4	9.1	54.5	100
Years of experience (n.s.)				
0 to 5	23.5	11.8	64.7	100
6 to 20	40.7	5.6	53.7	100
21+	54.5	9.1	36.4	100
Number of PhD candidates (n.s.)				
One to three	47.6	0.0	52.4	100
Four to five	30.4	8.7	60.9	100
Six to ten	37.0	7.4	55.6	100
More than ten	41.7	16.7	41.7	100
Number of international students (n.s.)				
None	29.8	6.4	63.8	100
Less than 50%	50.0	9.1	40.9	100
50% or more	50.0	7.1	42.9	100
Number of joint PhD contracts (*)				
None	44.4	2.8	52.8	100
Less than 50%	25.8	16.1	58.1	100
50% or more	50.0	0.0	50.0	100

Question: Would you find it interesting if the selection procedure of PhD candidates was outsourced to a HR department?

9 Role in further career prospect

Next to guiding PhD candidates through the PhD trajectory, the supervisors undoubtingly play an important role in preparing the PhD candidate for their further career, either within or outside of the academic world. The data of the PhD survey show that the number of PhD candidates expecting an academic career increases yearly. However, due to the growing number of people successfully obtaining a PhD, and the competitive nature of positions in academia, it also becomes increasingly important to prepare doctorates for a career outside of academia.

Table 37 presents to what extent the guidance of the supervisors is focused on aspects related to the preparation for a career. 45.8% of the supervisors feels like their guidance is very much or extremely focused on future career opportunities. For one in ten (10.8%) this is not the case at all. The majority of supervisors feels that their guidance also focusses on introducing the PhD candidates into the scientific network related to the field of study (72.3%). For one in four, this is moderately the case and only 2.4% says to not focus on this. This is an important point, because the data from the PhD survey show that the introduction to other prominent researchers is an aspect the PhD candidates are the least satisfied with when it comes to the support of their supervisor. 21% of the PhD candidates says to not be satisfied with it.

Table 37: Focus of guidance on further career

	Not at all/slightly	Moderately	Very/ extremely
	%	%	%
Future career opportunities? (E.g., informing the PhD candidate on career opportunities, teaching certain skills that will be useful in a future career…)	10.8	43.4	45.8
Introducing the PhD candidate into the scientific network related to the field of study?	2.4	25.3	72.3
Total	100	100	100

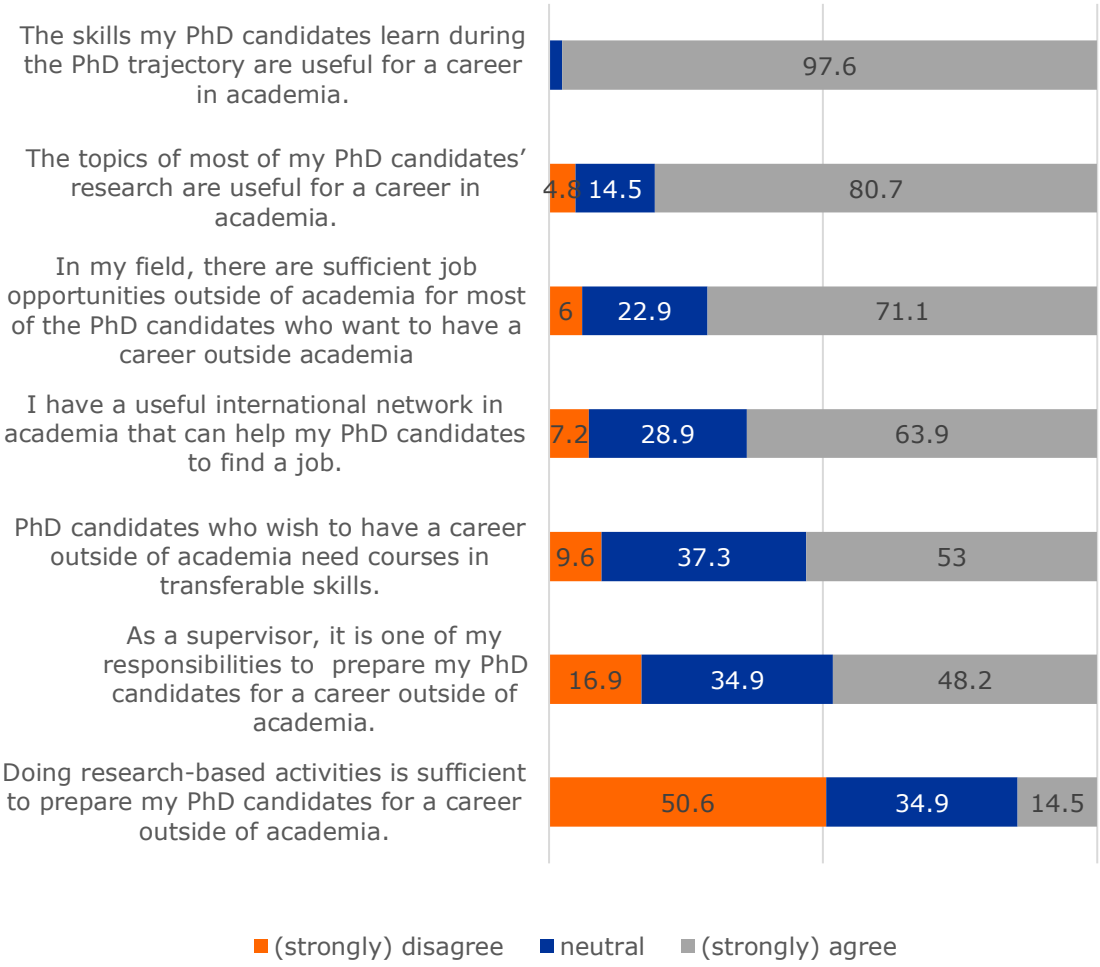
Question: To what extent is your guidance related to, or focused on...?

