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PhD Survey 2019



PhD Survey 2019

Experiences of PhD students
at the University of Groningen

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1 Preface and some retrospective thoughts

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This PhD survey for 2019 is the sixth edition of a series of comprehensive PhD surveys at the University of Groningen. PhD surveys have been carried out biennially by the Educational Support and Innovation Centre for Information Technology (ESI-CIT) since 2009, when the Groningen Graduate Schools were founded. All reports are on our Graduate Schools webpage¹.

PhD students are important to any university. Not only from the point of view that it is a university's duty to train them well so they become reliable and independent researchers, but also because most of the research at Dutch universities is performed by PhD students. Therefore, it is important to regularly assess PhD students' motivation, progress, educational activities and satisfaction. Thanks to our comprehensive PhD student registration and follow-up system, Hora Finita, we have clear insight into various details relating to our PhD students in Groningen and can easily approach them by email. Moreover, for the present survey, we were able to use the system to compare the characteristics of the survey respondents to the actual characteristics of the PhD student population as a whole. Consequently, we are quite confident that this survey gives a fairly representative image of what is going on in PhD students' lives in Groningen.

For me, this sixth edition is a special one, since I will step down as Dean of Graduate Studies as of 1 January 2020. This means that this is the last edition under my deanship. As I took up my position as Dean ten years ago in May 2009, it may be of interest to reflect on what has changed over these past ten years. A look through the whole series of PhD surveys helps to gain a picture of the developments and changes.

A major constant factor during the past ten years is that PhD students are quite satisfied with their PhD life in Groningen. This was already true in 2009 and despite quite a large increase in the number of PhD students registered in Groningen during the following ten years – 4,219 PhD students were registered in Hora Finita in November 2019 compared to 3,008 in 2009 – this high level of satisfaction has remained more or less the same to date. This is a nice outcome and probably stems from the fact that most PhD students are intrinsically motivated and enthusiastic about their work, i.e. learning and doing research. Moreover, doing research as a PhD student in a 'top-100' university is a great experience, indeed. Another constant positive factor is the generally very good relationships between PhD students and their supervisors. This is great, because good apprentice-master relationships are key in developing the appropriate research skills and being well prepared for a future career as a researcher.

¹ <https://www.rug.nl/education/phd-programmes/about/phd-survey/>

One aspect that has clearly changed for the better is the role of the Graduate Schools – with their visibility increasing from 60 percent in 2009 to almost 100 percent in 2019 – and the increase in the PhD students’ appreciation of Graduate School activities. In line with this, it is good to see that PhD students are paying more attention to acquiring what are known as ‘generic’ skills. It goes without saying that these skills are important, not only for a PhD project, but also, and even more importantly, for pursuing a successful career after a PhD, both inside and outside academia. The spectrum of courses and workshops offered by the Graduate Schools has greatly expanded over the past ten years and I am happy to see that many PhD students are well aware of the new opportunities and make use of these. The newly developed Career Perspectives Series is also well known and valued. Compared to PhD students in 2009, current PhD students follow about four times as many courses or are involved in other educational activities and indicate that they are reasonably satisfied with these.

Another improvement compared to the situation ten years ago is that it is much more common for PhD students to make a Training and Supervision Plan (TSP). In 2009, only 57 percent of the PhD students had a TSP, and in most cases it was not complete. In the present 2019 survey, 77 percent reported having a TSP and these include much more detail. Nevertheless, it is clear that further improvement is needed, since almost 60 percent indicated that their TSP is not regularly updated. This is a pity, since a TSP that is formally recorded, updated and regularly discussed with a supervisor is a valuable instrument which can ensure both the completion of a rewarding educational programme and, importantly, the timely completion of the PhD project itself.

This brings me to one element that has stayed the same over the past ten years, but which should have changed: the time that it takes to complete a PhD project. The data from Hora Finita clearly shows that it is very common for PhD students to not finish their project in the allotted time period. This was the case in 2009 and is still the case in 2019, with a little more than five years as the average time to finish a project that should be completed in four. In line with this, it is interesting to note that both in 2009 and in 2019 about 40 percent of the PhD students indicated that they expected (during the course of their project) not to finish in time and that they would need 8-12 months more than the actual time allotted in their contract. Although this expectation is in fact too optimistic, this is a disturbing finding. In this regard, for the first time, the present survey included ‘spare-time’ PhD students; those students finishing their thesis after their contract has ended, thus in their spare time. It is clear that these PhD students are the least satisfied of all PhD students in relation to all assessed items. Moreover, as was shown in a previously conducted survey about the wellbeing of PhD students, these spare-time PhD students experience a lot of unhealthy stress. Not finishing in time is simply not good. Thus, it is very important that this ‘culture’ of not finishing within the allotted time changes in the coming years. The University of Groningen has adopted a new policy on this,

which will involve PhD students, but even more importantly, Faculty Boards and, last but not least, the supervisors.

In summary, reading the present 2019 survey and browsing through the earlier surveys makes me proud of what we have accomplished over the past ten years. Of course, there is room for improvement, but my feeling is that we are doing a good job. The outcome that struck me most was, in fact, the positive attitude of PhD students, which is apparent in all of the surveys. Thus, I am confident that our PhD students are having a good time and a positive learning experience in Groningen and are heading for a great future either inside or outside academia. I wish them much success!

This leaves me with the pleasant duty of thanking all those who have contributed to the present survey. First, I would like to thank all of the PhD students who took the time to answer the rather extensive list of questions in the survey. Second, many thanks to Emmelien van der Scheer, who improved the survey, performed all the analyses and wrote up the report. Thanks also to Els van Rooij, Marjon Fokkens-Bruinsma, Ellen Jansen and Marjan Koopmans, whose valuable input in discussions helped to further improve the survey.

Prof. Lou de Leij

Dean of the Groningen Graduate Schools

2 Introduction

This PhD report provides an overview of the current state of affairs of PhD students at the University of Groningen (UG). The targets set by the Board of the University are to have 600 PhD defences each year at the UG from the year 2020 on, and, importantly, to prepare these graduates well for their next career step as researchers and professionals, both inside and outside academia. The introduction of the PhD scholarship student experiment in 2016 will help to reach these goals, but also presents a number of challenges. It is important to monitor the interplay between these policies and the actual outcome in daily practice. The biennial surveys of all PhD students in Groningen (thanks to Hora Finita all PhD students in Groningen are clearly registered and easily approachable) provides such a monitoring tool. The present PhD survey provides insights into the way PhD students in Groningen experience their research and educational surroundings and whether they value the way PhD studies are organized in Groningen. By means of an online survey, all PhD students from the UG (including the UMCG) were invited to participate and answer questions about the many aspects of their PhD life.

The 2019 survey is largely similar to the one conducted two years ago, but the way in which the results are presented differs. Now, in the main part of the report, we focus on aspects that are currently the core elements of PhD student policy, while most of the details are provided in the Appendices. These appendices are available online.²

The outline of the chapters is as follows:

- The present chapter (Chapter 1) provides an introduction to various aspects of the survey.
- Chapter 2 starts with an overview of the response sample, the characteristics of which are compared with those from the invited sample. Subsequently, an overview of the background characteristics of the PhD students who filled out the survey is given.
- Chapter 3 presents some overarching aspects concerning how the PhD students experience their activities. This includes overall satisfaction, workhours, workload and planning aspects.
- Chapter 4 gives a detailed description of how PhD students feel in relation to their supervisors and department.
- Chapter 5 deals with the importance of and satisfaction with employment or scholarship conditions.
- Chapter 6 assesses the various ways in which PhD students are followed and evaluated during their PhD trajectory.
- Chapter 7 describes to what extent PhD students explore their options for a future career from the start of their PhD.
- Chapter 8 presents the conclusions that can be drawn from this survey.

² <https://www.rug.nl/education/phd-programmes/about/phd-survey/>

3 | Sample characteristics

Background information

Due to the various backgrounds of the PhD students assessed in the survey, not all PhD students had to answer the same questions. For example, questions regarding applying for a visa were not presented to Dutch PhD students, and questions about the thesis defence were not presented to first-year PhD students. Furthermore, PhD students were free to ignore questions if they wanted to do so (apart from questions that were necessary to determine different routes in the survey), which means that not all questions are answered by all PhD students. In describing the questions and the responses of the PhD students, those who answered the question is briefly indicated, explaining the different 'N' across all questions.

Statistical analysis

For some questions, statistical analyses were performed to compare the results of different groups. These were only performed on scale scores, not for individual items that were part of a scale. Group differences for scale questions are highlighted in red and green in the case of the maximum difference between the groups or items being 0.4 or higher. It was decided to present the final numbers in the report with one decimal. However the calculation of the maximum differences was performed without rounding them. Due to this, there might be variations in outcomes.

When a statistical test was performed to indicate the differences, colours were not used, but the significant differences between the groups are presented by a *. In tables in which individual item scores are presented, red and green indicate the items with the lowest and highest scale scores, respectively; a maximum difference was not taken into account here as individual items were not compared with each other.

It was decided to perform comparisons for differences between Graduate Schools using the non-parametric Kruskal-Wallis test, as the differences in group size (ranging from 29 to 429) were large and the normality of the Likert data could not be assumed for the smaller groups. The Graduate School of Campus Fryslân (N = 11), Philosophy (N = 12) and Theology and Religious Studies (N = 15) were not included in these analyses because these numbers were considered too small. Assessments of differences related to gender (male/female) and nationality (in the case of a comparison being made between Dutch/non-Dutch) were performed with a t-test. A one-way ANOVA was performed for differences between Phase, Affiliation and Nationality (in the case of a comparison being made between Dutch, 'European/non-Dutch', and non-European). By means of the Bonferroni correction, a correction was made for cases where multiple comparisons had to be made. The total significance level for each test was $p = .05$.

This chapter provides an overview of the characteristics of PhD students who participated in the survey. First, the sample and background characteristics of the participants are described, including their educational background, the characteristics per Graduate School and the affiliation of the PhD students with the UG or UMCG. Second, the different funding sources of the PhD projects are described.

Sample description and background characteristics

In May 2019, a total of 3,889 PhD students (all PhD students registered in Hora Finita as 'not finished yet') were invited to participate in the survey. After sending two reminders to those who had not completed the survey, it was closed at the beginning of June 2019. At that time, 1,189 PhD students had completed a sufficient part of the survey.³ This means that the response rate was 30.6 percent. This is slightly lower than the response rates in previous years (around 35 percent). This could be explained by the fact that a slightly different group of PhD students was invited to participate this year. The present group included more PhD students who were already 'out of contract'. As this is generally a group with a high percentage of 'non respondents', this could explain the small drop in response rate.

In Table 1, an overview of the characteristics of the response sample (as indicated by the responders themselves) and that of the invited population (as deduced from the characteristics registered in Hora Finita) is presented. It appears that the response sample is marginally younger than the invited population, and that women are slightly overrepresented in the response sample.

Based on their starting date, PhD students can be divided into three groups. First-year PhD students ('starters', 26.1 percent), second and third-year PhD students ('intermediates', 47.2 percent) and fourth-year or longer PhD students ('seniors', 26.7 percent). The division of PhD students into these groups is comparable to the division seen in previous surveys.

³ Only PhD students who completed more than 66 percent of the survey were included in the 'Response sample'.

Table 1. Overview of background characteristics in the response sample compared to those in the invited sample

		Response sample		Invited sample	
		M	Sd	M	Sd
Age (in years)		30.5	6.5	32.5	7.9
		%		%	
Gender	Women	58.3		54.0	
	Men	40.2		45.9	
	Other	0.3		0.0	
Nationality	Dutch	45.2		40.1	
	European	17.2		16.0	
	Non-European	36.6		22.9	
	Unknown	0.9		21.0	

Educational background of the sample

The majority of PhD students obtained a Research Master's degree (35.7 percent) or a regular Master's degree (56.0 percent) as their most recent degree. This is comparable to what is seen in previous surveys. A small percentage of the PhD students (5.5 percent) indicated that they obtained a Bachelor's as their most recent degree. This mostly involves MD PhD students, who combine their Master in Medicine with a PhD degree. A few PhD students indicated that they already had a PhD degree (1.1 percent) and some PhD students did not report their degree prior to their PhD (1.8 percent).

PhD students and their characteristics per Graduate School

In Table 2, the number of PhD students and their characteristics per Graduate School is presented. Some inconsistencies were found between the Graduate School as indicated by the PhD students and the Graduate School affiliation shown in Hora Finita (2 percent indicated a different Graduate School, while 3 percent did not know to which Graduate School they belonged). The Graduate Schools as indicated in Hora Finita were used for the analysis, as in previous years.

Table 2. PhD student characteristics by Graduate School

Abbreviation	Graduate School	N	% of total	% Female	% Dutch	% Starters	Mean age
GSBSS	Behavioural and Social Sciences	117	9.8	76.1	67.5	21.4	31.6
GSCF	Campus Fryslân	11	0.9	81.8	90.9	27.3	28.5
GSEB	Economics and Business (SOM)	55	4.6	54.5	50.9	25.5	30.1
GSH	Humanities	83	7.0	66.3	55.4	20.5	34.9
GSL	Law	29	2.4	51.7	69.0	24.1	32.5
GSMS	Medical Sciences	449	37.8	66.6	53.5	24.7	30.1
GSP	Philosophy	12	1.0	58.3	58.3	33.3	29.1
GSSE	Science and Engineering	377	31.7	41.1	24.1	31.6	29.3
GSSS	Spatial Sciences	41	3.4	63.4	26.8	39.0	32.5
GSTRS	Theology and Religious Studies	15	1.3	53.3	40.0	13.3	36.1
Total		1189					

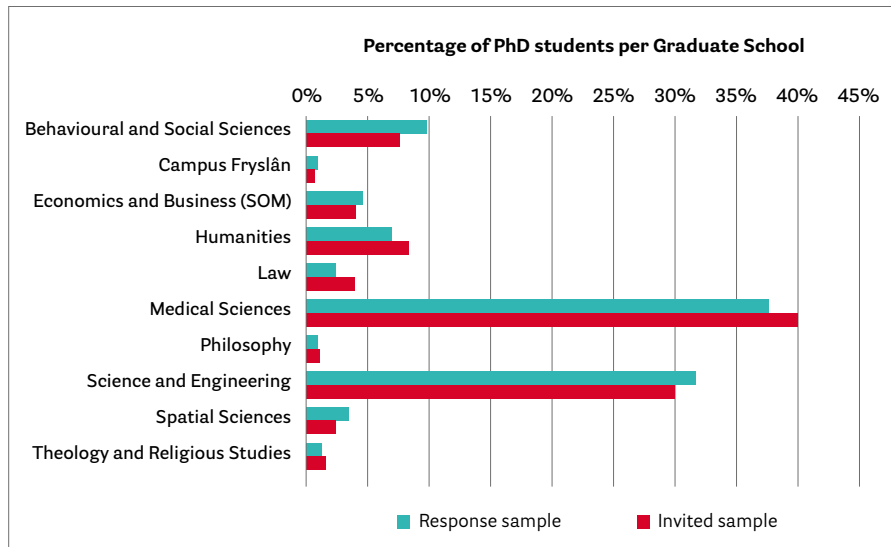
As in the previous PhD survey conducted two years ago, most PhD students are part of either the Graduate Schools of Medical Sciences, or the Graduate School of Science and Engineering. The smallest Graduate School is Campus Fryslân, which has just started. The Graduate School of Theology and Religious Studies had, on average, the oldest PhD students.

In Figure 1, the percentages of students allocated to a Graduate School are presented and related to the percentages present in the invited sample. Figure 1 shows that PhD students from the Behavioural and Social Sciences, and the Science and Engineering Graduate Schools are slightly overrepresented, while students from Medical Sciences and Humanities are slightly underrepresented in the response sample, compared to the invited sample.

Type of affiliation with the University of Groningen

PhD students were asked to indicate how they are affiliated to the UG (or UMCG). As shown in Table 3, most PhD students have an employment status (40.1 percent), followed by PhD scholarship students (27.3 percent). There is a clear difference from two years ago here, as only 10 percent of the response sample were PhD scholarship students in 2017. The percentage of PhD students who receive a 'bursary' (an international student with a scholarship

Figure 1. Overview of response sample over Graduate Schools



from his/her own country without a top-up from the UG, i.e., started before September 2016; this is a different affiliation status to the PhD scholarship student status) dropped from 13 percent to 4.5 percent in two years, as these 'bursary students' can no longer be attracted (since 1 September 2016, when the PhD scholarship student programme started). This implies that the background characteristics of both groups (employee PhD students and PhD scholarship students) differ slightly from each other. PhD scholarship students can only be in the first three years of their PhD trajectory, as they could only have been appointed a maximum of three years ago. This might slightly distort the differences between both groups when they are compared.

In order to make comparisons on the basis of affiliation, PhD students were divided into five groups. These groups differ from two years ago, due to the low number of bursary students. Therefore, four defined groups were formed, with a fifth group (group X) being a mixed group that includes a number of small, diverse groups considered too small to be statistically relevant size to make comparisons with. The following affiliation groups were formed:

- A. *Employee PhD students*. These students are employed by the UG or the UMCG.
- B. *External PhD students*. The PhD students are employed by an external party, or have never received funding for their project. This is an extended definition of the status of 'buitenpromovendus'.

- C. *PhD scholarship students*. This group of PhD students receives a scholarship from the UG or UMCG.
- D. *Spare-time PhD students*. These PhD students were either employed or received a scholarship, but are currently finishing their PhD in their spare time.
- E. This group of PhD students is too diverse to be categorized as a distinct group.

Table 3. Which description best fits your situation?

	N	%
Group A – Employee PhD students	526	44.2
I am employed as a PhD student by the University of Groningen/UMCG	477	40.1
I am employed as a PhD student by NWO I (formerly FOM), ASTRON or SRON	31	2.6
I am an MD PhD student and I am employed by the UMCG	18	1.5
Group B – External PhD students	122	10.3
I am employed by a University of Applied Sciences (HBO)	31	2.6
I am employed by an external party or company	52	4.4
I have never received funding and I work on my PhD project in my spare time	39	3.3
Group C – PhD scholarship students	389	32.7
I am a PhD scholarship student ('promotiestudent') at the University of Groningen/UMCG (this applies to you if you have a scholarship and started your PhD project after 1 September 2016)	325	27.3
I am an MD PhD student and I am a PhD scholarship student ('promotiestudent')	64	5.4
Group D – Spare-time PhD students	77	6.5
I was employed by the University of Groningen/UMCG and I am currently finishing my PhD project in my spare time	56	4.7
I had a scholarship and I am currently finishing my PhD project in my spare time	21	1.8
Group X – not included in group comparisons	75	6.3
I am a bursary or scholarship student at the University of Groningen/UMCG (this applies to you if you have a scholarship and started your PhD project before 1 September 2016)	54	4.5
Other	21	1.8
Total	1189	100.0

The division of PhD students in the response sample over the different affiliation types is similar to the UG-wide division used in official publications (Bestuursverslag Rijksuniversiteit Groningen, 2018).⁴

Funding project

PhD students who indicated they had an employee status (Group A), were employed by a University of Applied Sciences or an external party, or those who indicated 'other', were asked where the funding for their project comes from. As shown in Table 4, about 25 percent of the projects are financed by the UG or the UMCG and about 20 percent by the NWO, while about 16 percent are funded by a Dutch or European funding source.

Table 4. Where does the funding for your PhD project come from?

	N	%
University of Groningen/UMCG	160	24.4
The Netherlands National Research Council (NWO) (including NWO I, FOM, SRON, ASTRON)	126	19.2
Other funding from the Netherlands	103	15.7
Other funding from Europe (including the European Union)	108	16.4
Other non-European funding (including scholarships from your home country)	25	3.8
Combination of other funding/self-funded and funding from University of Groningen/UMCG	76	11.6
Self-funded	18	2.7
Other	23	3.5
I do not know	18	2.7
Total	657	100.0

⁴ <https://www.rug.nl/about-us/where-do-we-stand/facts-and-figures/annual-reports/rug-bestuursverslag2018-v9.pdf>

Conclusions

From the results described in this chapter, we conclude that the response sample is representative of the invited response sample. In the remainder of this report, we will therefore refer to the response sample as 'PhD students'. Furthermore, in the following chapters, the answers to questions will be presented for the entire sample, and selectively for different groups of PhD students. In Table 5, an overview of these groups is presented.

Table 5. Overview of groups and their categories

Groups	Category	Analysis
Gender	Man	T-test
	Woman	
Nationality	Dutch	One-way Anova
	European, but non Dutch*	
	Non-European*	
Phase	Starter	One-way Anova
	Intermediate	
	Senior	
Affiliation	Employee PhD student	One-way Anova
	External PhD student	
	PhD scholarship student	
	Spare-time PhD student	
Graduate School	Behavioural and Social Sciences	Kruskal-Wallis
	Campus Fryslân	
	Economics and Business (SOM)	
	Humanities	
	Law	
	Medical Sciences	
	Philosophy	
	Science and Engineering	
	Spatial Sciences	
Theology and Religious Studies		

* For some questions, these categories are combined.

4 Overarching aspects of the PhD trajectory

This chapter discusses overarching aspects. It starts with overall satisfaction with the PhD project, the composition of the supervision team and satisfaction with the supervision team. Subsequently, an overview is presented of the workhours, workload, the perceived level of freedom in the PhD project and the extent to which PhD students teach and/or supervise students. The chapter concludes with issues related to the progress and delay of the PhD students.

Overall satisfaction with PhD trajectory

At the end of the PhD survey, PhD students were asked to indicate their general satisfaction with their PhD trajectory on a five-point scale (ranging from very dissatisfied to very satisfied). An average score of 3.6 (Sd = 0.9) was found, which is similar to two years ago (M = 3.7). This indicates that PhD students are generally quite satisfied with their PhD trajectory. An overview of the response categories is presented in Table 6.

Table 6. Overall, how satisfied are you with your PhD trajectory?

	N	%
Very dissatisfied	20	1.7
Dissatisfied	122	10.4
Neutral	282	24.1
Satisfied	616	52.7
Very satisfied	129	11.0

External PhD students are on average the most satisfied (M = 3.7, Sd = 0.8), followed by employee PhD students and PhD scholarship students (M = 3.6, Sd = 0.8 and 0.9). Spare-time PhD students are significantly less satisfied (M = 3.0, Sd = 1.0) with their PhD trajectory than the other groups of PhD students ($F(3,1090) = 13.3, p < .05$).

The differences per Graduate School are presented in Table 7. PhD students from the Graduate School of Law are the most satisfied (M = 4.0), while PhD students from the Graduate Schools of Medical Sciences, Humanities, and Theology and Religious Studies are the least satisfied (M = 3.5).

Table 7. Average satisfaction with PhD trajectory per Graduate School

	N	Mean	Sd
Behavioural and Social Sciences	116	3.7	0.8
Campus Fryslân	11	3.7	0.6
Economics and Business (SOM)	55	3.9	0.7
Humanities	82	3.5	0.9
Law	27	4.0	0.6
Medical Sciences	441	3.5	0.9
Philosophy	12	3.9	1.0
Science and Engineering	370	3.6	0.9
Spatial Sciences	41	3.7	1.0
Theology and Religious Studies	14	3.5	0.7

Supervision team and satisfaction

Composition of supervision team

The PhD regulations (The University of Groningen PhD Regulations, 2018)⁵ stipulate that PhD students must be supervised by more than one supervisor. In the survey, 18 percent of the PhD students indicated that they only have one primary supervisor, while 2 percent indicated that their supervision is not officially documented. However, 80 percent of the PhD students indicated they had two supervisors or more. Table 8 shows that PhD students who indicated they only have one supervisor are present in all phases of the PhD project.

Table 8. What is the official composition of your supervision team?

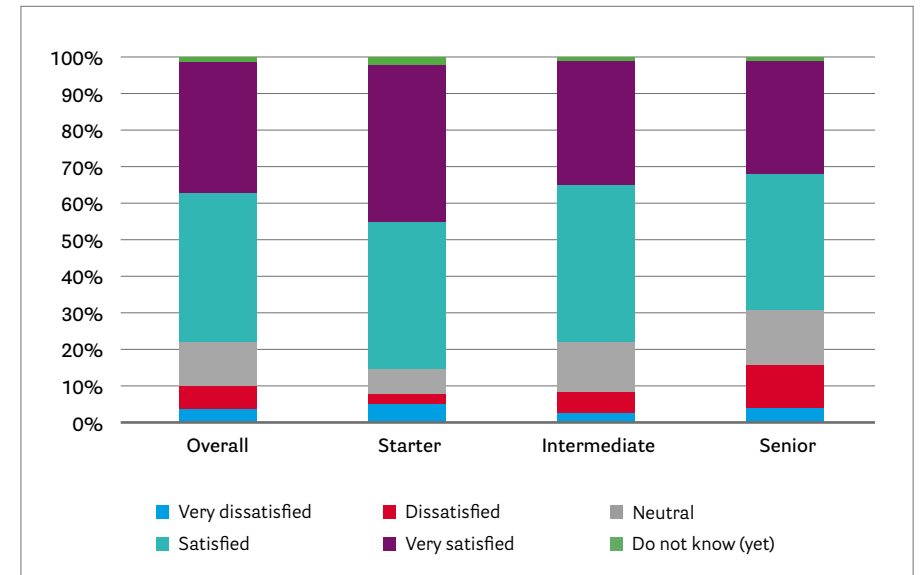
	Total		Starter		Intermediate		Senior	
	N	%	N	%	N	%	N	%
One primary supervisor (= promotor)	214	18	51	16.0	102	18.2	61	19.7
Two or more supervisors	969	80	267	84.0	454	80.9	248	80.0
My supervision has not been officially documented	6	2	0	0	5	0.9	1	0.3
Total	1189		318		516		310	

5 <https://www.rug.nl/about-us/organization/rules-and-regulations/onderzoek/promotiereglement-18-en.pdf>

The PhD students who indicated they had one supervisor are also present in each Graduate School and in each affiliation group. However, nearly half of these PhD students are from the Graduate School of Science and Engineering, while 34 percent are in the Graduate School of Medical Sciences.