Figure 6 presents some statements about how the supervisors consider they can prepare the PhD candidates for a career within and outside the academic

world. Almost all supervisors seem to agree that the skills their PhD candidates learn during the trajectory are useful for a career in academia (97.6%). Next to these skills, also the topics they work with are considered useful for an academic career (80.7%). 71.1% of the supervisors think there are sufficient job opportunities outside of academia in their field of research for the PhD candidates who aspire this. This differs significant between faculties. In the faculties of Engineering and Medicine & Pharmacy, supervisors are more sure about this. In the faculty of Psychology & Educational Sciences, they are more neutral about it.

There is less agreement on the statements at the bottom of the figure. Half of the supervisors think that those who aspire a career outside of academia need extra courses in transferable skills (53.0%). Another half of the supervisors feel like it is their responsibility to prepare PhD candidates for a career outside of academia (48.2%). Here, we again see a difference between faculties. Whereas supervisors in the faculties of Engineering and Medicine & Pharmacy tend to agree more, their colleagues in the faculty of Psychology & Educational Sciences rather disagree. Finally, half of the supervisors (strongly) disagrees that doing research-based activities is sufficient to prepare PhD candidates for a career outside of academia. 34.9% is neutral about this and 14.5% agrees.

Figure 6: Preparation of PhD trajectory for further career (row percentage)



Question: Please indicate to what extent you agree with the following statements about the future career prospects of your PhD candidates.

10 Training and self-efficacy

This section examines how competent supervisors feel about performing their supervisory task and what additional training they have followed – or would like to follow – in order to further develop their supervisory skills.

As presented in Table 38, almost half of the supervisors says they have never followed a course or workshop on doctoral supervision at the VUB or elsewhere (46.8%). 22.8% has followed one workshop or course and 30.4% has attended more than one.

Table 38: Respondents by courses followed

	N	Valid %
No, never	37	46.8
I followed one workshop or course	18	22.8
I followed more than one workshop or course	24	30.4
I don't know/don't remember	4	
Total	83	100

Question: Have you ever followed a course or workshop on doctoral supervision at the VUB or elsewhere?

Table 39 shows that female supervisors tend to have followed (an) extra course(s) more often than their male colleagues. Supervisors in the faculties of Engineering and Medicine & Pharmacy are more likely to have followed one or more courses. 60.0% of the supervisors in the faculty of Physical Education & Physiotherapy never followed an extra course or workshop. Supervisors with more than 20 years of experience are also less likely to have attended an extra course. There is a statistically significant difference between the number of PhD candidates under supervision and the number of courses that have been followed. The more supervisees a supervisor has, the more likely they are to have followed one or more courses. Supervisors that have international PhD candidates are more likely to have followed extra courses or workshops and the same is true for those who supervise joint PhD candidates. The association is only statistically significant for the latter.