Overall satisfaction with supervision

The great majority of the PhD students are satisfied or very satisfied with the overall supervision they receive. An average score of 4.0 (Sd = 1.0) was given on a five-point scale. In the previous survey (in 2017), PhD students were comparably satisfied (M = 4.0, Sd = 1.1). Senior PhD students (M = 3.8, Sd = 1.1) are significantly more negative about the supervision they receive than both intermediate PhD students (M = 4.0, Sd = 1.0) and starting PhD students (M = 4.2, Sd = 1.1), $F(2, 1185) = 10.1, p < .05$. This trend was also found in 2017. The division over the response categories regarding overall satisfaction with the supervision for each phase of the PhD trajectory is shown in Figure 2. Interestingly, starting PhD students include the relatively largest group that indicated being 'very satisfied' and the largest group that is 'very dissatisfied'.

Figure 2. Overall satisfaction with supervision, per phase in the PhD trajectory


The average overall satisfaction with their supervision was the lowest in two of the smallest Graduate Schools (Philosophy, and Theology and Religious Studies), with an average of 3.8 (Sd 1.2 and 1.3). The average supervision satisfaction was the highest in four Graduate Schools (M = 4.1): Behavioural and Social Sciences, Campus Fryslân, Economics and Business, and Spatial Sciences.

Interestingly, PhD students who are finishing their PhD in their spare time are the least positive about the supervision they receive, with an average of 3.6 (Sd = 1.2), while the other groups have an average of at least 4.0 (Sd = 1). PhD scholarship students and external students are the most positive about their supervision (M = 4.1, Sd = 1.1 and 1.0).

Workhours and workload

PhD students who have an employment or scholarship contract were asked to indicate how many hours a week they officially work (according to their contract) on their PhD project. Furthermore, they were asked to indicate how many hours they actually work on their project. As shown in Table 9, about 60 percent of the PhD students have a contract for 33-40 hours a week, while 25 percent have a contract without hour specification (mostly PhD scholarship students, as they have no hour specification). Of the PhD students who indicated how many hours they actually work, 46 percent work more than 40 hours a week.

Table 9. How many hours a week do you officially work/actually work on your PhD project?

	In contract		Actual working hours	
	N	%	N	%
I have never had a contract or agreement for my PhD project	13	1.3		
I had a contract/agreement but it has ended	7	0.7		
I have a contract without hour specification	258	25.2		
0-8 hours	5	0.5	7	0.8
9-16 hours	12	1.2	15	1.7
17-24 hours	41	4.0	32	3.5
25-32 hours	61	6.0	85	9.4
33-40 hours	613	59.8	347	38.3
41-50 hours			331	36.5
51-60 hours			70	7.7
More than 60			19	2.1
Other	15	1.5		
Total	1025		906	

From the 732 PhD students with hour specification, 634 also filled out the question on how many hours they actually work on their PhD. Comparable to two years ago, more than half of these PhD students (55.2 percent) indicated that they worked more than was stated in their contract, while 40.4 percent worked as many hours as stated. Two years ago, a comparable percentage of PhD students worked more hours than stated in their contract (58 percent). Only four percent work less than is agreed in their contract. No relation was found between the phase of the project and whether the PhD students worked more than was stated in their contract. More than 50 percent of the PhD students describe their workload as 'too high' or 'high', as indicated in Table 10. These PhD students (N = 675) were asked to indicate what the main reasons were for this heavy workload. 'Complexity, amount and/or pace of work' was mentioned most by these PhD students (61.9 percent) as one of, or the, reason for the heavy workload, followed by 'publication pressure' (51.0 percent) and 'deadlines' (48.1 percent).

Table 10. How would you describe the workload or time pressure in your PhD project?

	N	%
Too high	105	8.8
High	570	47.9
Normal	482	40.5
Low	16	1.3
Too low	2	0.2
I don't know	14	1.2
Total	1189	100.0

Figure 3 shows that the perceived workload is comparable across affiliation types, a little less than 60 percent of each affiliation type perceives their workload to be 'high' or 'too high'. The highest percentage of PhD students who experience 'too high' a workload is in the group of spare-time PhD students; however, they also have the highest percentage of perceived 'low' workload.

PhD students who experienced either a low/too low or high/too high workload were asked to what extent this bothered them. As shown in Figure 4, approximately 80 percent of the PhD students who experience their workload as 'too high' are either considerably or extremely bothered about their workload. In contrast, the majority of the PhD students who experience a high workload are 'somewhat' bothered about this. Approximately 75 percent of the PhD students with low work pressure are not bothered at all, or are somewhat bothered about their workload.

Figure 3. How would you describe the workload or time pressure in your PhD project? (presented by affiliation)

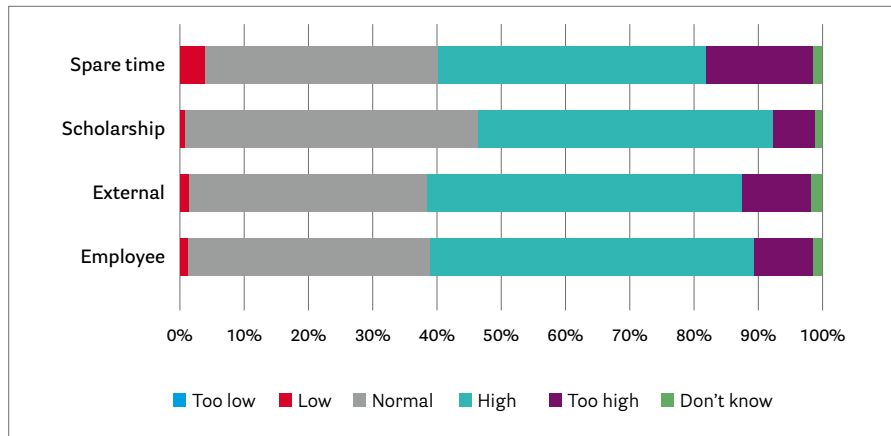
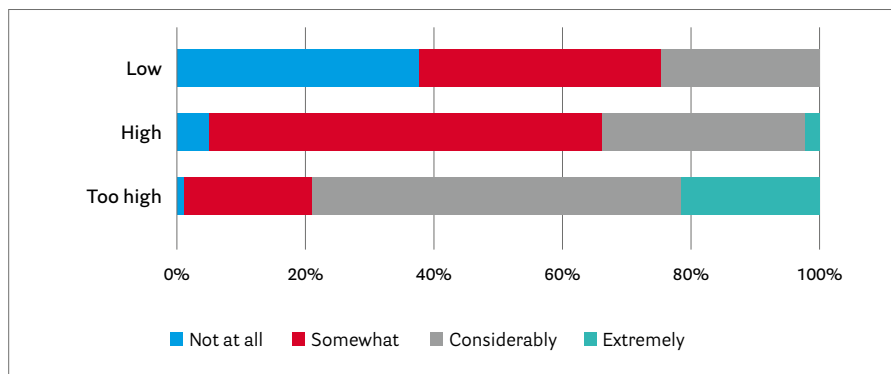


Figure 4. The extent to which PhD students are bothered about their workload, divided by the perceived workload



No significant differences were found between men and women in the extent to which they were bothered about their high or too high workload. This did not significantly differ for affiliation type or nationality either.

Level of freedom

PhD students were asked to indicate their level of freedom in their PhD project by means of six statements. On average, PhD students agree most with the statement, 'I have the freedom to choose which courses to take', and least with the statement, 'I have the freedom to choose which journals to publish in', on a five-point scale. The results for the other statements are presented in Table 11.

Table 11. Perceived level of freedom

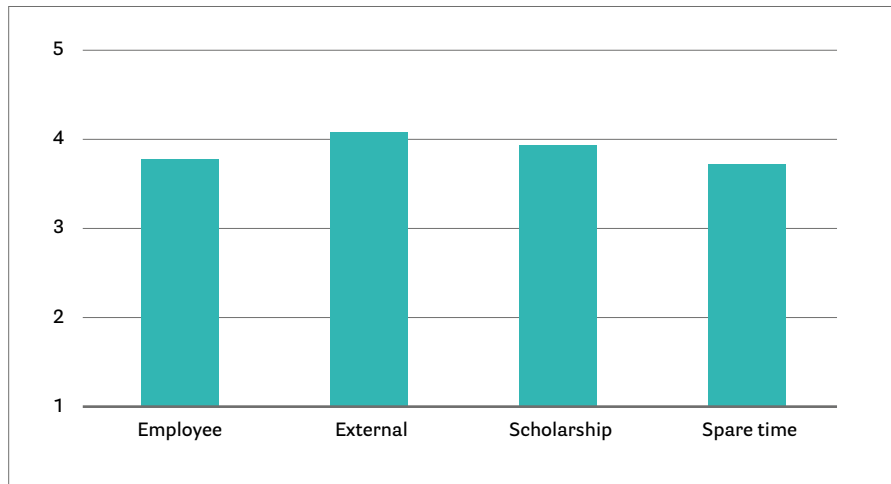
	N	M	Sd
In my PhD project there is much room for my own ideas.	1183	4.1	0.8
I have the freedom to make my own choices about the direction of my project and the methods to be used.	1179	3.9	0.9
I have the freedom to choose which conferences to attend.	1174	3.9	0.9
I have the freedom to choose which courses to take.	1171	4.1	0.8
I have the freedom to choose which journals to publish in.	1118	3.5	0.9
I have the freedom to choose when and where I work.	1170	3.9	1.0
Freedom scale ($\alpha = 0.8$)	1185	3.9	0.6

Note. Green indicates the highest item score in a scale, red indicates the lowest item score.

Significant differences were found for the different affiliation groups ($F(3,1107) = 4.6$, $p < .05$). PhD scholarship students have more freedom in choosing their PhD project (Programma Promotieonderwijs, 2019)⁶ than employee PhD students, but whether they also perceive more freedom during their studies or not is still a question. Although PhD scholarship students certainly perceive a very high level of freedom ($M = 4.0$, $Sd = 0.6$) and employee PhD students appear to perceive a little bit less freedom ($M = 3.9$, $Sd = 0.7$), this was not significantly different. External PhD students experienced the highest level of freedom ($M = 4.0$, $Sd = 0.6$); this is significantly higher than employee, but not scholarship, PhD students. Students who finish their PhD in their spare time perceive the significantly lowest level of freedom ($M = 3.8$, $Sd = 0.70$). An overview of the mean scores per affiliation group is presented in Figure 5.

6 <https://www.rug.nl/education/phd-programmes/phd-scholarship-programme/about/faqs-start>

Figure 5. Mean score on 'level of freedom' scale per affiliation group



As shown in Table 12, PhD students of the Graduate Schools of Law and Philosophy perceive the highest levels of freedom, while the PhD students in the Medical Sciences perceive the lowest level of freedom.

Table 12. Perceived level of freedom per Graduate School

	N	Mean	Sd
Behavioural and Social Sciences	117	3.9	0.6
Campus Fryslân	11	4.0	0.6
Economics and Business (SOM)	55	4.2	0.5
Humanities	83	4.2	0.6
Law	29	4.4	0.6
Medical Sciences	448	3.8	0.7
Philosophy	12	4.4	0.7
Science and Engineering	374	3.9	0.6
Spatial Sciences	41	4.1	0.7
Theology and Religious Studies	15	4.0	0.5

PhD students were asked to indicate who designed their project. As presented in Table 13, 35 percent of the PhD students indicated that they co-designed the project, while 36 percent indicated that their supervisor(s) designed the entire, or most of the, project. Another 19 percent indicated that the project was mostly designed by themselves, with help from their supervisor(s).

Table 13. Who designed your PhD project at the beginning of your trajectory?

	N	%
My supervisor(s) designed the entire project	200	16.8
My supervisor(s) designed most of the project; my contribution was modest	225	19.0
My supervisor(s) and I co-designed the project	417	35.1
I designed most of the project; my supervisor's/supervisors' contribution was modest	225	19.0
I designed the entire project	64	5.4
My project was designed by a national or international consortium	29	2.4
Other, namely	27	2.3
Total	1187	100.0

Table 14 shows the differences for the affiliation groups. In the PhD scholarship group, 44.0 percent of the PhD students indicated that they co-designed the project, and another 21.6 percent reported that they designed most of the project. For PhD students with an employee status, 28.2 percent indicated that they co-designed the project, and another 13.3 percent said they designed most of their project. For the external PhD students, the percentage who indicated that they designed most of their project was the highest, at 34.7 percent.

Table 14. Who designed your PhD project at the beginning of your trajectory?
(presented by affiliation)

	Employee	External	Scholarship	Spare time
N	525	121	389	77
My supervisor(s) designed the entire project	26.3	6.6	8.7	19.5
My supervisor(s) designed most of the project; my contribution was modest	21.7	9.1	18.5	14.3
My supervisor(s) and I co-designed the project	28.2	32.2	44.0	31.2
I designed most of the project; my supervisor's/supervisors' contribution was modest	13.3	34.7	21.6	16.9
I designed the entire project	2.3	14.9	5.9	13.0
My project was designed by a national or international consortium	5.0	0.8	0.3	1.3
Other	3.2	1.7	1.0	3.9

Supervising/teaching students

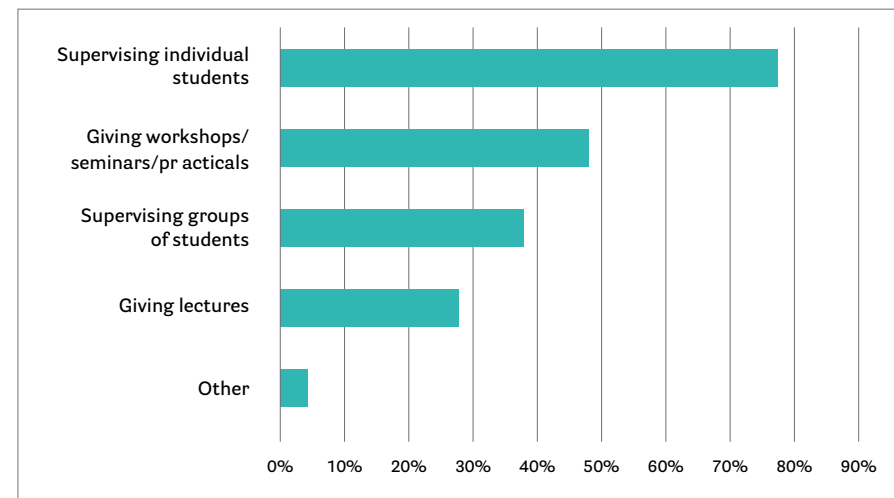
Employed and scholarship PhD students were asked whether they teach or supervise students. Of these, 62 percent reported that they do so, with the majority indicating that they do so on a voluntary base. Six percent of the PhD scholarship students indicated that they feel that they have to teach (although this is not allowed according to their contract). From the further explanations attached to this question, it is clear, however, that they were involved in occasional supervision of groups and individual students, as are most PhD students. The results are shown in Table 15.

Table 15. Do you teach and/or supervise students?

	Total		Employee		Scholarship	
	N	%	N	%	N	%
Yes, because it is obligatory	213	22.5	185	36.0	23	6.1
Yes, voluntarily	381	40.3	181	35.2	168	44.2
No	352	37.2	148	28.8	189	49.7
Total	946	100.0	514	100.0	380	100.0

Those PhD students (N = 594) who indicated they were involved in teaching and/or supervising students were asked what kind of teaching activities they do or have done during their PhD. Figure 6 shows that most PhD students (77 percent) have supervised individual students, while nearly 50 percent have given workshops, seminars or practicals.

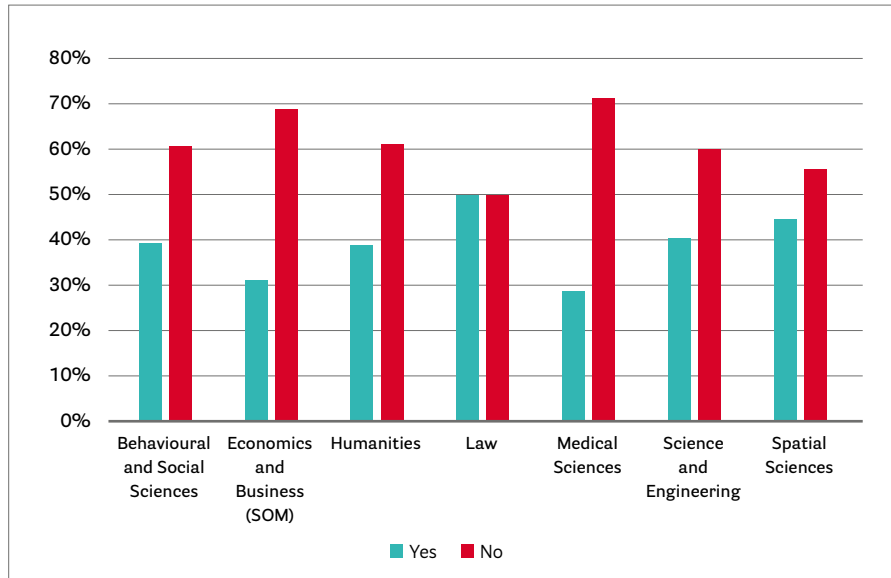
Figure 6. What kind of teaching activities do you do or have you done during your PhD trajectory?



Nearly two thirds of the PhD students (64 percent) who are involved in teaching or supervising felt that they did not receive sufficient training in how to teach or supervise students, while 36 percent indicated that they received sufficient training. Two years ago, 58 percent of the PhD students did not feel sufficiently trained. Of the PhD students who are involved in teaching or supervising students, 65 percent did not receive any educational courses in teacher training, while 24 percent received one course or more (9.2 percent).

Receiving teacher training or not does not clearly differ among nationality or affiliation type. The differences per Graduate School are shown in Figure 7. It was found that for all Graduate Schools, apart from the Graduate School of Law, more PhD students did not receive sufficient training than those who did receive sufficient training.

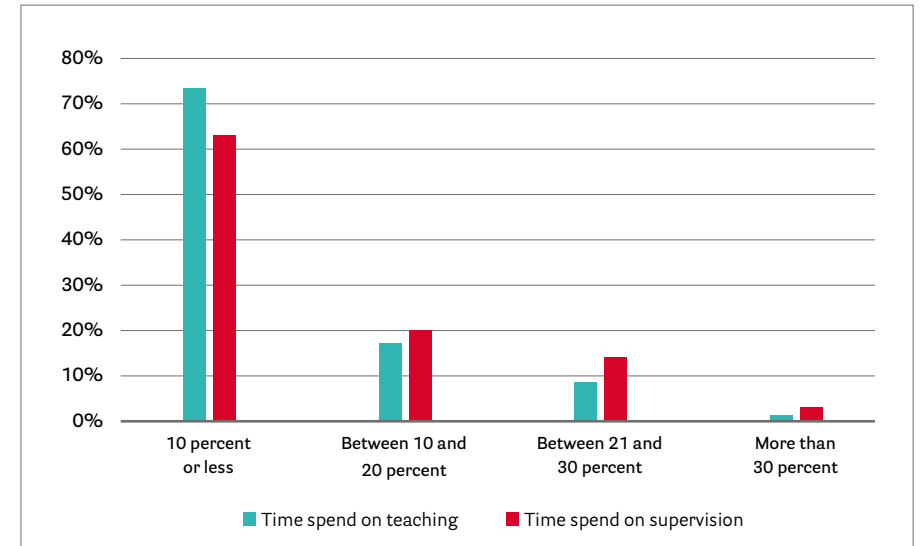
Figure 7. Do you (or did you) receive sufficient training on how to teach and supervise students?



PhD students were also asked what percentage of their time they spend, on average, on teaching and on supervising students. Their answers were divided into the categories presented in Figure 8. More than 70 percent of the PhD students indicated spending 10 percent or less of their time on teaching. More than 60 percent spend 10 percent or less on supervising students.

Two thirds of PhD students who teach or supervise are satisfied with the amount of time spent on teaching and supervising, while 16 percent would like to teach either more or less.

Figure 8. What percentage of your time do you spend, on average, on teaching or supervising students?



PhD students who indicated that they did not teach or supervise students were asked for the reasons why. Most (34.4 percent) indicated that their contract does not allow them to teach or supervise. Out of the 352 PhD students who do not teach or supervise, 65 indicated that they do not teach or supervise yet, but that they will in the future, while 62 indicated that they did not have time for teaching or supervising students. The results are shown in Table 16.

Table 16. Please indicate the reason(s) why you do not teach or supervise students

	N	%
My contract or agreement does not allow me to teach/supervise	121	34.4
I will in the future	65	18.5
I don't have time for it	62	17.6
I don't feel confident enough about my teaching/supervising skills	51	14.5
Other	42	11.9
I am not given the opportunity to teach/supervise students	23	6.5
I don't want to	20	5.7

Planning and delay

PhD students were asked to indicate the time period that is officially allotted to them for their PhD project. Of the PhD students who filled out the question, 60 percent indicated that this is four years, while 10 percent have three years to finish their PhD. Comparable to two years ago, more than 10 percent of the PhD students reported that the duration of their project has not officially been determined yet. An overview of the responses, per affiliation, is presented in Figure 9. Only the results of the categories with at least 5 percent of the total response group is presented.

Figure 9 shows that the division of contract length is comparable across the different groups, apart from the external PhD students. In this group, there is a relatively high percentage of PhD students (40 percent) who have not yet determined how long their PhD contract will last.

Figure 9. The official duration of the contract in percentages, displayed for the total group and per affiliation group

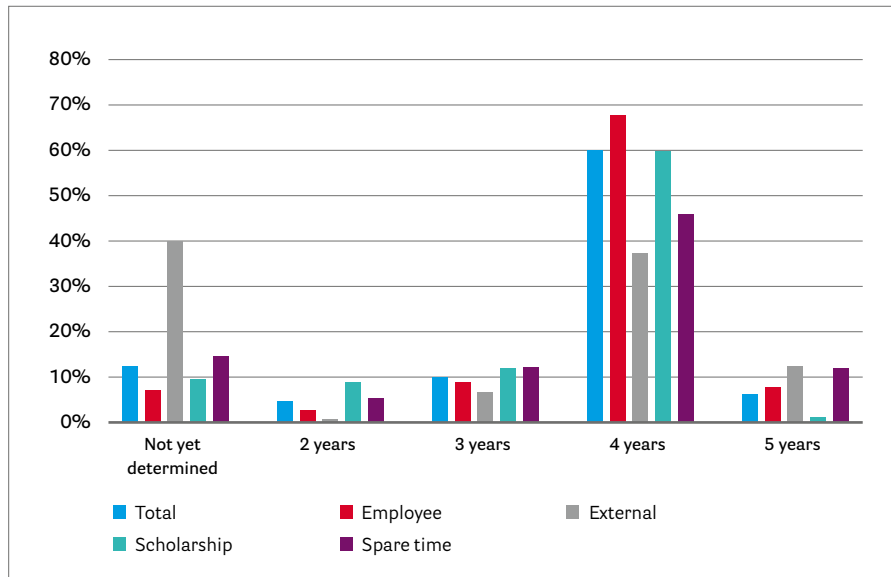


Table 17 presents the responses to the question, 'Are you currently on schedule with your work?' A little over 40 percent of the PhD students are both on schedule and think that they will be able to finish in time. This percentage (43.1 percent) is lower than two years ago (50 percent), but is comparable to the results from the surveys in 2013 (41 percent) and 2015 (45 percent).

This decrease could possibly be explained by the relative high number of starting PhD students in the 2017 sample, as starters are, just as was the case in previous years, the most optimistic about finishing in time.

To be able to compare starters, intermediates and seniors, the responses to the question, 'Are you currently on schedule with your work?', were divided into two categories. The first category expects to finish in time (Options 1 and 2), while the second category does not expect this (Options 3, 4 and 5). The results show that 96.9 percent of the starting PhD students fall into the first category, while 85.9 percent of the intermediate PhD students do so. Only 41.1 percent of the senior PhD students expect to finish in time.

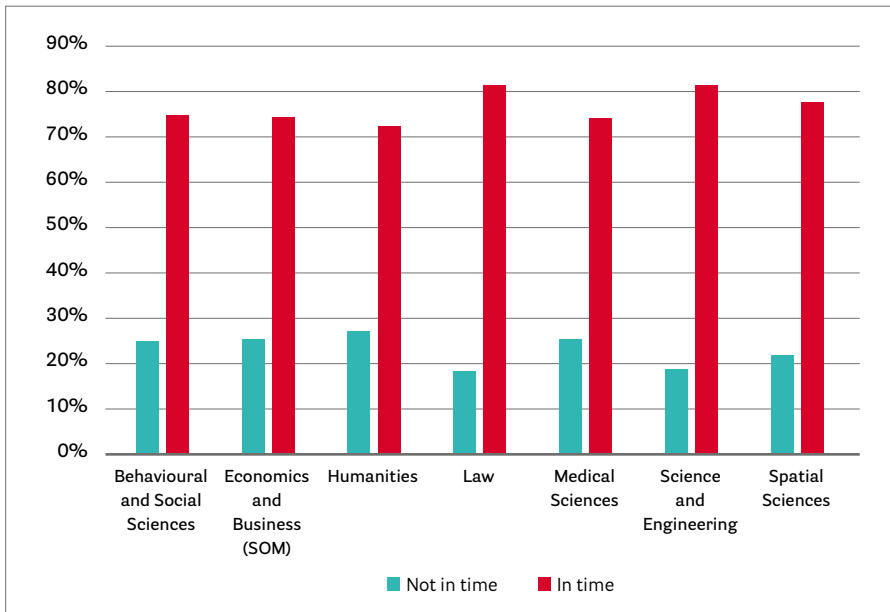
In previous years, the percentage of senior PhD students who had the confidence that they would finish in time was higher (49 percent in 2017, and 54 percent in 2015).

Table 17. Are you currently on schedule with your work?

	N	%
Yes, I think I will be able to finish my PhD in time	512	43.1
No, I have fallen behind, but I still think I will be able to finish in time	283	23.8
No, I have fallen behind and I don't think I will be able to finish in time	122	10.3
I was unable to finish in time and am currently on an extension	51	4.3
I was unable to finish in time and am currently finishing my thesis in my spare time	68	5.7
I do not have a schedule (yet)	38	3.2
I don't know (yet)	76	6.4
Other	39	3.3
Total	1189	100.0

Figure 10 shows how many PhD students in the various Graduate Schools are on schedule or not (only Graduate Schools with more than 15 respondents are shown). It was found that there were no big differences between Graduate Schools and that in all Graduate Schools most PhD students think that they are on schedule, with only 19-25 percent indicating that they were not going to finish in time.

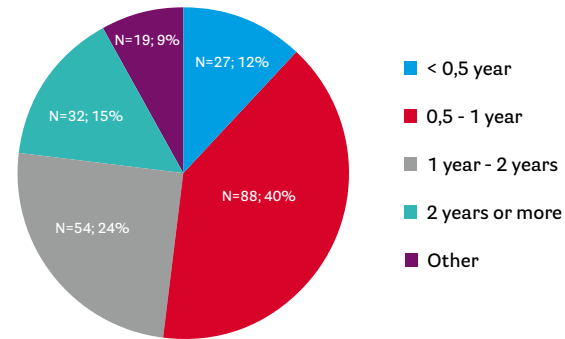
Figure 10. Percentage of PhD students indicating they will or will not finish in time, per Graduate School



Self-reported expected delay

PhD students who expected to be delayed (Options 3, 4 and 5), were asked to estimate their expected delay in months, with 91 percent (220 PhD students) providing an open answer. These answers were put into the categories presented in Figure 11. Most delayed PhD students expect to have a delay of half a year, up to (but not including) a year (40 percent), followed by PhD students who expect to have a year, up to (but not including) two years' delay (24.5 percent). More than 10 percent of the PhD students expect to have a delay of two years or more (14.5 percent).

Figure 11. Self-reported expected delay (in the 20-25 percent group that expects a delay)



PhD students (N = 524) who reported to be behind schedule (Options 2, 3, 4 and 5) were asked to indicate what the main reasons for their delay were. They were allowed to indicate multiple reasons. As shown in Table 18, PhD students who are behind schedule mostly report that they have experienced practical setbacks (49 percent), that their project is too complex (29 percent) or that their project is too big (25 percent).

Table 18. Reasons for delay

Reason	N	%
I have experienced too many practical setbacks (e.g. problems with equipment/ data collection)	259	49.4
My project is too complex	154	29.4
My project is too big	129	24.6
I have lost too much time because of my work on side projects or other tasks	125	23.9
I do not receive enough assistance or supervision	124	23.7
Personal circumstances	101	19.3
My planning is too tight	97	18.5
Lack of motivation	81	15.5
I have become completely stuck	80	15.3
Illness	76	14.5
I have a job alongside my PhD	54	10.3
I have lost too much time because of my teaching load	46	8.8
The demands from my supervisor are too high	34	6.5
Pregnancy	25	4.8
Changes in project	6	1.1

Table 19 shows the detailed results for various Graduate Schools (only Graduate Schools with at least 15 PhD students who reported being delayed, are presented). Too many practical setbacks is generally the main cause, but PhD students from the Graduate School of Humanities indicated that the most important reason was that their project is too big, whereas PhD students from the Graduate School of Law mostly indicated that they have too many side projects, other tasks and a high teaching load.

Table 19. Reasons indicated for delay (in the 20-25 percent group of PhD students that expect a delay), presented by Graduate School

	GSBSS	GSEB	GSH	GSL	GSMS	GSE	GSS
Total N	50	19	39	15	225	145	16
I have experienced too many practical setbacks (e.g. problems with equipment/data collection)	38%	63%	23%	7%	56%	54%	44%
My project is too big	26%	26%	38%	27%	25%	18%	19%
My project is too complex	28%	26%	26%	27%	31%	32%	13%
I have lost too much time because of my work on side projects or other tasks	36%	21%	21%	33%	26%	21%	6%
I do not receive enough assistance or supervision	24%	11%	23%	7%	25%	26%	25%
Personal circumstances	20%	16%	28%	27%	11%	26%	25%
My planning is too tight	28%	16%	31%	7%	17%	13%	44%
Lack of motivation	12%	21%	18%	7%	12%	21%	6%
I have become completely stuck	14%	16%	13%	13%	12%	20%	19%
Illness	26%	11%	26%	20%	9%	14%	19%
I have a job alongside my PhD	24%	16%	15%	13%	11%	3%	6%
I have lost too much time because of my teaching load	20%	26%	8%	33%	4%	8%	6%

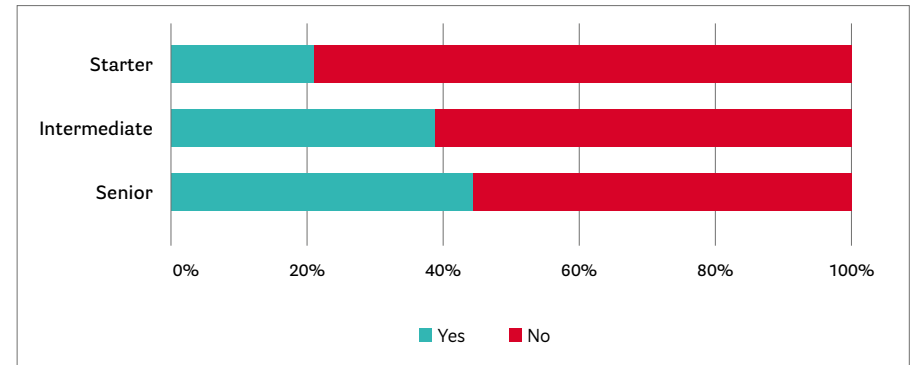
Note. The most often mentioned reason for each Graduate School is presented in red.

Considering quitting

Nearly two thirds of the PhD students (64.4 percent) answered the question, 'Have you ever considered quitting your PhD project?', with 'no, never', while approximately one quarter (27.1 percent) indicated they had considered quitting sometimes. Only a few PhD students consider this often (4.5 percent) or very often (4.0 percent). However, the percentage of PhD

students (35.6 percent) who considered this at least once is higher than the percentage reported two years ago (30 percent), and the years before that (ranging from 22 to 27 percent). This increase seems to be more apparent among Dutch PhD students, with 40.0 percent of the Dutch PhD students indicating that they had considered quitting more than once, while this was 26 percent two years ago. For non-Dutch PhD students, 32 percent indicated that they had considered quitting, which was almost the same (34 percent) as two years ago. As is shown in Figure 12, PhD students who have worked for a longer time on their thesis have more often considered quitting.

Figure 12. Have you ever considered quitting your PhD project?



PhD students were asked to indicate their main reason for considering quitting, with 384 PhD students providing such a reason. The main reasons (mentioned by 13 to 15 percent of the PhD students who ever considered quitting) were uncertainty about their capabilities, followed by a high workload and problems with supervisors and/or colleagues. Ten percent of the PhD students who considered quitting indicated they did not enjoy doing the PhD anymore, or that they had mental health problems.

ECTS to earn and already earned

Alongside completing their PhD thesis work, PhD students have the possibility to earn ECTS⁷ by performing educational activities, for example by following courses. If PhD students have a project of four years, they can generally earn 30 ECTS. However, there could be differences between the various types of PhD trajectories. The average number of ECTS

⁷ European Credit Transfer and Accumulation System.

that can be earned by PhD students during their PhD work is reported to be 27.0⁸ ECTS (Sd = 9.1). About 10 percent of the PhD students (10.1 percent) reported that they were under no obligation to earn ECTS, while 23.3 percent indicated that they did not know. PhD students (from the group that indicated that they had to earn ECTS and those who did not know) were asked to indicate how many ECTS they had already earned. This was 18.1 ECTS (Mean, Sd = 12.9). When various affiliation groups were compared, it was found that external PhD students have to earn the least credits (M = 23.0, Sd = 9.4), while PhD students with an employment status have to earn the most (M = 27.7, Sd = 8.8), followed by PhD scholarship students (M = 26.5, Sd = 8.7) and spare-time PhD students (M = 26.0, Sd = 11.5).

This chapter describes how PhD students relate to their supervisors, colleagues and department. These aspects were researched in the survey by means of asking for a response to several statements. A statement could be ignored if it was not applicable.

PhD students were also asked to fill out questions regarding two of their supervisors. The first supervisor asked about was the primary supervisor ('promotor'). In the case that more than one person acted in this role, the primary supervisor was defined as the person that the PhD student worked with the most. The second supervisor asked about was the daily supervisor. The daily supervisor was defined as the person in the supervisory team with whom the PhD student worked most closely. This role could also be fulfilled by someone who was not part of the official supervisory team. If a PhD student considered their primary supervisor and daily supervisor to be the same person, the PhD student was then only able to provide information about this person in their role as primary supervisor.

Frequency of meetings with first supervisor and daily supervisor

Of the PhD students, 42 percent indicated that the daily supervisor was the same person as the first supervisor ('promotor'), while 40.4 percent indicated that the daily supervisor was their 'co-promotor'. Some PhD students consider a postdoctoral fellow (8 percent), an assistant professor (2 percent), or multiple supervisors (2 percent) to be their daily supervisor(s). Two percent of the PhD students indicated that they did not have a daily supervisor, or indicated that another unspecified situation applied to them (3.5 percent). As shown in Table 20, PhD students indicated that they have a meeting/appointment with their daily supervisor about once a week (in the case of the daily supervisor not being the first supervisor). The vast majority of the PhD students (72.4 percent) meet their first supervisor at least once a month, while nearly 50 percent meet their first supervisor more often.

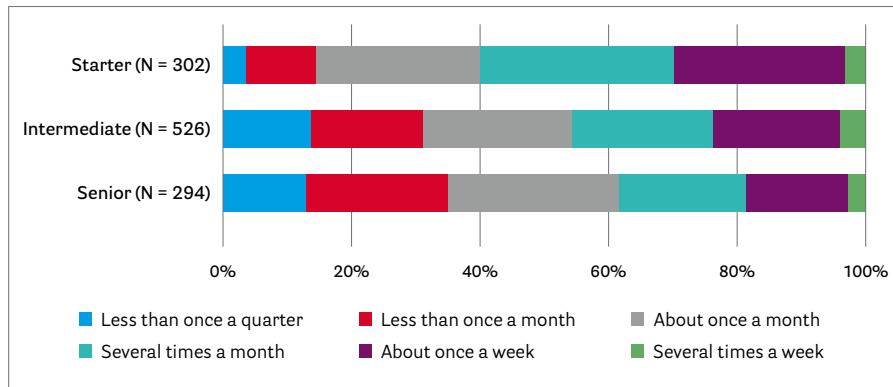
Table 20. How often do you have an appointment/meeting with your supervisor?

	N	Less than once a quarter	Less than once a month	About once a month	Several times a month	About once a week	Several times a week
First supervisor	1122	10.8	16.8	24.8	23.5	20.5	3.6
Daily supervisor	978	2.9	5.8	15.5	28.5	37.6	9.6

⁸ When calculating this average, two outliers (240 and 180) were removed.

As the amount of supervision might vary across the phases of a PhD, Figures 13 and 14 visualize how often PhD students meet their first supervisor (Figure 13) and daily supervisor (Figure 14) in each phase of the PhD project. Figure 8 shows that 60 percent of the starting PhD students indicate that they meet with their first supervisor at least several times a month. This percentage decreases with time as PhD students progress to later phases of their project.

Figure 13. Frequency of meetings with first supervisor, per phase



The same pattern is found for the meetings with the daily supervisors, as shown in Figure 14. When comparing Figures 13 and 14, it is apparent that – as was found in previous years – PhD students meet with their daily supervisor more often than with their first supervisor.

Figure 14. Frequency of meetings with daily supervisor, per phase

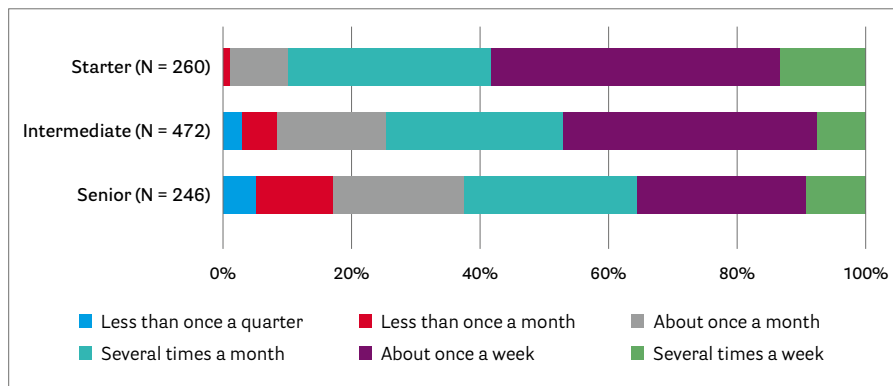
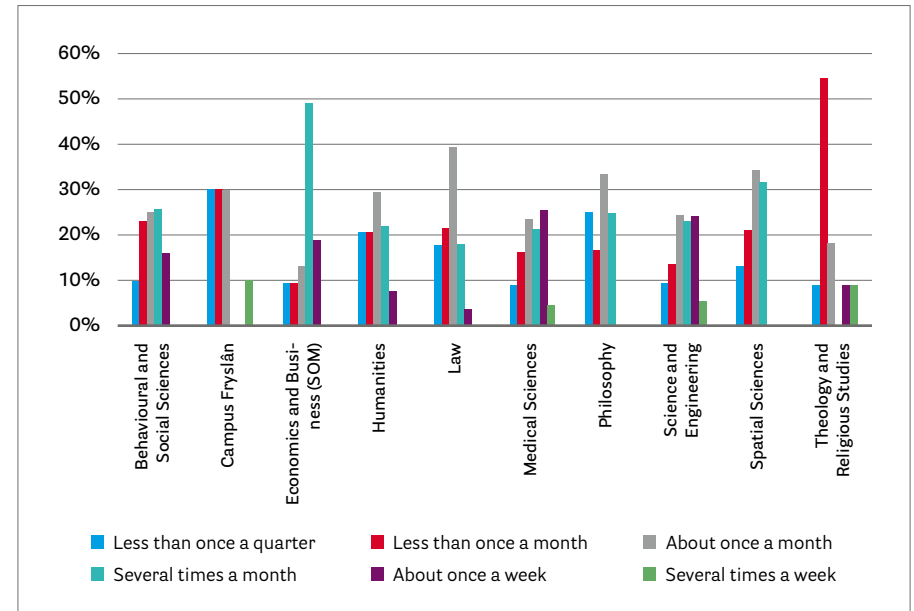


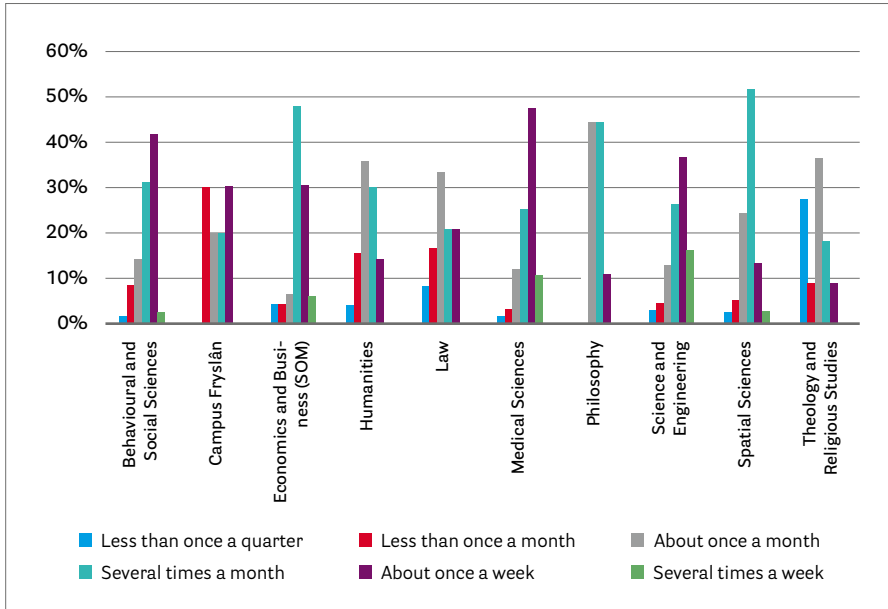
Figure 15 presents the frequencies of meetings with the first supervisor per Graduate School. The categories of 'About once a month' or 'Several times a month' are the most often chosen categories for most Graduate Schools.

Figure 15. Frequencies of meetings with first supervisor, per Graduate School



For daily supervisors, 'About once a week' or 'Several times a month' are most frequently chosen, as shown in Figure 16.

Figure 16. Frequencies of meetings with daily supervisor, per Graduate School



Relationship with first and daily supervisors

PhD students were asked to indicate how they would describe their relationship with their supervisors. Most PhD students (more than 40 percent) describe the relationship with their first supervisor as 'good', while more than 50 percent indicated that their relationship with their daily supervisor was 'very good'. An overview of the responses is presented in Figure 17.

Figure 17. Overall, how would you describe your relationship with your supervisor?

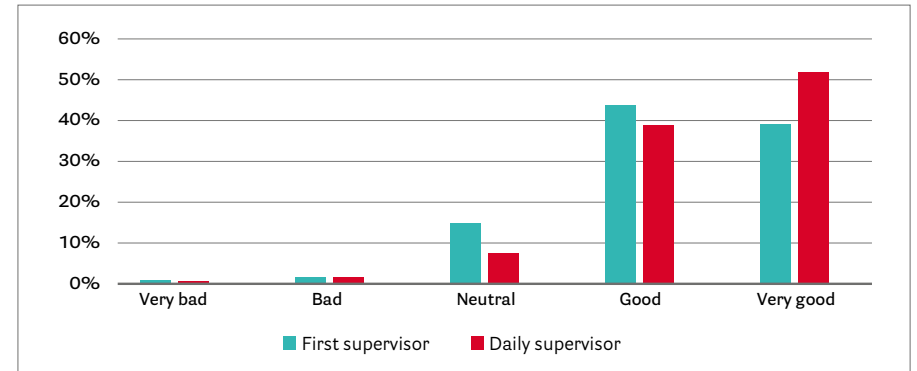
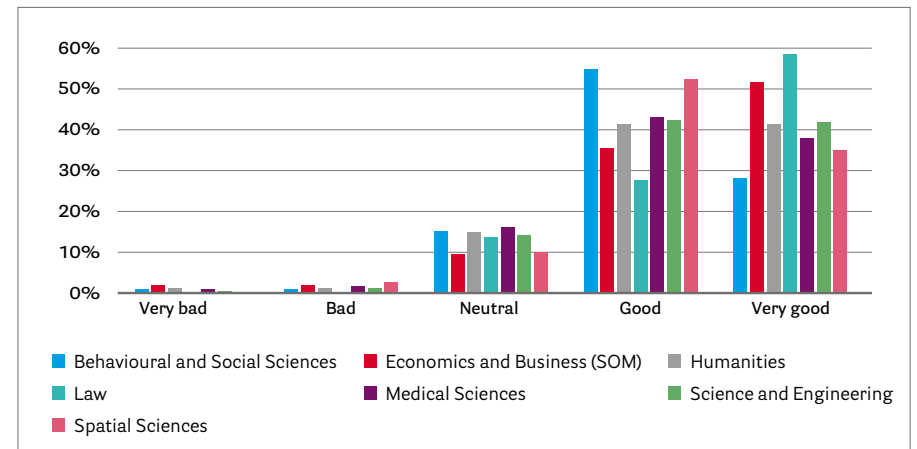


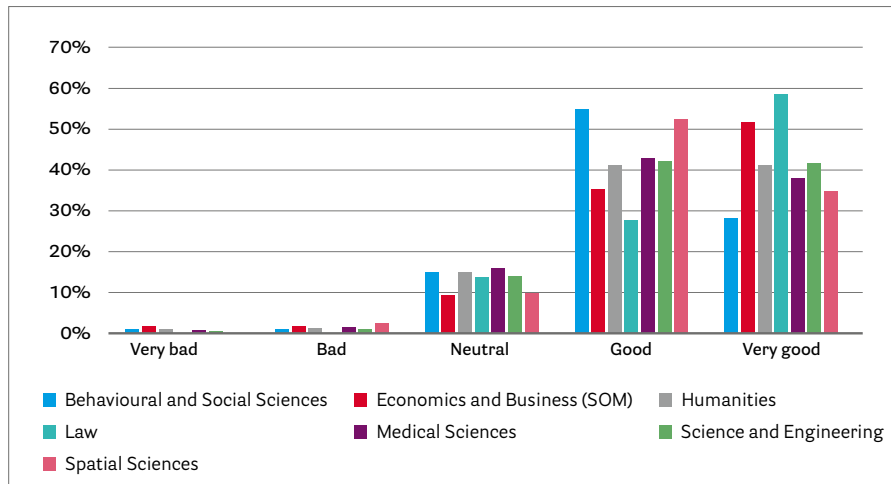
Figure 18 shows that PhD students from the Graduate Schools differ only slightly in their description of the relationship with their first supervisor. Most of the PhD students would describe their relationship as either 'good' or 'very good'. The Graduate School of Behavioural Sciences and the Graduate School of Spatial Sciences have relatively high percentages of PhD students who describe their relationship with their supervisor as 'good', while the Graduate Schools of Economics and Business, and Law have a relatively high percentage of students that describe their relationship as 'very good'.

Figure 18. Overall, how would you describe your relationship with your first supervisor? (presented for Graduate Schools with more than 15 participants)



As shown in Figure 19, the majority of the PhD students describe their relationship with their daily supervisor in each of the Graduate Schools presented as 'good' or 'very good'. More than 60 percent of PhD students in the Graduate School of Economics and Business and the Graduate School for the Humanities describe this relationship as 'very good'.

Figure 19. Overall, how would you describe your relationship with your daily supervisor?
(presented for Graduate Schools with more than 15 participants)



Availability and different types of support

PhD students were asked for their opinion by means of items that could be scored on a five-point scale (from completely disagree to completely agree) about the availability of their supervisors, the academic and personal support they provide, and the extent to which they support their path to autonomy as a researcher. Scale scores were calculated on the basis of the scores on the individual statements. A full overview of the item and scale score items are presented in Table 21, where the highest (green) and lowest (red) item score per scale and per supervisor are indicated. A comparison between first supervisor and daily supervisor is not indicated in the table.