Table 39: Respondents by courses followed

	No, never	One	More than one	Total
	%	%	%	%
Gender (n.s.)				
Male	48.9	19.1	31.9	100
Female	43.8	28.1	28.1	100
Faculty (n.s.)				
IR	39.3	28.6	32.1	100
GF	46.7	23.3	30.0	100
PE	54.5	18.2	27.3	100
LK	60.0	10.0	30.0	100
Years of experience (n.s.)				
0 to 5	52.9	23.5	23.5	100
6 to 20	39.2	25.5	35.3	100
21+	70.0	10.0	20.0	100
Number of PhD candidates **				
One to three	75.0	25.0	0.0	100
Four to five	50.0	22.7	27.3	100
Six to ten	32.0	28.0	40.0	100
More than ten	25.0	8.3	66.7	100
Number of international students (n.s.)				
None	55.6	22.2	22.2	100
Less than 50%	38.1	14.3	47.6	100
50% or more	30.8	38.5	30.8	100
Number of joint PhD contracts *				
None	61.8	14.7	23.5	100
Less than 50%	30.0	23.3	46.7	100
50% or more	46.7	40.0	13.3	100

Question: Have you ever followed a course or workshop on doctoral supervision at the VUB or elsewhere?

46.8% of the supervisors have never followed an extra course. The most common reason for this is a lack of time (59.5%, see Table 40). One in three say they are not familiar with the offer (32.4%) and 13.5% do not find what they are looking for in the current offer. None of the supervisors indicated that they did not follow a course because the offer would not be up to standard or because the course location is inconvenient.

29.8% indicated another reason for not attending extra courses. They were asked to elaborate on this in an open-ended question. The most common other

reason was that extra workshops did not exist back in the time when they started supervising, so that they taught everything themselves or learned from experience. Another frequently mentioned answer (about one in three) was that the courses do not fit into their schedule, and that the dates should be announced more in advance. Still others indicated that they do not experience any problems in their supervisory task, hence they do not see the added value of extra courses.

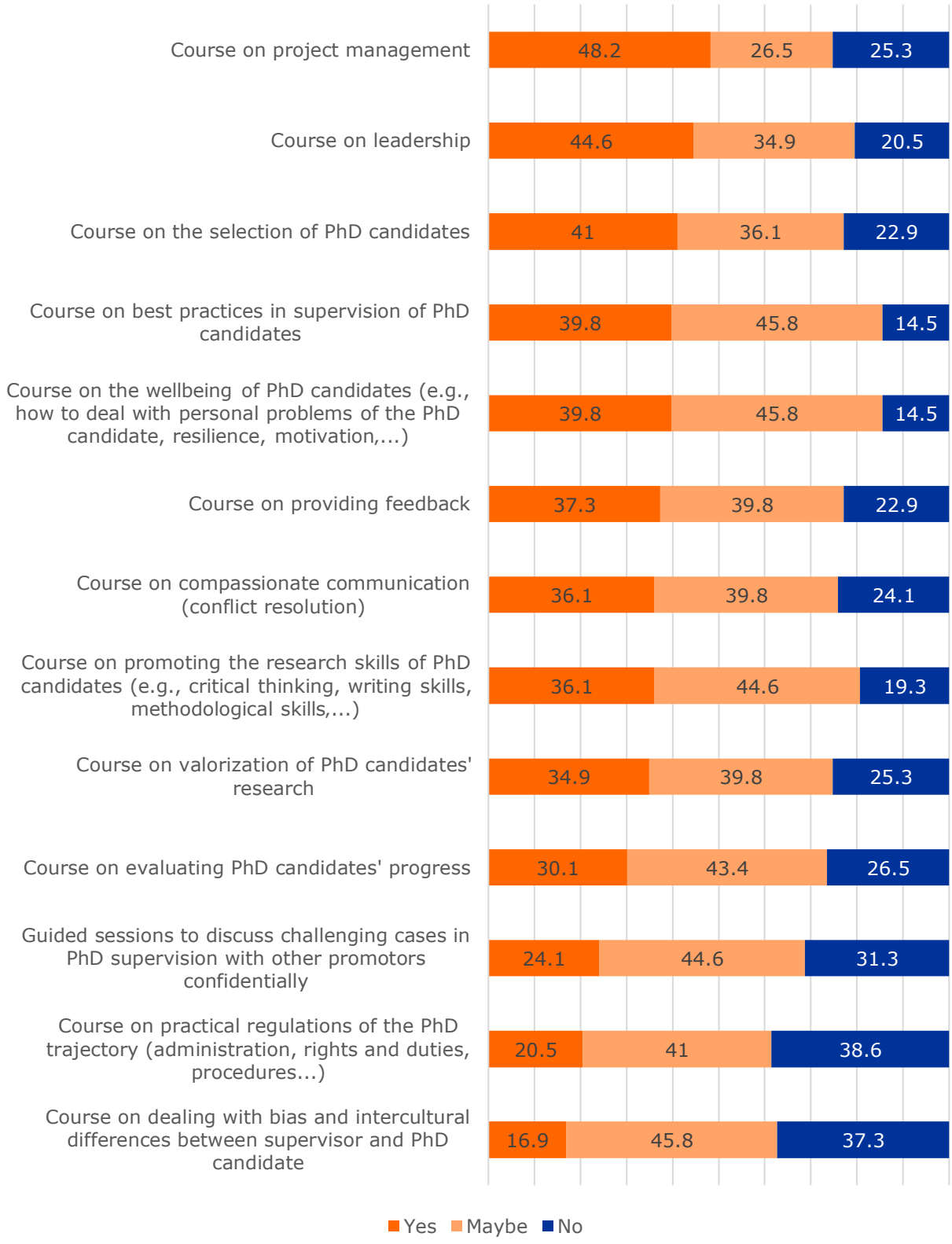
Table 40: Respondents by reasons not to follow a course (n=37)

	N	Valid %
I don't have time	22	59.5
I am not familiar with the offer	12	32.4
Other reason	11	29.8
I don't find what I'm looking for in the current offer	5	13.5
I hear the quality of the offer is not up to standard	0	0.0
The course location is inconvenient or impossible	0	0.0

Question: What is/are the reason(s) you never followed a course or workshop? Multiple answers possible.

The supervisors were asked to indicate to what extent they would be interested in following a certain course if it would be provided. Almost half of the supervisors would be interested in attending a course on project management (48.2%, see Figure 7). For courses on leadership (44.6%) and on the selection of PhD candidates (41.0%) there is also high interest. Moreover, courses on best practices in supervision and dealing with the wellbeing of PhD candidates (39.8%) would be considered interesting. For a course on dealing with bias and intercultural differences between a PhD candidate and the supervisor there is least interest (16.9%) and only one in five (20.5%) would be interested in following a course on practical regulations of the PhD trajectory.

Figure 7: Percentage of respondents that would attend a course if it was provided

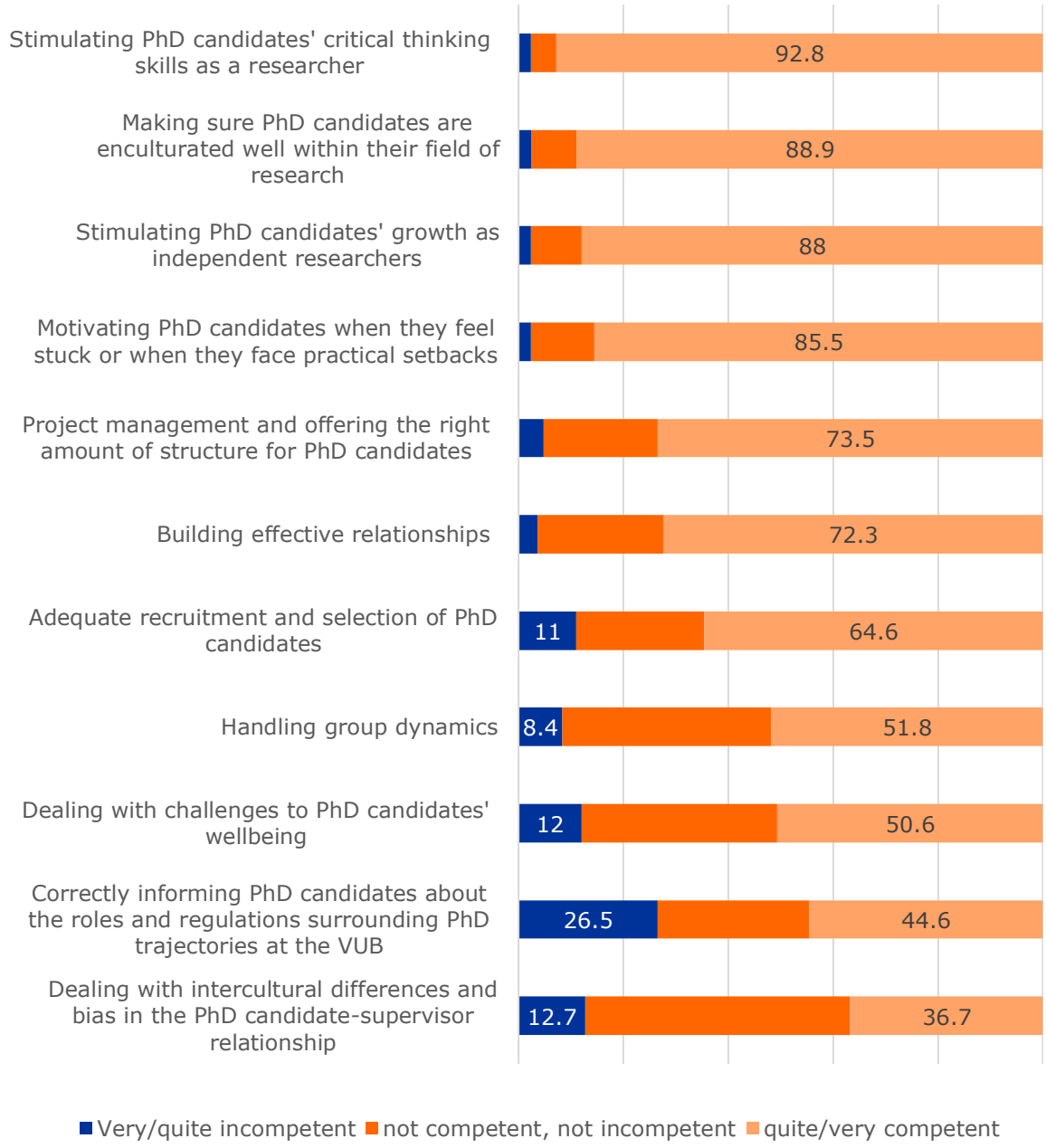


Question: If the following courses were to be provided, would you attend?

The supervisors were asked to what extent they feel competent in certain tasks regarding the supervisory task (see Figure 8). 92.8% says they are good at stimulating the PhD candidates' critical thinking. 88.9% reports that they can make sure that the PhD candidate is encultured well within their field of research, and another 88.0% says they can stimulate the PhD candidate's growth as independent researchers. This second point is interesting, since the PhD survey shows that "the introduction to other prominent researchers in the field of interest", which can be seen as an indicator for being encultured in the field of research, is the aspect of the supervisor PhD candidates are the least satisfied with (54.5% is satisfied).