Table 21. An overview of the mean scores on each of the items, presented per scale and per supervisor

	First supervisor			Daily supervisor		
	N	M	Sd	N	M	Sd
Availability						
My supervisor responds to my queries or requests for help within a reasonable time frame	1121	4.1	0.9	926	4.4	0.8
My supervisor provides me with prompt feedback whenever I submit written work to him/her	1094	4.0	1.0	910	4.2	0.9
My supervisor is available to answer any questions I have	1119	4.1	1.0	918	4.4	0.8
Scale score ($\alpha_{\text{first}} = 0.87, \alpha_{\text{daily}} = 0.86$)	1127	4.1	0.9	927	4.3	0.8
Academic support						
My supervisor helps me to plan and manage the different research tasks I have to complete	1091	3.4	1.1	896	3.7	1.1
My supervisor helps me construct timelines and deadlines to ensure that I complete tasks on time	1088	3.2	1.1	889	3.4	1.2
My supervisor gives me good, practical advice about how to plan and conduct my research	1089	3.6	1.1	889	3.9	1.0
My supervisor offers suggestions about how to find the resources I need	1081	3.7	1.0	881	4.0	.9
My supervisor gives me guidance in finding relevant literature and research materials	1089	3.6	1.1	889	3.8	1.0
My supervisor helps me develop good writing skills (e.g. expression of ideas, grammar, structure of thesis, etc.)	1071	3.4	1.1	880	3.7	1.1
My supervisor looks for information that will help me with my thesis	1075	3.1	1.2	879	3.5	1.2
My supervisor teaches me the technical knowledge and skills that I need to complete my research	1072	3.1	1.1	880	3.5	1.1
My supervisor spends time helping me learn the skills I need to complete my research	1070	3.2	1.2	877	3.7	1.1
My supervisor provides practical assistance when I need help conducting research tasks	1072	3.8	1.0	879	4.0	1.00
Scale score ($\alpha_{\text{first}} = 0.93, \alpha_{\text{daily}} = 0.92$)	1110	3.4	0.9	904	3.7	0.8
Personal support						
My supervisor behaves warmly towards me when discussing my research and/or any problems I am experiencing	1093	4.1	0.9	890	4.3	0.9
My supervisor expresses understanding and empathy when I experience difficulties	1086	4.1	1.0	884	4.2	0.9

My supervisor listens and responds to any concerns I have	1085	4.1	0.9	884	4.2	0.9
My supervisor is friendly, supportive and approachable	1092	4.2	1.0	887	4.4	0.8
My supervisor comforts and reassures me when I am feeling down	1045	3.8	1.1	850	4.0	1.1
My supervisor compliments me and makes me feel good about myself and my work	1075	3.9	1.0	879	4.0	1.0
My supervisor shows me that he/she respects and values me	1079	4.0	1.0	878	4.1	0.9
My supervisor reassures me that I will be able to successfully complete my research/thesis	1070	4.0	1.0	874	4.1	1.0
My supervisor makes me feel that I have the ability to do well	1075	4.0	1.0	876	4.1	1.0
My supervisor is interested in my personal situation	1078	3.5	1.1	877	3.8	1.1
My supervisor tells me personal things about himself/herself	1080	3.5	1.2	882	3.8	1.1
My supervisor understands me	1069	3.6	1.0	873	3.8	1.0
My supervisor supports me when I have a conflict with a colleague	905	3.5	1.0	742	3.7	1.0
Scale score ($\alpha_{\text{first}} = 0.96$, $\alpha_{\text{daily}} = 0.96$)	1101	3.9	0.8	893	4.0	0.8
Autonomy						
My supervisor encourages me to ask questions	1082	4.1	0.9	883	4.2	0.8
My supervisor encourages me to be open about my own ideas and any issues that concern me	1078	4.1	0.9	877	4.2	0.8
My supervisor listens to how I would like to do things	1077	4.1	0.9	878	4.2	0.8
My supervisor welcomes my input in discussions and treats my ideas with respect	1082	4.2	0.9	877	4.3	0.8
My supervisor provides me with choices and options	1069	3.9	0.9	872	4.1	0.9
My supervisor encourages me to work independently	1076	4.3	0.8	870	4.4	0.7
My supervisor always presses his/her own point of view*	1066	3.0	1.2	868	2.9	1.2
My supervisor gives me the main responsibility for my project	1075	4.2	0.8	872	4.3	0.8
Scale score ($\alpha_{\text{first}} = 0.81$, $\alpha_{\text{daily}} = 0.81$)	1094	4.0	0.6	887	4.1	0.6

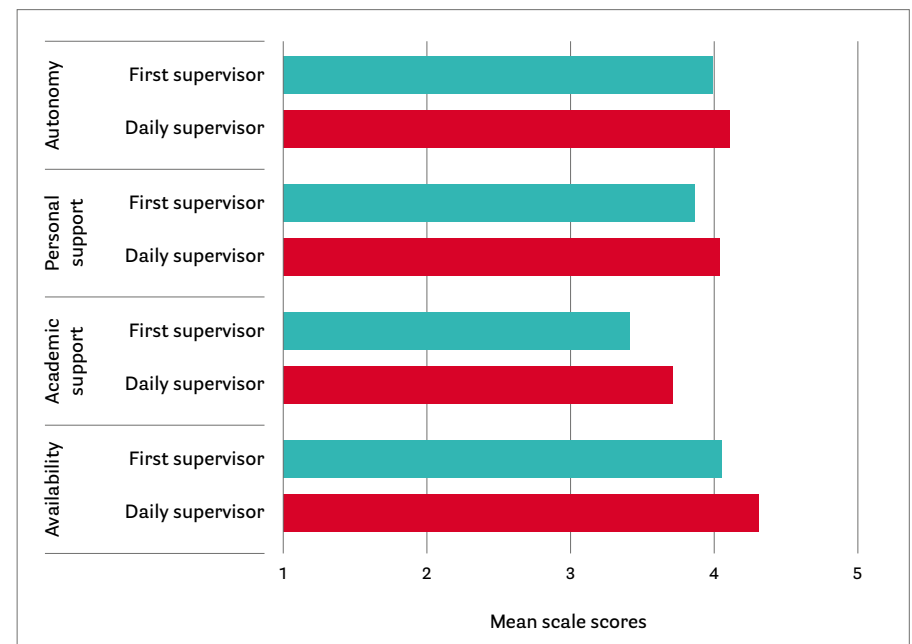
Note. The green numbers indicate the highest average score, while the red numbers indicate the lowest score per scale, per supervisor.

* This item was recoded in the calculation of the scale score.

Figure 20 presents the means scale scores for the first supervisor and daily supervisor. It is apparent that PhD students, on average, agree with the statements about the availability of their supervisors; the PhD students generally indicated that their supervisors respond to their requests on time and that they receive sufficient personal support and autonomy. PhD students gave lower, but still positive scores to the academic support that they received from their supervisors.

When the scale scores from both supervisors are compared, it is apparent that PhD students consider that their daily supervisor is more available, provides more support (academic and personal) and stimulates their autonomy more than their first supervisor. These differences are largest in the 'academic support' and 'availability' scores.

Figure 20. Average scale scores for first supervisor and daily supervisor



Group differences for the availability scale

In Table 22, the mean scale scores for the first and daily supervisor are presented per phase, gender, nationality, affiliation and Graduate School. It is apparent that the perceived availability of the first supervisor differs more across groups than the perceived availability of the daily supervisor. As was found two years ago, first-year PhD students were the most positive about the availability of their supervisors, in comparison to intermediate and senior PhD students. Also, clear differences were found for affiliation type: PhD students who work on their PhD in their spare time report their supervisors to be less available than do other PhD students. PhD students who are in the Graduate School of Law agree most with statements regarding the good availability of their first supervisor, while they agree the least on these statements in relation to the availability of their daily supervisor.

Table 22. Mean scale scores per phase, gender, nationality, affiliation and Graduate School for daily supervisor and daily supervisor on the availability scale

		First supervisor			Daily supervisor		
		N	Scale score	Sd	N	Scale score	Sd
Phase	Starter	304	4.3	0.7	246	4.4	0.7
	Intermediate	526	4.0	0.9	447	4.3	0.7
	Senior	297	3.9	0.9	234	4.2	0.8
	Max difference		0.4			0.2	
Gender	Man	455	4.1	0.8	378	4.3	0.7
	Woman	655	4.0	0.9	534	4.3	0.7
	Difference		0.1			0.0	
Nationality	Non-Dutch	611	4.1	0.9	492	4.3	0.8
	Dutch	507	4.0	0.8	428	4.3	0.7
	Difference		0.2			0.0	
Affiliation	Employee	498	4.0	0.8	410	4.3	0.7
	External	113	4.1	0.9	104	4.4	0.7
	Scholarship	370	4.2	0.8	296	4.3	0.7
	Spare time	73	3.8	1.0	51	4.1	0.8
	Max difference		0.3			0.2	

Graduate schools							
Behavioural and Social Sciences	111	3.9	0.8	102	4.4	0.7	
Campus Fryslân	10	3.7	0.9	10	4.4	0.7	
Economics and Business (SOM)	54	4.2	0.8	45	4.4	0.7	
Humanities	79	4.1	1.0	64	4.4	0.8	
Law	29	4.3	0.7	22	4.2	0.7	
Medical Sciences	429	4.0	0.9	366	4.3	0.8	
Philosophy	12	4.0	0.8	9	4.3	0.7	
Science and Engineering	353	4.1	0.8	259	4.3	0.8	
Spatial Sciences	38	4.1	0.9	38	4.3	0.7	
Theology and Religious Studies	12	4.2	0.7	12	4.1	0.7	
Max difference		0.4			0.2		

Note. Green indicates the highest scale score in a group, red indicates the lowest score in the case that the maximum difference was 0.4 or higher. Only groups with more than 15 participants were included.

Group differences for the academic support scale

Statements regarding the academic support scale include, for example, 'My supervisor helps me construct timelines and deadlines to ensure that I complete tasks on time' or 'My supervisor provides practical assistance when I need help conducting research tasks'. Table 23 shows that first-year PhD students perceive more academic support than senior PhD students. This difference is especially visible for the first supervisor, but less for the daily supervisor. Non-Dutch students and PhD scholarship students perceive more academic support than students with different affiliation types.

Table 23. Mean scale scores with respect to the perceived academic support from the first and daily supervisors, as subdivided for PhD student's phase, gender, nationality, affiliation and Graduate School

		First supervisor			Daily supervisor		
		N	Scale score	Sd	N	Scale score	Sd
Phase	Starter	299	3.7	0.8	241	3.9	0.7
	Intermediate	516	3.4	0.9	436	3.7	0.8
	Senior	295	3.2	0.9	227	3.6	0.9
	Max difference		0.5			0.3	
Gender	Man	444	3.6	0.8	369	3.8	0.8
	Woman	649	3.3	0.9	520	3.6	0.8
	Difference		0.3			0.2	
Nationality	Non-Dutch	601	3.6	0.9	479	3.9	0.8
	Dutch	500	3.2	0.8	417	3.5	0.8
	Difference		0.4			0.3	
Affiliation	Employee	491	3.3	0.9	404	3.6	0.8
	External	110	3.3	0.9	102	3.6	0.8
	Scholarship	365	3.6	0.8	287	3.9	0.7
	Spare time	72	3.1	1.0	46	3.6	0.9
	Max difference		0.6			0.3	
Graduate schools	Behavioural and Social Sciences	109	3.3	0.8	102	3.6	0.9
	Campus Fryslân	10	2.8	0.9	10	3.5	0.7
	Economics and Business (SOM)	53	3.5	0.9	44	3.8	0.7
	Humanities	77	3.3	0.8	61	3.7	0.8
	Law	28	3.7	1.0	21	3.6	0.9
	Medical Sciences	423	3.4	0.8	355	3.7	0.8
	Philosophy	11	3.0	0.9	9	3.5	1.0
	Science and Engineering	348	3.5	0.9	253	3.8	0.9
	Spatial Sciences	40	3.5	0.8	38	3.8	0.7
	Theology and Religious Studies	11	3.6	0.8	11	3.9	0.7
Max difference		0.3			0.2		

Note. Green indicates the highest scale score in a group, red indicates the lowest score in the case that the maximum difference was 0.4 or higher. Only group sizes with more than 15 participants were included.

Group differences for the personal support scale

As shown in Table 24, on average, both supervisors score the highest on the statement, 'My supervisor is friendly, supportive and approachable', in the personal support scale. As with the autonomy and academic support scale, first-year PhD students perceive the most personal support from both supervisors. Also, spare-time PhD students agree the least with the statements regarding personal support, while PhD scholarship (in relation to first supervisor) and external PhD students (in relation to daily supervisor) agree with these statements the most.

Table 24. Mean scale scores per phase, gender, nationality, affiliation and Graduate School for first supervisor and daily supervisor on the personal support scale

		First supervisor			Daily supervisor		
		N	Scale score	Sd	N	Scale score	Sd
Phase	Starter	300	4.1	0.7	239	4.2	0.7
	Intermediate	509	3.9	0.8	431	4.0	0.8
	Senior	292	3.7	0.9	223	4.0	0.9
	Max difference		0.4			0.2	
Gender	Man	440	4.0	0.8	362	4.1	0.7
	Woman	644	3.8	0.8	516	4.0	0.8
	Difference		0.1			0.1	
	Non-Dutch	595	3.9	0.9	475	4.0	0.8
	Dutch	497	3.8	0.8	411	4.1	0.7
	Difference		0.1			0.0	
Affiliation	Employee	487	3.8	0.8	397	4.0	0.8
	External	109	4.0	0.8	101	4.1	0.7
	Scholarship	362	4.0	0.8	284	4.1	0.7
	Spare time	72	3.6	1.1	46	3.8	1.1
	Max difference		0.4			0.3	
	Graduate schools	Behavioural and Social Sciences	111	3.9	0.8	102	4.1
Campus Fryslân		10	3.5	0.9	10	3.8	0.7
Economics and Business (SOM)		53	3.9	0.8	43	4.1	0.9
Humanities		76	3.9	0.8	61	4.2	0.7
Law		29	4.1	0.8	22	4.0	0.8
Max difference			0.4			0.3	

Medical Sciences	415	3.8	0.9	352	4.1	0.8
Philosophy	11	3.7	0.8	8	3.9	0.9
Science and Engineering	347	3.9	0.8	247	4.0	0.8
Spatial Sciences	38	3.8	0.8	37	4.1	0.8
Theology and Religious Studies	11	3.9	0.8	11	4.1	0.8
Max difference		0.3			0.2	

Note. Green indicates the highest scale score in a group, red indicates the lowest score in the case that the maximum difference was 0.4 or higher. Only groups with more than 15 participants were included.

Group differences for the autonomy scale

PhD students were asked to fill out questions regarding their perceived support for acquiring autonomy. Both supervisors scored, on average, the highest on the statement, 'My supervisor encourages me to work independently', while both of them scored the lowest on the statement, 'My supervisor provides me with choices and options'. As displayed in Table 25, a similar pattern as that seen with the other support scales discussed above was found for this scale: senior PhD students and spare-time students agree the least with the statements. The supervisors from the Graduate School of Economics and Business received, on average, the highest score.

Table 25. Mean scale scores per phase, gender, nationality, affiliation and Graduate School for first supervisor and daily supervisor on autonomy scale

		First supervisor			Daily supervisor		
		N	Scale score	Sd	N	Scale score	Sd
Phase	Starter	298	4.1	0.5	235	4.2	0.5
	Intermediate	508	4.0	0.6	431	4.1	0.6
	Senior	288	3.9	0.6	221	4.0	0.7
	Max difference		0.3			0.2	
Gender	Man	439	4.1	0.6	363	4.1	0.6
	Woman	639	4.0	0.6	510	4.1	0.6
	Max difference		0.1			0.1	
Nationality	Non-Dutch	592	4.1	0.6	474	4.1	0.6
	Dutch	493	3.9	0.5	406	4.1	0.6
	Max difference		0.1			0.0	

Affiliation	Employee	481	4.0	0.6	392	4.1	0.6
	External	109	4.0	0.6	101	4.1	0.6
	Scholarship	365	4.1	0.6	286	4.2	0.5
	Spare time	70	3.8	0.7	45	3.9	0.8
	Max difference		0.3			0.3	
	Graduate schools	Behavioural and Social Sciences	111	3.9	0.6	102	4.1
Campus Fryslân		10	3.8	0.5	10	4.2	0.6
Economics and Business (SOM)		53	4.1	0.5	43	4.3	0.5
Humanities		76	4.0	0.6	60	4.3	0.5
Law		28	4.1	0.5	21	4.1	0.6
Medical Sciences		413	4.0	0.6	354	4.1	0.6
Philosophy		11	3.9	0.5	8	4.2	0.7
Science and Engineering		342	4.0	0.6	241	4.1	0.6
Spatial Sciences		39	3.9	0.5	37	4.1	0.6
Theology and Religious Studies		11	4.0	0.6	11	4.2	0.7
Max difference		0.2			0.3		

General conclusions regarding supervisor availability, academic and personal support, and support in acquiring autonomy as a researcher

A few general conclusions can be drawn:

- If there are differences between groups, these are generally larger with respect to first supervisors compared to daily supervisor support.
- Starting PhD students are the most positive on all aspects.
- Men are more positive than women on all aspects, but the differences are generally small.
- No clear differences were found for nationality, apart from the academic support scale, in which non-Dutch are more positive than Dutch students.
- Spare-time students were the least positive on all aspects; PhD scholarship students are generally the most positive.
- No clear pattern was found for differences between Graduate Schools: the maximum difference range was between 0.2 and 0.4.

Expectations

PhD students were asked to indicate to what extent they agreed on statements about the expectations of their supervisors (scored on a five-point scale from completely disagree to

completely agree; the scale score is not displayed, as it would be difficult to interpret). While some items can clearly be regarded as 'negative', such as, 'I feel that my supervisor is pushing me too much', this cannot be concluded for items such as, 'My supervisor expects me to publish in high-impact journals'. The item scores are presented in Table 26: the scores are comparable to those of two years ago. Although first supervisors expect more from their PhD students than daily supervisors, the differences are small. The two statements that can be regarded as 'negative' received the lowest scores (on average, 'disagree'): 'I have the impression that nothing is good enough for my supervisor' and 'I feel that my supervisor is pushing me too much'. Clearly, these items are not an issue.

Table 26. Average item scores about the supervisors' expectations

	First supervisor			Daily supervisor		
	N	M	Sd	N	M	Sd
My supervisor expects me to publish in high-impact journals	1032	3.8	1.0	844	3.7	1.0
My supervisor expects all of my papers to be published before I submit my thesis	969	2.8	1.1	795	2.8	1.1
My supervisor expects me to finish my PhD in my spare time if I don't finish within the time of my contract	905	3.2	1.1	736	3.2	1.1
My supervisor thinks that courses and seminars are a waste of time	1041	2.1	1.0	841	2.0	1.0
My supervisor emphasizes the importance of finishing my PhD in time	1015	3.5	1.1	821	3.6	1.0
I have the impression that nothing is good enough for my supervisor	1043	2.1	1.1	853	2.0	1.1
I feel that my supervisor is pushing me too much	1053	2.1	1.1	856	2.0	1.0

Relationship with the department

PhD students who still had a contract, were asked to share their opinion about relationships within their department and the way they felt about being part of this department. This was done by asking them to score a number of statements (scored on a five-point scale from completely disagree to completely agree). A distinction was made between formal, work-related relationships (the academic relationship scale), and informal, socially related relationships (informal/social relationships). The sense of belonging scale received, on average, the highest scale score, with 3.8 (Sd = 0.7). For this scale, PhD students

agreed most with the statement, 'I get on well with most of the people in my department', while the statement, 'I share the same values with most of the people in my department', received the lowest score (M = 3.7).

PhD students agreed, on average, a little less with the statements in the academic relationship scale (M = 3.6, Sd = 0.7). The highest score for this scale was found for the statement, 'My interpersonal relationships with my colleagues have a positive influence on my performance'; while the statement, 'Colleagues invite me to work with them on projects or tasks', received the lowest average score (M = 3.2, Sd = 1.1).

PhD students agree slightly less with the statements for the informal/social relationships scale (M = 3.6, Sd = 1.1). Although PhD students indicate that 'Colleagues are interested in how I am doing', they agreed less with the statement, 'I regularly spend time outside work with my colleagues'. An overview of the item and scale scores is presented in Table 27.

Table 27. Item and scale scores for the 'Academic relationship scale', 'Informal/social relationships scale' and 'Sense of belonging scale'

Academic relationship scale	N	M	Sd
Colleagues invite me to work with them on projects or tasks.	930	3.1	1.1
It is easy to find colleagues to collaborate with.	938	3.2	1.1
In my department, people often work together.	954	3.3	1.1
Colleagues approach me to discuss their work.	959	3.5	1.0
Colleagues appreciate my feedback.	932	3.8	0.7
I collaborate well with my colleagues.	941	3.8	0.8
My interpersonal relationships with my colleagues have a positive influence on my performance.	965	4.0	0.8
There are people to turn to in my department when I need help.	970	4.0	0.9
Scale score ($\alpha = 0.89$)	993	3.6	0.7
Informal/social relationships			
I know my colleagues quite well.	985	3.6	0.9
My colleagues are interested in how I am doing.	985	3.7	0.8
I regularly spend time outside work with my colleagues.	983	3.2	1.1
I have close interpersonal relationships with my colleagues.	985	3.3	1.1
Scale score ($\alpha = 0.88$)	991	3.5	0.9

Sense of belonging			
I feel at home in my department.	983	3.7	0.9
I enjoy the atmosphere in my department.	983	3.8	0.9
This department is a good place for me to work.	984	3.9	0.8
I get on well with most of the people in my department.	978	4.1	0.7
I share the same values with most of the people in my department.	961	3.7	0.8
Scale score ($\alpha = 0.90$)	990	3.8	0.7

Note. Green indicates the highest item score in a scale, red indicates the lowest item score.

Group differences relationship scales

Table 28 displays the average scale scores across groups. No clear pattern was found across scales when the item concerning the phase of the project was assessed. Senior PhD students who still have a contract are the most positive about the informal relationships with their colleagues, but agree the least with the statements on the sense of belonging to their department. Small differences were found between Dutch and non-Dutch students, with Dutch students agreeing more with positive statements in each of the three scales.

External PhD students feel the least connection with their colleagues and department. About half a scale point difference (on a five-point scale) was found for the 'informal/social relationship' scale for these PhD students compared with PhD students with a scholarship or employee status. Possibly, this is due to the fact that external PhD students generally work elsewhere, at an external company, and are therefore not very integrated within the University or UMCG. Table 28 also shows differences between Graduate Schools with, on the academic relationship scale, nearly half a scale point difference between the Graduate School of Law ($M = 3.7$) and that of Spatial Sciences ($M = 3.3$).

Table 28. Descriptive statistics per group for the academic relationship scale, informal/social relationship scale and sense of belonging scale

	Academic relationship scale			Informal/social relationship scale			Sense of belonging		
	N	Scale	Sd	N	Scale	Sd	N	Scale	Sd
Starter	293	3.7	0.7	292	3.4	0.8	292	3.9	0.6
Intermediate	504	3.6	0.7	503	3.5	0.9	502	3.8	0.7
Senior	196	3.6	0.7	196	3.6	0.9	196	3.7	0.8
Max difference		0.1			0.2			0.3	
Men	403	3.6	0.7	405	3.5	0.8	406	3.8	0.7
Women	575	3.6	0.7	571	3.5	0.9	569	3.8	0.7
Difference		0.0			0.0			0.1	
Non-Dutch	537	3.5	0.9	539	3.4	0.9	540	3.7	0.9
Dutch	448	3.7	0.8	444	3.6	0.8	442	3.9	0.8
Difference		0.1			0.2			0.2	
Employee	500	3.7	0.7	502	3.6	0.9	502	3.9	0.7
External	74	3.5	0.8	69	3.0	0.8	67	3.6	0.7
Scholarship	369	3.6	0.7	370	3.4	0.8	370	3.8	0.7
Max difference		0.2			0.5			0.3	
Behavioural and Social Sciences	101	3.6	0.6	99	3.5	0.8	99	3.7	0.7
Campus Fryslân	10	3.4	0.7	10	3.6	0.9	10	3.6	0.7
Economics and Business (SOM)	48	3.3	0.8	49	3.4	0.9	48	3.8	0.7
Humanities	52	3.4	0.8	53	3.4	1.0	52	3.7	0.8
Law	24	3.7	0.8	23	3.5	0.9	23	3.9	0.7
Medical Sciences	371	3.6	0.7	369	3.5	0.9	369	3.8	0.7
Philosophy	11	3.4	0.4	11	3.6	1.0	11	3.9	0.6
Science and Engineering	332	3.7	0.7	333	3.5	0.8	334	3.9	0.7
Spatial Sciences	35	3.3	0.5	35	3.4	0.9	35	3.7	0.6
Theology and Religious Studies	9	3.3	0.8	9	3.4	1.2	9	3.7	0.6
Max difference		0.5			0.1			0.3	

Note. Green indicates the highest scale score in a group, red indicates the lowest score in the case that the maximum difference was 0.4 or higher. Only group sizes with more than 15 participants were included.

5 | Employment conditions

First-year PhD students were asked to answer a number of questions to gain an insight into how starting PhD students receive information about their employment or scholarship conditions. As shown in Table 29, most employed PhD students (N = 155) indicated that they receive this information during an appointment with HRM, their job interview or from the information package. PhD scholarship students (N = 141) obtain information from the University's website or the PhD Scholarship Desk, or through an information package.

Table 29. How did you find out about your employment/scholarship conditions, such as monthly payment, workhours, rights and duties?

Employed PhD students	N	%	Scholarship PhD students	N	%
During my job interview	42	27.1	At my admission interview	22	15.6
An appointment with HRM	72	46.5	At the intake interview at the Graduate School	15	10.6
From my Graduate School	18	11.6	From the PhD Scholarship Desk	38	27.0
From the information package	42	27.1	From the information package	28	19.9
From the University's website	29	18.7	From the University's website	39	27.7
From my PhD guide	25	16.1	From my PhD guide	22	15.6
Other	27	17.4	Other	32	22.7
I did not receive any information	6	3.9	I did not receive any information	10	7.1
I do not remember	8	5.2	I do not remember	13	9.2

Almost 80 percent of the first-year employed PhD students feel that they were given sufficient information. However, 22 percent indicated that they did not, with some of them indicating that it would have been better if they learned about the employment conditions earlier in the application process. Also, some of them indicated that the working conditions should be explained more extensively.

Almost 65 percent of the first-year PhD scholarship students feel that they were given sufficient information; however, 35 percent indicated that they would have liked the differences between an employee status and a PhD scholarship student to have been explained better beforehand and that the information could be more detailed.

Those PhD students who indicated that they did not receive sufficient information, were asked whether they experienced problems due to this. As shown in Table 30, 62 percent of the PhD students with an employment status did not experience problems due to insufficient information. If there were problems, these could not be contributed to any particular reason.

Fifty five percent of the PhD scholarship students who indicated that they did not receive sufficient information, indicated that they felt they experienced problems. These were generally due to the practical consequences of being a PhD scholarship student rather than a PhD student with employment status. For example, they indicated that they experienced problems with acquiring health and rent tax benefits ('zorg- en huurtoeslag'). Also, they indicated that they experienced problems because their student status causes confusion for external organizations.

Table 30. Have you experienced problems due to the University's provision of information regarding your employment or scholarship conditions?

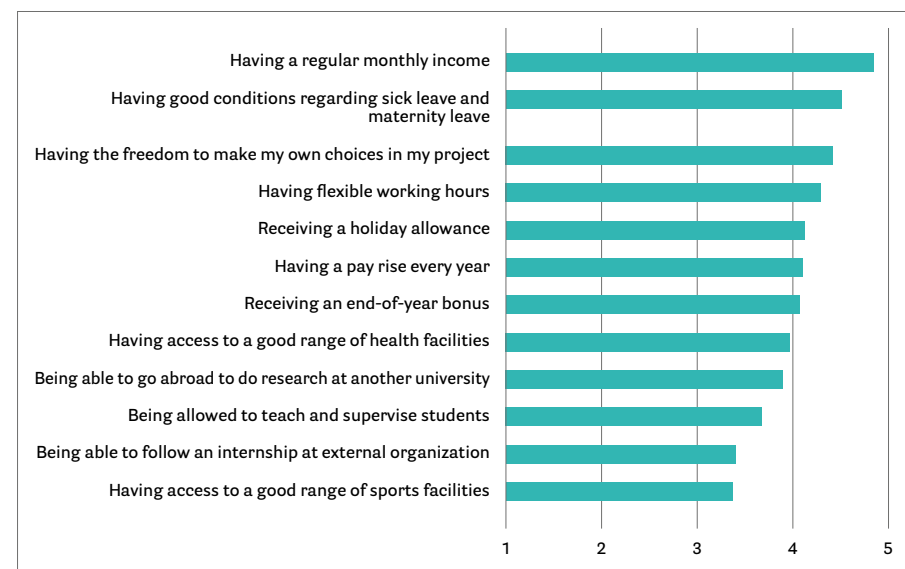
	Employment status		PhD Scholarship student	
	N	%	N	%
Yes, major problems	1	2.9	12	24.5
Yes, minor problems	12	35.3	15	30.6
No	21	61.8	22	44.9
Total	34	100.0	49	100.0

Rights and benefits

Importance of rights and benefits

PhD students were asked to share their opinion regarding the importance of and their satisfaction with certain rights and benefits as a PhD student. The importance of each right or benefit was scored on a five-point scale ranging from 'Not important at all' to 'Very important'. These statements were only presented to employee, scholarship and spare-time PhD students. As displayed in Figure 21, PhD students indicated that most of the rights and benefits are important/very important to them. In particular, having a regular monthly income, having good conditions regarding sick leave and maternity leave, and the freedom to make their own choices in the project are important conditions for PhD students. A good range of sports facilities and the opportunity to undertake an internship at a company or government organization were not considered very important.

Figure 21. The importance of rights and benefits



Differences between affiliation groups

Table 31 presents to what extent the affiliation groups differ in their opinion regarding the importance of rights and benefits. It is apparent that the groups do not differ much in their appreciation of most of the rights and benefits. However, for three benefits (sports facilities, health facilities and being able to go abroad), PhD scholarship students found this clearly more important (nearly half a point on a five-point scale) than both employee and spare-time PhD students.

Table 31. The importance of rights and benefits, presented by affiliation type

	Employee (N = 524)	Scholarship (N = 385)	Spare time (N = 77)	Max group difference
Having a regular monthly income.	4.8	4.9	4.8	0.1
Having a pay rise every year.	4.0	4.2	4.0	0.2
Receiving a holiday allowance	4.1	4.2	4.1	0.1
Receiving an end-of-year bonus	4.0	4.1	4.1	0.0
Having good conditions regarding sick leave and maternity leave.	4.5	4.6	4.5	0.1
Having access to a good range of sports facilities.	3.2	3.6	3.2	0.4
Having access to a good range of health facilities, including mental health services.	3.8	4.3	3.7	0.5
Having the freedom to make my own choices in my project.	4.4	4.4	4.3	0.1
Having flexible working hours.	4.4	4.2	4.2	0.2
Being allowed to teach and supervise students.	3.6	3.8	3.6	0.1
Being able to go abroad to do research at another university.	3.7	4.1	3.7	0.5
Being able to follow an internship at a company or government organization.	3.3	3.5	3.3	0.2

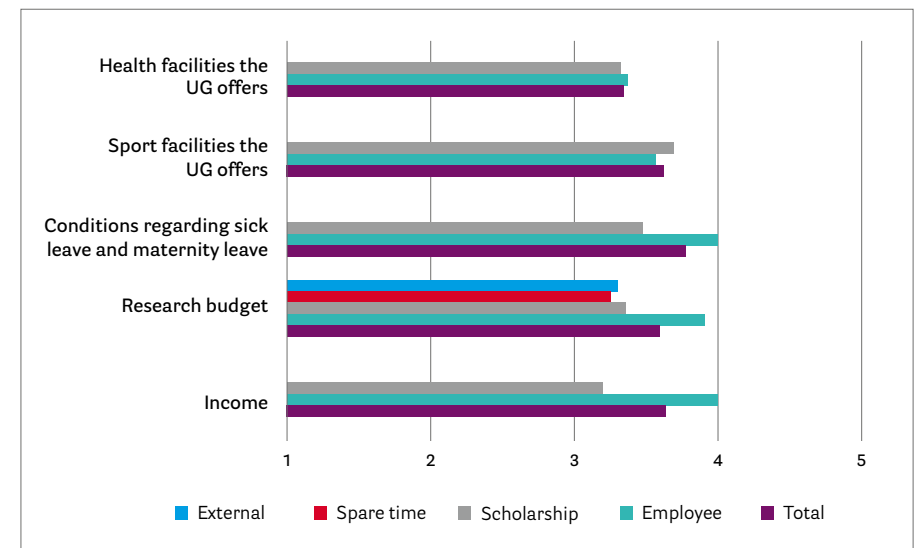
Note. Green and red markers were only added to group differences larger than 0.4.

Satisfaction with rights and benefits

PhD students were asked to respond to statements regarding their satisfaction about some of these rights and benefits. The statements were phrased as, 'I am satisfied with ...', and the PhD students could respond on a five-point scale, ranging from 'Completely disagree' to 'Completely agree'. These statements were only presented to employee and scholarship PhD students, apart from the statement, 'I am satisfied with my research budget'. This is the first time that PhD students have been asked to indicate their satisfaction on these aspects. As shown in Figure 22, PhD students are 'Neutral to Satisfied' with all facilities; they are most satisfied with their conditions regarding sick leave and maternity leave and the least satisfied with the health facilities that the UG offers. Significant differences were found between PhD scholarship students for income ($t(887) = 12.1, p < .05$) and conditions regarding sick leave and maternity leave ($t(852) = 7.9, p < .05$). The largest difference was found for income, in which

PhD scholarship students have an average score of 3.2 (Sd = 1.1) and employee PhD students an average score of 4.0 (Sd = 0.9). For conditions regarding sick leave and maternity leave, the difference was a bit smaller (0.51), with a mean score for PhD scholarship students of 3.5, and a mean score of 4.0 for employee PhD students.

Employee PhD students ($M = 3.9, Sd = 0.9$) were also significantly ($F(3, 1071) = 28.2, p < .05$) more positive about their research budget than spare-time PhD students ($M = 3.3, Sd = 1.2$), PhD scholarship students ($M = 3.4, Sd = 1.1$), and external PhD students ($M = 3.3, Sd = 1.1$). This is an interesting finding, as the conditions regarding research budget, sick leave and maternity leave are exactly the same for all groups (Jongbloed, Kaiser, Kottmann, 2019).⁹ Apparently, the provision of information on these aspects is not yet sufficient.

Figure 22. Mean satisfaction with the following rights and benefits, total and per affiliation group


⁹ Jongbloed, B., Kaiser F., & Kottmann A. (2019). Het experiment Promotieonderwijs: een tussenevaluatie. CHEPS, Universiteit Twente. Retrieved via <https://www.rug.nl/education/phd-programmes/phd-scholarship-programme/about/interim-evaluation-experiment-may-2019.pdf>

7 | Evaluations

Formal go/no go interview

Nine months after the start of their PhD project, PhD students should have a go/no go interview. This interview should be preceded by an informal interview at six months. Of the PhD students, 35 percent indicated that they had their go/no go interview nine months after the start of their PhD project, while 21 percent had this interview after twelve months. Another 20 percent indicated they would have this interview in the future. Of these PhD students, 90 percent were in their first year. Of all the PhD students, 16 percent indicated that they had not had a go/no go interview, most of whom were senior and intermediate PhD students. This reveals a clear difference for the better compared to two years ago, when 30 percent of the PhD students indicated that they had not had a go/no go interview.

The PhD students who had not had a go/no go interview were mostly in the Graduate School of Medical Sciences (N = 132, 68 percent of the PhD students who indicated they had not had a go/no go interview), similar to 2017. In addition, 7 percent of the PhD students reported that their go/no go interview had taken place in a different time frame, with the number of months ranging from 3 to 48, peaking at 6 months (42 percent).

Those PhD students (N = 752) who indicated that they had a go/no go interview were asked who was present at the interview. Table 32 shows that for most of these PhD students, their first supervisor was present. Those who did not indicate that their first supervisor was present, indicated that their daily supervisor was present or did not complete the question.

Table 32. Who was present at your go/no go interview?

	Primary supervisor(s)	Daily supervisor(s)	Graduate School delegate	Human Resources representative	Other
N	704	476	99	8	58
%	94	63	13	1	8

Results and Development (R&D) interview

At least once a year, PhD students should have an interview about their performance ('R&D interview'). Therefore, PhD students who were not in their first year, were asked whether they had an annual evaluation interview. The majority indicated that they had an R&O interview or an annual evaluation (63.5 percent), while 6 percent indicated that their performance had not yet been evaluated. Those PhD students who had had an annual performance evaluation (N=640) were asked who was present at their latest evaluation. As presented in Table 33, 91 percent indicated that their primary supervisor was present and 61 percent indicated that their daily supervisor was present.

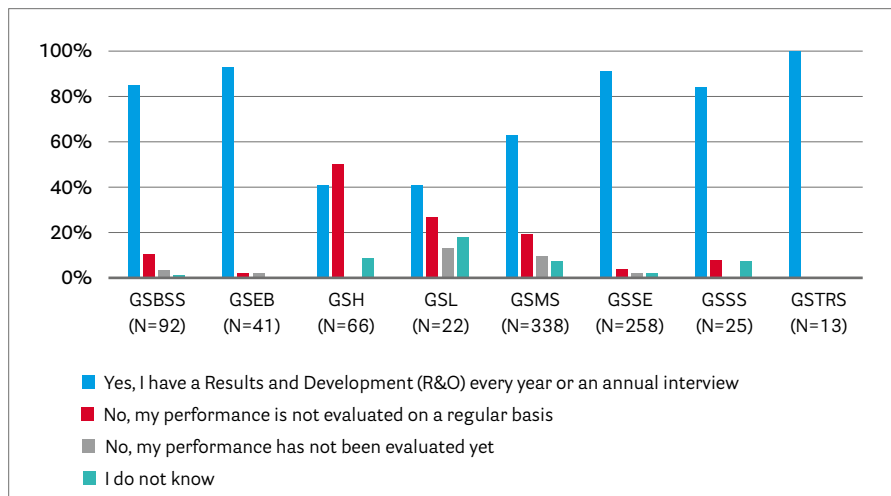
Table 33. Is your performance evaluated at least once a year?

	N	%
Yes, I have a Results and Development (R&O) interview every year (also known as 'Jaargespreek' at the UMCG)	473	54.3
Yes, I have an annual interview/evaluation (this is not an R&O or I don't know if this is an R&O)	167	19.2
No, my performance is not evaluated on a regular basis	133	15.3
No, my performance has not been evaluated yet	50	5.7
I don't know	48	5.5
Total	871	100.0

Differences between Graduate Schools

To be able to compare Graduate Schools, the first two categories were combined into the category, 'Yes, I have a Results and Development (R&O) or annual interview every year'. As presented in Figure 23, in three Graduate Schools, Economics and Business, Science and Engineering, and Theology and Religious Studies, 90 percent or more of the PhD students indicated that they had an annual performance evaluation. Only 40 percent or less of the PhD students from the Graduate School of Campus Fryslân, the Graduate School for the Humanities and the Graduate School of Law indicated that they had an annual interview.

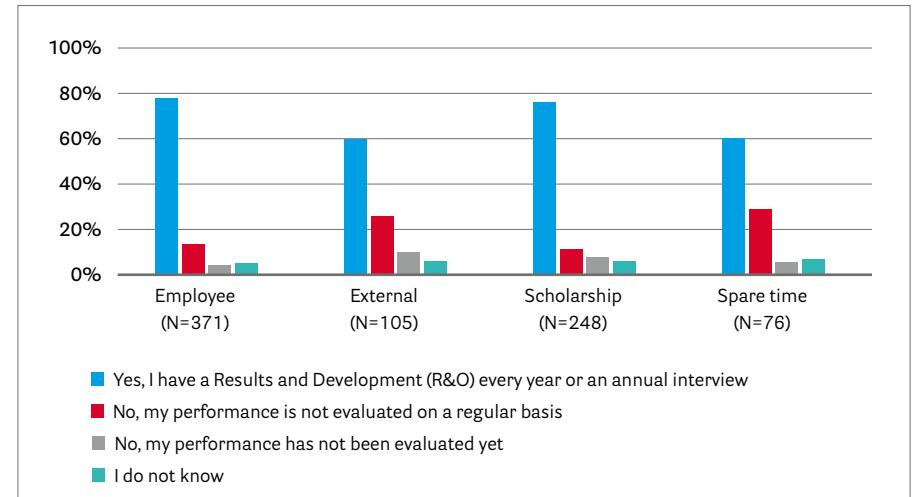
Figure 23. Is your performance evaluated at least once a year? (presented per Graduate School; only Graduate Schools with more than 10 respondents are presented)



Differences between affiliation types

Figure 24 shows that nearly 80 percent of the employee and scholarship PhD students have an annual performance evaluation. However, only approximately 60 percent of the spare-time and external PhD students have had such an evaluation.

Figure 24. Is your performance evaluated at least once a year? (presented by affiliation)



Training and Supervision Plan

Before starting a PhD project, a PhD student and their supervisors should draw up a Training and Supervision Plan (TSP), as described in the PhD regulations of the UG (2018).¹⁰ As shown in Table 34, 77 percent of the PhD students have a TSP. This is a slightly higher percentage than was found two years ago (74 percent).

Table 34. Do you have a TSP (Training and Supervision Plan)?

	N	%
Yes	918	77.2
No	181	15.2
I don't know	90	7.6
Total	1189	100.0

¹⁰ <https://www.rug.nl/about-us/organization/rules-and-regulations/onderzoek/promotiereglement-18-en.pdf>

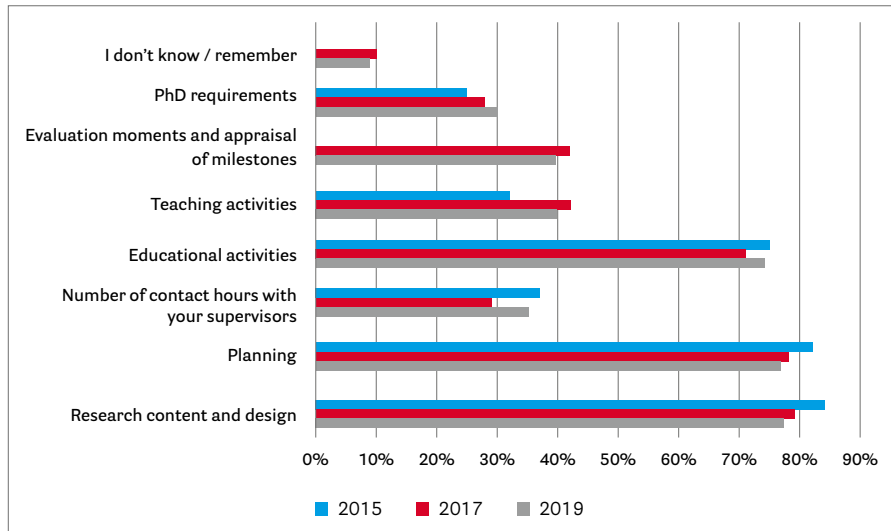
PhD students who have a TSP, were asked how many months after the start of their PhD their TSP was formalized. For 28 percent of these PhD students, this was before the start, for another 12 percent it was formalized at the start. For nearly 50 percent, their TSP was formalized between one month and a year after the start of their PhD, as shown in Table 35.

Table 35. How many months after the start of your PhD was your TSP formalized?

	N	%
Before start	255	28.0
At start	109	12.0
Within one month	99	10.9
Within three months	167	18.3
Within one year	174	19.1
I don't know / remember	107	11.7
Total	911	100.0

PhD students who had a TSP were also asked what elements were included in it. The results are comparable to two years ago, except that a higher percentage of PhD students have the number of contact hours specified in their TSP (an increase from 29 percent to 35 percent). A comparison between 2015, 2017 and 2019 is presented in Figure 25.

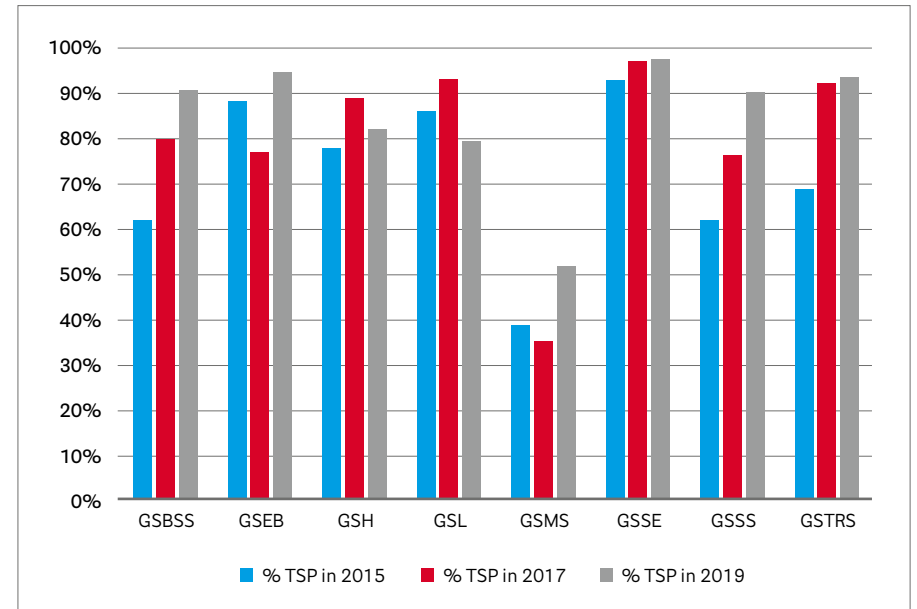
Figure 25. Elements included in the TSP



Differences per Graduate School

Figure 26 shows the percentage of PhD students who have a TSP per Graduate School. Most of the Graduate Schools have a slightly greater or similar percentage of students who have a TSP compared to previous years, now approaching 90 percent or more of the PhD students in most cases. Although the Graduate School of Medical Sciences has the lowest percentage of PhD students with a TSP, there was a growth from 35 percent in 2017 to 51 percent in 2019. The Graduate School of Law has a slight decrease in the percentage of PhD students who had a TSP (from 93 percent to 79 percent), but due to the relatively few PhD students (N = 23) in this Graduate School, this must be interpreted with caution.

Figure 26. Percentage of PhD students with a TSP in 2015, 2017 and 2019, by Graduate School



Differences between affiliation types

As shown in Table 36, 84 percent of the PhD scholarship students indicated that they had a TSP, while 78 percent of the employee PhD students have a TSP. Similar to two years ago, 60 percent of the external PhD students and 62 percent of the spare-time PhD students have a TSP.

Table 36. Number and percentage of PhD students with a TSP, by affiliation

	N	%
Employee	412	78
External	73	60
Scholarship	327	84
Spare time	48	62

Regular update and satisfaction TSP

PhD students who have a TSP and who were not in their first year were asked whether their TSP was updated at least once a year. Of the PhD students who answered this question (N = 623), 60 percent reported that their TSP was not updated at least once a year, 24 percent indicated that it was, while 16 percent indicated that this was not yet applicable to their situation. Table 37 shows to what extent PhD students are satisfied with the TSP, based on five statements that they had to score on a five-point scale (from completely disagree to completely agree). Overall, PhD students are neutral to satisfied (N = 3.31) about their TSP, which is comparable to the findings two years ago. The other statements range from between 2.9 and 3.5 (similar to two years ago), implying that PhD students generally have a neutral opinion about their TSP.

Table 37. Satisfaction with TSP

	N	M	Sd
My TSP serves as a good guideline for my time as a PhD student.	604	2.9	1.1
Drawing up a TSP helped me to plan my PhD project.	599	3.0	1.2
I can revise my TSP when necessary.	586	3.5	1.0
My TSP is evaluated regularly during my R&O or annual interview/evaluation.	578	2.9	1.2
Overall, I am satisfied with my TSP.	593	3.3	1.0

Group differences

As shown in Table 38, the maximum difference between Graduate Schools on each of the items is considerable (ranging from 0.5 to 1.1 on a five-point scale), with the Graduate School of Law scoring the lowest on each of the items. The non-parametric Kruskal-Wallis test was performed to test the differences between groups (only those with a group size larger than 15 were included). Significant differences were found for, 'My TSP serves as a good guideline for my time as a PhD student' ($H(6) = 37.3, p < .05$), 'Drawing up a TSP helped me to plan my PhD project' ($H(6) = 26.8, p < .05$), 'My TSP is evaluated regularly during my R&O or annual interview/evaluation' ($H(6) = 29.3, p < .05$) and 'Overall, I am satisfied with my TSP' ($H(6) = 15.5, p < .05$). Table 38 identifies which group differences are significant by means of * and **.

Table 38. Satisfaction with the TSP, presented by Graduate School

	N Average	My TSP serves as a good guideline for my time as a PhD student		Drawing up a TSP helped me to plan my PhD project		I can revise my TSP when necessary		My TSP is evaluated regularly during my R&O or annual interview/evaluation		Overall, I am satisfied with my TSP	
		Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd
GSBSS	80	2.4**	1.0	2.7	1.2	3.6	1.1	2.7	1.3	3.1	1.1
GSCF	7	2.9	1.5	3.1	1.5	4.0	1.2	2.1	1.3	3.1	0.9
GSEB	37	2.7	1.1	2.8	1.3	3.7	1.0	3.0*	1.2	3.5*	0.9
GSH	48	3.0*/**	1.1	3.3*	1.1	3.7	1.0	2.6	1.2	3.3	1.1
GSL	16	2.0*	0.7	2.1*	0.9	3.2	1.0	1.7*	0.6	2.7*	0.6
GSMS	131	2.8	1.2	2.9	1.1	3.6	1.0	2.9*	1.2	3.3	1.0
GSP	7	2.7	0.8	2.8	1.1	3.7	0.5	3.2	0.8	3.0	1.2
GSSE	235	3.1*/**	1.1	3.2*	1.1	3.5	1.0	3.1*	1.2	3.4*	1.0
GSSS	21	3.1	1.1	3.2	1.1	3.5	1.2	3.2*	1.2	3.3	1.0
GSTRS	11	3.0	1.3	3.2	1.3	3.7	0.9	3.1	1.3	3.4	1.1
Max difference		1.1		1.2		0.5		1.6		0.8	

- * Significant group differences between GSL and other Graduate Schools indicated by *.
Only Graduate Schools having group sizes with more than 15 participants are included in this test.
- ** Significant group differences between GSBSS and other Graduate Schools indicated by **.
Only Graduate Schools having group sizes with more than 15 participants are included in this test.

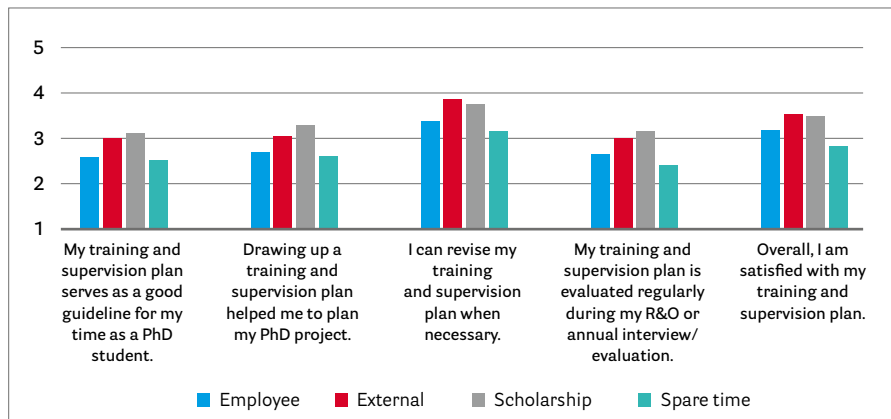
The differences between affiliation type are shown in Table 39 and Figure 27. The differences (ranging from 0.6 to 0.8) between the groups are significant for all items. Furthermore, spare-time PhD students and employee PhD students are significantly less satisfied with their TSP than PhD scholarship students on all items. Table 39 indicates which group differences are significant.

Table 39. Satisfaction with the TSP, presented by affiliation

	N Average	My TSP serves as a good guideline for my time as a PhD student		Drawing up a TSP helped me to plan my PhD project		I can revise my TSP when necessary		My TSP is evaluated regularly during my R&O or annual interview/evaluation		Overall, I am satisfied with my TSP	
		Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd
Employee	260	2.6*	1.1	2.7*	1.2	3.4*	1.1	2.7*	1.3	3.2*	1.1
External	58	3.0*	1.0	3.0	1.0	3.8**	0.7	3.0	1.1	3.5**	0.8
Scholarship	177	3.1**	1.1	3.3**	1.1	3.7**	1.0	3.2**	1.2	3.5**	0.9
Spare time	45	2.5**	1.1	2.6**	1.1	3.5**	1.0	2.4**	1.1	2.8**	1.0
Max difference		0.6		0.7		0.7		0.8		0.7	
		$F(3,546) = 10.1, p < .05$		$F(3,542) = 10.3, p < .05$		$F(3,530) = 8.8, p < .05$		$F(3,522) = 7.8, p < .05$		$F(3,537) = 7.3, p < .05$	

* Significant group differences between employee PhD students and other affiliation types are indicated by *.