More than one in four supervisors (26.5%) indicates that they are *not* competent to correctly inform PhD candidates about the roles and regulations regarding the PhD trajectory at the VUB. 12.7% feels incapable of dealing with intercultural differences and prejudices in the relationship between PhD candidates and supervisor. Another 12.0% feels inadequate in dealing with challenges concerning the PhD candidates' mental wellbeing. It is interesting to note that the aspects in which supervisors feel the most incompetent are also the subjects of the courses in which they are the least interested.

Figure 8: Percentage of respondents by feeling of competence



Question: Please indicate how competent you feel regarding your skills in the following aspects.

11 Conclusion

In this report, we aimed to shed light on the experience of supervising PhD candidates and to see whether the expectations of supervisors match those of PhD candidates. We looked into their practices of supervision, their evaluation of the task itself and of the support they receive in doing so, what they find important in PhD candidates and what their expectations are of them, and how they perceive their own role in preparing PhD candidates for their future career.

Supervisor-PhD candidate cooperation

Almost all supervisors indicated to have a good relationship with their PhD candidates, yet the quality of the relationship tends to vary a lot between supervisees. Ideally, supervisors prefer to keep the relationship with their PhD candidates mainly professional, whereas PhD candidates are slightly more inclined towards preferring a relationship in which there is also room for some personal connection. Preferring to keep the relation professional does not mean that the supervisors are unavailable. 75.9% says that they regularly have spontaneous meetings with their PhD candidates, meaning that they swing by in each other's office or have an unscheduled (video)call to discuss prompt issues. However, it is noteworthy that supervisors tend to meet with their PhD candidates more frequently than they would actually prefer. Ideally, they would meet with their supervisees weekly to several times month, whereas in practice, a substantial share of PhD candidates meets with their supervisor once or more a week.