** Significant group differences between spare-time and other affiliation types are indicated by **.

Figure 27. Satisfaction with the TSP, presented by affiliation


Significant differences in opinions about the TSP were found when the nationality of PhD students was taken into account. As shown in Table 40, non-European PhD students are significantly more positive on each of the items than either Dutch or European (non-Dutch) PhD students. For four out of five items, Dutch PhD students are the most negative about their TSP.

Table 40. Satisfaction with the TSP, presented by nationality

	N Average	My TSP serves as a good guideline for my time as a PhD student		Drawing up a TSP helped me to plan my PhD project		I can revise my TSP when necessary		My TSP is evaluated regularly during my R&O or annual interview/evaluation		Overall, I am satisfied with my TSP	
		M	Sd	M	Sd	M	Sd	M	Sd	M	Sd
Dutch	265	2.4**	1.1	2.6*	1.2	3.5	1.0	2.5**	1.2	3.1*	1.0
European	109	2.8**	1.1	2.8*	1.2	3.4*	1.1	3.0**	1.3	3.3	1.0
Non-European	204	3.4**	1.0	3.5*	0.9	3.7*	0.8	3.4**	1.0	3.6*	0.9
Max difference		1.0		0.9		0.3		0.9		0.5	
		$F(2,587) = 53.0, p < .05$		$F(2,582) = 38.9, p < .05$		$F(2,569) = 3.8, p < .05$		$F(2,561) = 32.7, p < .05$		$F(2,576) = 14.6, p < .05$	

* Significant group differences between non-European and other nationalities are indicated by a *.

** Significant group differences between Dutch and other nationalities are indicated by **.

Information regarding thesis submission

Nearly 80 percent of the PhD students have discussed the thesis requirements (e.g. the content of their thesis and how many research chapters should be submitted as articles and published) with their first supervisor(s), their other supervisor(s), or both. For the majority of these PhD students, the academic requirements (both quality and quantity) are quite clear or very clear (nearly 75 percent). For 10 percent (N = 97) of these PhD students, the academic requirements for their thesis are very or quite unclear.

Nearly 20 percent (N = 223) had not yet discussed these requirements with anyone. This 20 percent is divided over all phases, Graduate Schools, nationalities and affiliations.

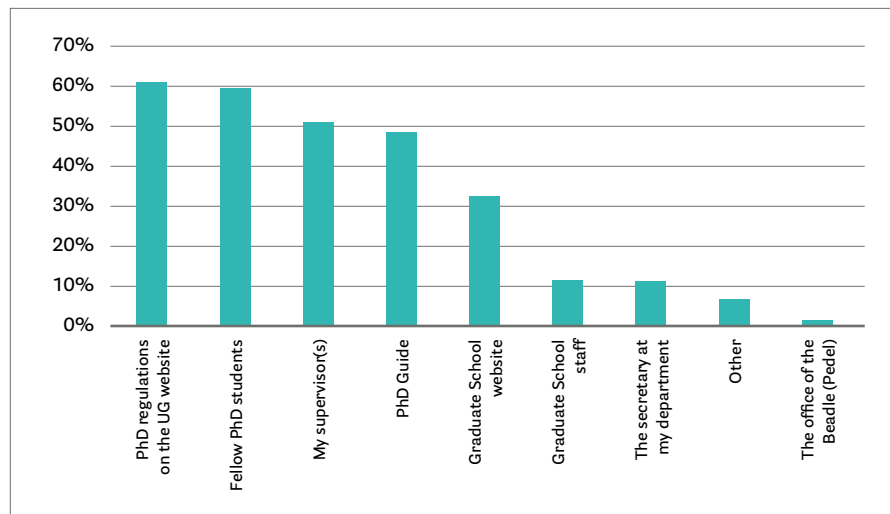
Intermediate and senior PhD students were asked whether and where they searched for information about the procedures and requirements for the thesis defence. As shown in Table 41, nearly 34 percent searched for information, with only 3 percent reporting that they could not find the required information. Seventy-one percent of the PhD students who searched and found the information, state that this information was quite clear or very clear to them. Only 9 percent indicated that the procedures and requirements are not clear to them, while 70 percent of the PhD students had not yet searched for this information.

Table 41. Have you searched for information about the procedures and requirements for the thesis defence?

	N	%
Yes	266	30.8
Yes, but I could not find them	24	2.8
No, but I will do this soon	321	37.1
No, this is not yet relevant to me	254	29.4
Total	865	100.0

As shown in Figure 28, the most important sources of information are: the PhD regulations on the UG's website, fellow PhD students, supervisor(s) and the PhD guide.

Figure 28. Where did you search for information, or whom did you ask about the procedures and requirements for the thesis defence?



Educational activities

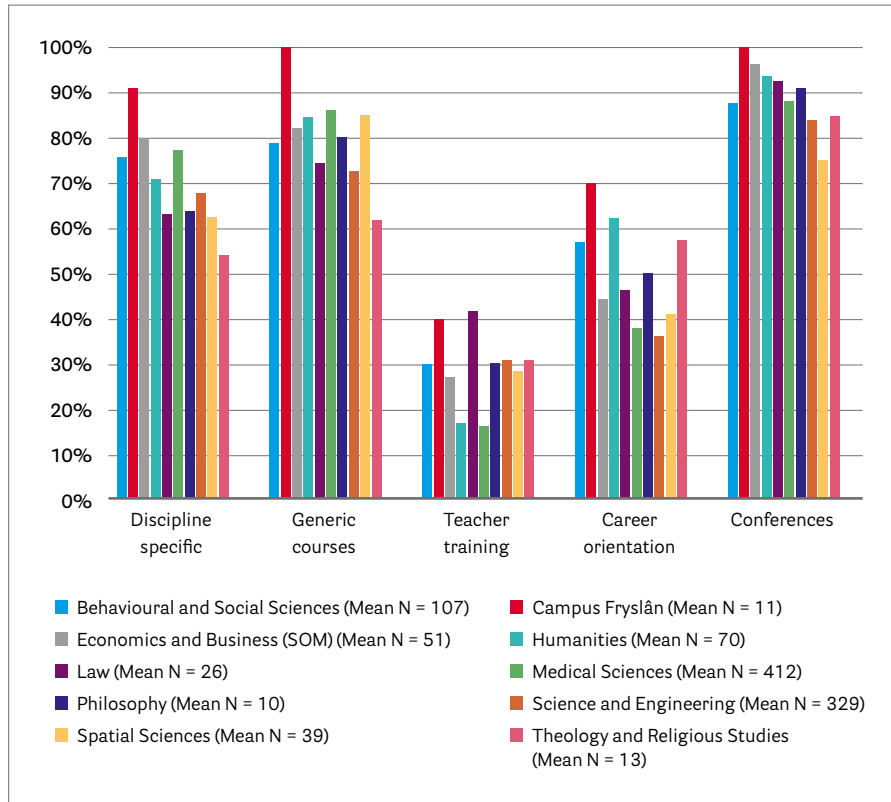
As described in Chapter 3, most PhD students have the opportunity to earn ECTS during their PhD trajectory. In most cases, the courses PhD students can attend are organized by the Graduate Schools, but other institutes or organizations may also provide educational modules. PhD students were asked how often they attended courses or activities. These were divided into 'Discipline-specific courses', 'Generic skills courses', 'Teacher training', 'Career orientation activities' and 'Conferences'. The results are presented in Table 42. It was found that 74 percent of the PhD students had not attended a teacher training course, while 56 percent had not attended any career orientation activities.

Table 42. How many of the following types of courses and activities have you attended during your PhD so far?

	N	None	One	Two	Three or more	Don't know
Discipline-specific courses	1124	25.9	24.2	20.7	23.7	5.5
Generic skills courses	1130	19.1	27.0	26.6	24.6	2.7
Teacher training	1063	73.9	17.2	3.7	2.6	2.5
Career-orientation activities	1065	56.2	22.8	11.6	6.5	2.8
Conferences	1132	12.6	17.8	18.8	48.8	1.9

Figure 29 shows the percentage of PhD students who have followed at least one course or activity, presented by Graduate School. Apart from the relatively high percentages for the Campus Fryslân Graduate School, no clear pattern was found for the differences between Graduate Schools.

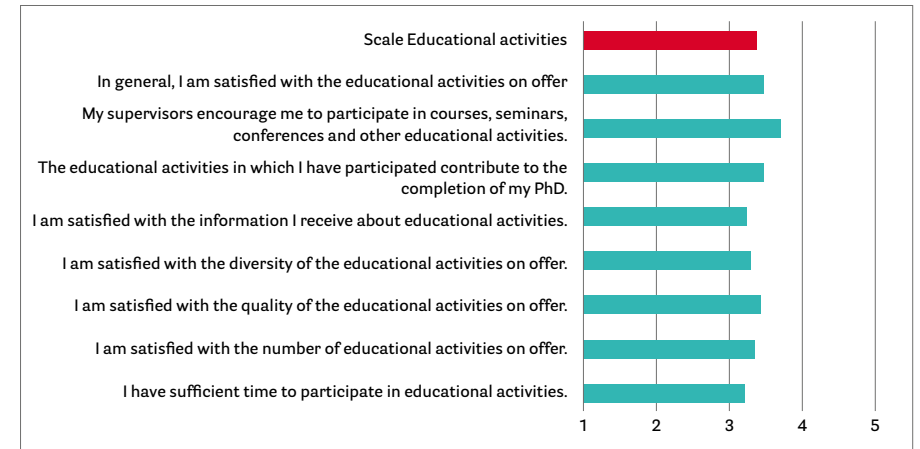
Figure 29. Percentage of PhD students that attended at least one course or activity, presented by Graduate School



Satisfaction with educational activities

PhD students were asked to indicate how much they agreed (on a five-point scale, ranging from completely disagree to completely agree) with statements regarding the educational activities that are offered. A scale score ($\alpha = 0.85$) was calculated on the basis of all items. Similarly to two years ago, PhD students are moderately satisfied with the educational activities ($M = 3.4$). Figure 30 shows that PhD students agree most with the statement, 'My supervisors encourage me to participate in courses, seminars, conferences and other education activities'. They agree the least with statements that address the preconditions of the educational activities, such as, 'I have sufficient time to participate in educational activities' and 'I am satisfied with the information I receive about educational activities'.

Figure 30. To what extent do you agree with the following statements about educational activities?



The extent to which PhD students are satisfied with the educational activities differs significantly across Graduate Schools ($H(6) = 13.7, p < .05$). The scores for the Economics and Business Graduate School are significantly higher than those for the Graduate School of Medical Sciences. The mean scores for each Graduate School are presented in Table 43.

Table 43. Average scale score for the educational activities scale

Graduate School	N	Mean	Sd
Behavioural and Social Sciences	115	3.3	0.7
Campus Fryslân	10	3.1	0.5
Economics and Business (SOM)	53	3.7*	0.7
Humanities	77	3.4	0.6
Law	28	3.3	0.8
Medical Sciences	434	3.4*	0.7
Philosophy	12	3.2	0.8
Science and Engineering	354	3.4	0.6
Spatial Sciences	41	3.5	0.7
Theology and Religious Studies	14	3.1	0.7

* These Graduate Schools differ significantly from each other. Only Graduate Schools having group sizes with more than 15 participants were included in this test.

Future career

The UG stimulates PhD students to start exploring their options for their future career in their first year (Career Perspectives Series).¹¹ As shown in Table 44, 46 percent of the PhD students indicated that they had started exploring options for their future career, while another 13 percent already know what they are going to do after their PhD. However, 35 percent of the PhD students had not yet explored their options. This is a slight decrease in comparison to four (39 percent) and two (37 percent) years ago. Clear differences were found depending on the phase of a PhD. More than 50 percent of the first-year PhD students indicated that they had not yet explored their options for a future career, while 63 percent of the senior PhD students had explored their options for a future career. This finding is similar to that of two years ago.

Table 44. Are you currently exploring options for a future career?

	Total	Starter	Intermediate	Senior
Yes	44.9	24.5	46.8	62.6
No, not yet	34.7	55.7	36.3	10.3
No, I already know what I am going to do / want to do after my PhD	12.9	11.0	10.5	19.0
No, I'll be/am working as a medical specialist	4.5	6.3	4.3	3.2
Not applicable	2.9	2.5	2.1	4.8

PhD students who have not yet explored their options for a future career were asked when they think they will start exploring this, with 31 percent indicating they would start in their second or second-to-last year, while 52 percent indicated that they would start doing this in their final year. The UG offers several courses for career training: of the PhD students who are exploring options for a future career, or will do so in the future, 79 percent indicated that they knew of these courses. This was not related to the phase a PhD student was in, but differences were found for Graduate School and affiliation. These differences are presented in Table 45. The lowest percentage of PhD students who knew about the career training courses offered by the UG were in the Graduate School of Medical Sciences (70 percent). In relation to affiliation type, spare-time PhD students had the lowest percentage who knew about the career training courses, while the highest percentage was found among PhD scholarship students.

Table 45. Do you know that the University of Groningen offers opportunities for career training (e.g. Career Perspectives Series)?

Graduate School	N	% Yes	Affiliation	N	% Yes
Behavioural and Social Sciences	112	91.1	Employee	501	78.2
Campus Fryslân	10	90.0	External	103	75.7
Economics and Business (SOM)	54	83.3	Scholarship	357	84.0
Humanities	77	90.9	Spare time	63	71.4
Law	29	93.1			
Medical Sciences	380	70.0			
Philosophy	12	91.7			
Science and Engineering	367	78.2			
Spatial Sciences	39	87.2			
Theology and Religious Studies	14	92.9			

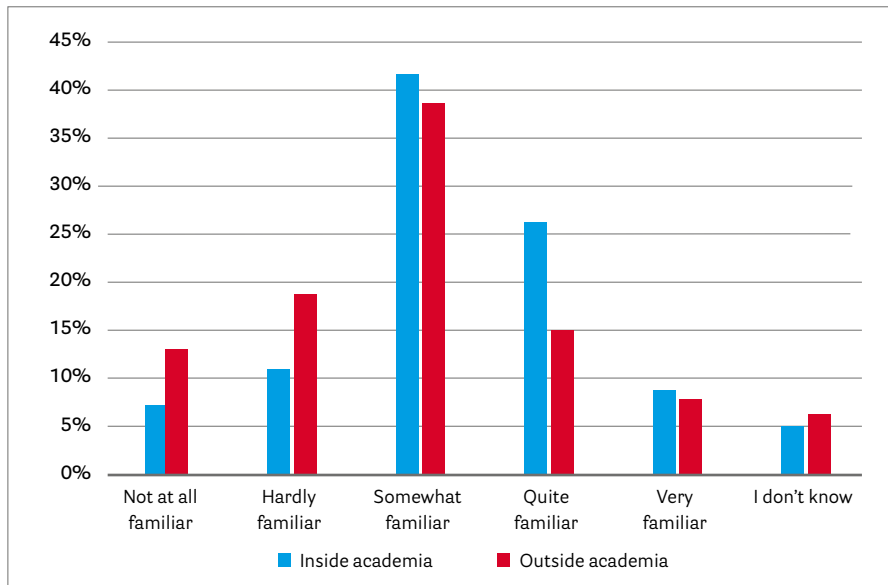
Note. Green indicates the GS with the highest percentage 'Yes', red indicates the GS with the lowest percentage 'Yes'.

In line with the results as described at the beginning of this chapter, slightly more than 60 percent of the PhD students have not attended any events that relate to their future career, whether inside academia (61 percent) or outside (62 percent). About 30 percent have attended one or more event, while 10 percent could not remember. No differences were found for activities inside and outside academia.

PhD students indicated that they were more familiar with options in their field regarding a career inside academia than outside, as presented in Figure 31.

¹¹ <https://www.rug.nl/education/phd-programmes/during/career-perspective-series/cps-practical-information>

Figure 31. To what extent are you familiar with the options in your field regarding a career?



To compare the differences between Dutch, European (non-Dutch) and non-European PhD students with each other, an average score, excluding 'I don't know', was calculated. The differences are presented in Table 46, showing that non-European PhD students are significantly less familiar than Dutch and European (non-Dutch) students with their options in their field regarding a career both inside and outside academia.

Table 46. To what extent are you familiar with the options in your field regarding a career? (presented per nationality)

	Inside academia			Outside academia		
	N	M	Sd	N	M	Sd
Dutch (including those who have two nationalities, one of which is Dutch)	435	3.3	0.9	430	3.1	1.1
European (non-Dutch)	188	3.3	1.1	177	2.9	1.1
Non-European	371	3.0	1.0	356	2.5	1.1
	$F(2,991) = 7.4, p < .05$			$F(2,960) = 22.5, p < .05$		

Encouragement and usefulness of network of supervisors

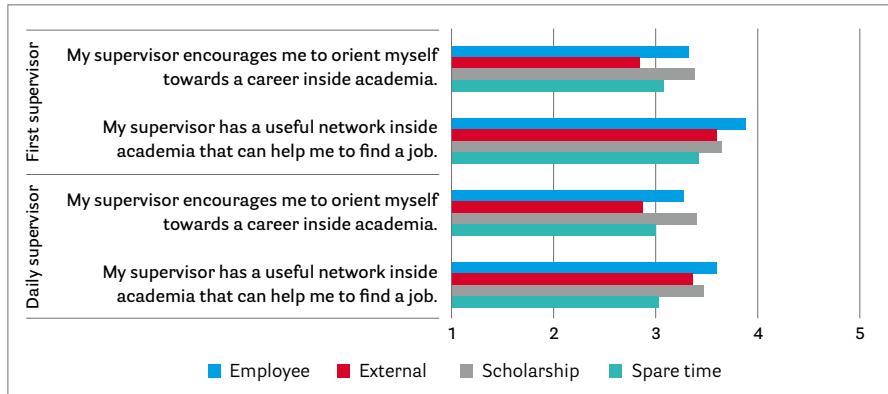
PhD students were asked to respond to two statements (on a five-point scale ranging from completely disagree to completely agree) on their first and daily supervisors, regarding their preparation for a career inside and outside academia. As presented in Table 47, PhD students are more positive about the network and the encouragement of their supervisors with regard to a career inside academia than outside academia. PhD students agreed most with the statement, 'My first supervisor has a useful network that can help me to find a job inside academia' (M = 3.7). PhD students are, on average, neutral in their responses to the statements on encouragement by and the network of their supervisors outside academia.

Table 47. Encouragement by and usefulness of network of first and daily supervisors inside and outside academia

	Inside academia			Outside academia		
	N	M	Sd	N	M	Sd
My first supervisor encourages me to orient myself towards a career.	873	3.3	0.9	820	2.9	0.8
My daily supervisor encourages me to orient myself towards a career.	727	3.3	0.9	689	2.9	0.8
My first supervisor has a useful network that can help me to find a job.	882	3.7	1.0	830	3.0	1.0
My daily supervisor has a useful network that can help me to find a job.	727	3.5	0.9	689	2.9	0.9

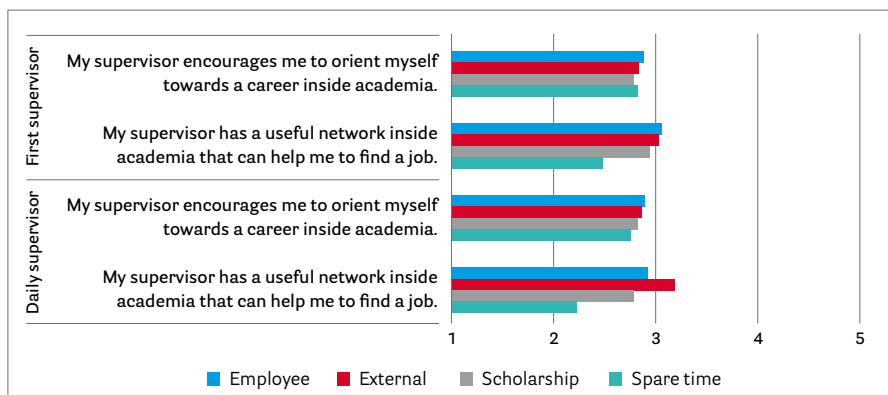
Clear differences are found among the various affiliation groups. Figure 32 shows the differences for the statements presented in Table 47, related to *inside academia*. External PhD and spare-time PhD students agree the least with all four statements; especially with the statements regarding being encouraged by their supervisors to pursue a career inside academia, where an average of three or slightly lower was found.

Figure 32. Encouragement by and usefulness of network of first and daily supervisors inside academia, presented by affiliation



In Figure 33, the differences between the affiliation groups are shown for the statements related to a career outside academia. Spare-time PhD students agree the least with three of the four statements, and especially with the statement that 'My daily supervisor has a useful network outside academia that can help me find a job' (M = 2.2 for spare-time students). Employee and external PhD students were the most positive, but only one statement received an average higher than 'neutral', namely, 'My daily supervisor has a useful network outside academia that can help me find a job'.

Figure 33. Encouragement by and usefulness of network of first and daily supervisors outside academia, presented by affiliation



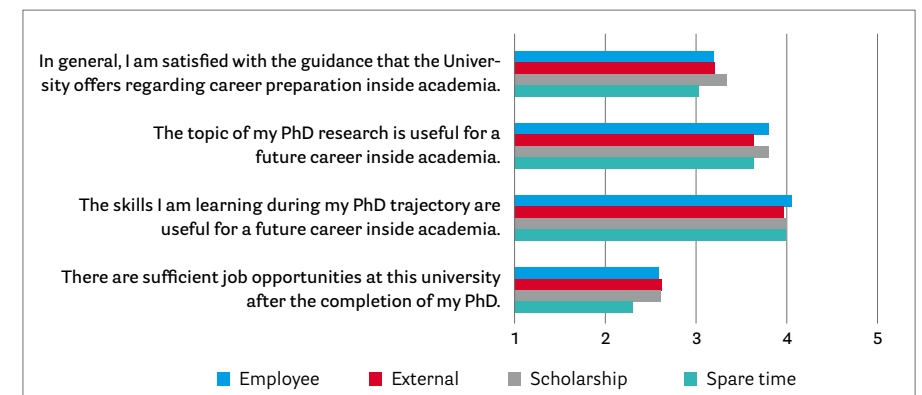
In line with these findings, PhD students feel that the guidance by the University, and the topics and skills required for their PhD are better suited to a career inside academia (ranging from 3.3 to 4.0) than outside academia (ranging from 2.9 to 3.6). Table 48 also shows that PhD students do not think that there are sufficient job opportunities at the UG for them after the completion of their PhD (M = 2.6).

Table 48. Agreement with statements regarding career preparation, both inside and outside academia

	Inside academia			Outside academia		
	N	M	Sd	N	M	Sd
In general, I am satisfied with the guidance that the University offers regarding career preparation.	978	3.3	0.8	850	2.9	0.8
The topic of my PhD research is useful for a future career.	981	3.8	0.8	927	3.4	0.9
The skills I am learning during my PhD trajectory are useful for a future career.	906	4.0	0.7	927	3.6	0.8
There are sufficient job opportunities at this university after the completion of my PhD.	906	2.6	1.0			

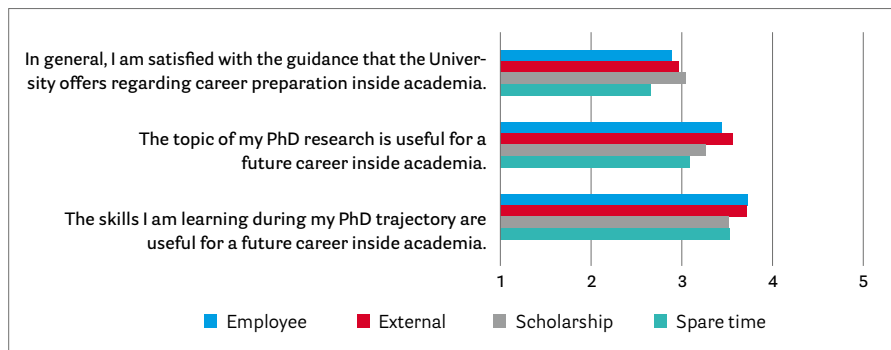
Figure 34 shows that small differences between affiliation type are found for the statements presented in Table 48 regarding *inside academia*. Spare-time PhD students generally express the most negative opinions on these statements, while employee PhD and PhD scholarship students are generally the most positive.

Figure 34. Agreement with statements regarding career preparation inside academia, presented by affiliation type



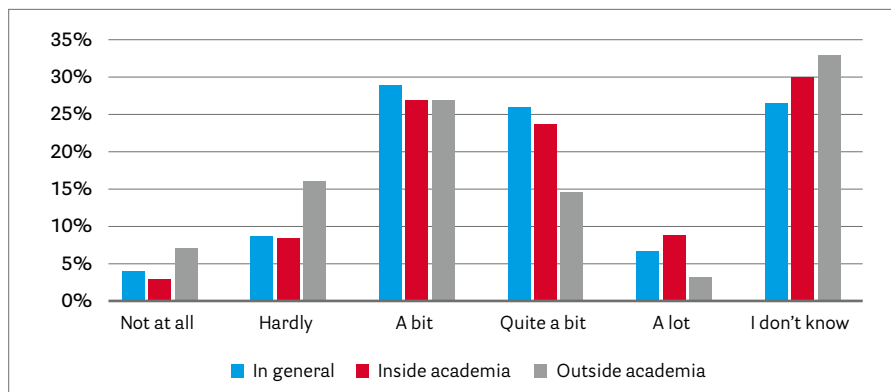
A similar pattern was found for the statements regarding opportunities *outside academia*, as presented in Figure 35. However, for this item, external PhD students were the most positive group in relation to the statement, 'The topic of my PhD research is useful for a future career outside academia'.