Expectations

When it comes to the expectations regarding the recruitment of PhD candidates, supervisors tend to value intrinsic motivation and soft skills over previous experiences and achievements. Being highly motivated and having a strong interest in the research subject weighs more heavily in the decision to recruit a PhD candidate than having previous work experience, having honors or awards or letters of recommendation. Of course, motivation and soft skills are hard to measure, which might explain why good exam and thesis scores are also considered relatively important, as these might be used as a proxy to evaluate these elements.

Furthermore, we looked into how the responsibilities of the PhD trajectory are expected to be divided between both parties. Supervisors estimate that it is their responsibility that PhD candidates have access to the facilities they need to execute their research. Moreover, supervisors tend to prefer to keep control over the content of the thesis (i.e., the research topic, the standard of the thesis, the number of drafts). The organizational aspect of the process is mostly considered a shared responsibility (i.e., organizing meetings, deciding on the submission date, coordinating communication, developing a timetable). Tasks related to the actual research are merely seen as the responsibility of the PhD candidates (i.e., writing, presenting, time management).

The broad patterns in expectations of supervisors about task responsibilities match with those of the PhD candidates: PhD candidates consider that tasks related to the actual research are more their own responsibility, whereas supervisors have more say in the content of the thesis and are responsible to ensure access to what they need. However, PhD candidates tend to feel a stronger responsibility for most of the tasks than the supervisors expect them to. The biggest discrepancy in expectations is regarding the choice of research topic. Supervisors feel strongly responsible for this, whereas PhD candidates think this is more of a shared responsibility. Also, when it comes to the development of an appropriate timetable there is little agreement: PhD candidates feel responsible for this, whereas supervisors see this as a shared responsibility.

Experience

Overall, supervisors tend to find the task enjoyable, although they indicate that the workload is relatively high. Ideally, supervisors would have three to five PhD candidates to supervise. They feel relatively supported by other actors in their supervisory task, especially by postdocs and the Doctoral Schools. Overall, it can be said that the higher-level support mechanisms generate less satisfaction among supervisors. The satisfaction with support of People and Organization and the administrative support at the university level, for example, is rated low. Administrative procedures are often seen as too decentralized, too slow, and too complicated.

Further career opportunities

In the PhD survey, we see a yearly increase in the number of PhD candidates that expects to pursue an academic career after graduating. Only 45.8% of the supervisors says their guidance is (strongly) focused on preparing a PhD candidate for a further career. Despite this, the majority of the supervisors do feel capable of preparing PhD candidates for a career in academia.

When it comes to a career outside of academia, only half of the supervisors think that solely doing research activities is enough to be prepared for this – and agrees that extra courses in transferable skills are needed. Moreover, only half of the supervisor feels responsible to prepare a PhD candidate for a career outside of academia.

Self-efficacy

Finally, we investigated to what extent supervisors would be interested in following certain additional courses to improve their skills. There is a relatively strong interest for courses on project management, leadership, and selecting PhD candidates. However, almost half of the supervisors said that they have never attended an additional course or workshop. Time restrictions seem to be the biggest barrier. It is considered helpful if the dates of classes were announced further in advance, so they could better fit into the schedules. Supervisors feel relatively incapable of informing PhD candidates about regulations and roles surrounding the PhD trajectory, even though three in four supervisors thinks that being aware of the regulation is their responsibility, or a shared responsibility between supervisor and PhD candidate. Moreover, the majority of supervisors does not feel quite competent in dealing with prejudices in the supervisor-PhD candidate relationship or with challenges concerning the wellbeing of PhD candidates. The latter is rather striking, since several supervisors indicate that PhD candidates under their supervision dropped out for mental health reasons. However, 85.6% of the supervisors shows interest in potentially following a course on dealing with mental health issues if provided.

Overall, this pilot edition of the PhD supervisor survey gave us a general insight in how supervisors experience their task. For a next edition, it would be interesting to expand the data to more faculties and to elaborate on several of the findings in this report, with attention for the different cultures within disciplines.

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