Figure 35. Agreement with statements regarding career preparation outside academia, presented by affiliation type



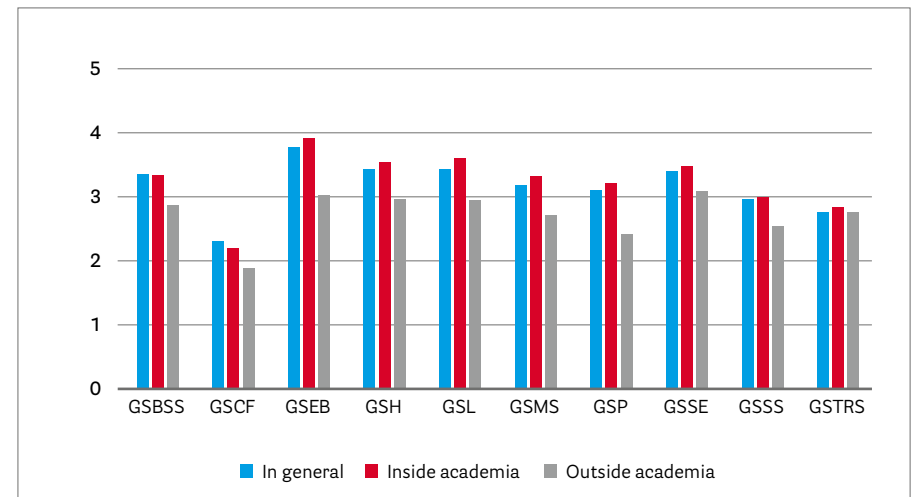
According to PhD students, the Graduate Schools pay only moderate attention to preparing them for a career inside academia, compared to outside academia. However, as shown in Figure 36, about 30 percent of the PhD students do not know the extent to which their Graduate School pays attention to preparing them for a career. The pattern presented in Figure 36 is comparable to the results obtained two years ago.

Figure 36. To what extent does your Graduate School pay attention to preparing PhD students for a career in general, inside academia or outside academia?



In order to compare the Graduate Schools with each other, a mean score was calculated (excluding the category, 'I don't know'). The results per Graduate School are presented in Figure 37. For each of the Graduate Schools, PhD students feel that their School pays more attention to preparation for a career inside academia than outside academia.

Figure 37. To what extent does your Graduate School pay attention to preparing PhD students for a career in general, inside academia or outside academia?



Job prospects

PhD students consider their job prospects 'in general' to be 'neutral' to 'good', with an average of 3.7 (on a five-point scale, from very bad to very good). As shown in Table 49, PhD students are more positive about their prospects outside academia (3.6) than inside academia (3.0). Spare-time students are the most negative about their job prospects, not only inside academia, but also in general and outside academia. Starting PhD students are the most positive about their job prospects, but they consider their job prospects outside academia better than inside academia. Non-Dutch PhD students differ in their expectations about their job prospects outside academia: Dutch PhD students almost score the equivalent of 'good', with 3.8, while non-Dutch students have an average score of 3.4.

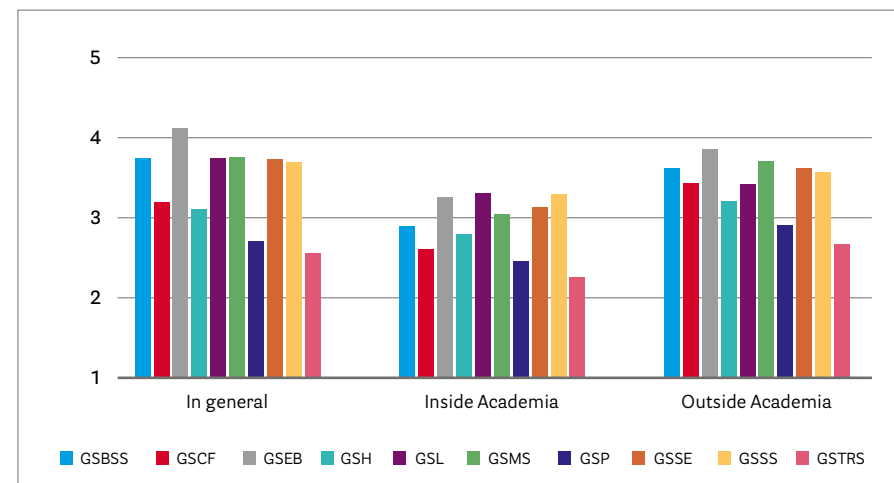
Table 49. What do you think about your job prospects after your PhD in general?

	Average N	In General		Inside Academia		Outside Academia	
		Mean	Sd	Mean	Sd	Mean	Sd
Total	975	3.7	0.9	3.0	1.0	3.6	0.9
Employee	443	3.8	0.9	3.0	1.0	3.8	0.9
External	87	3.8	0.9	2.8	1.0	3.7	0.9
Scholarship	321	3.5	1.0	3.2	1.0	3.4	0.9
Spare time	61	3.3	1.1	2.7	1.1	3.3	1.1
Max difference		0.5		0.5		0.4	
Starter	248	3.9	0.8	3.3	0.9	3.6	0.9
Intermediate	464	3.6	0.9	3.0	1.0	3.6	0.9
Senior	262	3.6	1.1	2.9	1.1	3.5	1.0
Max difference		0.3		0.4		0.1	
Non Dutch	548	3.6	0.9	3.1	1.0	3.4	0.9
Dutch	418	3.8	0.9	2.9	1.0	3.8	0.9
Difference		0.2		0.2		0.4	

Note. Green indicates the highest scale score, red indicates the lowest score.

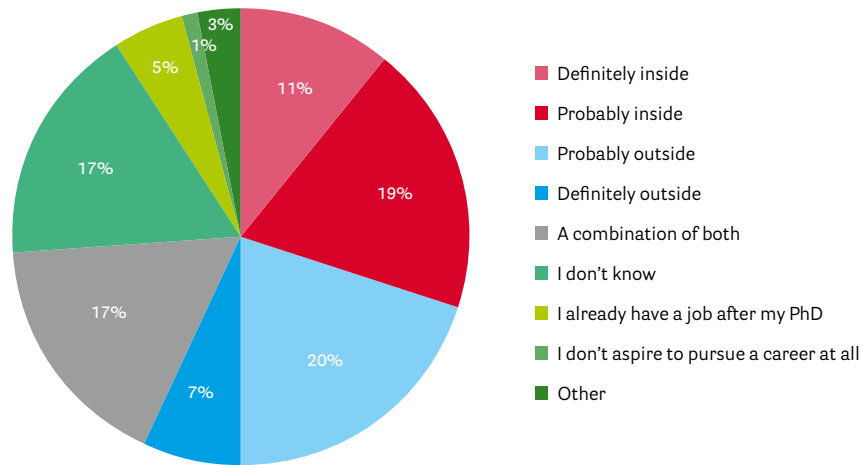
Differences per Graduate School regarding job prospects are presented in Figure 38. It was found that PhD students for all Graduate Schools are more positive about their job prospects outside academia than inside academia. The largest difference between the expected job prospects inside and outside academia was found for the Graduate School of Campus Fryslân (difference of 0.8, but with a small sample size of 10 and 7 PhD students, making statistically sound conclusions difficult) and the Behavioural and Social Sciences Graduate School (a difference of 0.7). The smallest difference was found for PhD students from the Graduate School of Law (0.1).

PhD students from the Graduate Schools of Law, of Spatial Sciences, and of Economics and Business (SOM) are the most positive about their job prospects inside academia. PhD students from the Graduate Schools of Theology and Religious Studies and of Philosophy are the least positive about their job prospects in general, both inside academia and outside academia.

Figure 38. What do you think about your job prospects after your PhD in general? (presented per Graduate School)


As shown in Figure 39, 31 percent of the PhD students wish to pursue a career inside academia, while 27 percent would prefer a career outside academia. In comparison to two years ago, the percentage of PhD students who wish to pursue a career inside academia has decreased from 37 percent to 31 percent. Those PhD students state that the main reasons they wish to pursue a career inside academia are their interest in science, sharing knowledge and atmosphere. The percentage of PhD students who would prefer a career outside academia (27 percent) has also dropped a little (29 percent two years ago). The main reasons that are mentioned by PhD students for preferring a career outside academia are that they would like to have more job security, that they do not like the academic system and that they think that there is too much pressure in academia. Of the PhD students, 17 percent indicated that they wished to combine a career inside and outside of academia, a response category that was not present two years ago. Another 17 percent did not yet know; two years ago this was 23 percent.

Figure 39. Do you currently wish to pursue a career inside or outside academia?



To reveal differences between gender, phase and affiliation, the following groups were compared: Inside academia (consisting of 'Definitely inside' and 'Probably inside'); Outside academia (consisting of 'Definitely outside' and 'Probably outside'); a combination of both; Other (consisting of 'I do not know', 'I don't aspire a career at all' and 'Other'); and 'I already have another job'.

As presented in Table 50, 32.2 percent of the men wish to pursue a career inside academia, while 24 percent of the women wish to do so. The division across the categories is significantly different for men and women ($\chi^2(4) = 10.1, p < 0.05, N = 1171$).

Table 50. Career wishes of male and female PhD students

	Men	Women
Inside academia	32.2	24.4
Outside academia	23.2	27.0
A combination of both	16.3	15.7
I already have a job after my PhD	5.0	5.2
Other	23.2	27.7
Total	100	100

As shown in Figure 40, clear differences were found for affiliation type, as could be expected. The category, 'I already have a job after my PhD', is the largest for spare-time and external PhD students, and they have the smallest percentage of PhD students who wish to pursue a career within academia. Of PhD scholarship students, 36 percent wish to pursue a career inside academia, while 25 percent of the employee PhD students wish to do so.

Figure 40. Do you currently wish to pursue a career inside or outside academia? (presented by affiliation)

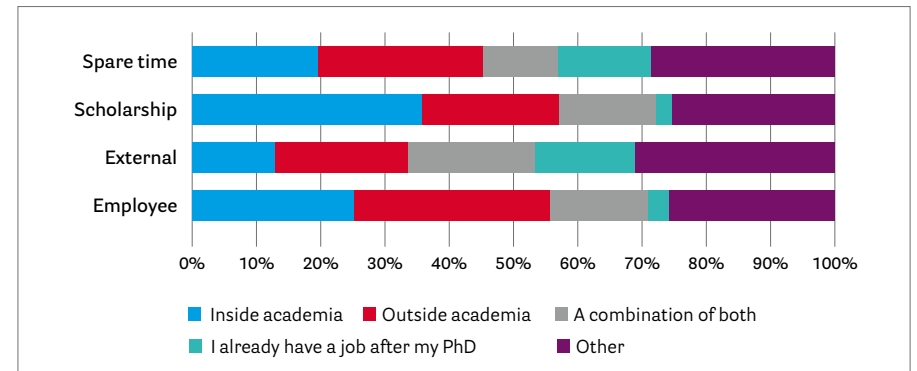


Figure 41 shows that the percentage of PhD students who wish to pursue a career inside academia slightly decreases with the phase of the project. Likewise, the percentage of students who wish to pursue a career outside academia increases per phase.

Figure 41. Do you currently wish to pursue a career inside or outside academia? (presented by phase)

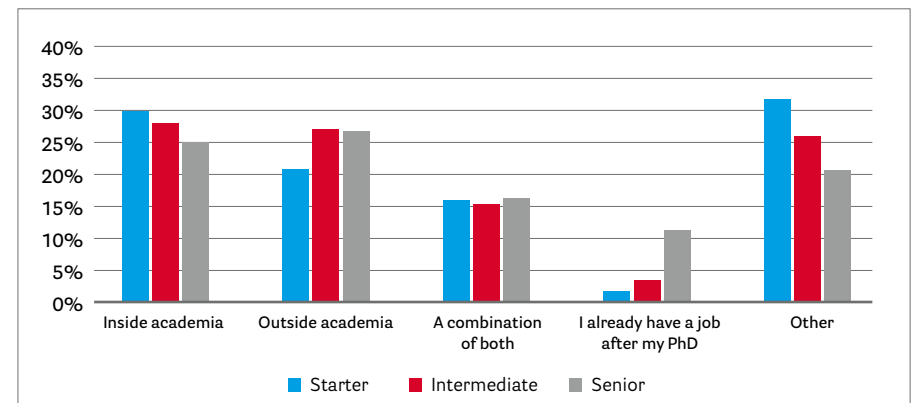


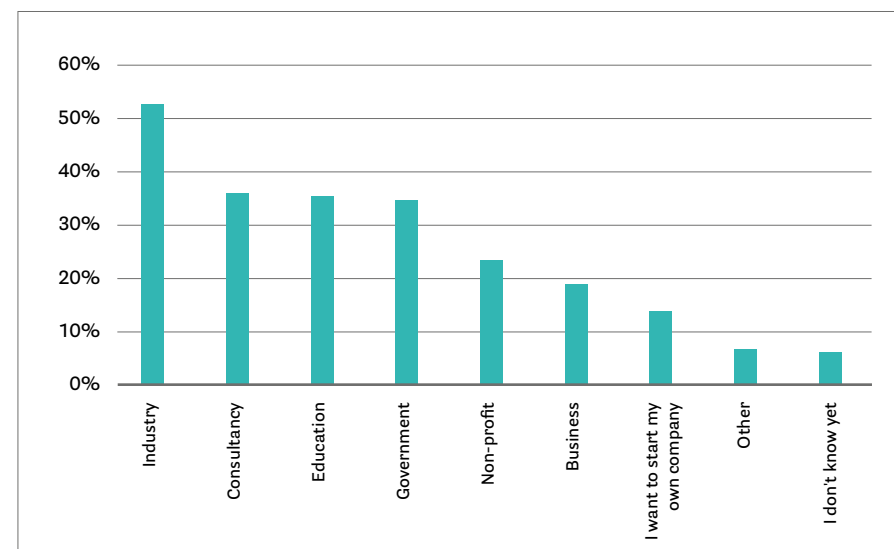
Table 51 shows what future career path PhD students want per Graduate School. The highest percentage of PhD students who prefer a career inside academia was found in the Graduate School for the Humanities (40 percent), while the lowest percentage is found in the Graduate School of Medical Sciences (24 percent). Nearly one third of the PhD students from the Graduate School of Science and Engineering wish to pursue their career outside academia, while this is only preferred by 14 percent of the Graduate School of Law PhD students.

Table 51. Percentage of PhD students preferred career future per Graduate School

	N	Inside academia	Outside academia	A combination of both	I already have a job after my PhD	Other
Behavioural and Social Sciences	117	27	24	15	7	26
Campus Fryslân	11	27	18	18	0	36
Economics and Business (SOM)	55	33	15	16	16	20
Humanities	83	40	19	14	2	24
Law	29	38	14	21	14	14
Medical Sciences	449	24	23	17	5	31
Philosophy	12	50	25	0	0	25
Science and Engineering	377	28	32	14	3	23
Spatial Sciences	41	27	27	29	5	12
Theology and Religious Studies	15	20	33	13	0	33

PhD students who indicated that they wished to pursue a career outside academia (N =301) were asked what career they aspired to after completing their PhD. As shown in Figure 42, most PhD students indicated a wish to pursue a career in industry (N = 158), while a little over 100 PhD students preferred a career in consultancy, government or education.

Figure 42. What career do you aspire to after completing your PhD trajectory?



Support from and satisfaction with Graduate School

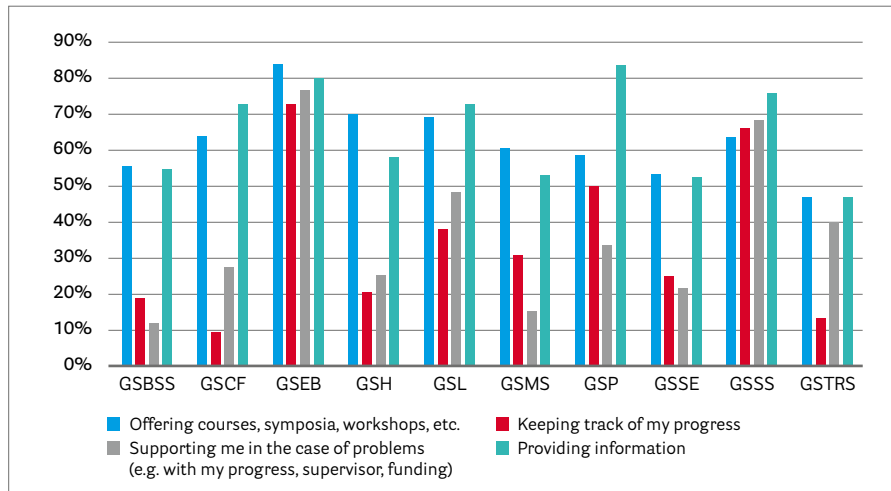
PhD students were asked to indicate how their Graduate School supports them during their PhD trajectory. PhD students were allowed to indicate multiple ways in which their Graduate School supports them. Of the PhD students, 63 percent feel supported by their Graduate School, as it offers, among other activities, courses, symposia and workshops. Nearly 60 percent indicated that their Graduate School provides information. More detailed information is displayed in Table 52.

Table 52. How is your Graduate School supporting you during your PhD trajectory?

	N	%
Offering courses, symposia, workshops, etc.	708	63
Providing information	669	59
Keeping track of my progress	356	32
Supporting me in the case of problems (e.g. with my progress, supervisor, funding)	281	25
I don't know	192	17
Other	26	2
Number of PhD students who selected at least one option	1130	

In Figure 43, the way PhD students feel supported by their Graduate School is further detailed to the level of the various Graduate Schools (the categories, 'I do not know' and 'other' were excluded). It is apparent that the PhD students of some Graduate Schools mainly feel supported by the provision of information or by the availability of courses, symposia and workshops. This is the case, for example, for the Graduate Schools of Behavioural Sciences, Humanities, Medical Sciences, and Science and Engineering. Other PhD students, from the Graduate Schools of Economics and Business, and Spatial Sciences, for example, also indicated that they receive support in the case of problems and by the School keeping track of their progress.

Figure 43. How is your Graduate School supporting you during your PhD trajectory?



PhD students indicated how satisfied they were with different aspects of their Graduate School by scoring seven statements on a five-point scale (from completely disagree to completely agree). On average, a mean scale score of 3.3 (Sd = 0.8) was found, indicating that the satisfaction of PhD students regarding their Graduate School is somewhat better than neutral. Significant differences in the scale score were found between Graduate Schools ($H(6) = 83.1$, $p < .05$). The scale score for the Graduate School of Behavioural and Social Sciences (M = 2.9, Sd = 0.8) was significantly lower than other Graduate Schools included in the comparison (except for the scale score of Medical Sciences, which has an M = 3.2, but an Sd = 0.7). However, this score is better than two years ago and it can be concluded that the new policy in the Graduate School of Behavioural and Social Sciences is starting to pay off. The scale score for the Graduate School of Medical Sciences is also significantly lower than all other Graduate Schools, except for the Graduate School for the Humanities. Furthermore, the Graduate School

of Economics and Business (M = 3.7, Sd = 0.8) scored significantly higher than the Graduate School of Science and Engineering. The results are presented in Table 53, with the average scores on the individual items. Clear differences between Graduate Schools were found for all items. Generally, the Graduate Schools of Behavioural and Social Sciences and Medical Sciences have scores close to 3, while the Graduate Schools of Law, Economics and Business, and Spatial Sciences have a score close to 4 for most items.

Table 53. Mean scores per Graduate School for items regarding satisfaction with the Graduate School

	I know whom I can turn to in my GS when I encounter problems in general			I am satisfied with the educational activities provided by my GS		
	N	M	Sd	N	M	Sd
GSBSS	107	3.1	1.2	102	3.1	0.9
GSCF	10	3.5	0.8	10	2.2	0.9
GSEB	53	4.2	0.9	51	3.7	0.9
GSH	75	3.6	1.1	73	3.4	0.9
GSL	26	4.2	1.0	26	3.8	1.1
GSMS	411	3.0	1.1	408	3.3	0.8
GSP	12	3.8	0.7	12	3.2	0.9
GSSE	326	3.3	1.0	315	3.4	0.8
GSSS	41	4.2	0.7	38	3.3	0.8
GSTRS	14	3.7	0.8	14	3.6	0.7
	I am satisfied with the way in which my GS monitors and supports the supervision of my PhD project			I am satisfied with the way in which my GS monitors the progress of my PhD project		
GSBSS	104	2.7	0.9	103	2.8	0.9
GSCF	10	2.8	0.8	10	2.7	0.5
GSEB	53	3.6	1.1	52	3.5	1.1
GSH	68	3.2	0.9	69	3.2	1.0
GSL	25	3.6	1.3	25	3.6	1.3
GSMS	400	3.0	0.9	398	3.0	0.9
GSP*	12	3.5	1.0	12	3.5	0.9
GSSE	307	3.3	0.9	305	3.3	0.9
GSSS	39	3.6	0.9	39	3.6	0.9
GSTRS	14	3.3	0.8	14	3.1	0.8

9 | Conclusions

	My GS provides a stimulating study and research environment that facilitates interaction and efficiency			My GS provides me with adequate information		
	N	M	Sd	N	M	Sd
GSBSS	102	2.8	0.9	105	3.0	1.0
GSCF	10	2.7	1.1	10	2.6	1.1
GSEB	52	3.4	1.1	52	3.9	1.0
GSH	68	3.2	0.9	74	3.7	0.8
GSL	25	3.7	1.2	26	3.9	0.9
GSMS	392	3.1	0.9	408	3.4	0.9
GSP*	12	3.6	1.1	12	3.7	0.9
GSSE	300	3.3	0.8	318	3.6	0.8
GSSS	38	3.2	1.1	41	3.9	0.8
GSTRS	14	3.2	0.9	14	3.6	1.1
	Overall, I am satisfied with the way in which my GS functions			Scale score ($\alpha = 0.91$)		
GSBSS	105	2.9	0.9	107	2.9*	0.8
GSCF	10	2.5	0.8	10	2.7	0.6
GSEB	52	3.8	1.0	53	3.7*/**/**	0.8
GSH	73	3.5	0.9	77	3.4**	0.8
GSL	25	4.0	1.0	27	3.8*/**	1.0
GSMS	409	3.4	0.9	417	3.2***	0.7
GSP	12	3.7	1.0	12	3.6	0.8
GSSE	314	3.5	0.8	331	3.4*/**/**	0.7
GSSS	41	3.7	0.9	41	3.7*	0.7
GSTRS	14	3.8	1.1	14	3.5	0.7

Note. Green indicates the highest item score in a scale, red indicates the lowest item score.

- * Significant group differences between GSBSS and other Graduate Schools are indicated by *.
Only Graduate Schools having group sizes with more than 15 participants were included in this test.
- ** Significant group differences between GSEB and other Graduate Schools are indicated by **.
Only Graduate Schools having group sizes with more than 15 participants were included in this test.
- *** Significant group differences between GSMS and other Graduate Schools are indicated by ***.
Only Graduate Schools having group sizes with more than 15 participants were included in this test.

The aim of the biennial PhD surveys, as reflected in the results shown, is to monitor the effect of UG policies regarding PhD students and the actual outcomes in daily practice. The previous chapters have shown that overall PhD students are quite satisfied with their PhD trajectories. This can be concluded from the overall score of 3.6 on a five-point scale, and also from the scores on most of the more specific aspects of the PhD trajectory. However, there is also room for improvement on several of these aspects.

In this concluding chapter, we reflect on the following five themes that are related to some important aspects of UG policy:

1. decreasing the time beyond the allotted time period for PhD students to finish their PhD
2. providing adequate information
3. improving familiarity with the Graduate Schools and increasing their role in helping PhD students
4. helping all PhD students to obtain and use a Training and Supervision Plan
5. broadening career-orientation opportunities

Decreasing the time beyond the allotted time period for PhD students to finish their PhD

In 2017, the nationwide average time to complete a PhD was 60 months, thus five years on average. The average for the UG was a little over five years (62 months in 2017). As the majority of PhD students have a contract for four years, this means that many PhD students will not finish their PhD before their contract finishes. In this survey, only 43.1 percent of the PhD students indicated that they would be able to finish on time. The importance of decreasing the time beyond the allotted time period is further supported by the findings in this report. This year's edition of the PhD survey was the first in which spare-time PhD students (PhD students who finish their thesis after the end of their contract, i.e., in their 'spare time') were analysed as a separate group. The findings show that these PhD students are less satisfied than PhD students who still have a contract in relation to many aspects, including: the perceived availability of their supervisor, the perceived academic and personal support, the perceived support in acquiring autonomy as a researcher, their job prospects and their TSP. This is an important finding, as low levels of satisfaction are related to aspects such as low production and mental health problems (Spaulding & Rockinson-Szapkiw, 2012).¹²

¹² Spaulding, L. S., & Rockinson-Szapkiw A. J. (2012). Hearing their voices: Factors doctoral candidates attribute to their persistence. *International Journal of Doctoral Studies*, 7, p. 199–219.

The latter is also apparent from an earlier report on the mental health of PhD students in Groningen (van Rooij, Fokkens-Bruinsma & Jansen, 2019).¹³

The reasons for the expected delay that are mentioned by PhD students are similar to those mentioned in 2017: practical setbacks, a project that is too complex and/or a project that is too big. Van de Schoot, Yerkes, Mouw, and Sonneveld (2013)¹⁴ indicated that minimizing PhD delay could be facilitated by ensuring that PhD planning is set within a reasonable time frame and by systematically evaluating the progress of PhD students. Although most PhD students at the UG have their TSP formalized within three months after the start of their PhD, 60 percent of the PhD students indicated that it is not updated at least once a year. Although this is a decrease of five percent in comparison to two years ago, the importance of a regular update should not be underestimated. By ensuring that the planning remains feasible for the PhD student, it might be possible to overcome unexpected practical setbacks and to shorten possible delays. In the case of a PhD student and supervisor succeeding in maintaining a realistic plan, the perceived workload of PhD students might also change. More than 50 percent of the PhD students indicated that they worked more hours than is stated in their contract, and more than 50 percent of the PhD students described their workload as either high or too high. This is less than was found by Woolston (2019), in this study 76 percent of the 6300 PhD students from all over the world indicated to work more than 40 hours a week.¹⁵ The most often mentioned reason for the high workload was 'the complexity, amount/or pace of work', a reason that is clearly related to the main reasons that are mentioned for delay. Decreasing high workload fosters the completion rate and the satisfaction of PhD students (van Rooij et al., 2019).

Other aspects that could minimize PhD delay would be to ensure effective communication between the PhD student and the supervisor(s) and to provide structural support for PhD students (Van de Schoot et al., 2013). On the basis of the PhD survey, it is not possible to indicate how effective the communication between PhD students and supervisor(s) is, but PhD students were generally very satisfied with the supervision they receive. In addition, the personal support of their supervisor that is perceived by PhD students can be considered quite satisfactory. However, alongside the support that PhD students receive from their supervisor,

13 van Rooij, E., Fokkens-Bruinsma, M., & Jansen, E. (2019). Factors that influence PhD candidates' success: the importance of PhD project characteristics. *Studies in Continuing Education*. DOI: 10.1080/0158037X.2019.1652158

14 van de Schoot, R., Yerkes, M.A., Mouw, J.M., & Sonneveld, H. (2013). What took them so long? Explaining PhD delays among doctoral candidates. *PLoS ONE*, 8(7): e68839. doi:10.1371/journal.pone.0068839

15 Woolston, C. (2019). PhD poll reveals fear and joy, contentment and anguish. *Nature*, 575, p. 403-406.

the UG could also provide support by means of better mental health care facilities, especially those aimed at preventing stress and burn-out. With an average score of 3.3 on a five-point scale, it appears that there is some room for improvement on these aspects. More in-depth studies are required to gain more insight into how to improve these aspects.

Helping all PhD students obtain and use a Training and Supervision Plan

This year, 77 percent of the PhD students reported that they had a TSP, which is a slight increase in comparison to two years ago (75 percent). Some efforts are still required to achieve the goal of every PhD student having a TSP, especially by the Graduate School of Medical Sciences.

Almost 90 percent of the PhD students who had a TSP knew when it had been formalized, which is considerably more than two years ago, when it was 60 percent. In addition, 40 percent had their TSP formalized before or at the start of their PhD, while this was only 32 percent two years ago. Similarly to two years ago, about 50 percent had their TSP formalized within one month after the start of their PhD. This indicates that TSPs are being formalized earlier than was the case two years ago, which is promising.

The content of the TSPs is similar to two years ago, with a slight increase in the percentage of PhD students who have the number of workhours specified. In most TSPs, educational activities, a work plan and the research content are specified, but the PhD requirements, evaluation moments, teaching activities and the number of contact hours are present in only 30 to 40 percent. For TSPs to be a genuinely helpful instrument in the PhD trajectory, it is important to include all of these elements in all TSPs and to update the TSP regularly.

In agreement with the above findings, PhD students are not satisfied with some elements of their TSP and do not agree with the idea that their current TSP is a good guideline or help with their planning. The latter should be an important goal of a TSP, however, and it should be used as such in relation to delay, as described in the first part of this conclusion.

Providing adequate information

In the present report, the provision of information focusing on employment or scholarship conditions and thesis submission was assessed. On both aspects, the majority of the PhD students indicated that they had received sufficient information. However, with respect to employment or scholarship conditions, those employee and scholarship students who indicated that they felt that they did not receive sufficient information, also indicated

that they would welcome the conditions being mentioned earlier in the application process as well as more openness beforehand regarding the differences between an employment and scholarship PhD position. This apparent feeling of not having sufficient information is supported by the finding in this report that PhD scholarship students are significantly more negative about the rules and regulations for sickness and their research budget than employee PhD students, while, in fact, there are no differences in these conditions. Although all of the information is provided on the website and is also stipulated in the contracts, more focused information provision to both groups of PhD students might address this issue.

Another issue that relates to the provision of information is the finding that PhD students still feel insufficiently trained for teaching and guiding undergraduate students. Nearly two thirds of the PhD students who teach and/or guide students reported that they had not received any training in how to do this. The UG offers several teaching courses that focus on how to give lectures and teach practicals, as well as how to guide students.¹⁶ The information on this is clearly presented on the website, but apparently both the supervisors and PhD students require more awareness of these courses. This could help PhD students feel more confident in teaching and guiding undergraduate students.

Improving familiarity with the Graduate Schools and increasing their role in helping PhD students

Nearly all PhD students are familiar with their Graduate School, with only a few PhD students not knowing what Graduate School they were in or mentioning another Graduate School than was indicated in Hora Finita. This finding is similar to two years ago, and shows that Graduate Schools have become a part of the PhD trajectory of PhD students.

The two most often mentioned types of support that PhD students receive from their Graduate School are the provision of information and courses/workshops. Both types of support were mentioned by approximately 60 percent of the PhD students, which is a clear difference compared to the results of two years ago. At that time, these roles were mentioned by approximately 50 percent of the PhD students. The other two roles – keeping track of progress and supporting PhD students in the case of problems – were mentioned by a similar percentage of PhD students as two years ago.

¹⁶ <https://www.rug.nl/society-business/centre-for-information-technology/esi/>

The support that PhD students reported receiving broadly defines two groups of Graduate Schools. Most of the PhD students from the first group of Graduate Schools (Graduate Schools of Economics and Business, and Spatial Sciences) indicated that they received all four types of support. The second group of Graduate Schools (Graduate Schools of Behavioural Sciences, Campus Fryslân, Humanities, Law, Medical Sciences, Philosophy, Science and Engineering, Theology and Religious Studies) mainly provide support by means of offering courses and providing information, with fewer PhD students indicating that they received the other two types of support.

It is not only in terms of the kind of support that PhD students receive from their Graduate School that there are differences, as satisfaction also differs considerably between Graduate Schools. PhD students in the Graduate Schools of the first group were on average satisfied with their Graduate School, while only some Graduate Schools in the second group scored satisfactory, on average. Clearly, there are points of improvement for at least some Graduate Schools. Generally, however, the satisfaction with the Graduate Schools is the same as two years ago.

Broadening career-orientation opportunities

It is the UG's aim to stimulate PhD students to start exploring their options for a future career as early as the first year of their PhD. The reason for this is that only 25 percent will ultimately pursue an academic career and that an early orientation towards the option of a career outside academia is also important. In this report, it was found that 25 percent of the first-year PhD students actually do this. This is similar to the findings of two years ago, as is the total percentage of PhD students who are exploring their options for a future career (45 percent). At the same time, the percentage of PhD students who know that the UG offers ample opportunities for career training (e.g. the Career Perspectives Series) has increased from 66 percent two years ago to 79 percent this year. This finding that the Career Perspectives Series seems to have gained in awareness is also supported by the finding that 84 percent of PhD scholarship students (who are in the first three years of their PhD trajectory) know about the series, while only 71 percent of the spare-time PhD students know about it (who are out of contract).

Apparently, career training by the UG is clearly in the picture for PhD students who are exploring options for a future career, but there is still work to be done to convince more PhD students to start exploring their options early in their PhD trajectory.

In general, PhD students feel more familiar with and better prepared for a career inside academia than outside academia, even though they consider their job prospects outside academia to be better. PhD students are neutral about the guidance that the University offers

regarding career preparation, especially in relation to options outside academia. As this is an important aim of the Career Perspectives Series, more in-depth research into this aspect might be useful to identify how PhD students might be better supported, such that they feel better prepared for a career outside academia.

Appendices

Background PhD students

1. In what discipline did you obtain your most recent degree?

	N	%
Arts	60	5.0
Behavioural and Social Sciences	158	13.3
Economics and Business	57	4.8
Humanities	28	2.4
Law	27	2.3
Medical Sciences	318	26.7
Philosophy	21	1.8
Science and Engineering	459	38.6
Spatial Sciences	31	2.6
Theology and Religious Studies	9	0.8
Other	21	1.8
Total	1189	100.0

2. Can the final year of your Master's or Research Master's degree be considered part of your PhD project?

This question is only answered by PhD students who obtained a Master or Research Master as most recent degree.

	N	%
Yes	257	23.6
No	830	76.4
Total	1087	100.0

3. Where did you obtain your most recent Master's degree (or equivalent)?

This question is only answered by PhD students who obtained a Master or Research Master as most recent degree.

	N	%
At the University of Groningen	402	37.0
At another Dutch university	165	15.2
At another European university	209	19.2
At a university outside Europe	289	26.6
Other	22	2.0
Total	1087	100.0

Appendix B Housing

1. Did you move to (the vicinity of) Groningen for your PhD?

	N	%
No, I already lived in Groningen	411	34.6
No, I do not live in Groningen	148	12.4
Yes, from elsewhere in the Netherlands	111	9.3
Yes, from my home country, which is not the Netherlands	449	37.8
Yes, from a country other than my home country	70	5.9
Total	1189	100.0

The following questions are only answered by students who live in Groningen.

2. What is your current living situation?

	N	%
I live in a house	227	23.1
I live in an apartment	528	53.8
I live in a room	191	19.5
I do not have a stable living situation	11	1.1
Other	25	2.5
Total	982	100.0

I live in a .. That I ..	House	Apartment	Room
	N	N	N
rent by myself	34	235	161
bought by myself	19	21	0
rent with my partner	50	178	7
bought with my partner	60	5	0
rent with (a) friend(s), colleague(s), acquaintance(s)	45	65	15
don't have a contract for	<5	<5	12
share with my parents	7	0	0
other	<5	<5	<5
prefer not to say	<5	<5	<5
Total	220	513	186

3. What does your house/apartment/room cost a month?

Displayed for house/apartment/room separately, only displayed for categories with in total more than 15 PhD students.

I live in a house

	N	1 to 300 euro a month	301 to 500 euro a month	501 to 700 euro a month	701 to 900 euro a month	more than 900 euro a month	prefer not to say
Rent by myself	34	<5	10	13	<5	6	0
Bought by myself	19	0	<5	11	<5	<5	<5
Rent with my partner	50	<5	8	10	11	17	<5
Bought with my partner	59	<5	12	14	16	14	<5
Rent with (a) friend(s), colleague(s), acquaintance(s)	45	<5	21	18	<5	<5	<5

I live in an apartment

	N	1 to 300 euro a month	301 to 500 euro a month	501 to 700 euro a month	701 to 900 euro a month	more than 900 euro a month	prefer not to say
Rent by myself	226	0	30	85	93	17	<5
Rent with my partner	176	<5	32	53	40	44	<5
Rent with (a) friend(s), colleague(s), acquaintance(s)	64	<5	21	36	<5	<5	0

I live in a room

	N	1 to 300 euro a month	301 to 500 euro a month	501 to 700 euro a month	701 to 900 euro a month	more than 900 euro a month	prefer not to say
Rent by myself	159	12	84	43	18	0	<5
Rent with (a) friend(s), colleague(s), acquaintance(s)	15	<5	10	<5	0	0	0

4. In general, how satisfied are you with your current living situation?

	N	%
Very dissatisfied	36	3.5
Dissatisfied	75	7.2
Neutral	189	18.2
Satisfied	414	39.8
Very satisfied	326	31.3
Total	1040	100.0

5. How long did it take you to find a room/apartment/house when you moved to Groningen?

	N	%
Approximately two weeks	129	20.6
Approximately a month	197	31.4
Approximately two months	126	20.1
More than two months	150	23.9
Prefer not to say / Don't remember	25	4.0
Total	627	100.0

6. How did you find your room/apartment/house when you moved to Groningen?

	N	%
Via a website (e.g. Funda)	181	28.8
Via SSH - student housing	103	16.4
Via family/friends	97	15.4
Via an estate agent	94	15.0
Via colleagues in my department	48	7.6
Facebook	43	6.8
Via an advertisement	26	4.1
Other	36	5.8
Total	628	100.0

7. Did you experience much trouble finding housing when you moved to Groningen?

	N	%
No	275	43.7
Yes	331	52.6
Prefer not to say	23	3.7
Total	629	100.0

PhD students who answered 'Yes' indicated several housing market difficulties in Groningen: too expensive, too competitive and a lack of options. Further, some PhD students indicate a lack of support and that is difficult as a foreigner to find housing.

Appendix C

Employment conditions

1. How did you find out about your PhD project?

This question is only answered by employed PhD students who are in their first year.

	N	%
I saw a vacancy for a PhD project	72	46.8
Someone from the University told me and asked me to apply for an existing vacancy or project	14	9.1
I was offered a PhD position	40	26.0
I applied with my own proposal	17	11.0
Other	11	7.1
Total	154	100.0

2. How did you found out about the PhD Scholarship Programme?

This question is only answered by PhD scholarship students who are in their first year.

	N	%
I did a Research Master's degree at the UG and they told me about it at the department	27	19.9
I saw the information on the UG website	40	29.4
Via (one of my) supervisors	10	7.4
After my application interview*	9	6.6
Other	50	36.8
Total	136	100

* PhD students interpreted this question in another way than was intended. They indicated that they received information about being a PhD scholarship student, after their application interview.

3. Which of the following descriptions best fits your application process?

This question is only answered by PhD students who are (or were) employed, who receive(d) a (PhD) scholarship or are (or were) an MD/PhD student.

	N	%
I was offered a PhD position without a formal application interview	175	17.3
The application process consisted of one formal interview	377	37.2
The application process consisted of two or more formal interviews	153	15.1
The application process consisted of one or more interviews plus an assignment (e.g. an assessment, a writing assignment, a presentation)	246	24.3
The application process consisted of writing a proposal and a presentation	12	1.2
I wrote my own proposal	9	0.9
Other	42	4.2
Total	1014	100.0

4. Who was on the selection committee?

This question is only answered by first-year PhD students who are employed, who receive a (PhD) scholarship or are an MD/PhD student.

PhD students could indicate all options that applied to their situation.

	N	%
My supervisor(s)	213	72.2
Other people from the department in which I currently work	101	34.2
Someone from HRM or the Graduate School	67	22.7
Someone from a funding agency	18	6.1
Other	50	16.9

5. Please indicate the extent to which you agree with the following statement regarding research facilities.

My workplace, computer and software, research facilities, and access to the library and other information are adequate.		
	N	%
Strongly disagree	19	1.6
Disagree	80	6.7
Neither agree nor disagree	121	10.2
Agree	649	54.6
Strongly agree	320	26.9
Total	1189	100.0

6. Which facilities are not adequate in your view?

This question is only answered by PhD students who selected 'Strongly disagree' or 'Disagree' on the previous statement (N = 99).

PhD students could indicate all options.

	N	%
Workplace	39	39.4
Computer and accompanying software	66	66.7
Research facilities (e.g. labs, instruments, access to secondary data)	30	30.3
Access to information (e.g. journals, books) relevant to my research topic	17	17.2

Appendix D

Support

1. Did you receive assistance in applying for a visa?

This question is answered by first-year, non-European PhD students who moved to (the vicinity of) Groningen for their PhD.

	N	%
Yes	98	89.9
No	6	5.5
Not applicable	5	4.6
Total	109	100.0

50 percent of the PhD students who indicated not to have received assistance in applying for a visa, would have liked to receive assistance, while the other 50 percent was able to deal with it by themselves.

2. Who helped you to apply for a visa?

This question is answered by PhD students who indicated to receive assistance when applying for a visa in the previous question.

	N	%
Someone from my department	7	7.1
Someone at my Graduate School	7	7.1
The International Service Desk (ISD) of the University of Groningen	76	77.6
The PhD Scholarship Desk at the University of Groningen	7	7.1
Someone else	1	1.0
Total	98	100.0

3. How satisfied are you with the help you received in applying for a visa?

This question is answered by PhD students who indicated to have received assistance when applying for a visa in the first question of this appendix.

	N	%
Very dissatisfied	16	16.3
Dissatisfied	3	3.1
Neutral	3	3.1
Satisfied	38	38.8
Very satisfied	38	38.8
Total	98	100.0

4. Did you receive assistance with finding accommodation?

This question is answered by first-year, non-Dutch PhD students who moved to (the vicinity of) Groningen for their PhD.

	N	%
Yes	55	36.2
No	89	58.6
Not applicable	8	5.3
Total	152	100.0

70 percent of the PhD students who did not receive assistance would have liked to have assistance, while 30 percent did not.

5. Who helped you to find accommodation?

This question is answered by PhD students who indicated to have received assistance with finding housing in the previous question.

	N	%
Someone at my department	22	40.7
Someone at my Graduate School	14	25.9
The International Service Desk (ISD) of the University of Groningen	6	11.1
The PhD Scholarship Desk at the University of Groningen	2	3.7
Someone else	10	18.5
Total	54	100.0

6. How satisfied are you with the help you received in finding accommodation?

This question is answered by PhD students who indicated to have received assistance with finding housing in the fourth question of this appendix.

	N	%
Very dissatisfied	6	10.9
Dissatisfied	5	9.1
Neutral	16	29.1
Satisfied	24	43.6
Very satisfied	4	7.3
Total	55	100.0

7. Did you receive assistance with other formalities (e.g. bank, insurance)?

This question is answered by first-year, non-Dutch PhD students who moved to (the vicinity of) Groningen for their PhD.

	N	%
Yes	70	48.3
No	66	45.5
Not applicable	9	6.2
Total	145	100.0

Nearly 60 percent of the PhD students who indicated 'No' for this question, would have liked to receive assistance on these aspects. A little over 40 percent could take care of it by themselves.

8. Who helped you with these other formalities?

This question is answered by PhD students who indicated to have received assistance with other formalities in the previous question.

	N	%
Someone at my department	22	31.4
Someone at my Graduate School	6	8.6
The International Service Desk (ISD) of the University of Groningen	19	27.1
The PhD Scholarship Desk at the University of Groningen	12	17.1
Someone else	11	15.7
Total	70	100.0

9. How satisfied are you with the assistance you received with arranging other formalities?

This question is answered by PhD students who indicated to have received assistance with other formalities in the seventh question of this appendix.

	N	%
Very dissatisfied	7	10.1
Neutral	8	11.6
Satisfied	38	55.1
Very satisfied	16	23.2
Total	69	100.0

PhD programme aspects

1. Are you familiar with the University's PhD registration system 'Hora Finita'?

	N	%
Yes	1093	93.0
No	82	7.0
Total	1175	100.0

2. You are employed by the University of Groningen or the UMCG. Which situation description best fits your current situation?

This question is only answered by PhD students who are employed by the UG or the UMCG.

	N	%
I am employed here for (most of) my PhD research	467	96.1
Sandwich construction: I am employed here for part of my PhD research; I work on the other part at another university	19	3.9
Total	486	100.0

3. You are a bursary or scholarship student at the University of Groningen/UMCG. Which description best fits your current situation?

This question is only answered by PhD students who are a bursary or scholarship student at the UG or the UMCG.

	N	%
Full scholarship: I receive a full scholarship from the University of Groningen/UMCG for (most of) my PhD research	213	49.2
Full scholarship & sandwich: I receive a full scholarship from the University of Groningen/UMCG for part of my PhD research; I work on the other part of my research at another university	39	9.0
Own scholarship: I have my own scholarship (funded by my home country) for (most of) my PhD research	172	39.7
Own scholarship & sandwich: I have my own scholarship (funded by my home country) for part of my PhD research; I work on the other part of my research at another university (sandwich construction)	9	2.1
Total	433	100.0

4. You have your own scholarship. Does the University of Groningen/UMCG provide an additional scholarship to supplement this up to the level of a full University of Groningen/UMCG scholarship?

This question is only answered by PhD students who have their own scholarship.

	N	%
Yes	149	82.3
No	21	11.6
I don't know	11	6.1
Total	181	100.0

5. What is the name of your scholarship?

This question is only answered by PhD students who have their own scholarship.

The scholarships that are mentioned more than five times are presented in the Table.

	N	%
China Scholarship Council	55	46.2
CONACyT	13	10.9
LPDP	9	7.6
Other	42	35.3
Total	119	100.0

6. Where is your supervision team based?

	N	%
All supervisors work at the UG in my department	586	49.3
All supervisors work at the UG, but in different departments	186	15.7
All supervisors work at the UG, but in different faculties	50	4.2
One or more supervisors work at the UG and one or more at another university in the Netherlands	145	12.2
One or more supervisors work at the UG and one or more at another university in another country	162	13.6
Other	59	5.0
Total	1188	100.0

7. Have you ever experienced substantial disagreement within the supervision team?

	N	%
Never	643	65.9
Once	107	11.0
A few times	167	17.1
Several times	42	4.3
Regularly	16	1.6
Total	975	100.0

8. When there is substantial disagreement within the supervision team, who usually makes the final decision?

This question is only answered by PhD students who indicated to have had substantial disagreement within their supervision team.

	N	%
One of my primary supervisors	107	32.2
One of my co-supervisors	18	5.4
My daily supervisor	30	9.0
I do (PhD student)	21	6.3
We reach a compromise together	146	44.0
Other	10	3.0
Total	332	100.0

9. What output have you produced so far?

PhD students could indicate all options.

	N	%
Finalized my research plan	708	59.5
Collected data	839	70.6
Presented my work at a conference	728	61.2
Written one or more articles (or chapters for my thesis)	696	58.5
Published one or more articles	423	35.6

10. Have agreements been made about a possible extension of the contract?

This question is only answered by PhD students who indicated to have fallen behind on their schedule and do not think to be able to finish in time.

	N	%
Yes, formal agreements about an extension	13	10.7
Yes, informal agreements about an extension	26	21.5
Extension is not possible	11	9.1
No agreements have been made (yet)	67	55.4
Other	4	3.3
Total	121	100.0

11. Where is your primary supervisor (promotor) based?

This question is only answered by external PhD students.

	N	%
University of Applied Sciences	6	5.4
University of Groningen/UMCG	98	88.3
Elsewhere	7	6.3
Total	111	100.0

12. How did you come into contact with your primary supervisor?

This question is only answered by external PhD students.

	N
I approached him/her myself and asked him/her to act as my supervisor	32
I submitted a PhD application to him/her	24
I already knew him/her, and this led to idea of him/her acting as my supervisor	35
He/she was assigned to me	14
In another way	21

13. Has an official completion date been agreed?

This question is only answered by external PhD students.

	N	%
Yes	44	39.6
No	56	50.5
Other	11	9.9
Total	111	100.0

14. With whom did you agree the completion date?

This question is only answered by external PhD students who indicated 'Yes' or 'Other' on the previous question.

	N	%
Primary supervisor	40	72.7
Employer	15	27.3
Total	55	100.0

15. Please indicate whether you have ever experienced any of the following language difficulties. Indicate all that apply.

	N	%
Problems with writing and presenting in academic English	318	26.7
Problems with writing and presenting in academic Dutch	122	10.3
Problems with general communication in the workplace due to being a non-native English speaker	148	12.4
Problems with general communication in the workplace due to being a non-native Dutch speaker	150	12.6
Problems due to colleagues being non-native English speakers	154	13.0
None of the above	555	46.7
Something else	41	3.4

Appendix F

Background Graduate Schools

1. Did you attend the PhD introductory event organized by the Groningen Graduate Schools?

	N	%
Yes	572	50.1
No	460	40.3
I do not remember	53	4.6
Not applicable to my situation	57	5.0
Total	1142	100.0

2. Apart from the Groningen Graduate Schools, are you involved in another national/international Graduate School or research school?

	N	%
No	888	78.4
Yes	245	21.6
Total	1133	100.0

The organizations that are mentioned by more than 10 PhD students are BCN (79), ICO (15) and KLI (10).

3. Please indicate with which of the following PhD organizations you are familiar.

	N	%
GOPHER (Groningen Organization for PhD Education and Recreation)	851	71.6*
GRIN (Groningen Graduate Interest Network)	192	16.1*
PhD council of your Graduate School	685	57.6*
PNN (Promovendi Netwerk Nederland)	230	19.3*
I do not know any PhD organizations	147	12.4*
Other	13	1.1*

* The percentage represents the percentage of all PhD students (N = 1189) who are familiar with the organization.

4. Do you think the PhD organizations in Groningen offer sufficient activities and services for PhD students?

This question is answered by PhD students who indicated to know at least one organization from the PhD organizations that are listed in the previous question, including PhD students who indicated the 'other' category.

	N	%
Yes	604	59.4
No, I would like to see more activities or services	71	7.0
I don't know	341	33.6
Total	1016	100.0

Several activities and services are mentioned by the PhD students who indicated 'No', such as career perspectives, more social activities, network events, sports games, and mental health services.

5. Are you familiar with the Federation of Graduate Schools in Social Sciences and Humanities?

This question is only answered by PhD students from the following Graduate Schools: Behavioural and Social Sciences, Economics and Business, Humanities, Law, Philosophy, Spatial Sciences, and Theology and Religious Studies.

	N	%
Yes	60	17.1
No	291	82.9
Total	351	100.0



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